ENABLING YOUNG COMPOSERS THROUGH THE VERMONT MIDI PROJECT: COMPOSITION, VERBALIZATION AND COMMUNICATION

BY

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DISSERTATION

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Abstract

The purpose of this study was to examine what conditions of a mentoring project enable teachers and students to keep composing and teaching composition in public school music classrooms over time. Using a case study, I explored the extended relationship and reciprocal influences and interactions among the triadic relations of teacher-student-mentor, which I call triads. Within the Vermont MIDI Project, as the primary case, these individual triads constitute three independent mini-cases in my study around two high school teachers and one elementary school teacher. Semi-structured interviews, observations of composition-related courses and the Opus event, and students' compositions and mentors' matching comments were used for data collection.

This mentoring project is an example of the cognitive apprenticeship learning paradigm (Collins et al., 1989). The apparent technological limitations on communication in online mentoring afford unique pedagogical benefits for all the participants, including students, teachers, and mentors. In particular, because of the necessity of asynchronous communication, mentors must write in order to comment on students' compositions. The resulting verbalization served as a powerful pedagogical tool for teachers, as a stimulus to reflection for the student composers, and as a precious data source that makes the process of teaching composition visible for researchers. Developing learner agency was an explicit value and key motivating factor for all participants. There are reciprocally supportive relationships among members of the focal triads in this study. The mutual support the participants provide each other helps sustain their motivation to continue participation in the Vermont MIDI Project.

In its practical implementation, this out-sourcing system maintains musical integrity by involving professional artists, at the same time that it utilizes information and computer technologies in ways that overcome limitations of time and space. Thus, this system suggests alternatives that can help teachers outsource skills and knowledge that they find difficult to cover while also helping students to overcome isolated environments for creating music that composers usually encounter. Suggestions for future research and implications for music education are provided.

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TABLE OF CONTENTS

Chapter One

Introduction

Background of the Research

This study examined the teaching and learning of composition in an online mentoring context, focusing especially on conditions that enable the students and teachers in that environment to persist in composing and teaching composition. Within the innovative study of challenges to creating music with computers and information technology, this study's unique contribution is to consider how those challenges are related to knowledge, skills, and beliefs that affect learners' composing procedures as well as to the teacher's motivations and roles in teaching composition.

Because this study investigated motivations for prolonged engaged teaching and learning—which meant reasons or driving forces behind the decision to *continue* composing and teaching composition, rather than the motivations for engaging in those activities at any particular moment—qualitative methods were appropriate. Using case study methods, I also explored the extended relationships and interactions among the of teacher-student-mentor groups, which I call triads; within the Vermont MIDI Project as my primary case, these individual triads constitute three independent mini-cases in my study. The aforementioned investigations depended on diverse methods of data collection, such as interviews; field observations, my own field memos and field notes; and participants' artifacts, such as teachers' teaching materials and lesson plans, students' compositions, and mentors' corresponding comments.

Contemporary classrooms are encountering numerous trends related to technological changes, which are in turn part of socio-cultural revolutions. In a technologically developed

society in which groundbreaking cultural forms are being invented by members of the digital generation, school music encounters new challenges. As a result of these trends, music teachers have a range of both choices and responsibilities to implement new possibilities into their teaching practices.

In the midst of these changes, since 1995, the Vermont MIDI Project has fostered a community of music educators, including pre- and in-service educators who encourage and support music composition in their teaching practices, professional composer-mentors, and students. Addressing composition in the school music curriculum from the earliest stages, professional composers and other project participants offer critiques to student-composers in-progress and make suggestions about possible changes and improvements to their work. Based on a respectful climate, the mentoring project has successfully established protocols for mentoring as one of its major tenets.

The Vermont MIDI project is organized into three components. Its main component consists of Online Mentoring for Student Composers provided by professional composers. This mentoring occurs through a password-protected website for the sharing and critique of student compositions.

The second component is professional development for teachers. Here, the MIDI Project offers four major opportunities: (a) one-day workshop sessions in the fall and spring, (b) a four-day Arts and Technology Summer Institute, which is the Project's main body for professional development in music composition and technology, (c) occasional Interactive Learning Network presentations/discussions, and (d) other online resources.

The final component of the Project is a live performance opportunity for students, called the Opus concert. In the Spring and Fall, professional ensembles are hired to perform students' works, which have been completed during the mentoring and revising process.

The key principles governing the whole composition process used in the Vermont MIDI Project include: (a) to promote composition for teachers, (b) to begin composition with structured guidelines, (c) to provide frequent reflection and critiques in order to encourage revision, (d) to use notation software as a way to develop music literacy, (e) to provide opportunities for live performance of student work, and (f) ultimately to make music composition one element of a well-rounded curriculum in school music programs (Cosenza & MacLeod, 1998; MacLeod, 2004).

The Vermont MIDI Project as a valuable case.

The Vermont MIDI Project provided a meaningful way to explore the nature and characteristics of teaching and learning music composition due to the following factors: the longevity of the program, the wealth of its instructional resources, the musical integrity of its composition-focused learning situation, its dependence on volunteers, and its constructive teaching and learning environment.

Longevity/Continuity. Other on-line-based projects, particularly mentoring support systems for teaching and learning music composition, have been "stand-alone" efforts unable to provide any continuity to participants. It is rare to find efforts that aim at the continued development of compositional skills. This Project is particularly worthwhile because it allows not only students, but also teachers and mentors, to maintain continual participation in this web-based composition project or even to return to it after a break, while other composition-related teaching and learning projects rarely have provided any longevity to participants. For example,

some student-participants return to the Project after earning degrees in music composition and music technology, to serve as mentors or instructors in the Summer Institute, the teacher preparation program at the Vermont MIDI Project. Many teacher-participants are involved with the Project for several years, and some eventually become instructors in the Summer Institute, as well.

Rich resources for teaching composition. For fifteen years, the Vermont MIDI Project has possessed a wealth of material resources for teaching composition in a school context. With a vast collection of students' uploaded composition files and mentors' comments, the project web site provides materials for teaching and learning music composition that span the entire educational situation: mentoring guidelines for teachers, mentors, and students, which are the product of surveys conducted with teachers and mentors over time; strategies or approaches to composition and arrangement, which were developed by several core teachers and composers of the project; media files of classroom work and integrated projects; manuals for using music-related computer software, which are based on the practical experiences of the instructors; and documents and records for the Opus event materials.

Musical integrity of a composition-focused learning situation. The Vermont MIDI Project creates an authentic experience of music composition at every level. First, it provides an environment focused solely on composition, rather than integrating composition activities within a general music program. Second, the Project provides musical integrity by involving professional composers as mentors who meet teachers and students in the school setting. Through repeated mentoring procedures over time, students are able to have a professional experience of music creation. Ultimately, the Opus provides students a precious experience in which professional musicians perform their compositions on a real concert stage. In sum, unlike

integrated band, choir, or theory classes that teach composition, this Project focuses solely on music composition itself, so it is an ideal site for investigating the nature and characteristics of teaching and learning composition activities.

Dependence on voluntary participation. The mentoring project does not offer an established experimental setting or other mandatory curriculum. Although the National Standard for Music Education recommends composition and improvisation as a fundamental component of music learning, the teachers and students in the Vermont MIDI Project are not bound by employment to implement that standard; they participate voluntarily. This fact makes the Project an ideal site to study intrinsic motivation, one not available to researchers using a mandated experimental design.

Constructivist teaching and learning environment. Because its online learning environment creates a version of cognitive apprenticeship, the Vermont MIDI Project provides an authentic constructivist learning and teaching situation. Teachers and mentors effectively create agency for learning composition, considering each learner's unique pedagogical and musical capabilities. The request-respond-reply process, which was the Project's most fundamental strategy, strongly encourages opportunities for student reflection. The learning situation is organized for collaboration and cooperation among students, teachers, and mentors. The outsourcing of mentoring and performance to music professionals, combined with teacher preparation, make authentic tasks, problems, and assessment possible. In addition, the main teaching and learning activities revolve around an active discourse of learning and of music composition; the composition process includes creating a description of a piece and requests for mentoring, conducting regular conversation with teachers, as well as communicating with mentors regarding comments and revisions. Most of all, both teachers' guidance and mentors'

comments provide scaffolding to support student composition (Schunk, et al., 2007; Brooks & Brooke, 1993).

Therefore, the Vermont MIDI Project provides an ideal setting for exploring the conditions that enable students and teachers to continue composition and teaching composition; the roles and identities of teachers in the mentoring process and in students' composition processes; the nature of the interactions among teachers, students, and mentors; and the learning environment under the influence of computers and information technologies.

Significance of This Study

In order to explore methods and strategies of teaching music composition, previous research in music education has tended to emphasize students' own compositional processes. Such traditional scholarship has paid little attention to other fundamental issues, such as teacher-student interactions, teaching practices, pre-service preparation for teaching composition, the defining characteristics of adolescence, and the influence of cultural and technological changes. However, music-creating activity in actual classrooms is a more comprehensive project than the simple production of sounds; it includes pedagogical issues, knowledge of and skill in music notation, the evaluation of students' created works, and the implementation of technologies as a learning environment.

A transition in research perspectives is thus required. As Berkley (2004) has pointed out, past research on music making has disregarded in particular the fundamental relationships between teachers and students. Although it has focused on developing students' compositional skills and methods, such topics have not been understood within the dynamism of the learning process. Therefore, a more multi-dimensional approach is needed, one based on the practical

perspectives of real classroom teachers and accompanied by a research method that can capture teachers' realistic and grounded concerns.

This study seeks to address these issues. It complements currently underdeveloped research on teaching and learning interactions and on the motivations that drive the continued teaching and learning of music composition. It does so by expanding upon previous research studies that explore students' compositional processes and teaching practices in music composition. To illuminate the relationships and reciprocal influences among teachers, students, and mentors in an on-line-based composition project, I chose focal triads that included a member of each of these groups. Although I looked closely at every spoke of this triad—including the relationships between teachers and students, mentors and students, and teachers and mentors— I focused especially on the teachers' own roles and identities as figures who existed in the midst of mentor-student interactions.

There is also a wealth of materials and curricula regarding how to teach composition, but it is much rarer to find materials on the continual development of compositional skills; materials for teaching and learning music composition focus heavily on musical aspects instead of considering the whole learning and teaching situation, whose success depends on its own continuation. More basically, composing and teaching composition is not required at all for the participants' in the mentoring project, despite the fact that the National Standard does recommend composition and improvisation as a fundamental component of music learning. Nevertheless, these teachers and their students have been willing to keep teaching and studying composition through their participation in the Vermont MIDI Project. Therefore, I specifically investigate the factors that lead students to keep studying and teachers to keep teaching composition over time during a prolonged engaged period.

To reveal this comprehensive nature of teaching and learning music composition in the contemporary music classroom, I consider the influence of technology on learning and teaching paradigms as well as on the interactions of my focal triads. This approach expands existing computer-based music composition research on learning technology by taking account of comprehensive perspectives and by viewing technology as a factor that influences human interactions. In this study, technology is infused rather than implemented, influencing students' procedures and methods of composing and learning composition, teacher-student classroom interactions, and my own research design and paradigm.

Because of the multi-layered learning and teaching structure within triadic relations, the design of this study includes several unique features relative to previous research on composition teaching and learning. First, based on interview and field observation data, I was able to identify common themes in the relationships among teachers, students, and mentors across the triadic relations. Second, the project itself integrates both offline and online learning environments; teacher-student interactions are exclusively offline in classrooms while mentor-student interactions are almost exclusively online; moreover, teachers witness these online interactions as mediators of learning interactions. Part of my analysis examines the ways these two kinds of interactions support the learning of all triad members. Third, this study includes analysis of composition mentoring by tracking mentors' written comments regarding musical scores of specific student compositions across a prolonged revision process.

In addition to critiques and suggestions, mentors' comments are provided in a written format of students' compositions. In other words, students' composed works are already analyzed through mentors' lenses prior to my own data analysis processes. Thus, it makes sense for me to conduct a sort of meta-analysis of students' works in dialogue with mentors' comments,

rather than a direct analysis of the students' composed music--which would involve doing a note-to-note analysis or taking a detailed look at revisions for musical content, such as melody or rhythm. A meta-analytic paradigm has the added benefit of naturally resulting in an investigation of mentor-student interactions.

Based on the aforementioned paradigms and attending specifically to motivational, interactional, and technological features, this research focuses on composition pedagogy and on implementing learning technology. Within online asynchronous communication, mentoring and composing interactions and procedures are verbalized and notated. Using these materials, which enable abstract and inner cognitive behaviors to be accessed and studied, I can explore possibilities for conceptualizing components of composition pedagogy in a public school curricular context.

Research Questions

In this study, various participants' roles and motivations for teaching and learning music composition are explored: students' roles as composers, teachers' roles as mediators between students and mentors, and mentors' roles as mediators between teachers and the environmental influences of digital media and culture. Concentrating on the focal triads of teacher, students, and mentors, I also investigate the relationships that these roles produce. To investigate these complicated roles and relationships, I constructed the following set of research questions:

What conditions of the Vermont MIDI Project enable the students and the teachers to continue composition and teaching composition?

1. What is the teacher's role in relation to students and mentors?
2. What are the characteristics of online mentoring?

3. How do students continue to develop their musical works within the mentoring process over time?

4. How do computers and information technology influence the content, strategies, and interactions involved in learning composition?

5. What is the nature of the interactions among teachers, students, mentors, and the context of learning?

Chapter Organization

From Chapter 4 through Chapter 6, I explore composing, teaching composition, and the mentoring interactions of teacher-student-mentor triads through the three focal cases of Mrs. Campbell, Mr. Stanley, and Miss Gibson. In Chapter 7, I provide a description and analysis of mentors' roles and motivations in this project and of their beliefs about teaching composition. After scrutinizing critical technological issues, particularly their influence on composition methods as well as on student-mentor interactions, in Chapter 8, I employ a cognitive apprenticeship paradigm to understand the whole learning environment of this project, focusing on mentor-student interactions, in Chapter 9. I comprehensively conclude and discuss emergent themes in Chapter 10.

Chapter Two

Literature Review

In chapter 2, I survey broad research trends in teaching and learning technology-based music composition. I then review the literature regarding the composing process in the digital era, issues in teaching and learning this process via computer and information technology, and the implementation of cognitive psychological theories in such learning situations. This literature review begins with the question of how the music education profession articulates the rationale for teaching music composition in a digital environment. The challenge that I address is the gap between the theory and practice of composition in educational contexts. Although creating music has long been considered one of the core activities in music instruction, many music educators encounter musical, pedagogical, and cultural difficulties in teaching this activity (Strand, 2006; Barrett, 2003). Therefore, I will review how previous research on music education has dealt with this inconsistency, tracing changes in subject matter, research methodologies, and overall approach.

To ground my own research, I aimed to present a theoretical framework that would connect learning psychology with composition instruction. Based on constructivist perspectives, I began by consulting cognitive apprenticeship theory. With this psychological learning theory as a foundation, I turned to survey related music education research.

The resulting review of music composition, learning technologies, and learning psychology is categorized into three parts: (a) research trends in teaching and learning technology-based music composition, (b) teaching and learning music composition the digital environment, and (c) cognitive psychological foundations for teaching and learning music composition.

Research Trends in Technology-Based Music Instruction (TBMI)

To provide a broad perspective and context, this section overviews the research on music instruction via the computer and information technology. Focusing on the emerging technologies period identified by Berz and Bowman (1994, 1995), I define three major characteristics in the research: (a) interest in illuminating the features of technology itself, focusing on its implications and efficiency, (b) the interest in approaching technology from comprehensive perspectives, and (c) the effort to identify technology as part of a holistic learning environmental ecology. These characteristics map onto shorter and overlapping time periods. For each one, my review will focus on the content of teaching and learning music composition.

In their survey of shifting trends in research approaches, Berz and Bowman categorize early research on technology-based music instruction (TBMI) into four periods: what they call the early period (to 1965), the mainframe period (1965-1978), the microcomputer/ traditional compute assisted instruction (CAI) period (1978-1989), and the emerging technologies period (1989-1994).

While early literature defined educational technology fairly broadly, beginning with the introduction of electric equipment into the classroom, Berz and Bowman (1994) themselves focus specifically on computer-assisted music instruction. Their approach strongly exemplifies the scholarly interest in *features* of technology. They examine TBMI research and practice from theoretical perspectives, considering the implications of technology for such issues as musicianship, skills and knowledge, creativity, testing and measurement, and curriculum design. Regarding the latter, Berz and Bowman suggest that computer-assisted instruction, which originated in studies of language acquisition, is based on classroom behavioral learning principles. They treat the instructional and technological potentials of computer-assisted

composition by simply classifying it within the category of creativity. Berz and Bowman define studies of creativity as those studies that:

> ... utilize a computer environment or micro world as an arena for compositional activities in the classroom and experiments targeted at development of hardware and software tools for composers…. Input by means of mouse, a peripheral device, can be interpreted as visual gesture by an appropriate computer program and can then be used to generate systems-exclusive messages in real-time as standard MIDI files; this provides the composer with greater flexibility in the use of MIDI devices (p. 26).

Higgins' (1992) essay addresses the initial stage of technology use in music education. While recent TBMI tends to focus on applying integrated computer technologies to specific educational content, Higgins' review approaches broader topics of learning technologies, such as programmed instruction and television as well as the early use of MIDI, digital recording, and multimedia. Still, Higgins contributes the significant observation that technology-related instruction allows the individual learner to control access to media and to manage the pace of interaction with it; he also emphasizes the versatile character of technology-related instruction.

The literature described above provides a foundation upon which to build in order to better understand the unique pedagogical and curricular issues related to music teaching and learning with technology. They review broad trends in research on TBMI. They also reveal movement from studies of technology itself to studies of the people who use technology in a day-to-day learning and teaching situation that is organized around specific content, and then, even to the ecological issues exploring tensions and interactions. The early period of research instead focused on the thing itself by exploring the potential of new technology and seeking broad possibilities for practical implementation.

Compared with other educational fields, music education has adapted slowly to technological progress. The reasons for that slowness include a combination of skepticism, lack

of access to technology, and discomfort with learning and applying hardware and software to music teachers' teaching practices. Recently, however, driven mainly by a younger generation of teachers, music instruction has begun to employ new technologies by incorporating computer equipment, applications, qualified multimedia resources, and new means of communicating and exchanging information. Music educators have directly imported these explorations into classrooms; by focusing on merging technology with learners and learning content, they have developed more comprehensive and systematic perspectives on technology-based music instruction. These innovative perspectives emerged in non-research journals and reflected qualitative changes in real classroom environments devoted to music instruction. In particular, these changes responded directly to technological innovations that enabled forms of music teaching and learning that had previously been impossible. Increased budgets for applying technology to music instruction have helped lead many music teachers to participate in this field-wide change by employing computers in their pedagogy (Berz & Bowman, 1994; Reese, 1998; Rees, 2002; Ruthmann, 2006; Webster, 2002).

These field-wide changes arose with the development of diverse approaches to technology-based music instruction. Reese (2004) offers a systematic perspective, which focuses on the whole context of music learning and emphasizing balance among its interactive and dynamic elements--such as teachers and learners, instructional goals, environments, learning content, and hardware and software technology.

The discussion of transformation as opposed to efficiency opened another new perspective on technology-based music learning (Beckstead, 2001; Hickey, 2002), which has today become a cornerstone of reconsiderations of the role of technology in the classroom. This perspective uses the term "transformation" to refer to qualitative changes in the entire range of

components of music instruction once technology is introduced. The distinction between efficiency and transformation has been particularly influential in music-creating activities, which have been considered one of the most challenging areas in the music classroom.

Compared with both the systematic and transformative views, the last perspective—the ecological approach to TBMI--concentrates on technology as a part of a learning environment. Within this broad approach, the pervasive computing perspective, which is similar to the ubiquitous computing perspective of Weiser (http://sandbox.parc.com/weiser/), aims to integrate computer technology into daily life for everyone at anytime. As a forward-looking view, this perspective encourages school music programs to fully integrate technology into the learning environment rather than just to apply technology as a discrete tool.

Webster's review in *The New Handbook for Music Teaching and Learning* (Colwell & Richardson, 2002) outlines changes in direction within technology-based music learning, including primarily shifts away from effectiveness and efficiency and toward this ecological view of technology as one part of an active learning environment. Focusing on 'computers' and 'creativity,' he notes the cognitive and constructive dimensions of music learning in the computer-based learning environment.

The most recent trend in technology-based music instruction is the ecological approach. This approach recognizes that technology has been not only a tool for instruction, but has also become a pervasive ecology for learning and a culture for learners of a new generation as one of a factor of interactions. In keeping with this shift, empirical research has tended to investigate technology in a curricular context instead of in an isolated research setting. One of the latest studies to investigate the use of technology in composition instruction from the ecological view was conducted by Ruthmann (2006). He discusses research that explores the nature of

technology-based music learning and teaching in real classroom settings and in specific curricular environments. Ruthmann has noted that the direction of research in TBMI has changed with the ecological perspective's focus on the actual learning environment, leading to research that moves far beyond terms like efficiency and effectiveness, instead focusing on the nature of music teaching and learning within naturalistic and educational contexts. In this naturalistic case study pursuing curricular goals, Ruthmann concluded that tensions between tradition and innovation become visible in the relationship between a teacher's prior musical experiences and his or her decision-making in the classroom.

Teaching and Learning Music Composition in the Digital Environment

Research on teaching composition using computers.

In this section, I review studies regarding teacher dimensions of music-creating activities, such as specific teaching practices and teacher preparation for teaching computer-based music composition.

Since the 1990s, the rapid development of computer and information technology has impacted music teaching and teacher training practices in various innovative ways. The new technology provides teaching and learning opportunities beyond the ordinary limitations of classroom time and space. Nevertheless, typical research on technology in music education has been restricted to learner dimensions, such as students' composing processes and the impact of specific pedagogical strategies on learners in technology-based music education. While a great deal of previous research has considered students' musical responses, changes in composing strategies, cognitive psychological functioning, and ability to use technology as a music-creating tool, the teacher's role and stance in technology-based music education has been explored less often and less extensively (Berkley, 2004).

> However, research into cognition in composing generally avoids comment on the influence of the teacher on the rate and quality of development of composing cognition, or the impact of the school curriculum on the way learning in composing is structured (Berkley, 2004, p.240).

Teaching practices in music composition. Strand (2006) surveyed Indiana public school music teachers about their practices and beliefs regarding the teaching of composition, focusing on why they do or do not implement music composition in their instruction and how. The results indicate that 88.5 % of the teachers incorporate composition into their teaching practice, but that only 5.9% incorporate composition activities frequently. In addition, the results show that general music teachers tend to integrate composition in their classes slightly more than band or choir directors do.

Fundamentally, Strand's project explored whether music teachers recognize an operational definition of composition. In my previous pilot study of the Vermont MIDI Project, I conducted open-ended interviews about operational definitions of creativity and composition in the curricular context. However, this questioning did not work because teachers seemed unfamiliar with the terms. In addition, these terms are ambiguous and not easily defined in an interview situation with anybody, regardless of their backgrounds. Similarly, Strand discovered no one definition of composition in her analysis of open-ended survey questions: The teachers instead addressed various activities, such as dictation, notation, and improvisation, and treated them as "composition." Indeed, in research on the self-efficacy of pre-service teachers in both early childhood and elementary education programs, Kim and Choy (2005) reveal that these teachers have high overall self-efficacy but low self-efficacy related specifically to musical concepts.

In connection with the Vermont MIDI Project in particular, MacLeod (2004) sought to study the perceptions of three music teachers who did incorporate music composition into their teaching. Each teacher came from a different school setting, had a different level of experience with technology, and had a different musical background. But they all implemented computers, music software, and an on-line mentoring process in their curricula in order to provide their students commonality and connections in their study of music composition. McLeod identified three significant and influential factors in such integrations: (a) the selection of appropriate software, (b) the influence of the National Standards for Arts Education as an educational basis, and (c) the existence of learner-centered classrooms. She emphasizes the importance of successfully integrating technology into classroom practice, and suggests considering student perspectives in order to help teachers understand learners' compositional processes and the context of composition.

By surveying teachers and observing classrooms, Berkley (2001) has also broadly discussed critical topics in computer-based instruction in music composition, including the differences between the evaluation of *composing*, which refers to music-creating activities, and of *compositions*, which refers to the musical works resulting from those activities; the teaching of cognitive skills like problem-solving and creativity; students' compositional abilities and difficulties; and the role of value judgments in assessing compositions.

Berkley agrees that technology-based teaching and learning tools help students compose without notation or instrument skills that would otherwise be necessary. On the other hand, she mentions that music teachers are skeptical of the sound quality produced by the MIDI sound card on a computer and of the quality of musicianship acquired by manipulating events on a computer screen. However, most of all, she notes that the development of educational technology poses

challenges for teachers encountering teaching media that they have not themselves experienced as students. Students can often handle the new media better than their teachers can; they may overtake their teachers' capability to implement the tools; and they can achieve similar levels of sound quality as their teachers using the same tools. Berkeley argues that this phenomenon challenges the "literacy-based master apprentice relationship (p.133)." Berkeley (2001) found the following:

> Teaching composing is both a transfer of skills and a process of guiding students towards independence and critical self-awareness. What the teacher puts into the student's `cultural rucksack' and the way they encourage students to use this knowledge and experience is the major influence on the way the student learns. Just as the medium the student works in affects their progress, so the rules and conventions each teacher imposes will influence the student's approach to composing, and their appraisal of their own ability (p. 133).

Teacher preparation for teaching composition. Hewitt (2002) has examined how music creation differs between pre-service teachers with a high level of musical training and generalist teachers who work in primary school classrooms. Although Hewitt does not mention technology, this research seems to connect to previously documented concerns generalists have about notation and performance. He studied the differences between specialists and generalists by arranging complex and inventive group composition activities in which both groups participated and which depended on other practical factors, such as social skills, aesthetic perceptions, and confidence in presentation skills. While the specialist group with an undergraduate level of musical training exhibited few difficulties with the exercise, Hewitt found that the generalist group had several concerns. Although the teachers were enthusiastic about creative music-making activities, such as performing and presentation, they were nonetheless worried about assessing and evaluating students' compositions and about students' facility with the conventional literacy of five-line notation. Moreover, the two groups exhibited differences in

their ability and willingness to engage in the exercise, their development and extension of musical ideas, and their creativity in music-making activities.

Kennedy (2004) has explored the compositional progress of nine pre-service teachers. Through observations, informal conversations with participants, and document analysis of six-week-long music computer lab activities, she concluded that pre-service teachers' compositional processes include exploration, incubation-inspiration, and revision in varying degrees. Participants had already taken an *Introduction to Music Technology* course in their first year. Nevertheless, several needed to reacquire the knowledge and skills for technology-based music instruction in general, and the software program *Performer2* in particular. Kennedy considers increasing fluency to be the mark of compositional progress and revealed that previous musical training, skills, and knowledge substantially influences that progress.

Another element of preparing pre-service music teachers is the tension between teachers' professional identities as musicians and as educators. Burnard's (2004) investigation of six elementary general music teachers' experience of this tension offers an opportunity to rethink current pre-service music teacher programs. She discovered that the music teachers characterized their identities in music making and music teaching in three ways: (a) as two distinct roles in their professional lives, with a clear separation between making music and teaching music, (b) as a single approach, so that they understand their music creating and music teaching in much the same way, and (c) as two related activities, so that they bring their own experience of making music to life for their student to recreate. Through this exploration of teachers' dual identities, she notes that music making and music teaching are closely related and that this relation can provide great satisfaction in the professional lives of teachers who engage in both activities.

Learner dimensions of computer-based music composition.

In this section, I survey research on students' general music-creating methods and procedures, and then move on to previous research studies in music composition in the digital environment, focusing on the particular influences of computer and information technology.

Students' compositional processes. In his early works conducted in 1989 and 1985, Kratus investigated students' cognitive functions in the composing process by incorporating technology into a time analysis. Kratus believes that composition is a procedure organized around flowing thoughts, in which composers explore new ideas, and revisit as well as review their previous ideas and actions, as they generate a product. Whereas Kratus uses technology as a tool for conveying children's cognitive musical strategies, the main variables of his research have included the roles that musical knowledge, composing experience, age, gender, and *audiation* ability play in children's compositional processes. He notes that children's compositional process is a linear process of exploration, development, and repetition.

Based on developmental models of creativity proposed by Swanwick and Tillman (1986) and Levi (1991), Emmons (1998) has studied the compositional processes of middle school students and the relationship between these processes and the medium of the computer. He established co-existing conditions in this study: Students composed their own music in general music classrooms and they used professional computer software instead of paper-and-pencil bearing traditional five-line notation. Emmons selected documents that established the creative process of six seventh-graders from two different schools and investigated the students' personal histories, personal traits, creative processes, use of technology, and comparisons to existing models of composition. Finally, he discovered three components of students' thinking and music-creating process: formation, preservation, and revision. He also reveals that none of these

components are linear or sequential.

Kennedy has investigated the compositional processes of four high school students in the educational context (2000) and of pre-service teachers enrolled in a course titled *Creativity in the Music Classroom* (2004). She developed a six-stage model of the compositional process and confirmed the existence of each stage in varying degrees in each individual student. Kennedy concludes that the increasing fluency of successive output provides evidence of students' compositional progress.

Younker (2000) has explored the musical thinking process and composing strategies of elementary and middle school students who use synthesizers and sequencing software. Based on experiences in general music classes, participants acquired technological skills and composed individually. Younker discusses the possibility of creating a developmental model of the compositional process based on the various thinking processes of each student.

Influence of computer technology on students' composing process and content. Upitis (1989) has investigated the means and processes of children's composition with computer tools versus traditional instruments. She identifies several advantages of computers as composing tools: it is easy for children using such tools to consider themselves composers, and a computer and a synthesizer can generate a variety of high-quality sounds. She particularly stresses flexibility and aesthetic appeal as features of useful music-making tools.

Ladanyi (1995) conducted in-depth research by focusing on four high school students who were given digital music equipment to use in their composing processes. By developing a comprehensive understanding of students' musical and personal backgrounds, Ladanyi revealed that technology illustrated different types of compositional endeavors and provided opportunities for creative individualization. She concluded that teachers need comprehensive training in the

ways that technology can support students' self-actualization and minimize teacher interventions.

Folkestad et al. (1997) point out that the development of multimedia based on information and computer technology has made students' own music as vital a factor in their lives as music listening. By providing their research subjects with sequencing software that made it possible for people without knowledge of traditional notation to create music using multi-track functions, they found that all participants successfully created their own music. Based on the data created by students using the software, the researchers categorized students' music-making strategies into two varieties: a horizontal variety in which students compose and arrange music separately, and a vertical one in which they integrate both composing and arranging into one process.

Stauffer (2001) conducted in-depth qualitative research on the composition process of an eight-year old girl named Meg in order to further examine the relationship between a child's compositional process and the tools she uses. During the seven months of the case study period, Stauffer interviewed Meg, her parents, and even the composer who designed the software she used. The researcher asserted that when Meg was drawing with the graphics-based composition software *Making Music* (Subotnick, 1995), time, tool, and technique became interactive in her music composition process. Using the software, Meg also discovered over time a variety of exploratory and developmental strategies for music-making. She showed significant evidence of musical understanding and compositional strategies, particularly in the fluency of her musical products, while demonstrating an increasing awareness of qualities and kinds of sounds in her works.

One of the most noticeable influences of technology on teaching and learning music composition is that it makes new things possible, an effect called "transformation" (Beckstead,

2001). The technology environment transforms teaching and learning in diverse ways, rather than simply making them more efficient. Beyond providing a convenient teaching environment, technology-based music instruction fundamentally alters the system and formats of music composition paradigms (Beckstead, 2001; Hickey, 2002). Hickey (2002), for instance, discusses how computer technology has created an innovative literacy that is not interrupted by traditional five-line notation. Furthermore, computers enable teachers and learners to carry out diverse musical activities with minimal skills and knowledge--skills and knowledge that have previously been the main focus of music instruction.

In a separate two-year empirical study, Nilsson and Folkestad (2005) investigated the creative processes involved in computer-based composition, particularly the process involved in generating forms and structures of music. They discovered five major variables of composing strategies: (a) the equipment, such as the synthesizer and computer, (b) affective domains, such as personal fantasies and emotions, (c) the playing of the instrument, (d) the music itself, and (e) the given and structured tasks.

Teaching and learning composition over the Internet.

In technology-enabled environments, computer technology creates innovative changes in teaching and learning. Those changes surpass the effect known as transformative change (Beckstead, 2001): technological factors also influence the paradigm of teaching practices, learning content—such as notation and musical literacy, and interactions. In particular, distance communication has become another useful feature of music learning. Since network systems such as the Internet have become pervasive in the everyday life of teachers and students, they have become able to communicate with each other and exchange information without the constraints of time and space.

At their core, distance communication-based learning activities, such as Internet-based mentoring and collaboration, are influenced by human interactions. Challenging the traditional stereotype of the composing process as an isolated and solitary act of creative inspiration, the holistic approach to teaching and learning music composition focuses on the relationship between the composer-teacher and the student-composer, as well as among students themselves (Barrett, 2006; Barrett & Gromko, 2007; Jaffurs, 2004; Seddon, 2006).

In an early 1995 effort, Beckstead launched Composers in Electronic Residence (CIER) with the music faculties of the Universities of York and Simon Fraser, the composers of the Canadian Music Centre, music teachers in five public schools, and two individual composers in Canada. Students met with the composers in online text forums/fora to discuss their compositions and sent the compositions to the composers for feedback. After a couple of years, CIER expanded to 15 schools with five composers (Rees, 2002).

In a study that considers multiple prominent issues in contemporary educational technology, Rees (2002) identified the features of distance learning in music education combined with collaboration. He notes the significance of a continuous level of communication among participants, teachers' qualifications for providing effective learning experiences, interactions that can overcome the limitations of time and location, and most of all, the availability of time for closer physical interaction with others.

Hickey and Reese (1999) conducted research to develop a rating scale and a measurement tool for use in composition mentoring. In this study, in-service teachers at the university level communicated with school-age students via the Internet. For the rating scale, researchers developed the initial form and then collected written-feedback from other experienced teachers. Hickey and Reese were able to identify several ways to improve inter-rater

reliability on rating forms: first, clear and consistent training, and second, clearer definitions of rubrics in the rating scale.

Savage and Challis (2001) investigated collaborations with technology through a curriculum-based music project, *Dunwich Revisited*. Applying technology to develop musical ideas via composition and performance, seventh to tenth graders composed an electro-acoustic piece based on *Dunwich*. Savage and Challis were able (a) to conclude that technology enabled real musical experimentation that built on students' existing skills and experiences, (b) to verify the role and significance of music composition as the core of the music curriculum, (c) to discover alternative technology-based notational methods that overcame the limitations of traditional five-line notation, (d) to identify the significance of experience with real sound and real music making activities, which nurtured students' ownership as active composers; and finally, (e) to recognize the feasibility of technology as an essential element of the teaching and learning process, one that has a role in speculation about musical ideas as well as their selection, rejection, and evaluation.

Seddon (2006) expands on his prior research regarding the relationship between the experience of instrumental learning and *collaborative* computer-based music composition. He discusses evidence of the practicality and effectiveness of using computer technology in music e-learning environments. Specifically, he finds that the Internet facilitates communication through both email and music files, and he categorizes the types of communication as descriptive, active, evaluative, and social.

Learning interactions within Internet-based mentoring. Network systems have become pervasive in the everyday life of teachers and students, who as a result are able to communicate beyond the constraints of time and space. Unlike the traditional stereotype of the composing

process as an isolated and solitary act of creative inspiration, communication-based composition activities focus on the relationship and interaction between the composer-teacher and the student-composer, as well as between students themselves. In technology-enabled learning environments, activities that depend on distance communication, such as Internet-based learning activities, have also become a useful way of promoting student-centered communication, collaboration, and inquiry-based learning. Thus, mentoring and collaboration have become versatile resources for supporting teachers' musical and pedagogical needs and for fostering technology-based music instruction.

Mentoring refers to a developmental relationship between a more experienced or skilled expert and less experienced protégés, who receive advice and encouragement in their personal and professional development (Chao, Walz, & Gardner, 1992; Day & Allen, 2004). Mentoring in contemporary education is based on social cognitive theories. According to Bandura (1997), personal factors (e.g., learning goals, motivations, cognition, affective domains, and behaviors) and environmental factors reciprocally influence each other. Therefore, the personal factors that each mentor and mentee bring to the mentoring relationship influence the dynamics and quality of the mentoring process (Egan, 2005; Lima, 2004).

In the music education tradition, mentoring has been broadly used for everything from teacher preparation to teacher retention, from teacher management to educational content; it has long been a way of learning to *teach*. However, it has recently been innovatively pursued as a way of teaching musical content, rather than only as a way of training music teachers in pedagogy. While mentoring is a common feature of general teacher education, mentoring for musical content has rarely been adopted (Reese, 1999, 2001). Prior to the development of online networks, mentoring was usually limited to interaction between a mentor (teacher – expert) and a

practicing teacher (Smith, 2003). Today, however, mentoring in the digital environment includes diverse relationships among music teachers, teaching experts, musicians, students, and even various community members.

Mentoring-based music composition projects such as MICnet (http://collaboratory.nunet.net/micnet/index.html), Network for Technology, Composing, and Music Mentoring (NETCOMM), and the Vermont MIDI Project are evidence of the holistic and systematic relations between pre-service teacher preparation, in-service teacher support, teaching composition with technology, and the integrity of art through music composition.

As part of a set of community-based collaborative activities, MICnet was technically supported by the Collaboratory Project (http://collaboratory.nunet.net/cwebdocs/index.html), which helps K-12 teachers implement Internet technology to improve students' learning and achievement. MICnet connected music students with their teachers, pre-service music teachers, and other experts, such as professional composers providing feedback. It aimed to integrate technology-based music instruction into the curricular context; to support teachers, who lack experience teaching music composition with technology; and ultimately to facilitate students' creative musical thinking through music composition.

NETCOMM provided services for K-12 music teachers and students in a technology-rich environment and teachers shared and actively participated in the overall mentoring process between the student and the mentor. Consequently, teachers were effective resources for managing the regularity and quality of the communications and guiding composer mentors to adapt to the general music teaching context.

These relationships over Internet networks depend on a supportive community with diverse information and skills that go beyond the curriculum, they facilitate the individual

student as a musician, and finally they encourage an interdependent relationship among society, school, and individual via the medium of music. In lieu of isolated classroom instruction with a teacher, the on-line mentoring environment provides intrinsically collaborative circumstances with ample pedagogical support and artistic authority. These mentoring-based music composition projects thereby enlarge the school music program without sacrificing musical integrity, specifically by connecting professional musicians, particularly composers, to classrooms through the Internet. These projects take advantage of the Internet's benefits to solve the most urgent concerns involved in hiring professional composers, such as time, effort, and most of all expense.

Despite these innovative advantages of on-line mentoring systems for teaching and learning music composition, most projects have been "stand-alone" efforts; that is, they have not provided any longevity to participants. Thus, this study investigates how the Vermont MIDI Project not only overcomes traditional barriers in teaching and learning music composition, but does so in a way that differentiates itself from other on-line mentoring systems, allowing not only students but also teachers and mentors to participate in the Project over a long-term period.

Conclusion and summary of the context of this study.

My review of research on student dimensions of music composition has found that studies focus largely on musical aspects, and even more narrowly on the compositional process. Authors of previous studies have discovered patterns, principles, or factors influential in this process in students (Strand, 2006; Barrett, 2003; Younker, 1997; Wiggins, 1990; Nilsson & Folkestad, 2005): a linear process of exploration, development, and repetition (Kratus, 1989); horizontal and vertical varieties, in which students compose and arrange separately or at the same time (Folkstad et. al., 1997); three components of composition--formation, preservation,

and revision (Emmons, 1998); a model of the compositional stages and processes addressing the significance of increasing fluency of successive output (Kennedy, 2002, 2004); and a developmental model of the compositional process (Swanwick & Tillman, 1986; Younker, 2000). However, they have paid little attention to more comprehensive factors, such as the motivations for and satisfactions of learning music composition, nor to specific musical dimensions that are detailed in genre, structure, and theories, such as melody, harmony, rhythm, and orchestrations.

The focus of research on technology-based music instruction, meanwhile, has moved in more comprehensive directions, from exploring the potentials of new technology and the possibilities for their practical implementation to investigating the learners and teachers who use the technology on a daily basis. Technology has been recognized and deployed as not only an effective tool for instruction, but also an ecology for learning and a culture for learners of the new generation. In this process, music educators have developed more comprehensive perspectives on technology-based music instruction, and empirical research has also tended to investigate technology in a curricular context with real teachers and students instead of in an isolated research setting.

These two fields, moreover, have yet to come together, for the music composition procedures that scholars have sought to model, have only recently included computer technology as a significant variable. Computer and information technology has recently been implemented not only as a direct teaching tool but also as a mode of delivering students' artistic products. In particular, the development of computer technology has created an innovative style of literacy that is not interrupted by traditional five-line notation. Moreover, the development allows students to compose with minimal skills and knowledge, whose acquisitions have previously been the main goals of music instruction.

While research trends in music composition have traditionally focused on students' compositional processes, computer technology has recently become a significant variable in studies of music making. Computer and information technology has been implemented not only as a direct teaching tool but also as a mode of delivering students' artistic products, in part because of a younger generation's comfort with such technologies.

Meanwhile, research on the role and effectiveness of technology-based music education, which was the main focus of technology-based music instruction in the 1990s, has recently been de-emphasized in favor of research into the human factors related to learning, such as cognitive approaches that can reveal composing processes and strategies. However, as a main learning and teaching tool that delivers content, technology should not be left behind by this trend, particularly given its relationship and interaction with other educational features. Indeed, recent research trends have approached technology as an ecology as well as a learning and teaching tool (Ruthmann, 2006).

Cognitive Apprenticeship Learning Paradigm

The framework: Psychological foundations.

The primary purpose of this literature review is to identify psychological perspectives that can explain participants' motivations for and sense of agency. Together they resulted in prolonged teaching, mentoring, and learning of composition.

The results of my pilot study suggested that the constituent strategies and processes of teaching and learning composition within the mentoring system are consistent with a cognitive apprenticeship learning environment. This finding, in concert with this study's view of music composition activities as part of a reciprocal learning process rather than an isolated and individual process, made the cognitive bases of relationships and interactions within the Vermont

MIDI system are crucial object of investigation.

What emerged from the previous research was the significance of relationships among triads, particularly both verbal and non-verbal interactions between mentors and students over the Internet. The affective elements of these interactions, in particular—including confidence and respect—seem to play a large role in students' decisions to continue or quit composition. These affective elements are triggered by the cognitive processes of learning and teaching, such as the praise-critique-suggestion cycle that mentors employ. Therefore, I draw here on psychological theories of learning that help explain how people think about, feel about, and comprehend the content and processes of composing and teaching music composition specifically while they are interacting with each other.

To investigate the psychological basis of learning interactions among students, teachers, and mentors, I review cognitive apprenticeship literature rooted in Vygotsky and social cognitive theories. While the behavioral approach to technology-based music instruction still focuses on designing "skill and drills" with music learning software, the development of cognitive psychology and the emergence of constructivism have afforded significant opportunities for alternative approaches to music teaching and learning (Bamberger, 1991; Vygotsky, 1978).

Utilizing Collins, Brown, and Newman's (1989) principles of *Ideal Learning Environments* as the framework for this study, I begin with issues and concepts in cognitive apprenticeship and their implications for teaching and learning interactions. To conceptualize students' and teachers' motivations for continuing to teach and learn composition, I supplemented the cognitive apprenticeship paradigm with an expectancy-value model (Eccles & Wigfield, 2002). Based on various theories of motivation, I provided a basis for understanding how participants' cognitive motivations are able to explain the persistence of their participation

in music composition; what theory meaningfully accounts for the motivations among the triads; and what roles teachers and mentors play in encouraging students' motivations. I furthermore expand cognitive apprenticeship issues to include studies in teaching and learning music composition that are related to the aforementioned issues in both the cognitive apprenticeship paradigms.

Collins, Brown, and Newman's (1989) characteristics of ideal learning environment.

Collins, Brown, and Newman (1989) investigate three successful cognitive apprenticeship models--reciprocal teaching of reading (Palincsar & Brown, 1984), procedural facilitation of writing (Scardamalia & Bereiter, 1985), and methods for teaching mathematical problem–solving (Schoenfeld, 1983, 1985)–in order to conceptualize aspects and characteristics of ideal learning environments.

Cognitive apprenticeship is both a midpoint between radical and cognitive constructivism, as well as a particular constructivist learning principle. As an instructional paradigm for teaching and learning interactions rather than a model or formula, it seeks to build individual cognitive ability in the context of social and cultural interactions. While constructivist learning theories are related to the notion of cognitive apprenticeship, they have expanded beyond a traditional focus on individual learning processes to include reciprocal and social dimensions of teaching and learning interactions; cognitive apprenticeship instead assumes autonomous and independent individuals who actively build their own learning processes through their interactions with peers and experts. Finally, from the cognitive apprenticeship perspective, learning processes entail everything from individually constructed skills and knowledge to mutually constructed cognitive behaviors that result from interactions between novices and experts. (Collins et al., 1989; Dennen & Burner, 2007; Kang, 2003).

Considering apprenticeship the most natural way of learning, Collins et al. (1989) conceptualize four key characteristics of the ideal apprenticeship learning environment: content, method, sequence, and sociology.

Table 1

Characteristics of the Ideal Learning Environment

Content	Domain knowledge
	Heuristic strategies
	Control strategies
	Learning Strategies
Method	Modeling
	Coaching
	Scaffolding and fading
	Articulation
	Reflection
	Exploration
Sequence	Increase complexity
	Increasing diversity
	Global before local skills
Sociology	Situated learning
	Culture of expected practice (Community of practice)
	Intrinsic motivation
	Exploiting cooperation
	Exploiting competition

From *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 476), by L. Resnick (Ed.), 1989, Hillsdale, NJ: Erlbaum.

Content of learning. The cognitive apprenticeship learning environment includes specific types of knowledge and skills that experts must have in order to maximize their effectiveness. These types include both subject matter, their original area of expertise, and also interpersonal skills, specifically within the context of interactions between experts and learners. With a cognitive apprenticeship understanding of '*Content'* in mind, Collins et al categorized the content of instruction as *domain knowledge, heuristic strategies, control strategies,* and *learning strategies* **(**Collins, at. al 1989).

Domain knowledge. In public education, *domain knowledge* is equivalent to subject matter, which is revealed in textbooks or through teachers' instruction. Collins et al. (1989) stress that the cognitive apprentice learning environment stresses the practical engagement of such knowledge in realistic challenging situations; when learning occurs isolated from authentic problem-solving situations, students' skills and knowledge might remain static rather than evolve and grow via application. Kang (2003) reinforces this emphasis by noting that experts and novices exhibit differences not only in the complexity and intensity of their domain knowledge, but also in their capacity for using it; experts tend to link core concepts both to each other and to applied situations while novices recognize domain knowledge and skills isolated from practical situations or from other related and previous information.

Mentors are certainly experts in the cognitive apprenticeship sense. They give suggestions based not only on theoretical facts, but also on their experiences as professional composers. Mentors not only understand and recognize the skills and knowledge in music composition, but they have also experienced the real life of composers. Furthermore, most of them are still making their living by composing music.

Heuristic strategies. Collins et al. (1989) identify heuristic strategies and methods with experts' ways of solving problems as "tricks of the trade." Kang (2003) approaches heuristic strategies from the perspective of *differences* between experts and novices; experts tend to use more abstract and comprehensive problem-solving heuristics, while novices stick closely to a particular assignment or an exact situation. Using examples in writing studies, Collins et al. explain how heuristic learning generally works. A sentence following the quotation extrapolates from this specific example; in their example, as learners develop and revise the main body and conclusion of a text, their original ideas in the introduction are naturally refined and consequently rewritten:

> …a standard heuristic for writing is to plan to rewrite the introduction to a text (and therefore to spend relatively little time crafting it); this heuristic is based on the recognition that a writer's initial plan for a text is likely to undergo radical refinement and revision through the process of writing and, therefore, that the beginning of a text often needs to be rewritten to "fit" the emergent organization and arguments of the main body and conclusion (Collins at. al, 1989, p.478)

Polya (1945) notes that although heuristic problem-solving strategies tend to be somewhat uncommon in practice, these approaches work efficiently for "open-ended task domains, such as reading and writing" (quoted in Collins at al., 1989).

In learning music composition, heuristic strategies are more fundamental than in other, more theoretical kinds of learning, because every element of music involves experience, trial, and error—from the stage of initiating a composition to the final moments of revising it.

Control strategies. Control strategies refer to ways of controlling the process of performing a given task. As meta-cognitive strategies, control strategies imply reflection on the problem-solving process. Collins et al. (1989) identify three stages of control strategies. In the *monitoring* stage, experts guide learners to move forward to the next stage of a task while

providing a simple evaluation of their performance and progress. In the *diagnostic* stage, they explain problems, and this stage should be followed by a *remedial stage*, at which problems can be solved.

Mentors determine the level of challenge learners face and influence the pace at which they develop skills by moderating their control strategies: they suggest throughout the revision process that students either move forward in a piece or move in and refine it.

Learning strategies. In cognitive apprenticeship, learning takes place as learners actively define, select, and achieve their goals based on their pre-existing knowledge and interests. Thus, experienced learners are able to obtain target skills and knowledge by implementing their own learning strategies. Such learning strategies are related to domain knowledge, heuristic strategies, and control strategies. Like experts in a specific subject area, who possess domain knowledge and control strategies, expert learners possess diverse dimensions of knowledge about learning itself, such as universal strategies for exploring a new task, particular strategies for applied situations, and advanced strategies for problem-solving or multi-layered tasks even in unfamiliar situations. Furthermore, expert learners' learning strategies access social factors, such as criticisms through peer critiques (Collins et al., 1989; Kang 2003).

> If students want to write better, they need to find people to read their writing who can give helpful critiques and explain the reasoning underlying the critiques (most people cannot). They also need to learn to analyze other's texts for strengths and weaknesses (Collins et al., 1989, p. 480).

In the mentoring project, the expertise required to provide constructive critiques and to clarify the reasons for them is outsourced by teachers who elect to participate in the project. Domain knowledge and control strategies are more related to experts' instructions, while heuristic strategies and learning strategies are more related to the learner's agency in the learning

process.

Methods of the cognitive apprenticeship paradigm: Expert aspects. Collins et al. (1989) categorize the six components of cognitive apprenticeship into three major areas: (a) modeling, coaching, and scaffolding, which are the core of the cognitive apprenticeship learning process, (b) articulation and reflection, which shift the focus from experts' presentations and support to students' own cognitive processes, and (c) exploration, which encourages learner autonomy.

While Collins et al.'s (1989) model has been considered basic, other variations have also been proposed. Gallimore and Tharp (1990) divide scaffolding into six activities: (a) instructing, (b) questioning, (c) modeling, (d) giving feedback, (e) structuring cognition, and (f) managing contingencies. Enkenberg (2001) consider scaffolding and explanation to be core components of the process. LeGrand Brandt et al. (1993) sequence these elements in order from approximating, fading, and self-directed learning to generalizing. To support Web-based pre-service education, Liu (2005) proposes a three-phase cognitive apprenticeship model: (a) a modeling–observing phase, (b) a scaffolding–practice phase, and (c) a guiding–generalizing phase (quotes in Dennen & Burner, 2007). These variations in cognitive apprenticeship methods depend on learners' target skills and knowledge, as well as the degree of expert involvement and the timing according to which the expert's assistance fades.

Modeling. Modeling generally refers to a learner's observation of and engagement with an expert's own performances of a task. In the cognitive domain, however, modeling fundamentally involves the "externalization of usually internal processes" (Collins at al. 1989, p. 481). Thus, it refers not only to visible skills or techniques, but also to an expert's demonstration of his/her own thinking process for learners to see (Dennen & Burner, 2007).

Collins (1991) discusses the advantages of modeling in the initial stages of the computer-based learning environment. They note that computer software enables experts (a) to represent the process of learning, which books cannot show, (b) to provide their own problem-solving solutions, which are not available in common school situations, and (c) to simultaneously present the target event and the reasons for that event while also controlling the pace of students' understanding. Therefore, computer technology can quite literally make internal cognitive processes visible.

In the specific context of instrumental music learning, modeling usually refers to musical demonstrations by expert musicians. Kang (2003), however, suggests another type of performance modeling: the expert's verbalized externalization of a usually non-verbal, internal musical process. She addresses that "the teacher uses an instrument, voice or gestures to model desired performance. On another level, cognitive modeling, the teacher models how another musician thinks through problems by sharing thought processes out loud (Kang, 2003. P. 62)."

In the asynchronous online mentoring environment, modeling is the most fundamental method through which experts comment on learners' work. While mentors begin their comments by analyzing and diagnosing students' compositions, these discussions equally significantly use verbalizations to represent how mentors think about students' compositions and how they solve problems.

Coaching, *scaffolding, and fading.* Both coaching and scaffolding strategies aim to support students' cognitive activities along with their needs where they cannot solve problems and situations in learning. Coaching instead tends to offer learners' more direct attention by answering questions, clarifying learners' challenges, generating summaries, and making predictions (Collins et al., 1989).

Scaffolding involves providing a cognitive framework for carrying out a task that students cannot manage on their own at their current stage of development. Ultimately, scaffolding aims to nurture learner autonomy while maintaining students in a "zone of proximal development" (ZPD). ZPD refers to the specific stage that lies between a learner's current ability level and the next skill level, which they cannot yet quite reach. At this stage, a small amount of expert scaffolding results in optimal learner achievement (Vygotsky, 1978). When it is not longer needed, scaffolding is withdrawn or faded. Fading is a critical element of scaffolding because it indicates the point at which learners acquire the skill and knowledge that has previously been supported by experts. (Collins et al, 1989; Dennen & Burner, 2007).

To implement scaffolding in teaching practices, Hogan and Pressley (1997) suggest practical and detailed strategies: (a) identify how scaffolding corresponds with a teacher's individual goals in the teaching and learning process, (b) listen to students' voices and their conversations in order to build scaffolding on top of preexisting teacher-student interactions, (c) from a long-term perspective, plan and specify the primary object of scaffolding, (d) consider flexible implementation of scaffolding for diverse situations, and (e) think about affective affordances of scaffolding as well as instructional goals.

One significant issue in applying scaffolding to actual learning contexts is the diverse range in which learners' ZPDs may fall (Dennen & Burner, 2007). A mentoring system that supports one-on-one interactions allows mentors to effectively cope with this issue by adjusting each student's ZPD in composition learning. By contrast, one teacher in a classroom situation cannot possibly respond to each individual's cognitive differences. According to Collins at al., (1989), "A requisite to such scaffolding is accurate diagnosis of the student's current skill level or difficulty and the availability of an intermediate step at the appropriate level of difficulty in

carrying out the target activity" (p. 482).

Methods of the cognitive apprenticeship paradigm: Learner aspects. As an instructional paradigm for teaching and learning rather than a formulated model, cognitive apprenticeship encourages the learner's role in transforming a novice into an expert throughout prolonged interactions with established experts.

Articulation. At the articulation stage, learners begin to independently articulate their knowledge, ways of thinking, or ways of solving problems, thus constructing their learning as experts do. Collins et al. (1989) discuss specific strategies to support articulation, such as encouraging inquiry and facilitating critique. Because articulation encourages learners to verbally represent their ideas and knowledge to peers or experts, it enables learners both to become explicitly aware of implicit thoughts and knowledge and also to make particular issues and skills available for discussion with experts or peers. Ultimately, communicating with peers about knowledge and skills allows learners to compare learning strategies across diverse contexts and thereby nurtures flexible and alternative ways of thinking (Collins, 1991).

In the online mentoring process, young composers articulate their thoughts and processes of creating music through written notes to mentors, students verbalize their musical ideas and composing challenges, their need for mentors' comments, and their future plans, as well as describing their compositions themselves.

Reflection. Reflections lead learners to review and to analyze their previous learning processes, strategies, and performances, and consequently promote learners' abilities to engage in self-analysis and meta-cognitive assessments. They propose four ways of supporting reflection: *imitation, replay, abstracted replay,* and *spatial reification*, and describes the advantages of successful reflection as follows. While reflecting, students can objectify their

previous learning from the perspective of others. Thus, reflection encourages students to explore the potential of different methods adopted by those others for improved future performance, instead of simply re-doing or repeating what they are already familiar with. These self-realization methods also lead students to compare their accomplishments and processes to those of their peers; this comparison encourages learners to recognize what is considered successful or unsuccessful in their learning context and community of practice.

Within the mentoring process, students have opportunities to reflect on their performances while writing replies to mentors and while representing and peer-critiquing their compositions in their classes.

Exploration. Ultimately, learners are able to form and examine their own hypotheses about their learning or learning strategies. At this stage, teachers or experts encourage students to establish, elucidate, and solve their own problems. Collins et al. (1989) define exploration as the natural end of the fading of the expert's assistance-- not only the fading of support, but also the fading of problematizing. Thus, through exploration, the general goals or problems of learning and teaching situations are transformed into each learner's individual and independent goals.

Through exploration, learners are able to independently define their own achievable goals, as well as to construct, formulate, and examine hypotheses about the subjects they are developing expertise in, and ultimately to experience their own learning from the very initial efforts to their ultimate successful achievements--all while promoting ownership of their learning process and outcomes (Collins, 1991).

In learning music composition, unlike typical cognitive apprenticeship paradigms, students begin posing their own problems from the early stages, despite not being able to solve them independently. That is also a unique aspect of *music* composition. In the very act of

initiating a composition–that is, in confronting a blank sheet of paper--young composers begin with their own ideas, whether or not the quality and length of their musical phrases are sufficient.

Learning sequence. Sequencing activities and skills allow students to structure their learning strategies. In the cognitive apprenticeship learning paradigm, Collins et al. (1989) address the three leading principles for ideal learning sequence: Global before local skills, increasing complexity, and increasing diversity.

Global before local skills. In cognitive learning activities, learners are encouraged to conceive of a framework for their learning strategies. By sequencing learning from global to local skills, experts are able to help learners build such framing conceptual maps: Learners can thus conceptualize and acknowledge their learning activities while monitoring their progress. Consequently, moving from global to local skills gradually nurtures learners' ability to engage in self-reflection and self-correction, particularly as experts deliberately fade their own scaffolding (Collins et al., 1989).

Increasing complexity. Instead of themselves managing complex tasks that are difficult for learners, experts need to gradually order the learning sequence from simple to complex. If complexity is successfully controlled, learners can reach the level of experts' performance skills and knowledge while scaffolding and fading gradually take place.

> For example, in the tailoring apprenticeship described by Lave, apprentices first learn to construct drawers, which have straight lines, few pieces, and no special features like waistbands or pockets. They then learn to construct blouses, which require curved lines, patch pockets, and the integration of a complex subpiece, the collar (Collins et al., 1989, p. 484).

Increasing diversity. Experiencing diversity n a controlled situation helps learners to make contextual associations across tasks. When learning skills and content are designed to become gradually more diverse and broader in sequence, skills and knowledge obtained in a

given task can be transferred to other tasks that pose unfamiliar or novel problems (Collins et al., 1989).

Mentoring strategies in the Vermont MIDI project fit the learning sequences of cognitive apprenticeship. Before giving critiques about detailed and specific content, mentors provide comprehensive maps that present global intellectual directions for young composers without limiting their own thinking and planning processes. Usually, at the beginnings of their comments, mentors would present such maps side-by-side with compliments, which create a positive and respective attitude.

When young composers made progress in overall structures, mentors guided them to move in and refine during their revision process while also encouraging students to move forward in their compositions. Mentors also suggested diverse possibilities from which young composers were able to choose; this approach enabled student composers to flexibly reflect on mentors' suggestions while making selections.

Social characteristics of cognitive apprenticeship learning. The last vital constituent of an ideal cognitive apprenticeship learning environment, according to Collins et al. (1989), is its social characteristics. Participants' social engagements--such as social practices, cooperation with peers, as well as the situation and context of learning as community --become a fundamental component of learning itself. Learning is thus ultimately understood to be closely entwined with standards, cultures, and social value systems.

Situated learning. In the cognitive apprenticeship learning paradigm, effective learning occurs when learners conduct tasks situated in practical and realistic situations, which are applicable to their real-life experiences (Collins et al., 1989). Furthermore, learning is understood as a process of becoming a member of a sustained community by obtaining knowledge and skills

that enable one to participate in the community's practices and to build up an identity as a member of the community (Lave, 1991).

Therefore, situated learning provides opportunities (a) to understand practical conditions and goals of knowledge and skills, (b) to actively use knowledge and skills, (c) to encounter diverse real situation where skills may or may not be used, and (d) to experience multiple realities rather than absolute knowledge. In a situated learning environment, learners not only passively practice isolated knowledge and skills but also comprehensively and actively explore their application in diverse and unpredictable real-life situations (Collins, et al., 1989; Collins, 1991).

The MIDI project constitutes such a situated learning environment. Instead of created simulating tasks and problems for learning and teaching composition, mentors primarily consider students to already be young composers or musical colleagues. While mentors comment based on theoretical knowledge, they also consistently remind young composers about real performance situations as well as the audiences of their music. For example, mentors frequently ask students to consider the constraints and challenges facing performers on the stage.

Community of practice. A community of practice offers learners a realistic learning environment in which they can experience "mutual engagement," "joint enterprise," and "shared repertoires" (Dennen & Burner, 2007, p.428). When learners perform activities related to a community of practice, they are able to obtain a sense of context, of reciprocal relationships among members, as well as a recognition of their own identity: when they dynamically interact with peers and experts, they can utilize skills and knowledge that are considered a form of expertise within the community (Collins, at al. 1989).

In addition to being a situated learning environment, the mentoring project is also a

community of practice. It is initially designed not as an independent forum for teaching composition, but as a community or miniature society of teachers, composers, and students who communicate via the Internet. Accordingly, within class as well as outside their computer labs, students as well as music teachers meet many other young composers and teachers who share the same purpose of composing.

Intrinsic motivation. Instead of focusing on the influences of external learning results, like scores or pleasing teachers, recent cognitive learning theories tend to illuminate the internal cognitive procedures and principles governing the learning process: how learners recognize a given learning environment, interpret a task, and process information. In lieu of inputs such as learning situations or tasks, the learners' inner cognitive reactions, such as beliefs and expectations about such inputs, are believed to determine their performance of learning activities.

In keeping with this emphasis on internal processes, motivations for learning are considered by the cognitive apprenticeship paradigm to be intrinsic. While motivations are thoroughly intertwined with the social, interpersonal, and situational context, their sources consist of internal drives, such as the desire for ownership and identity. Instead of being oriented toward extrinsic rationales, learners may be motivated by personal interests or the satisfaction of communicating with peers or experts. When the learning environment and practice intrinsically motivate learners, they can perform given tasks on their own (Collins et al., 1989).

Intrinsic value within expectancy-value theory. Like cognitive apprenticeship models, expectancy-value theory emphasizes the cognitive aspects of motivation; it argues that motivation is generated by each individual leaner's *expectations* of achievement and perceptions of the *value* of that achievement. Eccles and Wigfield detail an expectancy-value model of task choice (Eccles & Wigfield, 2002; Schunk et al. 2007). This model notes that both advantages and

challenges of a task have an influence on decision-making. In addition, all choices are considered in terms of costs, because one choice might eliminate or reduce the possibility of other options. Accordingly, the relative value and probability of success of various options determine the option ultimately chosen. Eccles and Wigfield (2002) elaborate on this research to identify four components of task-value: *attainment value, intrinsic value, utility value*, and *cost value.*

In the context of expectancy-value theory, intrinsic value consists of the degree of enjoyment and satisfaction a task provides for the individual who performs it (Eccles & Wigfield, 2002). Other psychologists note that intrinsic value relates to the affective domain of satisfaction and motivation. Intrinsic motivation boosts learners' positive emotions, improves reflection, encourages achievement, and even improves physical and emotional health. The intrinsically motivated person focuses on a task itself and the process of completing it rather than the result; engages in self-regulation and experiences self-efficacy while achieving tasks; and exhibits optimal performance when the given challenges and the learner's capacity meet at equal levels. In practice, intrinsic value and intrinsic motivation are identified as the time voluntarily assigned for performing tasks, the degree of willingness to tackle difficult and challenging tasks, as well as the expression of preference for and satisfaction with tasks (Csikszentmihalyi, 1990).

Cooperation and competition. In cognitive apprenticeship learning practice, learners are encouraged to collaborate by engaging in such activities as cooperative problem solving, peer critiques, and information sharing, which strongly motivate learning as well as extend and broaden learning resources. Cooperation occasionally creates competition as a natural consequence of interactions among learners. However, competition should be part of the process rather than the product of learning, so as not to create difficult emotional issues, such as discouragement or frustration (Collins et al., 1989).

Cognitive apprenticeship in music composition.

The notion of cognitive apprenticeship has been broadly used to explain music learning processes and interactions, but only rarely to explain the learning and teaching of music composition in particular.

Wiggins (1994) is one study that does use cognitive apprenticeship to study music composition. She uses the concept to investigate the nature of children's cognitive musical processes, the representation of their musical ideas, their interactions with music, and their interactions with peers and teachers within the context of a music classroom. While listening, creating, and performing, children tend to evaluate their musical ideas against a holistic and preconceived perspective. Wiggins discovered that students are able to use this perspective to determine when and how peers need assistance, and then when they should provide scaffolding in response. As an expert musician, the teacher's role is to provide scaffolding and assess student progress toward an understanding of the entire learning process. Finally, Wiggins found that children communicate with peers and teachers alike about their musical ideas, using verbal and non-verbal statements, singing, instrumental performance, gesture, and graphic representation (Wiggins, 1994, 2001).

Several researchers have recently turned to cognitive apprenticeship as a way to understand and build on some of these insights into children's composing activities. Berkley (2004) has conducted a research survey analyzing the reasons teachers experience certain challenges in teaching music composition. She criticizes much of the current research for focusing on students' compositional processes and on developing students' composing skills rather than on understanding the dynamic relationship between the learning and the teaching process. She argues that much research avoids any mention of the significance of the

fundamental relationship between students and teachers. Berkley's survey revealed that the challenges of teaching composition originate in the difficulties of composing itself. Before teaching composition, teachers should have expertise as composers, and should understand both their own and their students' learning and composing processes. Berkley notes that teachers need to ensure their students truly focus on composition: they should be able to convince students not to limit their compositions according to other musical skills, such as notation and performance. Most of all, the fundamental qualification for teaching composition is the ability to recognize what length and quality of composition children can realistically produce.

Even teachers with these qualifications face logistical challenges, however: while all participants have the potential to create music, Berkley has pointed out the practical problems that a teacher may encounter in a class made up of diverse students with varying degrees of artistic intuition and musical ability, and in which the teacher is likely also grappling with insufficient equipment and accommodations as a result of limited budgets.

Another significant facet of collaborative music-making activity is its social dimension (MacDonald, Miell, & Mitchell, 2002). Children who collaborate on composing music achieve higher quality outcomes compared with children working in isolated and independent situations, because of the influence of friendship and age on the composing process. MacDonald et al. stress the mutual interaction between verbal and musical communication abilities on the one hand, and the quality of collaboration on the other. In another research study exploring the social process of children's collaborative music making, Miell and MacDonald (2000) found that the friendship pairs in the treatment group that relied on verbal and musical communication exhibited more mutual engagement and active interaction and achieved a higher quality of outcomes than the group that relied on one kind of communication alone.

Barrett (2003) examines composition as a meaning-making process rather than a purely social one, and in this regard notes that students engage in both internal and external collaborations in their composition process. She addresses the development of creativity through music composition; she notes that the dialogic process of meaning-making in composition involves a reciprocal relationship between freedoms and constraints: students who are offered time and opportunities come to recognize the constraints built into the compositional process and with that recognition they begin to explore the freedoms of creative experience. Thus, she argues, teachers should provide enough freedom to allow students to reflect on and revise creative work.

Barrett's (2006) study, which focuses on the relationship between teaching and learning processes, presents composition instruction as a form of mutual collaboration. Looking at the interaction between an eminent composer-teacher and an undergraduate student-composer, she describes the two as "a dyad working towards shared goals in a process characterized by collaboration, joint effort, and social support" (p. 195). In particular, the composer-teacher described his role as that of a "mentor-model" who would "draw out" the student-composer's voice by supporting the composing process (p. 213), setting the constraints for identification as a composer, encouraging self-confidence, and providing guidelines on how to revise musical ideas and structures.

John (2006) investigates the collaborative efforts of young children working with teacher-provided musical materials. He found that children instantly adjusted their roles if they perceived that their work demanded not only existing skills but also developing new ones. John found three influential variables in children' collective music making, including social interactions, children's capacity for transforming and reconstructing musical ideas, and the environment in which they explored musical content.

In her research exploring the relationship between instruction and transfer, Strand (2003) applies cognitive apprenticeship as an instructional approach by examining structural transfer to composing tasks. Based on a traditional three-step instruction procedure, including instruction, evaluation, and implementation, the content of each cycle of this research investigates collaborative teaching and learning activities.

Smith (2008) explores how teachers scaffold young children's musical growth and understanding in the context of musical play. Based on the learning context provided by such play, she discovered that peer and teacher scaffolding boost young children's development of musical understanding and teachers' abilities to recognize a child's zone of proximal development for growth in musical understanding plays a significant role in ensuring appropriate scaffolding choices.

Chapter Three

Methodology

The joy of fieldwork unfolds at complicated layers: the extraordinary daily experience of living in a strange place, the curiosity of knowing new and unfamiliar people, and most of all, the thrill and delight of communicating with them. With focused consciousness on an isolated time and place, I was able to assimilate with the people I was studying--the teachers, students, and mentors--and concentrate more fully on their thoughts and emotions than they themselves could. As I met them, interviewed them, and spent time together with them, they became interested in the versions of themselves reflected in my questions and thoughts; throughout an intensive period of data collection, I have had opportunities to experience multiple perspectives almost every day.

Methodological Rationale and Contextual Issues: Why and How the Case Study Method?

The bulk of motivation research in music education, which tends to use quantitative or descriptive methods, has followed several dominant trends: it has focused on the learner's motivation in a general music classroom (Asmus, 1986, 1994; Austin & Vispoel, 1992, 1998; Miyamoto & Lind, 1997; Mota, 1999); on flow experience and the development of music learning (Custodero 1998, 2005; O'Neill, 1999); on the role and contribution of motivational factors, such as self-efficacy, in instrumental performance (McPherson & McCormick 2000, 2006); on applying the theoretical frameworks of motivation to music learning (O'Neill & McPherson, 2002); and on relations among motivation, performance achievement, and music experience in secondary students of instrumental music (Schmidt, 2005). However, the dynamics of motivation among *long-term* students of *music composition* have rarely been investigated.

Using a qualitative case method, this research expands the study of teachers' and learners' motivations to consider their prolonged continuation over time, and especially the role that those groups' interactions played in facilitating that continuation. I sought "specific" and "complex" knowledge about how the central issues of this project intersected in the lived experiences of teachers, students, and mentors during the duration of the mentoring procedures (Schwandt, 2007; Stake, 1995). I focused on teachers' thoughts about their roles; students' compositional procedures, particularly for making progress; the influence of mentors on the learning context and content; the reciprocal influences of relationships and interactions across these features, including technology; and most of all, the motivations to continue that enabled and facilitated all the aforementioned factors over time.

Case, site, and context: Concerns in methodological structure.

In this study, the Vermont MIDI Project (http://www.vtmidi.org) is my primary case—as a center stage and not a variable (Yin, 2009). In order to achieve my target knowledge—motivations for continuing to teach and compose, as they are related to mutual interactions among participants--I focus on the triadic interactions of teacher-student-mentor, which I call triads. As "bounded systems" within the larger case, these individual triads constitute independent mini-cases in my study (Stake, 1995).

By illuminating three successful triads from various angles, I propose to identify general issues and strategies in the teaching of composition, rather than to explore the characteristics or nature of this particular mentoring system itself. Of course, the system of this mentoring project is still significant; I began my research as "qualitative researchers have pressed for understanding the complex interrelationships among all that exists (Stake, 1995, p.37)": it has its own historical meaning as a prolonged 15-year endeavor that has employed information and computer

technology in a curricular context to teach music composition. In addition, the project provides a context that not only enables music teachers to teach composition in their classrooms, but also facilitates an awareness of the preliminary interest of this study—how and why to teach music composition in a school music context. Therefore, this study employs an instrumental case study method combined with an intrinsic case study method; it focuses on the participants' reasons for continuing to compose and teach composition in their own cases. Ultimately, I pursue potential paradigms for composition pedagogy (Schwandt, 2007; Stake, 1995).

As an extension of instrumental case study, this study entail three mini-cases (Stake, 1995): this study takes the meaning of each triad as a unique case, representative of general High school, improvise-focused high school, and elementary after-school activity. By taking this approach, it identifies apparent common characteristics in situations where participants elect to keep composing and teaching composition. Each case includes teacher-student(s)-mentor(s) triads, which facilitates the teaching and learning of music composition within a school curriculum. These three cases support the transferability and trustworthiness of this study.

Site Information: Both Physical and On-Line Sites

Online mentoring, the fundamental constituent of the Vermont MIDI Project as the main focus of this study, takes place through a password-protected website (http://vtmidi.greenriver.org/) devoted to the sharing and critique of student compositions. The learning, teaching, and mentoring activities of the Project, and most communications about the cases, happen asynchronously on this website, which becomes the virtual field of this study.

Officially, the Vermont MIDI Project asks teachers (a) to post student work, (b) to prepare students to provide written descriptions of their works and requests for feedback, (c) to manage timelines to ensure an appropriate revision period, (d) to help mentors understand the

context in which students work and their learning stages, and (e) to support students by appropriately understanding mentors' comments (http://vtmidi.org/mentorguidelines.htm). In addition to these formal tasks, in practice teachers play additional roles in students' composition processes. Throughout the observation period, because I worked with three excellent teachers, I was able to obtain more in-depth data and information regarding teacher' positions in the mentoring system: why they became motivated to teach music composition, how they keep teaching composition while encountering practical challenges, what they gain from participating in the online mentoring project, how they adapted the mentoring system into their day-to-day teaching practice, and how they interacted with students and mentors. Drawing on the diverse backgrounds, experiences, and perspectives of each teacher, I was able to illuminate the specific but comprehensive features of classrooms in which teaching and learning composition was possible.

The direction the mentoring project to students as well as teachers by standardizing the format that their pieces would follow. That format included titles, grade levels, intentions, revision status, keys, meters, tempos, self-descriptions, and requests for mentor feedback. All of this structure was intended to explain the context of the compositions as well as the backgrounds of the young composers.

Student compositions are posted to the online mentoring website and critiqued by professional composers, but all teachers and students who are involved in the project may share compositions and access peer reviews and critiques, as well. Students use this site to engage in a recursive process of critique and reflection, receiving feedback on their work-in-progress and considering which elements of that feedback will help them improve their work (Summary from the web site). While elementary-level compositions require short and simple feedback

procedures that can be completed in about 15 minutes, a high school student's piece requires a more substantial process that can take almost an hour.

> Martin (mentor): There is no usual. But if I am actually looking at a piece, commenting on one or two things, sometimes I can do that in 10 minutes if it is a short piece. But I have spent an entire hour on one comment before also… I have also the impression that if you don't know kid, and you spend a long time commenting, and they respond back and it feels like you don't even know if they read your comment based on what they revised. That can be really frustrating. So that is a difficult thing, trying to gauge how involved this kid is going to be, and how proactive they are going to be in getting into a dialogue with you rather than just kind of glancing over what you say and writing whatever they would anyway.

Overall, initial comments deal with broader issues, and as pieces near "completion" mentors tend to narrow to specific and detailed content. When mentors comment on students' works, they try to begin with compliments and praise. However, the Vermont MIDI Project board warned that too much flowery praise was not useful, nor was it seen to be sincere.

Grasping the Nature and Characteristics of the Mentoring System: The Pilot Study

In the preliminary study, which focused on a professional development component of the Vermont MIDI Project named the Music and Multimedia Technology Summer Institute 2007, I explored the challenges involved in preparing public school music teachers to teach music composition within a digital environment. In this pilot study, which also proposed to assess the potential for further research, I investigated the characteristics of the mentoring project and the Summer Institute, illuminating teacher reflections, processes, and practices as teachers were learning to teach music composition.

Within natural classroom environments, I explored a variety of individual components and the relationships among them, including teacher-participants' compositional processes, changes in mind, instructors' teaching and management, and mentors' mentoring processes. In the beginning of the study, I was introduced as a researcher who would conduct interviews and

class observations. As the Summer Institute progressed, I became assimilated into the community. Based on my experience as a teaching assistant for an *Introduction to Technology-Based Music Instruction* course, I was able to partially assist in a lab class. As I became familiar with the teacher-participants, some of them shared their arrangements or compositions with me. I also stayed in the same dormitory as other teacher-participants and instructors and ate with them in the cafeteria. As a participant observer, I interviewed participants, wrote field notes while observing classes, and collected teacher-participants' self-reflection papers.

My observations revealed that the Vermont MIDI Project effectively anticipates music teachers' characteristics and needs, discerning exactly what music teachers do and do not know about teaching composition. Building on teacher-participants' existing knowledge of music, this project successfully establishes strategies for training teachers to teach music composition: most importantly, communicating that learners can be most successful when teachers integrate composition into already-successful music programs rather than attempting to teach composition separately or to deliver it as a completely new set of knowledge and skills (Bransford, Brown, & Cocking, 2001). Teaching composition should consist of reminding students of what they already know, re-organizing what they already have, and drawing out musical material that is already internal to them. This approach means that students and teachers can compose at a level equal to what they have already learned about music, as musical skills and knowledge already obtained directly influence the process of learning and teaching composition.

In this Summer Institute, teaching composition begins with having the teacher-participants experience the same compositional processes that their students do. Prior to teaching and passing on knowledge, teachers learn to feel the ways their students do as the students are composing.

The teacher-participants also experience the pedagogical power of learning composition as a cognitive mental activity. While experiencing aesthetic achievement through the creation of music, teacher-participants learn in the mentoring process to verbalize the creative sources or intent of their musical compositions. Most importantly, though, the teacher-participants are able to recover their confidence and interest in creating music through their successful composing experiences and through the encouragement they receive from the staff, including the mentors and instructors.

The structure and character of this Summer Institute can be summarized in one word: *comprehensiveness*. For the duration of the Institute, every member—from the Coordinator to the teacher-participants—experiences a prototype of ideal technology-infused music learning and teaching within an authentic technology environment and with real-tech people. Teacher-participants not only learn computer skills and gather information about software but also experience positive emotions—such as kindness and concern—from the Institute staff, allowing them to overcome technical barriers, resolve many of their fears about creating music, and discover future plans for implementing technology in their teaching. By ending with a jam night and the final presentation of teacher-participants' projects, the body of the curriculum encapsulates the entire experience of music composition, including thinking, creating, practicing, presenting, performing, and exchanging critiques.

About the Researcher

Educational background.

My formal music education began with piano lessons at the age of five. While attending an arts middle school and high school, I developed a keen interest in piano performance and music composition. As an undergraduate, I became fascinated with music composition and music

analysis, but my true passions developed outside the classroom. Giving private lessons in music theory and composition led me to major in music education. After obtaining a Master's degree in music education, I extended my interests to various levels and across many music disciplines: music history, analysis, dictation and sight singing, and music composition at the high school and college level.

Through my four days of early research on the mentoring project, I was able to revisit my early experiences with music composition. In my undergraduate period, whenever I was composing, I experienced something strange; although I was creating music, I felt that my creation had its own natural character. Like a living creature, it had its own natural and balanced shape; like a stream running down a mountain, the melody would go its own way. Therefore, I concluded that composition did not consist of artificially making or even producing music, but instead of finding its most balanced nature. After this realization, I came to feel more comfortable with composition and was able to communicate through my pieces.

Interestingly, when I interviewed Elliot, he pointed out the same phenomenon. Although he did not say where his ideas came from, he definitely felt that "they have to be in a particular way and particular piece." He also recognized music as a structure of sounds, rhythm, melodic ideas, and harmonic ideas, which are "coherent, hold together, mix" as organic statements.

Being a researcher from another culture certainly influences my interactions with study participants. As a foreigner researcher, I experience both challenges and advantages. The challenges of encountering a strange culture in which people speak a foreign language have become ordinary for me. On the other hand, being a foreigner has made me more deliberate while, at the same time, allowing me to bring a unique perspective to participants or colleagues. In my research experience, I have found that many participants wanted to see themselves from

the lens of an outsider, and the point of view of another culture often provided distinctive insights for them.

My stance based on methodological frameworks.

Hermeneutic or naturalistic stances. As a qualitative researcher as well as a music educator, I have generally taken a naturalistic position on the epistemological grounds for my research methods. That was particularly true during my preliminary fieldwork for this study. Based on the idea that the reality of each individual is multifaceted and multi-vocal–that is, that each individual is composed of unique and flexible layers accumulated through various mediating filters–I have undertaken an effort to understand social actions from the actors' own perspectives. I have been interested in identifying local or general knowledge specific to those actors' particular contexts (Lincoln & Guba, 1985; Schwandt, 2007).

Over the last two years, however, as I have conducted data analysis outside of the field and have studied theoretical and methodological issues that bear on the Vermont MIDI Project, my stance has evolved to become more hermeneutic, particularly through my acquaintance with and interest in Verstehen sociology. A hermeneutic epistemology emphasizes interpretation from external perspectives, such as interpretation of social interactions and of inter-subjectivity (Schwandt, 2007); it thus understands education as ultimately aiming at self-construction through language, conversation, and communication.

My interest in hermeneutics stems in part from the fact that data analysis for my previous research about the mentoring project led me to focus increasingly on the *process* of research than to jump instantly to results—a trend that is in turn a product of experiencing more qualitative research from the field and encountering various people in my study. This refocusing includes a kind of objectification of myself. Beyond my natural existence in the field, I became aware of the

interpretive process that produces *understanding*. That awareness lends itself to the philosophical notion of hermeneutics, which refers to "that is, to understand what is involved in the process of understanding itself" (Madison, 1991, re-cited from Schwandt, 2001, p.196,).

Participants

Process and rationale for recruiting participants.

To investigate triadic interactions, I needed to recruit teacher-student-mentor groups that would serve as the "collective cases" within the main case (Stake, 1995). To reinforce the validity of qualitative methods, I decided to explore multiple mini cases within my one main case, which have their own boundaries but have similar curricular contexts as public school music classes. Each mini case participates in the main case, the Vermont MIDI Project, so they share mentors. In this mentoring system, eight mentors cover all participant schools. Thus, common mentors do not impact the characteristics of each mini case as a bounded system.

To recruit the triads--which include the focal teacher, students, and mentors –I first reviewed the Vermont MIDI web site, where the mentoring activities occur. From data submitted online, I reviewed various teachers' histories with the mentoring project and their students' activities, such as the number of students who participated in mentoring and in the Opus selections, as well as the content of students' compositions for the last three years; the Opus participation can serve as a visible proof of active involvement in mentoring procedures. I initially chose five teachers but ultimately narrowed my selection to three, due to practical concerns such as distance. These three teachers have experienced the mentoring project for several years and regularly help their students participate in the Opus. I decided to contact the teachers first, because students would automatically follow along with them.

After the first submission of students' work to the web site, I recruited and confirmed the focal mentors. I also confirmed during the observation process that my student-participants exhibited active interactions with their teacher and mentors in their composing procedures.

Participants' information.

Case 1. Mrs. Campbell*[1]*. As a full-time teacher, Mrs. Campbell had earned both undergraduate and master's degrees in music education and had been teaching for 25 years from the elementary to high school level. At Highland High School, she teaches select choir, men's and women's ensemble, and the MIDI Composition course. My first encounter with her took place in July of 2007 at the Summer Institute, which I explored in a pilot study. As a co-founder of the Project, she taught the MIDI-Composition course for beginners. She has also researched and presented the work of the Vermont MIDI Project at conferences throughout the United States. Two of her students participated in my study, Jonathan as an expert student-composer and Clara as a novice. From the first interview, she willingly tried to reflect on her 15 years of Vermont MIDI experiences as a music teacher who has taught composition from the early stages of technology-based music education.

Case 2. Mr. Stanley. Mr. Stanley, a very passionate and empathetic teacher, has a background as a musician; he studied Jazz Performance in New Orleans, and then later obtained a music teacher certificate. Thus, he frequently played both piano and saxophone when he wished to use musical examples in class. He was currently teaching various courses in instrumental ensembles as well as theory classes at Roosevelt High School in Vermont.

Roosevelt, whose long history dates to the 1850s, incorporates three towns; it serves a population of about 500 students in grades 7-12 with around 55 teachers and 2 co-principals. It is

[1] All names of the participant teachers, students, mentors, and schools in this study were changed into pseudonyms to protect their identities.

based on an artistic and liberal environment and has a strong arts programs, offering Band, Jazz Band, Chorus, Hip Hop: Music, Culture, and Controversy, as well as Music Composition and Theory courses. I located two students, Allen and Sam, for the students of Mr. Stanley's triad.

Case 3. Miss Gibson. Since 1985, Miss Gibson has taught general music in various elementary schools; today, she teaches at two. At the North Lake Elementary School, which is her main school, she spends 30 hours in general music sessions, holds one chorus session for a combined class of fourth and fifth graders, and holds one two-and-a-half-hour after-school class for the Composition Club. North Lake Elementary School is located in Vermont and has about 300 children from grades K-5. In addition to this work, Miss Gibson also teaches three classes a week on two different afternoons, including a kindergarten class and combined second and third grade classes, at the Sustainability School.

Miss Gibson majored in music education as an undergraduate, and went on to complete her master's degree with Dr. Feierabend at The Hartt School of the University of Hartford, with an emphasis on early childhood education and performance. At Hartt Community School, she taught afterschool classes. For my elementary case, I chose Jake and Kelly from among 11 of Miss Gibson's after-school students, both of whom went on to win the Opus.

Mentors. The mentors are the professional composers who are hired to review students' works. On average, the mentoring project tends to maintain about 8 mentors; five mentors participated in this study both by providing their comments in mentoring process as well as by participating in interviews. I additionally referred to three more mentors' comments when they commented on my focal students' composition. I discuss each mentor's background in detail in Chapter Seven along with my discussion of their motivations in mentoring.

The Coordinator. The director of the Vermont MIDI Project, Dr. Whithead was a very informative and supportive gatekeeper for my study. Based on her own experience researching this mentoring project using qualitative methods, she helped ensure that this study did not interrupt the naturalistic setting of teaching and learning interactions. Dr. Whithead, a classroom and vocal music educator for 20 years, has coordinated the Vermont MIDI Project for the past 11 years and has participated actively in all phases of the project: teaching workshops, course instruction, grant writing, site visits, website maintenance, online mentoring, and event coordination. Outside of the Project, she presents on related topics, such as online arts mentoring and technology-based music composition, at national and regional conferences around the country.

Data Sources

In conducting this qualitative research, I generate data from multiple sources and using multiple means. I can state definitively that the synergy of these multiple sources surpasses their simple addition. My sources include interviews with teachers, their students, mentors, and the Coordinator; observations of music classes as well as the Opus event; my own field memos and field notes; and participants' artifacts, such as teachers' teaching materials and plans, students' compositions, and mentors' matched comments.

Interviews.

As a knowledge-constructing activity, qualitative interviewing enables both the interviewer and interviewee to seek new knowledge about the conversational reality (Kvale & Brinkmann, 2009). Based on the mutual relationships, the active interview becomes an interactional encounter (Schwandt, 2007). Within this interaction, I try to understand subjective elements (such as composition, motivation, expectancy, and competency) of the teachers',

students', and mentors' lived daily worlds from their own perspectives. In this research, I employ the interview method to explore participants' musical knowledge and competency, claims based on their self-reflections and experiences, and personal motivations and beliefs, as well as changes in these features over time (Kvale & Brinkmann, 2009).

Throughout my previous pilot study of the Vermont MIDI Project, from designing the study to interpreting data, I realized the relevance of the interview method as a powerful data-collection tool for research on teaching and learning music composition. Compared to other musical activities, such as performing on instruments or singing, composition is an extremely individual and cognitive activity, which occurs inside of students. Composition is also a personalized medium through which individuals can express themselves (Kratus & Wilcox, 1994). Interviewing allows me to access these cognitive and personal processes. I also examine the visible evidence of a composer's personalized language, such as students' musical works, mentors' comments, and teachers' reflections.

Initial interviews. In my first research trip to the Summer Institute 2009, I began interviews with the coordinator, Mrs. Campbell, and the mentors Elliot and Martin. I also conducted an initial interview with Miss Gibson, Mr. Stanley, and the mentor Mike after the Summer Institute was over. Interviews were conducted mainly in individual meetings.

I took handwritten notes on the initial interviews and audiotaped them with the consent of the participants.

The initial interview questions provides opportunities to: (a) clarify the in-depth main interview questions, (b) prepare the framework for observations, (c) understand teachers' and mentors' individual backgrounds related to the Vermont MIDI Project and their compositional

experiences, (d) create rapport with the participants, (e) examine participants' practical availability for involvement in this study, and (f) revise the study's research questions.

Each initial interview followed an unstructured format of free conversation focused on (a) motivations and conditions for joining and persisting in the mentoring project, (b) advantages and disadvantages of the Vermont MIDI Project, and (c) plans for the upcoming semester.

Main Interviews. I conducted core interview sessions, which were audio-taped with participants' permission, mainly during my second research trip. Interview questions were created and finalized based on the initial interview results. I interviewed each teacher three to five times at their schools between and after classes. I also conducted short interviews with individual high school students, also between and after classes, in order to establish a rapport, in addition to interviewing some students in groups or in pairs both along with and without their teachers. I referred to various materials during interviews, such as students' compositions and mentors' comments. In particular, since I had first interviewed Mrs. Campbell and mentors Elliot and Martin in 2007, the data demonstrate their thoughts and reflections over a prolonged period.

Table 2

The Number and Duration of Interviews

Role	Name	Interviews	
		Time and Duration (minutes)	
Gate Keeper (The Project Coordinator)	Dr. Whithead	July, 2007	61
		July, 2009	42
		October, 2009	51
		November, 2009	26
Teacher (High School)	Mrs. Campbell	July, 2007	24
		July, 2009	64
		October, 2009	48
		November, 2009	32
		November, 2009	31
Student	Jonathan	November, 2009	26
		November, 2009	24
		December, 2009	*Short interview about 10 min.
Student	Clara	November, 2009	18
Student	Harry	November, 2009	25
Students (Group interview)	Jonathan and Harry	November, 2009	21

(Continued)

Table 2 (continued)

Role	Name	Interviews	
		Date	Duration (Minutes)
	Mr. Stanley	July, 2009	38
		November, 2009	48
		November, 2009	60
Student	Sam	November, 2009	19
		December, 2009	*Short interview around 10.
Student	Allen	November, 2009	31
Students (Group interview)	Sam and Allen	November, 2009	22
Student	Matthew	November, 2009	Around 15
Teacher (Elementary School)	Miss Gibson	July, 2009	62
		October, 2009	42
		November, 2009	84
Student	Jake	October, 2009	10
		December, 2009	Short interview around 10.
Mentor (Composer)	Elliot	July, 2007	47
		July, 2009	63
		November, 2009	95
Mentor (Composer)	Martin	July, 2007	36
		July, 2009	40 + 31
		July, 2009	31
		November, 2009	49
Mentor (Composer)	Ally	December, 2009	Written format
Mentor (Composer/Percussionist)	Ross	November, 2009	86
Mentor (Composer/Cellist)	Mike	July, 2009	41

* These short interviews were conducted before or after the rehearsals of the Opus event.

Observation.

Unlike other music learning activities, compositional procedures occur inside learners. Thus, to investigate students' composition procedures, I rely more on interviewing and analyzing web data about composing and commenting than on observational data. To explore teaching and learning interactions between the teachers and their students, I observed classes based on an *Observation Template (See Appendix B).* In addition, at the end of the data collection period, I observed the Opus event, where the students' compositions are performed; my observations included rehearsals, student-composer conversations, and the workshop for composition techniques.

The purposes of observation are to: (a) explore interactions and dynamics between the teacher and students, (b) investigate roles of the teachers with respect to both the mentor and students, and (c) examine the musical and pedagogical context conveyed in interviews and on-line documents, which include both students' compositions and mentors' comments. To control for the unavoidable subjectivity of observation, I tried to distinguish observation from analysis, particularly in composing field memos (Wolcott, 1995).

Table 3

The Type and Number of Class Observation

Name and Type of Class	Teacher	Observation	
		Number	Duration (minutes)
MIDI Composition (High School)	Mrs. Campbell	7 (Two or Three times a week)	90
Composition and Music Theory (High School)	Mr. Stanley	8 (Three times a week)	60-90
General Music Classes (Elementary School)	Miss Gibson	7 (Varied)	30
Composition Club (Elementary School afterschool activity)	Miss Gibson	5 (Once a week)	120

Table 4

The Type of the Opus Event Observation

Type of Event	Participant	Duration (minutes)
Rehearsals	Jonathan and Mrs. Campbell	22
	Sam and Mr. Stanley	23
	Kelly and Miss Gibson	14
	Jake and Miss Gibson	11
Lecture Seminar for Elementary Kids	Miss Gibson and her kids	60
The Concert	All Opus winners	About 90

Journals and field notes.

Using 'Contact Summary Forms,' 'Document Summary Forms, 'Contact Summary Forms,' and 'Observation Templates' *(See Appendix B)*, I kept field notes during the entire research period. These field notes include not only research content, such as records of observations and interviews, but also self-reflections and critiques that are intended to serve as a research instrument.

Students' compositions with mentors' comments.

I collected students' uploaded musical data--which include MIDI files with explanations and requests, Sibelius scores, and mentors' comments--in order to address research questions regarding students' competency in composition and revision, the influences of computer and information technology on these processes, and the influence of the interactions between teachers, students, and mentors on the ultimate musical results.

Table 5

Number of Postings of Students' Compositions and Mentors' Comments

			Number		
Teacher	Student	Title of Composition and Instrument	Students' Posting	Mentors' Comment	Related Mentors
Mrs. Campbell	Jonathan	The Córdoban Puppet (1st Tp., 2nd Tp., Hn., Tb., & Ta.)	7	11	2
	Clara	Minor Melody (Vn., Va., & Vc.)	2	3	2
Mr. Stanley	Sam	Transistor Lamp Professor Pt. 1 (Pf., Xylophone, & Drum set)	8	15	2
	Allen	Rain Rain Plus Sunshine Then Rain Again (Tp., H., & Pf.)	6	8	3
Miss Gibson	Kelly	A Jolly Song (Pf.)	6	13	6
	Jake	Change Up (Tb., & Pf.)	7	8	4

Data Analysis and Interpretation

Challenges caused by a well-structured case with rich data resources.

By the time my field stay was over, I had already become convinced of the richness of my data. Interviews had proceeded fluently. Each interview with a teacher was supported by previous interview results, so that the teachers and I were able to construct knowledge together via our journey through successive interview and observation interactions. Interviews with mentors, who had practiced verbalization extensively in the mentoring process, allowed them to articulate and express their thoughts on many abstract issues in composition and teaching composition. During observations, I was immediately able to focus on emergent themes in classes. Finally, I was able to identify shared and divergent features across all three schools.

There are several reasons for these advantages. Most importantly, the structure and system of the Vermont MIDI Project had been developed over more than 15 years by composers, excellent teachers, and experienced board members who are also music practitioners. They had well-established strategies and structures based on their collective teaching and mentoring experiences, as well as insights into technology-based learning situations. Beginning in 2007, I had explored the potential of this mentoring project as a researchable case while conducting pilot research. The gatekeeper over this research project wisely supported my plan not to interrupt naturalistic settings based on her own experiences as the qualitative researcher.

Nevertheless, the plentiful data, which were a blessing at the project's beginning, quickly became burdensome; the richness required great labor. In particular, students' posted compositions with requests for mentoring and the corresponding mentors' comments produced an overwhelming quantity and quality of data: during one semester, each student revised 4-7 times and 2-4 mentors flexibly commented on those revisions. In addition, well-structured

paradigms and mentoring strategies, which were provided by the Vermont MIDI Project board members, became another inconvenience, because I needed to move one step beyond their practical insights and knowledge.

Data gathered or constructed?

Differences in ways of gathering or constructing data ultimately influenced interpretations of it, as well. Among the multiple data sources in this stud y, observation and interview data were constructed through interactions with participants, while I more traditionally gathered web-based data that included students' compositions and mentors' comments.

In the pilot study, I acted as an "interviewer-traveler," who wondered about the participants' lived worlds, asked questions, and encouraged participants to reflect on themselves (Kvale & Brinkmann, 2009, p. 48). This format did not allow anything that might be conceived of in "mining" terms. Thus, emphasizing participants' narratives, I was effectively an audience member and knowledge was constructed as I analyzed and interpreted data.

Nevertheless, when I tried through the Vermont MIDI Project site to explore future research potential with interim analysis, my stance began to change; through the process of completing research--which confirmed the potential for further investigation that I undertake in this study--I recognized the epistemological differences embedded in various data types, and that influences my approaches to interpret data as a kind of reciprocal interaction between data and researcher.

Thus, to interact with web-based data, I employ the miner stance; I did not exist in the mentoring project when these data ware generated nor did I intervene between students and mentors. I assume that the knowledge I pursue may be concealed from participants and that my responsibility is to uncover objective facts by borrowing their perspectives. Therefore, I propose

to address not only knowledge, which is constructed in the field with the participants, but also to pursue pre-existing and unconscious truth, a kind of phenomenological essence of the interviewees (Kvale & Brinkmann, 2009).

Pure interview: Data from mentors.

Interview data from mentors differed from teachers' and students' data. First, mentors were very accustomed to addressing the issues I was interested in, issues that required them to verbalize musical concepts and pedagogical matters just as they did in their commenting experiences. Thus, mentors were able to represent their thoughts logically and comprehensively. To become able to offer comments that were appropriate to a learning context, they had also developed highly organized thoughts about their philosophy of, rationale for, and motivations in teaching composition, as well as how they defined their online relationships with teachers as well as students.

From a methodological perspective, mentors' interview answers went beyond conversation. Initially, I prepared questions for a semi-structured interview. However, during the conversations, the interview formats naturally and gradually became fully unstructured, as the thoughts and reflections of the artists far exceeded my expectations. The interview content included their broad and diverse thoughts on composition, which had been constructed throughout their entire lives. At the same time, they had unique perspectives on public music education, particularly in music composition. Unlike other professional composers, who have not frequently encountered music outside of academic or professional contexts, they had come across various general music contexts. Therefore, their interview answers took the shape almost of prepared statements rather than off-the-cuff conversational exchanges.

Analyzing online mentor-student interactions.

Struggles with musical data and their verbalized pairs. The analysis of data in this project was challenging. It required not only intellectual and logical skills, but also musical appreciation for student compositions and interpersonal sensitivity to online and offline interactions. Most of all, because the purpose of analysis and interpretation was to reveal factors that support student composition over time, I needed to explore the aforementioned multi-dimensional aspects among students, mentors, and teachers.

My analyses were qualitative, subjective, and shaped by artistic encounters that hover over my mind, emotions, sensitivity, and musical ability. Moreover, the types of on and offline interaction I studied led to a strange experience. Unlike interviews and observations, which I conducted in the field while data were being generated, I had to theoretically "enter" a relationship between a student and mentors after it was already *completed*. These kinds of observations were exhausting, because they involved interpersonal tensions and a need to control subjectivity that was very different from handling interview and observation data; as a third party, I had to monitor completed interactions rather than construct knowledge together with participants.

This analysis ultimately proposes to explore the factors that enable certain prolonged compositional behaviors, rather than the value or features of a composition itself. Initially, I tried to analyze each stage of students' compositions using the methods of music theory. However, I came to realize that this approach was inappropriate. Unlike the traditional and typical forms of analysis associated with music theory--which explore harmonic structures, melodic progression, or orchestrations--this study proposes to look at the prolonged processes and strategies of

students' composition. Therefore, my stance did not focus on analysis of musical features but on illuminating the interactions that made up the activities of mentoring and composing.

Indeed, mentors had themselves already generally analyzed musical features of students' compositions; in fact, their mentoring was designed to begin with an overview analysis of a student's entire piece. The analysis of students' compositions, in other words, is itself a fundamental component of the student-mentor interactions. By providing verbal analysis and interpretation of students' compositions, mentors give musical meaning to students' music-creating behaviors. Students' thoughts develop through mentors' comments, as they concur with and understand mentors' views and interpretations of their compositions. My study takes this entire process, and its effects on student composition, as its object.

Protocols for analyzing and interpreting pairs of student-mentor interactions. Since the Vermont MIDI web site archives all students' compositions and mentors' comments, I was able to log the stages of each student' composition from his or her first posting to the completed piece. My objects of analysis included not only musical scores and MIDI sound files, but also verbalized written documents, which included students' descriptions of their compositions and requests for comments, as well as mentors' comments in response. I employed four dimensions of analytic criteria to understand the composition-mentoring procedures and mentor-students interactions, as well as the influences of teacher interventions.

I first explored repeated and formulated patterns in students' compositional processes alongside mentors' comments. Authors of previous studies have discovered patterns, principles, or factors influential in students' compositional process, such as horizontal and vertical varieties of composition, or whether students compose and arrange music separately or together; components of composition, including formation, preservation, and revision; and the

developmental aspects of the compositional process (Barrett, 2003; Emmons, 1998; Kaschub & Smith, 2009; Kennedy, 2002; Kratus, 1989; Nilsson & Folkestad, 2005; Strand, 2006; Wiggins, 1990; Younker, 1997; Younker, 2003). To expand on these patterns and principles, I examine how mentors and teachers influence the formation and development of patterns in comparison to the evidences of students' own musical examples. In particular, the teacher's influences on students' revision processes will be explored through my class observations.

In temporal terms, I categorized students' composition processes and mentors' comments into four stages: (a) a blank sheet of paper, (b) the first posting and the first comments, (c) the construction period, including repeated pairs of revisions-comments, and (d) the last comment and the final posting.

I then examined themes based on recurring and developing issues that emerged during the analysis of these stages. Some of the anticipated themes emerging from the interpretation were: (a) the cognitive and affective changes occurring in students, (b) the musical knowledge and skills the students acquired, (c) the characteristics of students' compositions, such as genre, tonality, rhythm, and structure, (d) the influence of computer and information technologies, particularly on students' composing strategies and interactions between students and mentors, and (e) the recurring patterns in mentoring and revising procedures.

Finally, I classified the types of mentor-student behaviors, in accordance with the method of cognitive apprenticeship, into the following categories: suggestions, critique, analysis, examples, shared experience, encouragement, compliment-praise, appreciation, and respect.

Table 6

Coding of Mentoring Interactions and Methods of Cognitive Apprenticeship

Coding Categories	Methods of Cognitive Apprenticeship
Analysis	Modeling
Praise- Encouragement	Modeling
Critique	Coaching/ Scaffolding
Suggestion	Coaching/ Scaffolding
Examples	Support building material
Sharing Experience	Support building material

Table 7

Component for Analyzing Musical Content

Coding Categories
Melody
Harmony
Rhythm
Technology (as content)
Orchestration (including instrumentation)
Form-Structure
Mood/Articulation
Composition Technique/Tips

Research Permission: Institutional Review Board (IRB)

This study was approved by the University of Illinois at Urbana-Champaign Institutional Review Board (IRB). Prior to the beginning of the research process, the focal teachers, students, and mentors: the Coordinator; the instructors of the Summer Institute; and other music teachers were asked to sign and return a permission slip in order to confirm their consent to participate in this study.

Trustworthiness of This Study

To validate this study, I adopted criteria provided by Lincoln and Guba (1985), which include credibility, dependability, and transferability.

Credibility.

The criterion of credibility, which measures the validity, applicability, and acceptability of my assertions, claims, and assurances (Schwandt, 2007), depends directly on preparing myself as a research instrument, including my ways of reconstructing experiences and of adapting record-keeping methods (Patton, 2002). To meet quality standards for a qualitative inquiry, particularly standards of credibility, I adopt (a) prolonged engaged time with the case, (b) triangulation, (c) member checking, and (d) peer debriefing.

Prolonged engaged time with the case. Qualitative research is constructed through "intense and/or prolonged contact" with a field (Miles & Huberman, 1984, p. 6). After my initial encounter with the mentoring project, during a 2003 graduate course in Technology-Based Music Instruction, I first experienced this mentoring project from the stance of a mentor: I investigated the potential for research in teaching and learning composition via the Internet while exploring students' uploaded compositions and mentors' comments as well as tracking the maturation of the Vermont MIDI Project.

Since 2007, I have maintained extended connections with the Project through four rounds of intensive contact. Between July 2007 and December 2009, I visited the field four times and totally stayed in Vermont for 60 days. I observed 27 classes in three schools and the final Opus event: I interviewed three teachers a total of 11 times, seven students a total of 13 times, five mentors a total of 10 times, and finally the Project Coordinator four times. These intensive contacts enabled me to discover contradictions among diverse perspectives.

What I triangulated. I planned to use both multiples forms of data collection, such as interviews, observations, and field notes, as well as students' musical works and mentors' comments.

First, I used a multi-framed method to triangulate characteristics of pedagogical and musical interactions between mentors' comments and students' composition and revision procedures. In addition to identifying emergent issues as a framework for interpreting data--such as '*move forward and zoom in and refine*' and '*the pattern of praise-critique-suggestion'*, I also adopt methods of cognitive apprenticeship (Collins, at al, 1989) as a theoretical foundation for my analysis of students' composing processes, and specifically of their use of computer technology and their asynchronous interactions with mentors. Intertwining both frameworks, I was able to propose potential paradigms and components of composition pedagogy via the online learning environment (*See Chapter Nine*).

Moreover, to investigate motivations within triadic relations for continuing composing and teaching composition, which are the focal point of this study, I conducted semi-structured interviews over varied aspects of the continued involvement for all teachers, mentors, and students; to explore their motivations, I asked about the personal benefits they gained from participating in this project, their biggest satisfactions and frustrations, the achieved outcomes

most important to them, their ultimate goals related to music composition, as well as ways to enjoy the Project and the part of it they found most exciting.

Member checking. To verify the interview data and its interpretation, I asked teachers and mentors to review my transcriptions with my coding for interpretation. To clarify their thoughts and intentions in the interviews and to protect their privacy, I invited them to add, delete, or change information.

To design interviews, I took two matters into account: ethical considerations and my stance as a qualitative interviewer. In my past research on the Vermont MIDI Project, I was impressed by the participants' open-mindedness, support, and active participation in and sincere intellectual curiosity about my research. Consequently, I became aware of the necessity to protect their privacy while exploring elements of their emotional and cognitive make-up, such as their knowledge, experiences, and beliefs. Ethical consideration for the interviewee is the starting point of an interview, because a qualitative interview proposes to illuminate and understand interviewees' lived daily worlds from their own perspectives. In this interpersonal relationship, the qualitative inquirer might transgress the interviewees' personal boundaries while constructing and seeking knowledge (Kvale & Brinkmann, 2009).

One mentor, who provided a detailed and intensive review, asked to look through the written draft to provide more exact clarifications of his statements. Teachers suggested more expanded deliberations for my further research on them.

Peer debriefing. To acquire multiple perspectives, I used peer debriefing. I participated in a discussion group, named the "fat data" group (Lincoln & Guba, 1985). Once a month, graduate students majoring in education, and those particularly interested in the arts, discussed their on-going research; one member gave a detailed presentation and others gave critiques,

suggestions, and recommendations. From these broader and more diverse perspectives, I received precious comments that influenced the direction of my study. While I have focused on addressing my research paradigms, or even research questions, these inventive critiques made me consider: (a) innovative dimensions of my study on teaching and learning music composition in a school music context, and (b) more active and specific contemplations on, and applications to, pre-service teacher preparation. Most of all, while discussing my study, I was (c) able to review my study from a more objective stance; throughout this opportunity for meta-cognitive reflections, I learned how readers recognized the frameworks for this study differently than I did from my own subjective stance.

Dependability: Time in a setting with data for analysis and interpretation.

To ensure dependability, which assesses consistency in logic as well as the stability of procedures for keeping track of the research process—including the recording, coding, and analyzing of data sets (Schwandt, 2007) —I initially created and categorized interview questions, which were my main instrument of data collection, according to the criteria embedded in the research questions. These categorization criteria are also successfully matched with the emerging themes.

To establish a traceable and documented process, I modified and created various types of forms, including 'Contact Summary Forms,' 'Document Summary Forms, and 'Observation Templates' *(See Appendix B)*. In addition, after each research trip, I met committee members to report interim results of each set of data collection procedures.

While collecting data in the field, I immediately began my interim analysis using basic coding based on Contact Summary Forms and Observation Summary Forms. After returning home, I directly wrote within-case information and then moved to cross-case reports.

Based on cross-case reporting, I revisited each case's data and revised the structure of my analysis and interpretation. At the last stage of my second visit, I discovered relevance of the theory of cognitive apprenticeship to the interactions among mentors and students in this study; after this point, I contemplated and interpreted data from the paradigm of the ideal characteristics of cognitive apprenticeship (Collins at al., 1989). This second stance finally resulted in the dual structure of this study while supporting the validity of "specific" and "complex" knowledge of each teacher's case as well as the project itself.

Transferability and generalization.

Mutual agreement between the inquirer and respondents enables readers to determine whether the inquirer's constructed reality can be transferred to their own realities based on communal characteristics. The transferability of this study is supported by two sources. First, the pilot research over the Summer Institute of the Vermont MIDI Project investigates teacher dimensions of this mentoring project by putting them in dialogue with a more comprehensive aspects, including teachers', students', and mentors' motivations for maintaining their participation in the system as well as the nature of their interactions and relationships in the learning context. Second, I selected three teachers' cases that include a triad of teacher-student-mentor, and through cross-case investigation, I was able to reach case-to-case transferable results to support the knowledge sought in this study. Consequently, I was able to illuminate the possibilities and potentials for composition pedagogy based on these cross-case features. These generalized issues will be discussed in the last chapters of this study.

Chapter Four

Mrs. Campbell: Sharing, Communicating, and Creating Music

During my field stay in Vermont, all three teachers gladly participated in the study with both curiosity and dedication. They offered me a frank glimpse of their classes. Even though each class carried out only the quotidian details of their daily lesson plans, each scene of teaching and learning interactions seemed to me like a movie, with respect, love, and beliefs suffused with musical sound. Before gathering data, I was initially moved and absorbed by the classroom atmosphere. At first, all three teachers introduced me in their classes as a researcher from far away in Illinois. As time went by, however, I felt that I became a class member; in the theory classes, I sat with students and learned from the teachers. Sometimes, in busy situations, I assisted the teacher in explaining mentors' comments or software usage to young children. Although that amounted to a very small portion of my time, the experience provided me with an understanding of the complicated situations teachers face in teaching composition in hectic and rushed classroom settings.

In this first case about Mrs. Campbell, who has prolonged experience in teaching composition within this particular mentoring project, I examine her motivations and teaching practices related to music composition, as well as her students' composing practices and relationships with mentors. From five students in the MIDI Composition Class, I chose Jonathan from the experienced students and Clara as a representative student from the beginner group to explore how young skilled and novice composers make progress interacting with their teachers and mentors.

Mrs. Campbell

She is the best
(Mentor Martin, personal communication).

Highland High School, where Mrs. Campbell teaches, is located in Newport, Vermont. For me, after living for 7 years in the plains of Illinois, the 2-hour drive from Burlington to Highland on highways that cut through mountains seemed strange. In the center of this hidden highland, there was a big, deep blue lake. The downtown looked small but clean, while the Highland Union High School was very large; this school is one of the largest schools in Vermont, uniting 8 towns with a student population between 1100 and 1200. It provides various strong music offerings, such as Advanced Placement Music Theory, Band, Instrumental Music Lessons, Jazz Ensemble, Music Appreciation, Chorus with Lessons, and MIDI Composition. Mrs. Campbell was teaching 3 distinct classes with approximately 30 students in each, totaling around 90 students in both Choir and MIDI Composition classes. I observed eight sessions of the MIDI Composition class.

Motivation, Challenges, and Perseverance of Mrs. Campbell

I want them to discover the music that's inside them.
I want them to be able to know that they have a voice.
They can translate it from inside them to outside because I never had that
(Mrs. Campbell, Interview, July 29th, 2009).

Advocating for teaching and learning composition.

Mrs. Campbell has encountered various challenges both as a music teacher and a board member of the Vermont MIDI Project. The most practical and visible frustrations were that of time and money, and she was also concerned about the lack of any noticeable rewards, including money and recognition.

> Mrs. Campbell: It's very frustrating that it's a lot of work. We are always trying to raise money and it's very difficult. With the bad economy, it's even more difficult. But I think that it's a lot of work for teachers to do this. I think that they feel that it's something "additional", something "more and more and more" on their backs, more for them to have to do (Interview, July 29th, 2009).

The core principle, which has enabled her to persevere against various challenges and barriers, was her inherent inspiration as a music teacher. But what made Mrs. Campbell continue teaching composition for such a long time? She emphasized her philosophy and rationale for teaching composition and explained that she believes composition is the best opportunity to foster students' creativity and allow them to express affect through music. From the stance of a choir teacher, she also noted differences between composing and performing music: she addressed the significance of composition as an opportunity to express students' emotions and musical ideas in different ways than singing and playing instruments would allow. She specifically pointed out the significance of 'writing' music. Why is *writing* musical ideas *down*, even if one is not creating sounds themselves, meaningful? She stressed the issue of helping students manage their ideas while creating music:

> Mrs. Campbell: It's a place where we can teach students to be creative, more creative than they are in chorus where they all have to sing the same note and they all have to sing it the same way… They can be expressive. They can express their emotions but only at certain times in certain ways… This [Composition] is much more like visual arts where you have a blank piece of paper… What I would like my students to do is to have their own little library of their ideas, and then they could use any of those ideas in their pieces. So that's why I bought those little books for the students to write their little ideas in and I've never done that before. They've never had that experience just writing down musical ideas… This is an experiment and we'll see how it goes (Interview, October 29th, 2009).

Cultivating students' musical identity.

She articulated her primary rationale for teaching composition as a belief that composition fosters students' creativity and allows them to express their affective state through music. Mrs. Campbell's greatest reward while teaching composition is witnessing students'

creative process and their completed works, both of which depict the students' journey of finding their own voices. More particularly, she wants to help students find their musical identity through creative experiences.

> Mrs. Campbell: My students' success is the biggest satisfaction to me, to see what they can do out of their own brains, and how they create. And then many of them go on and keep composing and teaching music. That's, to me, the biggest success (Interview, July 29th, 2009).

Mrs. Campbell addressed the essential nature of composing as an awareness of one's own musical voice and self-expression that exceeds the possession of skills and knowledge. To explain the nature and process of self-expression in the early stages of composition, she analogized it to drawing; the most significant difference between the two, she suggested, was the affective dimension of teaching composition. She stressed that teaching composition should involve teaching not only the art of creating, but also of *crafting*: students should first be allowed and encouraged to compose whatever they wish without the burden of producing something theoretically meaningful. Just as Barrett (2003) noted the significance of managing freedom and constraints at each stage of composition learning, Mrs. Campbell specifically addressed the necessity of providing students freedom and comfort during their initial steps.

> Mrs. Campbell: I think composing is finding your musical voice and expressing yourself—you can do that with skill or you can do that with no skill and just throwing things on the screen. I think everyone should be composing, then we teach them the skill after. Artists who draw or paint take a blank piece of paper and they fill it right away and they take another one and they sketch. They are not afraid to make a line. I think we are often afraid. So my first goal should be to get students to express themselves and not be afraid (Interview, July 29th, 2009).

To foster student autonomy and musical ownership, their active volunteered participation is essential. For the most part, Mrs. Campbell's students volunteered to take the MIDI Composition course. "They want to take it and many students take it twice." While observing her class, I was able to clearly perceive the active dynamics among her students, who had not only

voluntarily taken this composition class but done so multiple times; they energetically interacted with the music teacher, took care of new students, and even led discussion sessions. For these advanced and experienced students, the classroom was transformed beyond the typical place where their learning occurred; by means of music, it was the place where they represented their thoughts and interacted with each other. Mrs. Campbell tried to help students to work with their own pieces instead of instructing them in direct compositional strategies.

> Mrs. Campbell: The Vermont MIDI Project itself also encourages students' originality in creating music. But I think for us to grow, the best thing we can do is to help people to create their own projects. And that would be the biggest success of all... I think I help the students find their voice, but I don't feel that I'm an expert in music composition…I assist them (Interview, July 29th, 2009).

Finally, as the most important outcome of the mentoring experience, she emphasized the opportunity to uncover the originality in students' musical works by fostering their creative voice. She understood her students, what they were excited about, and how she prompted them to realize their own creative voice in and outside of the classroom. Thus, while she reflected on her own methods, she also emphasized the core of creating activities:

> Mrs. Campbell: I think giving my students the opportunity to have their work performed, whether it's in the Opus concert or by their peers or their friends. To hear their work performed, I think that's the biggest thrill. It's very exciting for them (Interview, July 29th, 2009).

Pursuing professional growth.

Mrs. Campbell addressed other factors behind her motivation to teach composition; she was motivated by deeply intrinsic and cognitive factors. She is fascinated by experiencing new events, having opportunities to learn fresh content, and most of all, achieving different stages of development and progressing with her students. In keeping with this attitude, she believed the beginning stage to be a critical and fascinating point of departure. Mrs. Campbell also often used cognitive terms such as '*discovering*,' '*sense*,' and '*thinking about'* to describe students' creating

activities in her class, rather than using more artistic terms such as musical, beauty, feeling, or expressions. In particular, she emphasized the intellectual aspect of composition combined with the students' autonomy:

> Mrs. Campbell: I enjoy problem solving. Especially in the beginning [of the Project], it was very challenging, very difficult. But I enjoy difficulty. I'm always learning new things, and we are always trying a new project, like this new project composed for Vermont Symphony Orchestra. It's a big thing. Since we first started the Opus, every year we get better at it. The students' compositions are better and better. And so we are always going forward; it's never just still. It's always interesting… It's important because it has made me teach composition. I think they're discovering things about music and about themselves and the way they work. I think they're developing a sense of and thinking about it (Interview, July 29th, 2009).

As she facilitated encounters between students and mentors, Mrs. Campbell learned the mentors' strategies for teaching composition and learned from her students creating processes, as well. She implemented this knowledge when she taught students herself. While respecting the mentors' authority and valuing students' independence, she was also focused on her own teaching and how she could improve it. She was able to review her teaching using mentors' comments: by examining repeated comments on her students' compositions, she could identify potential indicators of her own teaching habits or practices, and where necessary, could try to repair them.

Preparing to be music teachers: Never learned how to compose.

Mrs. Campbell's interest in pursuing professional growth originated in the issue of teacher preparation for teaching composition, which has recently become a fundamental concern of research in teaching and learning music composition (Strand 2003, 2006; Williams, 2006).

As one of the founders and the current president of the Vermont MIDI Project, therefore, teacher preparation became one of Mrs. Campbell's most critical and ultimate concerns regarding the teaching of composition. She identified precisely what teachers needed, such as

teaching materials, lesson plans, tools, as well as training opportunities for teaching composition with technology.

> Mrs. Campbell: Believing in the importance of having students compose music. I think it's successful because we have focused giving teachers the tools they need, not so much the technical tools but the lesson plans and the ways to be successful. Connecting with the teachers and providing the summer institute and the workshops, I think all the materials we've developed for teaching, and the videos--it fills a need (Interview, July 29th, 2009).

To describe the other problems and difficulties that music teachers face in teaching composition, Mrs. Campbell noted that most music teachers had little experience with composition before becoming in-service teachers, and did not compose when they were themselves in elementary or secondary school. Mrs. Campbell began with her own past experiences; she has experienced various teaching and learning situations regarding composition, from being a pre-service music teacher to an instructor for the mentoring project. She emphasized that she had not learned the exact strategies or methods how to compose; the theory and counterpoint classes she took involved analysis, theory exercises, and writing in styles of given composers. Moreover, although she has been using technology for 15 years, Mrs. Campbell took only 2 classes at the Vermont MIDI Summer Institute, and a few workshops that lasted 1-2 days each, which were provided by TI:ME (Technology Institute for Music Educators). As she commented one day on her personal attempts at composition, “I tried to compose. It was a great experience. It’s very difficult. I found it’s very difficult.”

She finally came to discriminate between composing and teaching composition from the perspective of a practitioner who has struggled for a long time. Although teachers should know how to compose or should at least experience how students feel and think while composing, at the same time, she realized that composing and teaching composing depend on different paradigms.

> Mrs. Campbell: I think that if I took one class I would learn more about composition. But I wouldn't know as much about how to teach it. I keep learning every year through experiences. It keeps feeding new students, new pieces, new comments, and new mentors (Interview, November 10th, 2009).

After experiencing composing, teachers developed better strategies for teaching composition than for composing itself. In other words, teachers need to experience composing procedures in order to teach composition (Berkley, 2001). However, strategies for teaching composition need not be identical to, and indeed should differ from, composing strategies. Eventually, learning opportunities afforded by her mentoring experience made her more confident in herself as someone who could teach composition without being an expert composer.

> Mrs. Campbell: I think at this level, I can teach what I know to them, but I think that I learn more from the mentors and how to teach it. I learn from what they say. So if a mentor keeps saying something to all my students, I should be changing what I'm doing. And then I can fix those things before they post, and then we can get new information. But I learn through my students' creating pieces and where they might go. I don't tell students what to do so much anymore. It gave me more confidence in my role as a teacher in composition. I don't think I know enough about music composition. I would like to know more about how to teach it. But I think now I'm doing a good job if I can teach what I know and then get out of the way and let them keep going, and help them and work with the mentors. If I notice that they're saying the same things to me or to my students, I think I should do a better job with my students on certain things (Interview, July 29th, 2009).

Another variable in teacher preparation for teaching composition is technological concerns. Mrs. Campbell experienced frustrations with learning two things--technology and composition--at the same time. In the pilot study, which was more focused on in-service teacher training in the Summer Institute, the teacher-participants were also frustrated and challenged by encountering new learning technologies while also learning to compose or arrange: "Learning how to teach it, and learning the technology. But, I pretty much know the technology now."

The MIDI Composition Class

I wouldn't be teaching composition at all.
I want the students to respect the mentors,
but I also want them to respect me and
I want them to respect themselves
(Mrs. Campbell, Interview, November 10th, 2009).

As a 2-semester class, the MIDI Composition class was a 'half and half' class of theory and composition: in the first semester, students primarily learn theory and then gradually move to creating music from their short music theory exercises. This semester was geared toward beginner-to-intermediate level students who have musical literacy. At the end of the first semester, an intensive level of music theory was integrated into music composition with computer software; students learned music notation and other musical elements while applying those skills and knowledge to compose their own music. At the end of both semesters, Mrs. Campbell assigned final projects. In the first semester, students composed variations, while music based on a fairy tale was the second semester project. If students took this course for more than three semesters, their individual project for the Opus posting would be their final project. This class met every other day alternating from Monday, Wednesday, and Friday in one week to Tuesday and Thursday the next. Each session was 90 minutes long, yielding 74 classroom hours each semester.

In the Fall 2009 semester, among five class students, Jonathan, Harry, and Clara became my focal students. Jonathan was ultimately chosen for the Opus. Jonathan and Harry had already taken this course five times and they even composed an orchestral piece, *Peter and the Wolf*, in the fall. Clara like the other two students in the class was taking the MIDI Composition Course for the first time.

Figure 1. Student workstations in the computer lab and Mrs. Campbell's choir room.

Mediating between mentors and students.

In the MIDI Composition class, Mrs. Campbell taught music theory in detail using various sound examples from her piano playing or CD recordings. However, in the composition session, she changed her mode of teaching, trying not to interrupt the students and mentors. Even during experienced students' sharing sessions, she guided the discussion but never led it; she helped students to understand mentors' comments and to develop their own critical abilities.

> Mrs. Campbell: Between the mentor and the student, I might be a mediator… In some cases, I'm a translator because sometimes students don't understand what the mentor says… I think explaining things about the mentors and what their role is, because sometimes students might get a comment from 2 mentors that are different... But they just have to think about it and work with it. So I'm in the middle, kind of. I don't think I have the final word (Interview, July 29th, 2009).

Mrs. Campbell's skillfully controlled role as a mediator was also revealed in interviews with her students. Based on her extended and extensive experiences with mentors, Mrs. Campbell trusted and fully supported them, with the hope of achieving the best mentoring results. As a consequence, she let students post from the very beginning stage of their compositions, even if they had only several notes. In her class, therefore, students' composition activities are chiefly developed with communication between students and mentors.

> Harry: Mrs. Campbell usually tries to set up a plan for us to do, and come up with some ideas. But some of the time we really just do it on our own and figure it out, but she really helps us along the way. What I did was I have one main idea, but I have another main idea. What I had to work on was connecting my ideas, so that's what I really focused on, combining them and connecting them when I was here on Saturday [which is her last working chance before the Opus] (Interview, November 2nd, 2009).

At the moment of reading her students' comments, she was closer to the students' viewpoints than a neutral mediator. Nevertheless, interestingly, she also changed her stance:

> Mrs. Campbell: I feel that when the mentors speak to my students, they are speaking to me also. I pay a lot of attention to what the mentors say and try to make it so that they don't have to make the same all the time…But I talk to my students, I'm with them, and when I'm with mentors, I'm with them (Interview, July 29th, 2009).

Facilitating discussions.

Affective comments are appropriate and should not be discouraged.
If a student says "Wow, that reminds me of a circus!"
It will generate a rich discussion of the music
(Mrs. Campbell, retrieved from http://vtmidi.org/reflect_critique.html).

In every class that I observed, Mrs. Campbell strongly encouraged students to discuss the learning content of the day, their ideas for composing pieces, and the compositions of their peers. Usually the advanced students, Jonathan and Harry, explained ideas, interests, and challenges of their compositions, as well as how they received and understood their mentors' comments.

From the initial stage of interviewing at the summer institute in 2007, Mrs. Campbell stressed active sharing and peer reviewing in her class sessions. When I observed her teaching both for in-service teachers in the Summer Institute as well as for her high school students, I was consistently able to see the collaborative sharing between the teacher and students, as well as among students, as one of the main features of her teaching practice.

> Mrs. Campbell: We always talk about the work in class, so we look at everyone's work. And then we talk about what they noticed and what they could change… We have it almost every day. Even if I don't do that with them, they do that. They'd call someone and say "Would you listen to this and help me?" It's very good. It's important they are able to talk about their work and what they have in mind, if they want something to be dissonant

> or it's an accident. "Oops, help me, so it's not." Or "No, I really wanted that to be there." But they help each other (Interview, July 29th, 2009).

When I interviewed Martin, who is a current mentor as well as a past student of Mrs. Campbell from the 7th grade, he said that she has always weighted discussion sessions as the core of her teaching. She encouraged her students to participate in this mentoring project while promoting active discussion and peer critiques in each class.

> Martin: Once in a while we had a composition project and we would learn how to critique each other's pieces…Yeah peer review. Someone said, "Oh that is a very cool piece," and Mrs. Campbell would say, "why is it really cool?" We would get to the heart of talking about music and why we like or didn't like it, so she initiated the whole process of thinking about music critically in 7th grade… Some of them are more articulate than others about what they are listening to and discussing it... It's just general music (Interview, July 16th, 2009).

When students engaged in peer reviews, they seriously and sincerely critiqued each other. The peer-critique process seemed to be a role-playing opportunity for students. Interestingly, they used formats similar to their mentors' comments; they began with compliments, then carefully critiqued, and wrapped up with positive words regarding expected revisions. For instance, Jonathan's critique of Clara is interestingly consistent with Mrs. Campbell's; Jonathan was also able to critique colleagues' music as mentors or teachers do from their perspectives. Beginning with compliments, he was also able to analyze the reasons for praise; he recognized not only musical but also structural factors.

> Jonathan (Student): Sometimes I do, I just listened to Clara's piece today. Great. She has a great sense of harmony and melody is nice and strong. She knows how to do her counter melodies and stuff like that. It's good. I am expecting some good to come out of Clara, because she can compose clearly. So I do enjoy listening and critiquing other people's pieces (Interview, November 6th, 2009).

Collaborating with students.

With their teacher mediating and facilitating, students acquired critical ownership over their creative processes not only by composing their pieces, but also by participating in class.

They were able to provide a mentor's perspective while commenting on the compositions of others. Accordingly, these practices of commenting lead students to actively understand mentor comments on their own compositions. Finally, this active sharing resulted in a collaborative mood in the classroom. During the class, Mrs. Campbell worked closely with her students. Although the Vermont MIDI Project as a whole emphasized the respectful environment among participants, the most respectful relationship between teacher and students occurred in her class. She was always excited by her students' compositions and encouraged them in whatever they composed, whether it was only a couple of measures or even an apparently random group of notes: "I think sometimes I explain. I would always sit with a student and go through what the mentor said and say, 'Do you understand this?'"

> Harry: Mrs. Campbell will sit down with me and give me some ideas, and we just play around on the piano with different chords and just write it down on paper. Because that is sometimes easier to, just write it down on paper before you put it into the computer (Interview, November 2nd, 2009).

While Mrs. Campbell led the students to respect the mentors, and while she herself recognized the mentors' musical and pedagogical authority, she also fully recognized the student's ownership as composer.

> Mrs. Campbell: I feel as if my students are more like my partners, and we can take a fresh look at what the mentors say, and I can help them to be successful. This could also be part of collaborative process in her classroom. I would never tell them they have to change something exactly what the mentor says, but they have to agree when they post something that they would be willing to look at what it says. And then they will be willing to try things; they can always go back. But most often, they work things through and they make changes. The best thing would be if they look at a comment and then start to make some changes, and then discover something else they can do that's even better. They can go in a different direction from where they were before (Interview, July 29th, 2009).

Thus, while Mrs. Campbell has not been challenged by teaching composition itself, particularly in delivering skills and knowledge about creating music, the actual challenge has

occurred in her communication and conversation with students, due to her respectful feelings and mutual attitude towards them and their music:

> Mrs. Campbell: I think a frustration might be sometimes wanting to tell the students exactly what to do but knowing that I don't want to be too direct. "Change this note to this note." I sometimes will try to get them to do those things. But I don't experience a lot of frustration as a teacher (Interview, July 29th, 2009).

Wolf School Dropout: Class collaboration for orchestra piece.

It's wonderful to have their piece played by the Vermont Symphony Orchestra.
How many students can say that they have that opportunity?
This and the Opus to write for people who are going to play your music live
not just the computer and to have that experience
(Mrs. Campbell, Interview, November 10th, 2009).

Mrs. Campbell sometimes collaborated directly with her students. When the Vermont Symphony Orchestra appointed Mrs. Campbell's students to compose an orchestra piece for younger kids based on *Peter and the Wolf*, Mrs. Campbell dramatized the traditional tale into a story of a modern character named Wolfgang. Then, all students in the class participated in making a detailed story line and musical plans. Finally, the experienced Jonathan and Harry composed a piece of music together.

In her class, Mrs. Campbell has assigned 'Music for Fairy Tales' as the final project; both the music teacher and students were familiar with the format of using music for telling stories, including collaborative composing.

> Your next composition assignment addresses the National Standard for music composition, specially the section that asks students to "demonstrate creativity using the elements of music for expressive effects." This means that we are not just creating music, but we will use what we know about music express a mood or tell a story. Pick a well-known story (fairy tale, myth, legend, etc.) and write a plot summary of it. Make some musical dimensions and an outline of the form of your piece (From Mrs. Campbell's teaching material, p.3)

Then, she provided a detailed evaluative rubric with categories like "Effectiveness of Telling the Story," which dealt with the relevance of the music to the story; "Musical Forms,"

which covered overall musical aspects such as melody, harmony within the large concept of forms; "Online Mentoring," which indicated how students developed and revised music under their active interactions with mentors; and finally, "Neatness of Score." Students are also able to collaborate for their final project. Interestingly, one of the reasons for asking students to collaborate one story-telling music was a lack of computers for all students: they didn't have enough computers so they collaborated.

For the grand *Wolf gang* story-telling project, Mrs. Campbell wanted to involve the whole class, as her usual practice of teaching composition involved not only composing but also reacting, critiquing, and making suggestions.

> Mrs. Campbell: I said we don't know the ending yet. We made all the class; we made little diagrams and we housed what should we do, should the wolf be mean or should the wolf be, what should happen... The whole class worked on the story and then we said ok now we need music for blowing trees down and then, "Jonathan, you do the wolf music" and "Harry, do the huffing and puffing and the sharpening of teeth." We divided that up between them…I think the idea of the story was mine but they wrote most of the words (Interview, November 10th, 2009).

While the full class participated in story-building and Harry and Jonathan composed; based on their composing and other musical experiences, her two expert-students, were capable of composing the musical work for an orchestra. Mrs. Campbell processed the many other technical tasks, such as preparing the score, contacting the staff of the Vermont Symphony Orchestra, addressing the due date, as well as combining all the aforementioned collaborative jobs of several students even while keeping up her regular schedule of teaching theory and composition. Below is the script of *Wolf School Dropout*, the output of the collaboration of the teacher and students in Mrs. Campbell's class.

Table 8

The Script of "Wolf School Dropout" (provided by Mrs. Campbell and her students)

Wolf School Dropout

Once upon a time there was a young wolf named Wolfgang. He had great big hairy feet, and was very clumsy. *(A)*

All the other wolves picked on Wolfgang because he always seemed to be tripping over his big feet, and also because he was a vegetarian and loved to eat tofu. When they picked on Wolfgang it made him feel sad, and made him wish that he could be more like his great grandfather 'the Big Bad Wolf'. The Big Bad Wolf was very scary and Wolfgang hoped he could be like that too. *(B)*

One day, when young Wolfgang was surfing the internet, he came upon a website called "thebiggerbadderwolf.com". There, he found out that there was a class you could take to become a 'Bigger Badder Wolf', and maybe, just maybe, Wolfgang could live up to the reputation, that he wanted.
At wolf school he learned all the things that big bad wolves do, like:
-Sneaking through the tall grass *(C)*
-Growling and making scary faces *(D)*
-Sharpening his teeth *(E)*
-Huffing and Puffing to blow a house down *(F)*
-Disguising himself as sheep and grandmas *(G)*
-And eating little children (Wolfgang got special permission to substitute tofu for the little children) *(H)*

Wolfgang practiced for weeks and weeks, trying to be Bigger and Badder, but between his great big feet, which kept getting in his way, and his kind heart, he simply did not scare anyone. Finally, it was time for to graduate from Wolf School. Wolfgang was told he had to find three pigs, sneak up on them in disguise, tear their house down, and eat them. All wolves remember how the three little pigs were able to outsmart the Big Bad Wolf, and they are mad about it to this day. Even though he did not want to eat the pigs, Wolfgang decided to do his best. *(I)*

It was time for Wolfgang to show what he had learned. He found a condo on the other side of town where three pigs lived. *(J)*

He tried sneaking but the lawn had just been mowed, and he could be seen by everyone. *(K)*
He tried growling, but his voice kept cracking and he sounded just silly. *(L)*

When he put on his granny costume, his big hairy wolf feet stuck out and people just laughed at him. *(M)*
The condo was very well built, and no amount of huffing or puffing was going to budge it. *(N)*

Wolfgang realized that he just wasn't cut out to be a Big Bad Wolf. The only thing big about him was his feet, and he was too kind hearted to try to scare anyone, or to be mean. *(O)*

Suddenly the front door of the condo opened and a pig came out through the door. "Good afternoon," he said. "Can I help you with anything? It's too early for Halloween, but you seem to be dressed in a most unusual costume." The pig was so friendly, Wolfgang felt very foolish for trying to be something that he wasn't. He decided to drop out of Wolf School, and became friends with the pigs, who happened to like tofu too. *(P)*

THE END!

Between September 28th and October 22nd, 2009, Jonathan and Harry posted their compositions of this orchestral piece to the mentoring site, and the mentor Elliot and Ross—who were professional composers as well as the main mentors of the mentoring system—commented; Harry and Jonathan revised five times, and after the fourth revision, they combined each part into one piece. In the November 6th class meeting, Mrs. Campbell asked Jonathan and Harry to give me a casual presentation of their procedures for preparing this orchestral piece. Jonathan and Harry energetically explained how they were inspired, how they converted their ideas into musical sounds, and how they gradually controlled the tensions of the music along with the story. While working together at the school computer lab, they stressed that they communicated a lot about ideas in style and patterns, orchestrations, harmony, and melody. This presentation was the most excited and happy I had ever seen them, whether in class or at the Opus.

Conceptualizing processes of teaching composition: Prepare and manage.

The first moment of encountering five blank lines. Reflecting on my past experience, I can recall exactly how I felt at the moment of coming across a blank five-line staff; excitement and expectation for the music, which would flow from the inside of my mind; the rush of numerous fragmented ideas, which were not yet completely converted into the form of musical sounds; and most of all, the feeling of disorientation from or even ignorance of the right pathway; sometimes I was just playing around with some notes from which I would begin.

As the very first step in the process, the blank paper is the most critical moment for everyone who is willing to compose--not only for students, but also for teachers. Mrs. Campbell compared music teachers to art teachers to explain why music teachers might have fewer opportunities for being creative. Unlike art teachers, who routinely created their own art works throughout their schooling, music teachers were never expected to encounter empty papers from

which they would create original music. Mrs. Campbell noted that music teachers were generally trained to read music and to perform it, and thus almost never encountered a blank piece of paper on which they have to produce their own creation.

Thus, with regard to research in teaching and learning composition, I have wondered how students begin with a blank piece of paper and how teachers initiate their student into the act of composing, for once students begin, particularly in composing with computers, they tend to be able to build notes and make phrases. When I interviewed students, they too noted the beginning stage as the most critical and challenging point they faced. Mentors may start with the very least of notes, whether they are musically meaningful or not, because mentors must invariably comment after the students' initial posting. No matter what the quality or quantity of the first notes, the definition of this very beginning stage belongs to students themselves or at most to their teachers. Mrs. Campbell agreed that "*Yes, because mentors don't say how to begin. I think the mentors could be very good teachers but that's not their role (Interview, July 29th, 2009)*."

From theory to practice. Mrs. Campbell shared how she dealt with this vital stage from the perspective of an experienced teacher. Beginning students first started their composition with a theory exercise; instead of pushing them to compose pieces for the Opus, Mrs. Campbell bonded the beginning stage of composition with theory practice in its most basic form. She had students build short composition pieces out of their theory assignment rather than directly suggest a motif to them or even look on as students worked with a blank sheet of paper.

When I observed her classes this fall, Mrs. Campbell taught theoretical topics like minor scales and intervals by ear: She would identify a piano sound, sing the interval, and then have students check it on a piano keyboard for themselves. She then moved students to the computer lab and assigned them to compose a short piece of minor scales with intervals. Usually, in the

later part of class, they practiced theory exercises with Sibelius notation software instead of paper and pencil. At this point, they were able to listen to the sounds of their notes and to explore various new possibilities, such as adding notes and extending phrases. Students tried the various sounds of the MIDI instruments as if they were playing a game, because the notation software made it easy to listen immediately to their results. As they listened to the sounds of their compositions on their headphones, students seemed very focused and excited; their theory practice had been transformed into musical works. The teacher did not need to lead them to compose; they naturally extended and developed their theory exercises into their music.

After that, the beginner group posted their short pieces of minor melodies and mentors commented with directions and suggestions; as soon as they uploaded their first postings, mentors took charge of the next steps regardless of the style or length of students' compositions. At that point, students began expanding the short exercises into longer pieces using mentors' detailed comments. Throughout this process, Mrs. Campbell was particularly cautious with the beginners, because the initial stage was emotionally tough even for the experienced students.

> Mrs. Campbell: I think that learning a little bit of theory first really helps them… I think I start teaching with simple A-B-A melody only. That's how I start and we go from here. It's too bad that Opus is so soon in the year for my students who are just beginning because they don't have the skill to compose for a lot of instruments… This past year, I had everyone post for Opus, but I don't want to put too much pressure on beginning students. So we can write very simple A-B-A. I might give them a little chord progression, a harmony part, and then they could write a melody to go with it (Interview, October 29th, 2009).

Accommodating different experience levels. Mentoring ultimately allowed the teacher to manage two groups of students at different stages of development. Because many students were willing to take the composition course more than twice, Mrs. Campbell separated students into two groups: experienced students and beginners. In the computer lab, the experienced group focused independently on their compositions while Mrs. Campbell taught the other three students

theory, such as scales and intervals, in the chorus room.

Even as Mrs. Campbell approached fundamental theories very explicitly and directly with her beginning students, she tended to scaffold them to build their own music. Instead of giving direct answers about how to use notation software, she encouraged students to search for answers in manuals. When students became stuck in their compositions and sought directions or solutions, she encouraged them to bring those issues to mentors while providing only very basic opinions of her own. Instead of giving quick responses, she asked open-ended questions about what the student had intended or how he or she felt with the resulting sounds. Throughout conversations, she helped students identify and verify what their problems were and how to verbalize them in questions to their mentors.

For Jonathan and Harry, her experienced students, Mrs. Campbell printed out mentors' comments; occasionally she reviewed critiques with them but sometimes simply delivered the comments to them instead. As students became more familiar with the mentoring system and notation software, they could communicate directly with mentors. Thus, at the same time that Mrs. Campbell taught the beginner group, Jonathan and Harry read comments, revised their work, composed using computers, and uploaded their revisions. For these experienced students, who were able to work autonomously, the computer lab became more than a classroom; it became more like a personal studio for creating music, where students were virtually connected with their personal mentors. This effect was particularly true for Harry, who did not have notation software at home and who thus could compose only in the computer lab. Although Jonathan did have the notation software on his home computer (he had asked for it as his last year's Christmas present), he nonetheless usually composed and revised work in the computer lab, as well.

Sometimes Jonathan and Harry shared their progress and then all students reviewed and critiqued their compositions together. Jonathan or Harry presented their pieces with simple explanations, including mentors' suggestions, and the class members--including the music teacher--offered comments. Mrs. Campbell did not directly critique students' compositions; she supports students by critically reviewing mentors' comments, realizing what they are composing, and recalling content learned from theory classes. Through these discussions, the first semester beginners naturally learned the composition procedures of other students and the mentoring process built into the mentoring system.

When I spent time with Mrs. Campbell's classes, I was able to feel Jonathan and Harry become the object of other students' attention when they shared their composing progress and their conversations with mentors. Harry and Jonathan's friends were moved when they witnessed their friends experiencing extraordinary opportunities while communicating with professional artists outside their classroom. In the school music context, the energy of aesthetic achievement and supportive relationships with professionals powerfully influenced students. The successes of students in the program influenced others outside of it, as well. Before they had received any teachers' recommendations, they had already witnessed their friends and peers as young composers, with access to the composition process, relationships with mentors, and live performance opportunities. The mentor Elliot pointed out:

> Elliot: So, with that sort of success, students talk to other students. When they bring their friends to a concert, or somebody else hears a piece and says, "Wow, that's really good," And then those other students say, "Well, I'd like to try this." So, it gives other students a chance to get involved also; it builds in that way (Interview, July 15th 2009).

About Jonathan

I do it because I like it. It's a lot of fun…
If I didn't compose, it's like losing an arm or something.
It's totally just part of me
(Jonathan, Interview, November 6th, 2009).

A bright, brilliant, and skinny boy, Jonathan was always quick to deliver his thoughts, emotions, and ideas. Whenever I met with him he was cheerful, and his composition for the Opus 19, *The Córdoban Puppet*, reflected these joyful moods. Jonathan's day was filled with music: he was taking several music classes--such as Band, Chorus, Afterschool Jazz band, Choir, and Rock band singing--and playing electric guitar for a band at his church. Jonathan had grown up in a musical family; beginning with his grandparents, almost all of his family members could play an instrument and they were all very supportive of his musical endeavors. Jonathan planned to major in composition or music education. Interestingly, this high school student already loved teaching music: he had given other children lessons in guitar, trumpet, and piano, and had even taught his brother to play drums.

Jonathan won this Opus with this joyful brass quintet. Since 2007, Jonathan had posted seven compositions for various purposes—for the Opus, the Vermont Symphony Orchestra, and also the Composition-Theory Class assignments. His pieces were chosen for Opus 17 in 2008 and 19 in 2009. All the way through his mentoring experience, Jonathan acquired techniques, skills and knowledge of composing in practice.

> Jonathan: A lot of technical stuff. If you have this chord here, you can't put this here because it will sound really bad… How to orchestrate it, how to put different parts in this, and here, so that it works together better. I think the best of what I have learned is how to do it technically. If you listen to my first piece, and then you listen to my latest piece, wow, I actually give a lot of credit to the mentors (Interview, November 6th, 2009).

I returned at the end of the long interview with Jonathan to the question why he composes, because he had fluently addressed so many ideas about motivation, enthusiasm, and the driving

forces behind composition. Ultimately, his motivation tended to focus on three things: his sense that musical ideas were running inside and through him, his willingness to organize those ideas, and his interpersonal interest in the reactions of other people to them. At the biography on the program of the Opus 19, he revealed, "*I very much enjoy composing, and can never find enough time to sit down and write more of the ever constant flowing through my head*."

The Córdoban Puppet.

Begin with melody: How Jonathan runs into five blank lines? Emphasizing original ideas in his mind, this brilliant young composer enthusiastically described precisely what he thought and did at the beginning stages of composing.

> Jonathan: Like I said earlier, I couldn't imagine not composing, because I will say that composing is writing it down. I have these ideas in my head, so I want to organize them and put them somewhere. So that's why I compose, because I have all these ideas, all these melodies, all these voicing and stuff going through my head, so why not put them down on paper and let people listen to them and see if they like them (Interview, November 6th, 2009).

Jonathan usually began with a melody or while playing instruments or singing. He worked with ideas as they arose in his mind, so that his composing behavior was thoroughly intertwined with improvisation.

> Jonathan: With the melody, either I am sitting down in front of the piano, I'll be singing, I'll be improvising, I'll be playing penny whistle. That's where they come from. What I do enjoy the most is composing the little melodies. I usually will write a melody and then fill it out around there, develop the melody. I like having that one little melody in the beginning (Interview, November 6th, 2009).

Like Jonathan, another of Mrs. Campbell's student, Harry, composed in a linear fashion; in the beginning, she created a melody while improvising and then added other 'lines.'

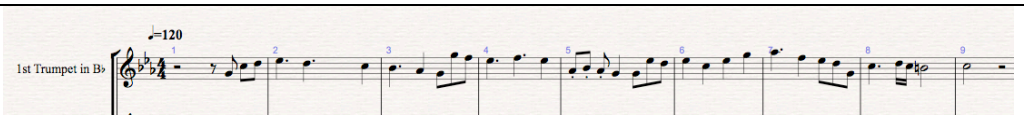
> Harry: What I first came up with was this, trumpet line, I played it on the piano, and I kind of came up with it. I improvised, and then I came up with the bass line to really give it a solid form, and then I just filled these in as they came to me. They kind of just pop into your head sometimes, and you don't have enough time to write them all down. Usually, at the beginning after I have the melody, and then I will feel confident about it

> because like I said, I really like just the plain melody. Because then I know I got a lot to go, and I look forward to filing that in. Sometimes when I don't have all those melody, I don't have any idea where I am going, that's kind of a little demoting (Interview, November 2nd, 2009).

Mentors' passionate comments on tiny melody: Jonathan's first posting. This is Jonathan's first posting: a phrase of melody with a simple description of his work. This piece captured the method Jonathan described in the quotation above, of beginning with a little melody, which just came into his mind, so that Jonathan could not yet articulate musical ideas or plans for development.

Table 9

Jonathan's First Posting with "Description of Piece" and "Request for Mentor Feedback"

Criteria	Content
Score	
Description of Piece	I honestly wish I could tell you.
Request for Mentor Feedback	This is a very very brief idea of what MIGHT come. I'm involved with a major project for the VSO right now, so that is my main focus. I simply threw together a little melody that showed some promise...So, at the moment, there is not really any mentor feed back necessary for the time being, unless you feel like you would like to critique my little pathetic sentence (which of course would be very welcome) and if you have any filler ideas, that also would be very nice. Thanks, Jonathan

Because of the rule of the mentoring project about applying to the Opus— students must post their first postings by the first posting day, which is usually 12-week prior to the Concert— Jonathan had to post his first piece even though it included only a very simple melody. At that point Jonathan and Harry were already co-composing an orchestral piece based on their class's revised story of *Peter and the Wolf*. Thus, he could not avoid throwing only a little melody together, and accordingly did not expect detailed comments. Nevertheless, mentors created

detailed and informative comments, which they believed this beginning composer needed to keep in mind when working with brass instruments: Mentor Martin and Elliot closely analyzed Jonathan's small melody, provided extra information about orchestrations, and offered strong encouragement focusing on the potential of what Jonathan had begun.

Although Jonathan had posted just a line of melody, Elliot responded with amazingly detailed comments, which were based on objective analysis but also included his own thoughts and suggestions. Elliot's analysis of Jonathan's initial melody identified the features of a good motive: fine shape, clear tonality, and a strong mood of uniqueness.

When students did not develop their piece very much, mentors usually provided general information about such issues as mood, genre, orchestration or instrumentation. This experienced composer, Elliot also gave tips for rehearsal that were also directly related to composing strategies. Although Jonathan seemed to be moving solidly ahead, Elliot double-checked and explained the reasons for potentials of his piece along with avenues for future directions. Interestingly, when I interviewed Jonathan at the Opus, he referred to Elliot's comments on how composers should deal with 'taxing situations' of brass performers even while they are still composing a piece. Jonathan clearly felt that he should Elliot's comments in mind.

Table 10

Elliot's Comment on Jonathan's First Posting

Stage	Comment
Elliot's Comment on Jonathan's Original Posting	Dear Jonathan, Thanks for posting the first melodic fragment in your work for brass. I'm so glad you've decided to enter Opus 19 in addition to your Vermont Symphony Orchestra work. Your melody shows a great deal of promise. It has a good shape, is clearly in C minor (it has moments which remind me vaguely of flamenco or Spanish music) and will, I think, give you a good core around which to build your piece. My one suggestion is that you might want to keep in mind that with a work for brass for an Opus event you must be very careful how much you write above the staff for trumpet. What you have right now works well because you go up and then back down again quickly, but the general range of the trumpet part is fairly high so just be conservative in the rest of what you write. The day of rehearsals is very taxing for the players and if there's too much high stuff they wear out by the concert with disappointing results. So just keep that in mind. Other than that, I'd say keep up the good work!

Martin also offered detailed feedback on Jonathan's simple line of melody. Focusing on stylistic issues, which were strongly revealed in this one line, he addressed rhythm in particular; comparing Jonathan's melody with the original features of 2+3 rhythm, Martin delivered a detailed explanation of the theoretical content of 2+3 Latin Clave rhythm.

Martin could not show a musical example related to this rhythmic pattern over the asynchronous form of on-line communication, so instead he linked to other sources. In music teaching, examples in recorded format can have meanings unlike scores or other written documents. When listening to musical examples, students not only think about but also feel the music. This process, in which thinking and feeling are combined, is extremely subjective, but mentors can draw out what they want students to learn; they can convey the mood and nuance of music, which are tricky to verbalize. In particular, when students do not yet have a strong *audiation* ability, the sounded examples can strongly support mentors' explanations.

Table 11

Martin's Comment on Jonathan's First Posting

Stage	Comment
Jonathan's Original Posting	First, I wanted to bring the traditional clave rhythm to your attention. You make great use of the dotted quarter, dotted quarter, quarter, syncopated rhythm. (which is your first full measure) This same basic rhythm skeleton is used in every measure of your melody except for measures 6 and 8. Most Latin rhythmic patterns (which you are certainly alluding to) use two measure patterns. One of the most common being called a 3 + 2 clave. This is a two measure pattern that goes as follows /dotted quarter, dotted quarter, quarter / quarter-rest, quarter, quarter, quarter-rest/. If you reverse these two measures, you naturally get a 2 + 3 clave. this is also very common try clapping or tapping these patterns repeatedly to get a feel for it. My point with all of this is that your melody is mostly using a one measure repeating pattern and I think it could benefit greatly from keeping this clave in mind while you do it. I've included a link to a couple short great YouTube videos that can clarify some of these ideas and let you hear some of it. These ideas are specific to strong Latin-American styles, which you may want to truly embrace or you may want to stretch away from. But either way it will certainly help to be informed about it when writing this piece: http://www.youtube.com/watch?v=cP8abnv53Z4, http://www.youtube.com/watch?v=EutyzjvCjzA

The visible feature of Martin's comment is his direct and detailed discussion of any weak aspects of Jonathan's composition. Because of his personal relationship with Mrs. Campbell—Martin was a past student of Mrs. Campbell, as well as a past participant of the Vermont MIDI Project as a young composer—Martin naturally tended to focus on Mrs. Campbell's students and received their respect as a legend among young composers in the class. Accordingly, Martin and Mrs. Campbell's students might have different levels of intimacy than other mentors would have with the same students. In his comments, Martin revealed his relationship with Mrs. Campbell in a way that expressed his trust of her and encouraged his and Jonathan's collaboration with her: he seemed to want to make the most of her ability to reach the students in person.

Table 12

Martin's Comment on Jonathan's 1st Revision

Stage	Comment
Jonathan's 1st Revision	…Also be careful not to get too locked into just tonic and dominant chords. I actually use to fall into that same trap when I was in your shoes. Just ask Mrs. Campbell (she was my teacher). I think one reason I'm so drawn to this project is that it reminds me a LOT of the second brass quintet that I ever wrote (when I was in Mrs. Campbell's class my sophomore year). See if she has a recording of it. It's called "Samba and Fugue". (I just went and listened to it and had a good laugh, what a memory) Anyway listen to it for an funny comparison NOT to get any good ideas. It's not something I'm quite as proud of any more! Oh well.

As a result of long interpersonal relationships and expertise both in teaching and learning skills as well as in the mentoring system, an intimate collaboration arose between these two experienced mentors that greatly impacted the dynamics of their triadic interactions with teachers and students. Moreover, both mentors deeply trusted the music teacher-- she was Martin's past music teacher, while Elliot and Mrs. Campbell were both current board members on the project. At almost every stage, therefore, Martin and Elliot more actively and intimately reinforced each other's comments. In particular, Martin was familiar with Elliot's comments from when he himself was in high school, and so he was also able to understand Elliot's intention and meaning better than any of the other mentors. Thus, more in-depth collaboration between the two became possible.

Table 13

Collaborative and Reinforcing Comments of Mentors

Stage	Comment
Martin's Comment on Jonathan's Original Posting	I agree with Eric that it shows great promise.
Elliot's Comment on Jonathan's 2nd Revision	I'm going to concentrate on three areas which Martin talked about last time, but in slightly different ways. The trombone is a much better instrument for this, as Martin implied.
Martin's Comment on Jonathan's 2nd Revision	Elliot has given you some great suggestions, and if I had time, I'd probably go through and second each one of them! Elliot did make a comment about the brass gliss, that I wanted to address. He's certainly right about the technical abilities of these instruments, Also as Elliot mentioned definitely make sure you get the tuba down an octave at 19. Right now the fifth of the chord (in the trombone) is below the tuba's root. This makes for an odd half cadence.
Martin's Comment on Jonathan's 3rd Revision	I agree with Elliot, that you've cleaned up a LOT of the harmonic detail in a way that is letting your content shine more and more. I also like the addition of the new triplet ideas.

Debate between the expert student and expert mentors. In their replies to mentor comments, young composers usually write expressing their appreciation for comments: what they accept from the mentors' critiques and suggestions and how the comments have helped them. Yet students are able to freely make their own decisions on whether to accept or reject the mentors' critiques. Some students addressed (a) reasons they did not accept the comments; (b) what they believed represented alternatives to the comments; or even (c) reasons for sticking with their own original ideas. Throughout this processes of verbalizing, critical reasoning, and decision-making, students can reflect on their thoughts and plans for their compositions and articulate them in practice while revising their compositions.

In his written reply to Martin's comment, Jonathan attested in detail to feeling better after receiving comments, explained how he revised his composition using the comments, and also

discussed his exploration of alternative strategies to develop his work; in this process, Jonathan truly convinced his mentors of the appropriateness of his decisions.

> Jonathan: The mentors really know what they are talking about, and give me a lot of helpful information to help me continue to grow in my musicality. Sometimes when I open it, "Oh, you want me to throw this out?" Well, a lot of times I have to compromise. They will say, "You shouldn't have this here", and I'll say, "I really want this here". So I will think, "Ok, how can I get what they want and what I want?" Sometimes I just won't keep this. A lot of the times I will do what they say, because it is usually for the best (Interview, November 16th, 2009).

Although he fully trusted his mentors, nevertheless he sometimes disagreed with their comments or suggestions. Although these disagreements did not occur often, they represented a significant opportunity for him to confirm his ownership of his compositions.

> Jonathan: Well, if I don't agree, quite frankly, it's my piece, so I will have to be a little stubborn. I can say, well, I kind of want this here. Most of the time if they really feel strongly about it, then I will take it out. But if I am too attached to it then I will leave it. Just depends on what it is (Interview, November 6th, 2009).

In his first revision, Jonathan showed a big leap of development from his initial idea: He mentioned that he was still sticking to his original rhythm pattern of 3+3+2 or 3+2+3, rather than accepting Martin's and Elliot's critiques. Although Martin had addressed issues of Latin rhythm, as well as strongly suggested related directions for Jonathan's revision, Jonathan developed his own original ideas but developed and presented alternative methods to support them.

> Dear Mentors, Thank you very much for your comments. You'll see that I've gone on a slightly different track, sort of still sticking to the basic 3+2 or 2+3 or 3+2+3 and so on, claves, but have added something different that changes the feel slightly. I think it's filled out enough, and the chord progressions are centered a little bit less than a constant one chord (which I always seem to have a problem with). Unfortunately Martin, the school won't allow me to go on YouTube, so I couldn't watch your links, but I did do a little research on line to get better associated with them. If you find any videos on Google video, I would be very pleased to listen to some stuff with the style of music that I'm writing in now. You will also notice I changed the key for the trumpets, I had some difficulty though, because it was either too high in the trumpets or too low in the tuba, but I think A minor will work fine. I look forward to your future comments (Jonathan's Reply in His First Revision, October 27th, 2009)

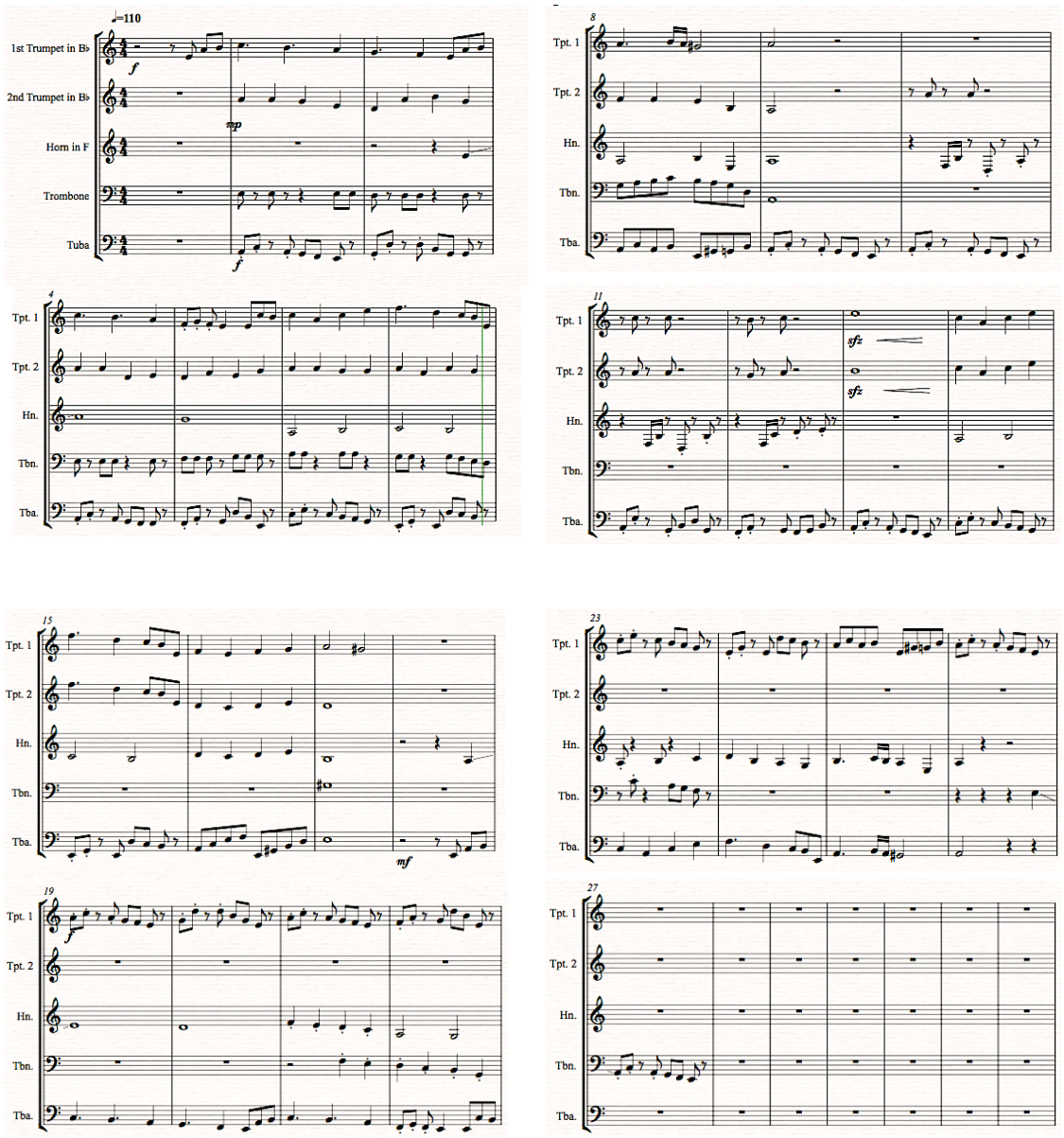


Figure 2. Jonathan's1st revision.

The following interactions between Jonathan and the mentors illustrate how he modified styles of the rhythmic melodies for the second trumpet and horn, while Martin had suggested the addition of other instrumental accompaniments as a possible alternative. This example also shows that although mentors might coach, students could recognize this coaching as support while, at the same time, exploring their own methods. In this example, this exploration resulted

in a more in-depth solution to a problem Jonathan faced. Because Jonathan always explicitly discussed his response to the mentors' suggestions, this example also makes this process and its advantages highly visible in the study.

Table 14

Interaction between Mentor Martin and Jonathan

Martin' Suggestion in Jonathan's 1st Revision	Jonathan's Reflection and Revision
And the trumpet 2 and horn both have different slower non-rhythmic layers that will add to the vertical sounds but not much to the rhythmic feel. So my suggestion would be to find a way to bring at least 3 of the accompanying instruments together, MUCH more closely. I would even venture to say thinking about it like a piano accompaniment. Maybe the tuba is the left hand and 2 or 3 other voices will make up the right hand that will surely compliment the left. (As opposed to having a piano part where each finger on one hand is acting separately).	I think it was really the quarter notes in the second trumpet that threw everything off, I just felt like I needed some solid punching so the syncopation would be more enjoyable, but after I deleted them, the melody became much more clear.

The glissandi argument between Jonathan and his two mentors exemplify the larger debate between composer-mentors and a vigorous young composer who felt a confidence in and ownership of his music. In his second revision, Jonathan added a couple of glissandi in the horn section. He had already put Trombone glissandi in his first revision, whose effectiveness Martin had recognized.

First, Elliot pointed out Jonathan's unusual use of Horn glissando and Martin expressed support for the same technical matters; both mentors recommended the Trombone glissando as an alternative. Generally, there are no reasons for sticking with a Horn glissando, because a composer can achieve more effective results using the trombone. However, this energetic young composer did "research" to adhere to his original inspiration about Horn glissando; he asked his

band director about the practical availability of a Horn glissando over a fourth or fifth, and the director gave him a positive answer. Ultimately, Jonathan decided to stick to his original plan for Horn glissando and explained his reasons and research efforts in detail to the two mentors. Of course, the mentors respected Jonathan's decision while, at the same time, noting the dependence of these special techniques on the flexibility of individual players.

This debate provided me a very interesting experience, in which I was able to witness the same episode on and offline, as well as from different people's perspectives. In the interview I conducted on November 6th, Jonathan discussed this event from his perspective with confidence, curiosity, and joy in his achievement; not only did he stick with his decision and try to conduct his own research, but even though he did not instantly accept mentors' suggestions, he considered trilling-up the notes as an alternative during the concert.

> Jonathan: My comment a couple days ago, that said, Horn can't *crescendo* from a 5th. I like it a lot, it helps to give a lot of variety to the piece. And they [Mentor Elliot and Martin] said, you can't do that. So I was like, hm, that kind of stinks. I went over to Mr. Chap [Jonathan's band director], and he said, "Absolutely [yes]." So I go, hm, that is interesting, we look at the piece, perform a little piece. So I wrote back the mentor, about *crescendo*, and said, I am going to keep mine in here. If they can't do it, I will just have them trill up to it. So usually when I open it, I am looking forward to what they have to say, because usually I know it is for the better (Interview, November 16th, 2009).

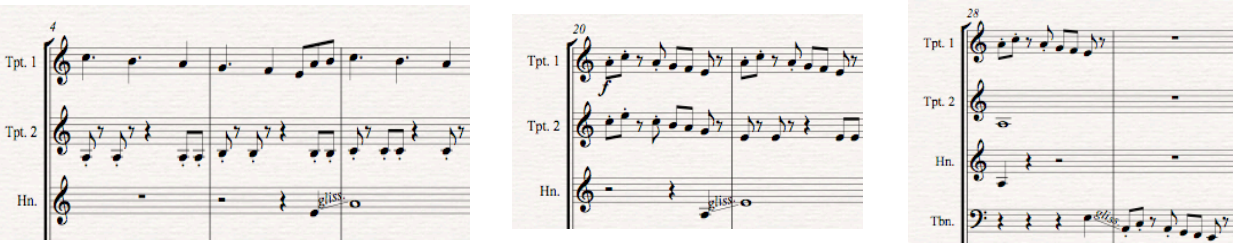


Figure 3. Horn glissandi in Jonathan's 2nd posting.

Table 15

Debate on the Horn Glissando

Student's Stage	Content
Elliot's Comment on Jonathan's 2nd Revision	First, glisses. Sorry, but unless you know something I don't, I don't think horns can slide up a fourth or a fifth as you have yours doing in bars 5-6 and 20-21, respectively. The trombone is a much better instrument for this, as Martin implied. However, it can't do any slide larger than a diminished fifth from the first position notes of (from bottom to top) B flat a 9th below middle C, F above that, B flat just below middle C, D above middle C, F above middle C (following the natural overtone series). So that E you have started on at the end of bar 28 can only go down to a B natural as it's in the F down to B natural gliss range. Please check with me if you have any questions about this or if I haven't been clear.
Martin's Comment on Jonathan's 2nd Revision to Reinforce Elliot's Critique	Elliot did make a comment about the brass gliss, that I wanted to address. He's certainly right about the technical abilities of these instruments, but I think many players are used to a few technically impossible demands like this and have ways of "making it work." It will not sound like a totally smooth gliss, so if that's what you really want then you're out of luck. But trombones definitely know how to fake glissando across a wider range then they're capable of. They do this by glissing part of the way then skipping a partial, or, vice versa. Anyway, it might be worth finding a tbone player at school and asking them to try a few things for you. That's always the best way to learn. (plus whoever you find will certainly enjoy being a resident expert on their instrument for a few minutes) The horn I'm not so sure you'll get a gliss at all, but you could get more of a "rip". This is not like a trombone but is still a way of shooting up to a note in a sort of ambiguous way. I would notate a "rip" with the squiggly line (the one directly above the gliss in *Sibelius'* line menu) if that's what you want.
Jonathan's Reply to Elliot and Martin's Critiques on the Horn Glissandi	First, lets touch once more on glissandos. I decided that I wanted to look a little bit more into this business of horns glissando-ing, (because I was almost positive that I had heard them before moving up a scale, the not entirely smoothly, in pieces I've played in band here, and music festivals). I went to my band director Mr. Chapman, and asked him if horns could glissando. He was quite certain that it was very possible, and was more technically called a "rip" as Martin said. I asked him if it was a fairly smooth transition from one note to another, at least the distance of a fifth. He told me that it was fairly smooth, and we looked at a score of one of Malcom Arnold's works "Tom o"Shanter". In the score we found horns "ripping" in some cases over two octaves, notated with a straight line in between the two notes. All this to say, I recognize that it wont be as smooth as the computer plays it back for me, but nevertheless, Mr. Chapman said it was quite possible for the horn to "lip" it, especially in the upper octave (which I've done). I have tried this part with the trombones, but I simply don't like the way it sounds.
Elliot's Comment	Thanks also for taking the initiative to do some research about slides and glisses. All brass players can "lip and rip", I just wanted to give you the lowdown on real glisses. Your trombonist can probably make the E-A gliss work by sliding down to a B and then skipping to the A. In any case, it all depends on knowing your players and how flexible they are.

Praise. The mentoring project recommended the "sandwich" format of "praise-critique-praise" as an effective mentoring strategy. Mentors usually tried to give complimentary comments, which appeared in both greetings and critiques, as well as general, closing-type comments. In Jonathan's case, too, this sandwich format provided a basic structure for commenting: all comments began with admiring comments in the opening and ended with closing praise to encourage revision. In the opening praise, mentors recognized and respected what students had already accomplished. Both Elliot and Martin similarly began their comments to Jonathan by summarizing what he had revised, developed, and explored, using a format that involved both praise and recognition.

Table 16

Opening Praise

Stage	Comment
Elliot's Comment on Jonathan's Original Posting	Your melody shows a great deal of promise. It has a good shape, is clearly in C minor (it has moments which remind me vaguely of flamenco or Spanish music) and will, I think, give you a good core around which to build your piece.
Martin's Comment on Jonathan's 1st Revision	You have some cool accompaniment ideas, an interesting bass line and, and some more interesting melodic rhythms.
Martin's Comment on Jonathan's 2nd Revision	Jonathan, Thanks so much for your revision. This is absolutely the kind of revision that reminds me why I love composition mentoring! You really took my suggestions to heart in a very effective way, and found your own solutions that have strengthened your piece in a huge way. Really great work. It's not easy to take a rather abstract musical concept from one of my rambling comments and really grasp it the way you have.
Elliot's Comment on Jonathan's 5th Revision	Jonathan, you've really done a lot of work on this and it shows. Now if you can finish off today you can breathe a sigh of relief. Now matter how the voting goes this piece shows tremendous progress over last year's work and even over the VSO piece as you've had to do more sustained work here.

The significant function of ending praise is that it encourages the revising process; Martin and Elliot would thus end their comments with appreciative statements and expectations for Jonathan's next posting.

Table 17

Ending Praise

Stage	Comment
Martin's Comment on Jonathan's 1st Posting	This piece has so much potential, and I'm definitely excited to see what you make of these comments and how you will revise your piece. I have more ideas about the other parts you've added, but I think for now this is probably enough for you to work on.
Elliot's Comment on Jonathan's 2nd Posting	You've made progress on the piece. You've cleaned up a lot of the harmony and your new material starting at 29 really works well with the quarter note triplets. I especially like how you build to a climax at 26. That's really exciting. I also think your plan to change tempo, ditch the ostinato figure for a while and emphasize new chords is a sound one.
Martin's Comment on Jonathan's 3rd Revision	Can't wait to see what you come up with next. Great work, and keep it up.

The Patterns: Praise-critique-suggestion. In the responses within this mentoring system, a set of *critique-suggestion* usually repeatedly follows *praise*. I named this system *the Pattern* and I defined it as the main structure in which to explore mentors' comments. Under or overlapped with the sandwich format of praise-critique-praise, *the Pattern* usually begin with praise placed in the opening or middle of comments.

I was able to locate several examples of *the Pattern* in Jonathan's composing and mentoring process. In his comment on Jonathan's short original melody, Elliot first offered a compliment on the use of the trumpet and then followed with a critique of instrumentation and suggestions about the practical constraints of a live performance.

Table 18

Example of the Pattern: Praise-Critique-Suggestion (a)

Stage	The Pattern	Comment
Elliot's Comment on Jonathan's Original Posting	Praise	What you have right now works well because you go up and then back down again quickly,
	Critique	but the general range of the trumpet part is fairly high so just be conservative in the rest of what you write.
	Suggestion	The day of rehearsals is very taxing for the players and if there's too much high stuff they wear out by the concert with disappointing results.

Martin also began by recognizing Jonathan's skilful use of dotted rhythm for syncopation, and then moved to a detailed critique and explanation of the traditional practice of Latin rhythm. Considering the features of Jonathan's melody, he addressed the differences between one- and two- measure patterns.

Table 19

Example of the Pattern: Praise-Critique-Suggestion (b)

Stage	The Pattern	Comment
Martin's Comment on Jonathan's Original Posting	Praise	You make great use of the dotted quarter, dotted quarter, quarter, syncopated rhythm
	Critique and Suggestion	This same basic rhythm skeleton is used in every measure of your melody except for measures 6 and 8. Most latin rhythmic patterns (which you are certainly alluding to) use two measure patterns. One of the most common being called a 3 + 2 clave. This is a two measure pattern that goes as follows /dotted quarter, dotted quarter, quarter / quarter-rest, quarter, quarter, quarter-rest/
		If you reverse these two measures, you naturally get a 2 + 3 clave. this is also very common try clapping or tapping these patterns repeatedly to get a feel for it. My point with all of this is that your melody is mostly using a one measure repeating pattern and I think it could benefit greatly from keeping this clave in mind while you do it.

In the initial stage, Jonathan tended to have less organized ideas about how to bring together instrumental parts. Martin commented that each part worked well independently while

the combination seemed to result in a fight among the different pieces. Thus, he suggested places where Jonathan could focus and how to turn other lines into accompaniment.

Table 20

Example of the Pattern: Praise-Critique-Suggestion (c)

Stage	The Pattern	Comment
Martin's Comment on Jonathan's 1st Revision	Praise	You have a lot of good ideas, some of them are melodies, some counter-lines, some bass-lines,
	Critique	To start getting to more of the critique, I think the biggest issues with your piece right now is the clarity of your material… and they're all fighting for my attention rather than working together… Now your piece doesn't sound dramatically chaotic, but the fighting for my attention somehow lead me to that analogy.
	Suggestions	Now to me it's obvious that the trumpet melody is what you want the central focus to be, so in order to help bring clarity to that idea, we need to look at the accompaniment.

Elliot commented on the equilibrium between the melody and harmony of Jonathan's piece. After acknowledging Jonathan's improvements, he followed with critiques and suggestions for solving dissonances in the overall piece.

Table 21

Example of the Pattern: Praise-Critique-Suggestion (d)

Stage	The Pattern	Comment
Elliot's Comment on Jonathan's 2nd Revision	Praise	My third area is harmony. You've improved some places,
	Critique	but there are still too many bars where the melody and harmony don't line up, especially places like the downbeat of bar 9 (and 17, etc.). This is where just playing through with chords can help figure out what works. The melody is really crying out for a iv chord there (D minor).
	Suggestions	Try one out and I think you'll find it will sound much more integrated than what you have and will eliminate the conflict Martin was talking about last time. I'd go through the piece carefully and be really analytical about the harmony. Where there are dissonances that don't resolve, change them to make the piece clearer and more effective.

Move forward or zoom-in and refine.

Giving directions. In addition to providing critiques, another significant role of mentors is to map the overall intellectual directions young composers without limiting their own thinking and planning processes. Usually, at the beginnings of their comments, mentors would present large maps side-by-side with compliments.

For Jonathan, to help students understand this big leap from what might have been a tiny initial posting, Martin would begin with a "boiled-down" summary that conveyed his understanding of what the student had done. Usually, these summaries provided students a chance to quickly grasp the entire body of a composition from an objective perspective, which the composers themselves could not easily grab.

In particular, in their comments on Jonathan's original posting of a short melody, the mentors refrained from giving directions, so as not to limit or influence Jonathan's initial idea too much. But beginning with the first revision, in which Jonathan fully developed his own ideas and shaped the overall form of his music, his mentors began to summarize what he had done while at the same time providing him with directions for future work. Providing overall directions at the appropriate point during a student's composing procedure can help to prevent a student from getting stuck without a sense of where they are headed next.

Move forward. Composing contains the flow of time in the form of sounds. Composers produce notes, develop melodies, and fabricate layers in order to move to an objective point, to fill the space between their starting and ending notes. Mentors thus comment only after students have already made some sort of musical move within this space.

The following examples indicates how Elliot let Jonathan know of appropriate points in time, reasons, and strategies for moving forward to the next stage of his composition.

Table 22

Examples of Comment on 'Move Forward'

Stage	Mentor	Giving Directions and Intellectual Maps
Jonathan's 2nd Revision	Elliot -Ending comment	Jonathan, you've made a lot of progress on your piece and I think you have a chance to make an effective quintet. If you can look carefully at rhythm and harmony in particular and also spend some time figuring out where the piece is headed next, you ought to continue to move forward
Jonathan's 3rd Revision	Elliot -Ending comment	Jonathan, you've made a lot of progress on the piece. Now if you can keep attending to things like harmonic detail, dynamics, articulations and then the arc of the rest of the piece, you will continue to move forward.

Zoom-in and refine. If mentors facilitate quantitative progress by encouraging students to move forward, they also help ensure qualitative improvements in diverse and detailed musical and pedagogical matters. Mentors' capacity for generalization plays a significant role in supporting students' progress in the refining stage. Generalization is rooted in mentors' situated insights and wisdom from their experiences as composers, in their interaction with Jonathan, Martin and Elliot commented by drawing on skills, knowledge, insight, and wisdom from their own real-life experiences as professional composers. In facing Jonathan's compositional challenges, mentors were able to extend the specific content of his piece to generalized subject matter based on their insights and wisdom.

Martin addressed some points of generalized music knowledge based on his experiences as a composer. He first mentioned the mood of Jonathan's piece and then addressed the function of the bass line in producing that mood. Finally, he extended his ideas to the integrated relationship of mood-rhythm-bass line-harmony issues in creating music.

Table 23

Example of Comment on 'Zoom in and Refine' (a)

Stage	Comment
Martin's Comment on Jonathan's 1st Revision	This is really in a dance-like feel and the rhythmic clarity and drive is crucial. I think the bass line is right on the money in terms of achieving that drive, so see if you can find a way to fit in the other parts. This will probably include doing a harmonic analysis of what you've written. Figure out what chords your melody and bass line implies, or what other chords they COULD imply.

Although inversion and sequencing are general composition techniques, Martin considered them in the specific context of Jonathan's music and offered possibilities with their likely results.

Table 24

Example of Comment on 'Zoom-in and Refine' (b)

Stage	Comment
Martin's Comment on Jonathan's 2nd Revision	Lastly, as you wrap up this section, and you consider developing your material leading to a new section, or you consider ending the piece, or whatever you have planned, I just have one suggestion for a way to develop your material. The trombone motive at measure 29 is something we've heard a LOT throughout this piece so far. I think developing this idea will be a lot more effective than just passing it around if you plan on using it more in the section(s) to come. Two very effective (and very audible) techniques you could try on this motive is inversion, and sequencing. It has such strong rhythmic character that inverting it will still be very easily heard by the listener as the same material. Also sequencing or transposing this idea might help you to get to another key, or another chord that our ears are craving after all this A minor. This is just a thought to keep you going as you progress and revise.

Clara: The Triad with Beginner Composer

It is good because they are professionals,
so what they are saying is valid obviously, and good insight to how I can better it.
I like constructive criticism.
It doesn't bother me at all, I like it
(Clara, Interview, November 10th, 2009).

Clara is in the 11th grade. She is willing to major in Psychology if she can also minor in

music. She has a very musical father, who is a self-taught drummer in an amateur band. She is involved in the choir and women's ensemble as after-school activities. Unlike other students, including Harry and Jonathan, Clara has never taken private music lessons but still has a very good sense of music. Thus, she is often able to post her harmony practice to the mentoring site faster than her other classmates.

Clara's motivation for taking the MIDI Composition Class is intrinsic and aimed at intellectual fulfillment, thus focusing on more cognitive aspects of musical experience.

> Clara: I have always been interested in music. Yea, I took this class because I wanted to be able to write music. Not just by ear, which is what I always do. I want to be able to know what I was doing. Do things on purpose instead of just hear it and have a meaning. Well, composing I can use instruments like violin and cello. I really like how those sound (Interview, November 10th, 2009).

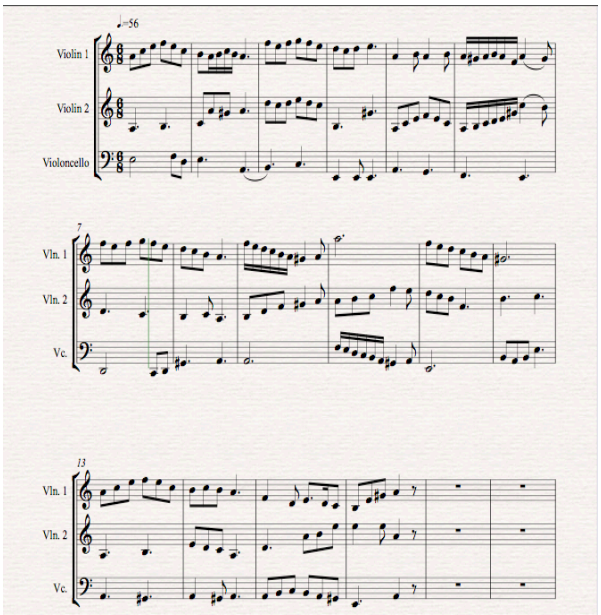
Clara's first posting of *Minor Melody*.

Clara's first piece included two postings, each of which consisted of Clara's original posting and her first revision as a theory exercise. Nevertheless, I chose her first composing experiment because (a) it showed the procedure and method by which students develop from theory practice to compositions throughout the mentoring process, (b) while this was her first experience in composing, Clara had already presented her own composing strategies and ideas, and (c) her music showed a well-balanced structure for each instrument with a fluent melodic progression and a securely supported harmonic basis. This short beginning piece already included *variety and unity*. Clara's music teacher, Mrs. Campbell, mentioned Clara's exceptional sense of harmony.

> Mrs. Campbell: I'm just saying that a lot of music that they listen to doesn't have a lot of harmonic structure when they're concentrating on a melody… Some students, I think Clara, when she writes the melody, she hears the harmony in her head. I think she's very good at writing a melody and then just putting one line to go with it and harmonizing it (Interview, October 29th, 2009).

Table 25

Clara's First Posting with "Description of Piece" and "Request for Mentor Feedback"

Criteria	Content
Score	
Description of piece	I decided to join MIDI composition to help better my knowledge in basic theory. This is my first time formally writing a piece of music and have basically been doing it by ear while taking notice to what make sense theoretically.
Request for Mentor Feedback	I would greatly appreciate any constructive criticism towards any aspect of this piece…Any suggestions towards where I could expand certain parts, or where I could go with it next would be very useful. Specifically if you think certain parts are too busy, or some parts don't belong, or it simply becomes too repetitive etc.

Clara's self-description of her piece explicitly conveys her precise motivations for learning composition—which are related to the expectancy-value theory, particularly 'utility value.' She chose this MIDI Composition Course based on her own goals. Although this piece was her first composition, she noted her process and strategies for making music; she recognized the balance and cooperation between ear and brain in creating music. She discussed her attitude of appreciation and openness to mentors' critiques. In particular, she anticipated which features of her pieces should be altered: those that were *"Too busy, don't belong, or [were] too*

repetitive." In other words, her short request for mentoring showed that she was already able to identify the qualities of a good composition.

Clara was very excited about receiving mentors' comments. Although she had uploaded only her minor scale assignment, the mentors responded in detail; their attentive comments transformed a theory assignment into a composition.

> Clara: First getting it to first expressing yourself, first hearing it, not only in your head, other people can hear it, too. Other people can respond to it and give me feedback, and then listening to the final product is also a good part… I was glad, because he [mentor] has very detailed things for me to change, so it was good. I can just change those (Interview, November 10th, 2009).

From theory exercise to musical piece.

Elliot's comprehensive comments. Providing Clara with a sense of intimacy and respect, Elliot opened his comments by welcoming her to the online community and giving her a compliment. A broad and positive overview at the beginning of the comments generally provided young composers with a confidence and comfort that allowed them to receive detailed critiques with an open-minded attitude. First, the overview analysis, which recognized Clara's work with terms like "already show" and "what you have done," made her comfortable and confident and thus enabled her to move forward. Elliot reminded her to discover what she already had completed and generated. Elliot then focused on more specific features, providing a very detailed analysis. Interestingly, as Mrs. Campbell noted, Elliot also immediately recognized Clara's strong sense of harmony: both her teacher and this experienced mentor agreed about her specific talents. In his first comment, Elliot broadly touched on almost all of the following musical aspects: harmony, melody, notation, tempo, dynamic, and structure.

After acknowledging the strong features of most of the piece's harmonic progress, Elliot pointed out the weak harmonic construction at the beginning of the composition. Using *the*

Pattern of "praise-critique-suggestion," he proposed that Clara re-arrange the cello and violin parts instead of simply change their notes, in order to take account of the appropriate and effective ranges of those instruments. As this comment suggested, in real composing situations, each component of a piece of music is organically related rather than being a theory exercise, which is intentionally tailored to exemplify distinct musical features. In suggesting revisions, Elliot consistently encouraged Clara to consider the overall sound of her composition. He explained the theory behind decisions about sounds, but moreover, he connected those decisions to expectations about how sounds would be heard and experienced by audiences.

Table 26

Elliot's Comment on Clara's Original Posting: Part A

Stage	Content
Elliot's Comment on Clara's Original Posting	Dear Clara, Thanks for posting the first version of your piece for two violins and cello. Welcome to the Vermont MIDI Project and the world of composing! You already show in your piece good melodic and rhythmic sense and an overall strong grasp of harmonic principles. This is a really successful start to your piece. I like a lot of what you have done, especially the first violin melody and the descending bass line in cello in bars 5-7. I have a few specific things for you to note and then I'll talk a bit about the future of the piece, that is, where it might be headed. First, most of your harmonic positioning is effective, but watch out at the beginning. Starting off the piece with a second inversion chord is a really weak way to begin as such chords are unstable and not very strong. So I'd suggest you consider flip-flopping the cello and second violin parts, giving the cello the second violin's first two bars (but down an octave) and giving the violin the cello part but up an octave. I'd also make the final note in bar 2 in the new second violin part a C (actually a middle C quarter and then an octave higher eighth to avoid a 9th leap going into bar 3) to give the chord some harmonic content. It's a bit early for just an open octave between the parts, which I'd suggest you save for a later dramatic moment, as octaves tend to REALLY get our attention and you don't want to overuse such an effect.

In this exchange, melodic progress is associated with other facets like harmony and practical notation. Elliot used generalization, enabled by his expert accumulation of skills and knowledge, to point out some of Clara's "unintentional" melodic progress, which resulted in

what an audience would experience as a “fragmented sound” of “unintentional dissonance.”

An appropriate tempo and dynamic turns a gathering of notes completed as an exercise into a real musical piece. Through his detailed explanations, Elliot showed Clara how to identify a suitable tempo, dynamics, and delicate articulations; he noted that tempo was not just a matter of literal speed, but rather of perceived pace: “*not race like, but a bit livelier*.” Even though he gave an exact range of tempo, Elliot confirmed her own decision as “*Try these and see what you think*.”

Elliot also consistently encouraged Clara to move forward. In addition to the aforementioned refining processes, which transformed theory exercises into compositional pieces, expanding their pieces to a reasonable length was another challenge students faced. Elliot suggested using appropriate harmonic progress, which provided effectiveness avenues of development, as well as exploring new themes alongside original ones. Finally, Elliot closed his comment by offering a treasured caveat to this beginning composer: “*A good deal of it is really pretty small and particular*.”

Table 27

Elliot's Comment on Clara's Original Posting: Part B

Stage	Content
Elliot's Comment on Clara's Original Posting	Second, watch out for big leaps as you have in second violin going from bar 3 to 4 and 4 to 5. They split up the part so it sounds fragmented. Moving the first note of 4 and 5 up an octave will eliminate the problem. Along the same lines, that tritone leap from D to G# in cello going from 7 to 8 is awkward. How about an E quarter followed by the G# as an eighth? Next, watch out for unintentional dissonance, such as you have between the violins on the third eighth in bar 8 and the second and third eighths in bar 14. There's no reason for these clashes, so keep whichever note is more important to you and change the other note to harmonize with it. Finally, we don't use half notes in 6/8, so the cello half notes in bars 1 and 7 need to become a dotted quarter tied to an eighth. As for the direction of the piece, I have three comments. First, I think the piece might sound better with a quicker tempo, not racelike, but a bit livelier, such as dotted quarter = 72 or even 80. Try these and see what you think. Second, dynamics and more articulations will help define the piece and will give you ideas for more music, such as repeating a phrase as an echo, first time f, second time p. Finally, in order to move forward, you may need to make what is now your final bar more open-ended by not ending on an A minor chord on the second half of bar 16. If you either stay on the E chord for the entire bar or move to a new chord it will give you momentum to move the piece forward into something different, even if it's just a new harmonic area, such as D minor. However, keep in mind that you only have about 35 seconds of music so far, so you could work some more with the first theme, especially as it's only been partly stated the second time. You could spend another 4 bars gradually changing material over toward a new theme and/or a new pitch area (C major would work as well). In any case, I think you need to open up bar 16 more so the piece can move forward.

Cellist commented. Moore's comments on instrumentation made the situation dramatically more realistic than a theory book could. As a cellist, composer, and music teacher, he provided thorough, situated skills and knowledge in string instruments. Like other mentors, he began his comments by showing favor for Clara's composition. Instead of evaluating decisions in terms of being correct/wrong, he used terms like "*goes comfortable*" or "*easily go*." He also mentioned that the flexibility in the range of each instrument would depend on an individual musician's skills. By explaining music in terms of a real performance situation, he introduced genuine aspects of music creating rather than just theory in books.

Moore referred directly to Elliot's comments on melody. Mentors' comments are open to the entire community—all students and mentors are able to read each other's comments. Mentors often agree with each other, because effective mentoring depends on selecting a couple of the most fundamental and significant aspects in a piece, and it is more natural and effective to summarize, reinforce, or emphasize other mentors' comments rather than simply to repeat similar things.

Table 28

Moore's Comment on Clara's Original Posting

Stage	Content
Moore's Comment on Clara's Original Posting	Hi Clara, Nice work with your trio so far. I like your melody and the imitation between the parts. Elliot has covered many of the things I would have pointed out- big melodic jumps that break up the flow, chord voicing, and tempo. Go through his comments carefully and write us back if there is anything you don't understand. As you continue keep in mind the range of the instruments. The cello so far is only using the bottom three strings. The range of the cello goes comfortably to the middle of the treble staff and beyond. The violin can easily go to the E above the treble staff and beyond. This range is somewhat diminished if you intend it to be played by beginning students (to D above the bass staff for cello, first B above the treble staff for violin). Also, as you have it now, all the instruments are playing all the time- which is totally fine- but as you write keep in mind that you have the option to use different combinations of instruments (and solos). That's it for now. Keep up the good work!

Conclusion of Mrs. Campbell's Case

Mrs. Campbell's sense of self as mediator is rooted in the relationship between her students and their mentors: Her 15 years of experience with the mentoring process have made it possible for her to play a unique role in her class. Fascinatingly, her role involves floating flexibly between students' and mentors' stances rather than maintaining a third stance that is additional to students and mentors. When Mrs. Campbell reads mentors' comments with her students, she tends to take on her students' stances. When she talks with her students, she implements mentors' perspectives. Accordingly, she is able to reinforce mentors' views or to

learn how mentors comment in each individual situation.

Although she does not directly teach composition and does not see herself as a composer, Mrs. Campbell's role as a facilitator and initiator of her students' compositions is essential. When moving to the composition process, Mrs. Campbell encourages students to discuss their pieces, thoughts, ideas, and peer critiques. Naturally, in this process, students develop the ability to verbalize and reflect upon their own ideas and their connections with musical content. By writing replies to mentors and reading mentors' comments as well as by participating in these intensive discussions, Mrs. Campbell's students logically foster their verbalization skills in various formats of speaking, reading, and writing.

Before they set out to compose music, Mrs. Campbell guides her students to engage with music theory. Using this approach, students build naturally from very short note-to-note exercises to create extended, structured phrases. Using the form of theory exercises, the teacher provides students experience in writing notes on the five-line staff. Mentors intervene in this process based on the teacher's decisions about appropriate timing. As soon as students posted their first trial, mentors gave comprehensive comments based on their experiences and wisdom as professional composers. Thus, students were able to begin by expanding their short exercises into longer pieces by using mentors' detailed comments.

The triad of experts: The Teacher Mrs. Campbell- Jonathan- Martin and Elliot.

In this mentoring system, the working triad is composed of the expert teacher, the expert mentors, and the expert student-composer. Jonathan was an expert student not only in composing, but also in the mentoring system. As a board member and representative mentor, Elliot was familiar with commenting on Mrs. Campbell's students; the teacher understood the system very well as the co-founder and current president of the Vermont MIDI project.

This particular triad also contained complicated personal relations: although Martin mentored Jonathan during this period, Mrs. Campbell had taught Martin in the past and Elliot had previously critiqued his whole compositions. Thus, Martin was able to understand deeply how Jonathan felt and thought, as well as how Mrs. Campbell managed him during classes.

Based on their experiences of extended periods in the mentoring system, along with their aforementioned personal relations, all of these individuals had a mutual and sturdy faith in each other and the process they were engaged in, and active and in-depth interactions took place among them. Martin and Elliot tended to directly comment on Jonathan's composition, even pointing out its faults, and to give detailed comments, which were relatively longer than those they provided for other students. They engaged in both practices because they recognized Jonathan's capability as well as the teacher's competence to guide him. Simultaneously, Jonathan was able to discuss in detail how the mentors' comments helped him, how he felt during composing, as well as why he did or did not agree with his mentors' suggestions, which allowed everyone to actively make decisions both in accepting and rejecting comments based on his thoughts.

In-depth interactions based on prolonged truthful relationships powerfully support the student's ownership of his piece, the process of composing, and even the interactions surrounding that process; this expert student was able to reflect on, explore, and articulate just as were his mentors, who are also able to actively coach and support him by providing detailed and advanced feedback. Throughout a set of diverse procedures, practices, and interactions, Jonathan finally realized the transformation from "this music" to "my theme" in the composition process; for him, composing went together with the process of recognizing ownership of his compositions.

> Jonathan: Really in my sophomore year, I was kind of just fooling around. I didn't really know what I was doing. I had this melody, I loved that melody. I am actually going to do

> that for my next Opus melody that I picked myself because that is kind of my theme. I have my own theme. I worked to set (Interview, November 6th, 2009).

Triad with a beginner: The Teacher Mrs. Campbell-Clara-Mentor Elliot and Moore.

This triad shows the process, methods, and strategies by which the student and mentors expanded from theory exercises to compositions: At the theory exercise stage, Clara focused on the given task of the harmonics of music. But as soon as Elliot illuminated macro-features of her music—which included harmony, melody, notation, tempo, dynamics, and structure, all from the perspective of a composer—and as soon as Moore broadened her eyes to practical features of real instruments, Clara was able to transform her theory exercise into a musical piece. She also communicated with mentors by reflecting on their comments and expressing her intentions about her own revisions.

Another strategy that puts novice student composers into the world of a real composer is the idea of considering audience as well as thinking about real sounds. In theory practice, students only contemplate the appropriateness of their answers within given rules or tasks. However, mentors guided students in how composers, from the earliest stages of creation, consider the actual sounds of music.

Therefore, when dealing with students who had never composed, mentors first recognized what students had already constructed in their first postings, and then enlarged students' perspectives to take comprehensive account of a range of issues, from diverse components of the musical score to the context in which the real music would be played and heard.

Chapter Five

Mr. Stanley: A Man of Inspiration, Belief, and Passion

Mr. Stanley, who was tall, handsome, and sensitive, very politely treated me as a guest in his classes, each of which seemed like an episode in a drama. He provided every convenience for me to conduct detailed observations and interviews, just as he prepared every convenience for his students composing; because of his courteous care and his strong connections with his students, I was able to remain an observer rather than participate in his class.

In this second case study, I explore Mr. Stanley's inspirations, beliefs, and motivations based on his passionate practice of teaching composition infused with improvisation. Mr. Stanley's students Allen and Sam participated in my study, and Sam was chosen for the Opus on his first try. As Jonathan and Clara were representatives of the expert and beginning composition student in the previous chapter, Allen and Sam represent the unique musical backgrounds of rock and classical music in this one.

Mr. Stanley

In 2006, one of his students introduced this mentoring project to Mr. Stanley. At that time, the student had participated in the project as an independent mentee of Elliot's. When Mr. Stanley witnessed the innovative influence of the student on the whole class, he decided that his entire class would participate in the Project. The class changed more and more to take account of students' processes of creating. Most of all, their considerate relationships with mentors touched the children: as Mr. Stanley noted, he would encourage his students to *look at the "positive praise and understanding" of professional composers!*

> Mr. Stanley: I was just attracted to the creativity of it. I saw that it was something that brought something out in him. Also, what was really important in the class culture is that students saw him and said, "Oh! He's doing this. He's figuring it out. He can do it." They saw him get positive praise and understanding and things like that. They said, "Ok. I like

that idea. I'm going to go in that direction…" So enthusiasm builds enthusiasm. Success builds success (Interview, November 20th, 2009).

Mr. Stanley's Motivation and Beliefs in Teaching Composition

You always have to open the door to the opportunity.
You don't know what is coming down the line.
I was inspired. I've come to grip with my musicianship…
For me, music is never about isolating
(Mr. Stanley, Interview, November 4th, 2009).

Beliefs in music.

The most visible feature of Mr. Stanley's teaching practice is his ability to catch teachable moments at which to deliver and apply musical knowledge to each student's situation. For him, music is not limited to textbooks or classrooms; it is the structure of reality for him and his students, a daily practice. His philosophy of teaching reflects that feeling.

> Mr. Stanley: It's all the same thing, like, if I am teaching concert band, if I am teaching jazz band, if I am doing music theory, if I am doing hip-hop, for me it is about making the kids feel excited, feel love, feel enthusiasm. So I try and just bring that to every experience that happen. I think the priority is being present with the kids, just sitting with them and being engaged with them, letting them know I am listening to them and taking them seriously... The kids are direct into real-life experience. It's not practice; it's not plastic. It's like a direct link into art. They're making art instant (Interview, November 20th, 2009).

Like Mrs. Campbell and Elliot, Mr. Stanley recognized his class as the only place where students could learn how to create music; he fully appreciated the valuable and significant opportunity that these creative moments represented.

> Mr. Stanley: I think that it's something that kids have never done, and will probably never have the opportunity to do if I don't open the door for them to be able to do it... It [The Project] makes them feel like they are part of a community that otherwise they wouldn't be a part of. It takes them out of this building. The kids have an identity there. They have a certain way they act in here, they react with teachers in a certain way. They may be very shy, they may be very exuberant like that. But if they tab out into them in the MIDI project, you can re-invent yourself. You have a new character, you are putting out yourself musically, you are expressing yourself (Interview, November 4th, 2009).

He described in detail how students could change through their experiences in creating music and how a sense of ownership of one's music contributed to these changes. For him, music, and more specifically opportunities to *create* music, provide his students with a chance to discover a new version of themselves, to give voice and thus sustenance to their minds and souls, and to re-evaluate their sense of self-worth; teaching composition ultimately became a matter of identity rather than just of knowledge and skills.

> Mr. Stanley: If the kid can see that they are something more than what they thought they were before… I and Elliot were just talking about this. Like, they don't feel good about themselves, they feel misplaced in this school. But if they are making music, writing music, if they are expressing themselves, they realize that they are more than they thought they were. And the agency brings in creativity, expression, perseverance… broadening the kids' experience… and me as well (Interview, November 4th, 2009).

At this point, I began to understand why Mr. Stanley had brought up his past experiences with one of his own excellent teachers and with an extraordinary student. A particular music teacher with whom Mr. Stanley had studied had led him to experience the sheer power of music, and those experiences helped him rebound from challenges in his own life. As a teacher, he had also worked with a capable student whose discovery off the world of creating music and of his own talent for composition, led him to various milestone achievements that encouraged him to surmount the tough realities of his life, including a difficult family background. Mr. Stanley had thus fully experienced from all sides how music can influence an individual's life, and this experience and awareness had made him passionate in his encounters with each student in his classes.

Beliefs in students: Agents of their music.

As I spent time in his class and had conversations with Mr. Stanley, I came to realize that another origin of his steady passion for teaching music was his devotion to and enthusiasm for his students; this devotion was rooted in his own musical experiences over his whole life and

culminated in his belief in his students' abilities. This conviction was also the reason he continued to teach band, composition, and to encounter various children in his alternative space, the band room.

> Mr. Stanley: You've got to believe, OK? You got to have faith that it's there. You've got to approach a student. You've got to believe there is something in there that could come out. You can trust in that... You have to believe what the kids put out will be OK. And if it's not, you can let inspiration lift, you can let, you can confront any problem. If you have, love knows how to respond to any situation correctly. Love never says "boy, that is stupid." So you need confidence, you need to know what you are talking about, but you also need to just believe in the student (Interview, November 4th, 2009).

Mr. Stanley addressed the issues that he focused on while teaching composition. He recognized that students' composing activities were not limited to the band room, but instead were shaped by their daily lives as well as their characters. He stressed that his role was to bring students into contact with music that they had never experienced, while taking account of their own inclinations. He gravitated toward this role because students' musical preferences and music-making strategies were generally already fixed by the time they got to Mr. Stanley's class, and they would be unlikely to stray from those tendencies on their own initiative: "*How do you get them out of their comfort zone? What's the edge for them? What's the thing that they have to do next?*"

However, most of all, Mr. Stanley tried not to interrupt students during active teaching and playing moments such as too direct coaching or straight critiques; he sought not to come between students and their music. In keeping with this goal, if he interacted with students who were composing, he would do so by sit beside them and maintaining eye contact during their conversation, rather than look at the computer screen to observe their compositions as they worked on them.

> Mr. Stanley: If I am over the kid's shoulder the whole time, they don't have time to work, they don't have time to think, they don't have time to process. If I am constantly haunting

> the kids, they don't have time to have their own ideas to come out. They don't have time to have their own sort of ideas. I always walk that line. I want the ideas to be the kid's own ideas, I want their own statement, their own themes, their own melodies to come out. So at first I was a lot more hands off, and I think I am more hands on than I used to be. I am getting in it a little bit more, and what I realize is that the kid may have a great idea, but it's my job to show them how that idea can be contextualized. How it can be expanded (Interview, November 4th, 2009).

Mr. Stanley insisted that composition was connected to the '*soul*' of students. To describe the nature of composition, he used psychological and affective terms such as '*feel'*, '*inspiration'*, and '*enthusiasm,'* and used the metaphor of a '*conduit'* to picture composition as a medium. He seemed enthusiastic about the unique role that he played as a music teacher in drawing out this deepest dimension of students.

> Mr. Stanley: A composition is something that came from inside the student. Exercise is something that I tell the student to do. I think it's the greatest thing. That is my goal… I want the student to feel inspiration, enthusiasm, expression, and more... And the part that is the student, their soul. I want that part to come out. Composition is about manufacturing. It's the medium. And to me, that is what I think of when I think of agency. It's a conduit, it's a channel. C O N D U I T! The music, the form, is a conduit for spirit, for expression, for soul (Interview, November 4th, 2009).

Although I did not use the term agency during interviews, Mr. Stanley nonetheless talked about students as agents of their music. We thus were able to have a discussion about the differences between agency and motivation in creating music.

> Mr. Stanley: I have motivations, I have respect for my colleagues, I have professionalism. Those all motivate me to do a good job. But the motivation for what I do every day, why I wake up and I am happy to come to work is because I have the potential to inspire. Inspiration is the agent (Interview, November 4th, 2009).

In addition, he stressed that students might have stronger ownership while creating music than while participating in band, which he also taught. In the band, as a leader, Mr. Stanley brought students to a higher and better level than they had accomplished before, but during composing, students were more autonomous leaders of their own development.

> Mr. Stanley: I get to know each kid has their own personality. I am working with their strength and their weaknesses. When I am really working with the ensemble, I am the leader, I am bringing them to a place they haven't seen. With the composition, they are the leader, an agent… which is the motivation within the kid. Their convergence, their agency, their thought… The kids have ownership of that. If the piece is theirs, it's not mine. So the kids, they own the piece, and I am just, I can point at their piece (Interview, November 4th, 2009).

Particularly in composing music, he emphasized his respect not only for students' ownership of their music, but also for their abilities to make their music "come out." Furthermore, he noted the significant differences between musical examples that he provided and that came from students' own compositions. Since students made their music, they already recognized its content and elements as well as the process of its creation. This is why he explained harmony and other music theories using students' own compositions.

> Mr. Stanley: Even if I show them an example, I can play them any piece of classical literature. I can play rock and roll. I show them different piece. But it's still coming from me. If I give them something coming from their own piece, they already have some stake in it. They have some kind of understanding about how it comes out. They have ownership, they have pride in it, they have everything that they want, you know. It's theirs. It's personal (Interview, November 4th, 2009).

The Music Composition and Theory Class

In the Fall 2009 semester, I observed eight sessions of the Music Composition and Theory Class. Using computer technology, this course proposes to explore a wide range of compositional techniques while learning the principles of music theory. Based on a hands-on classroom approach fostering the self-expression of each student, the course does not require any previous musical background. Mr. Stanley and his students Sam and Allen met for this course three times a week: 8:50 a.m. on Monday and 8:00 a.m. on Wednesday and Friday.

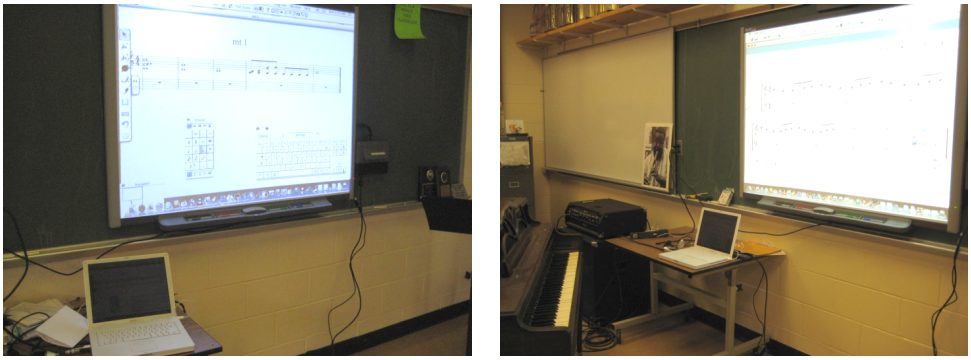


Figure 4. SMARTboard in Mr. Stanley's band room.

Theory, harmony, and jazz: Influences of jazz background.

OK. The C chord, C, E, G. And then, the F chord, F, A, C.
And you can make melodies with that.
It's kind of like connect the dots, right?
(Mr. Stanley)

Mr. Stanley taught composition himself, in contrast to Mrs. Campbell, who mediated between students and mentors. He actively steered students through their compositional processes when students needed help, sometimes by offering musical examples from CDs. He offered Sam Eric Satie's *Gymnopedie* because the opening of Sam's composition, which was constructed by chords, had a similar feel to it; the delicate mood and attractive chord progressions seemed moving to this sensitive student. Based on his wealth of experiences as a musician, Mr. Stanley often provided various materials for students that they could not easily access in their daily lives. In other words, this music teacher was himself the most accessible musical resource for the students in his class.

> Mr. Stanley: They haven't listened to a bunch of Chopin. They don't know what it sounds like, using arpeggios in different variations. They haven't listened to a lot of music with mixed meters and stuff. It's like, "hey check this out, you might like this." If I don't show them, they don't get the idea (Interview, November 4th, 2009).

Mr. Stanley frequently communicated with his students via sounds; he played instruments or sang when students were stuck rather than providing verbal solutions. Therefore, his classes

were often like a live ensemble performance of students and teacher. He also asked students to play instruments or to sing their melodies or harmonic progressions:

> Mr. Stanley: Because that's about what's happening , and you just go on the stand and you're playing jazz. You've got to really hear what's going on otherwise. To me, that's something that I'm always working on (Interview, November 20th, 2009).

Whenever he played musical examples on saxophone or piano, directly commented on composing strategies, or explained harmony, Mr. Stanley always addressed the precise ways in which his examples or suggestions were related to the context of students' own compositions. He warned against indiscriminate praise or agreement as a way to foster children's composing. He emphasized a following stage, which teachers and mentors had to keep in mind to facilitate students' development.

> Mr. Stanley: But if I don't go to the next step, if I am always just saying what they have done is fantastic, they haven't learned anything, they haven't gone to the next step. They haven't learned the next piece. If I bring them, "OK, we are going to write a Rondo form piece here, you are going to be in A minor, and then we have a b section that is going to go away from here," that is an exercise, that is not composition. That is the way I feel about it (Interview, November 4th, 2009).

Mr. Stanley's students in Composition-Theory began to compose from the course's beginning. In other words, music theory was always entwined with learning composition. Mr. Stanley relied on playing instruments, or more precisely, on improvising while teaching composition. Of course, he taught theory, particularly in explaining harmony; based on his background as a jazz musician, he was highly skilled at teaching harmony. In addition to using music theory books, he taught harmony using students' own compositions as examples and illustrations. In this way, students could understand anew what they had composed and how their improvised or composed musical content was related to the tradition of music theory. However the most significant feature of this method is that they can learn harmony in the context of their already created music.

> Mr. Stanley: I teach the kid and I say, "Okay, we are going to talk about primary and secondary chords and cadences. It's abstract. Abstract means it's an idea that the kids can kind of dig into. It's also outside of them, plagal cadence, authentic, all these different parts. And the kids can be very technical and grab that. If a kid writes a melody, and I can tell them "Okay, this is how the melody relates to this chord progression, to an authentic cadence". The kids go, "oh."
>
> Hae-Kyung: You use students' compositions as teaching materials.
>
> Mr. Stanley: It's so important. Because the kid can then understand it's something that is coming, it's not a foreign concept. It's not something that is outside them. This is something that came out of them, this is what you did. They can understand that (Interview, November 4th, 2009).

Ultimately, Mr. Stanley was concerned with fostering children's comprehensive intellectual abilities in music, and he considered creating music a more comprehensive activity than learning theory or performing on instruments. In the context of his teaching practice, he explained music theory using students' composed phrases while teaching composition and while improvising himself. He specifically described the distinction between composition and improvisation, from the perspective of a teacher who can skillfully improvise and teach composition competently. As he pointed out, we can save and re-visit moments in the composing process. Composing thus allows students to maintain their understanding and allows teachers and mentors to collaborate in producing that understanding, as well.

> Mr. Stanley: Improvising is something that happens in the moment and composition is something that is more like a painting. You put it away and come back to it. Then you take it back to the art gallery and you open it up. I think when you're improvising, the kids need a certain amount of confidence to be able to step out... A different kind of understanding (Interview, November 20th, 2009).

In practice, improvisation frequently is inseparable from composing. But as Ross discussed, and as Mr. Stanley also noted above, the most visible distinctions refer to notation.

> Ross (mentor): There is the lack of improvisation within written medium, because a lot of composers don't improvise like they used to, like Mozart. There has been all kinds of walls put up. There are walls between pop and classical, which is again silly because that is not how it used to be. The walls between improvisation and written medium, the walls

> between the creator and the re-creator, and also the person absorbing it, the audience (Interview, November 13th, 2009).

Evaluation issues. Evaluation methods reflect practical issues in teaching and learning composition. Basically, all teachers and students in this study had volunteered to teach and learn composition, rather than do it for tangible rewards. Nevertheless, volunteer teachers become responsible for completing their practical teaching obligation to evaluate students' compositions, because this teaching and learning occurred in a curricular context. Both Mrs. Campbell and Mr. Stanley agreed that their students' time and efforts fully exceeded the given evaluation standard. For example, Mrs. Campbell's students took ear-training tests and theory quizzes on intervals, in addition to completing final projects in the Composition-Theory courses, whether they posted those compositions for mentoring or not; at the beginning stage, they tended to focus more on theory than on composing. Most of all, if students participated in the Opus selection, they naturally completed a grand project, which includes an extended revision process relying on mentors' comments and on frequent discussions with teachers. In other words, teaching and learning composition that satisfies curricular demands might require more work than is completed in regular classroom tasks.

Mr. Stanley's view of evaluation began with more fundamental concerns in teaching. He discussed challenges to the validity of evaluating students' composing and improvising. Unlike other musical activities like performing and theory, the evaluation of music-creating behaviors should be appropriate to the types of musical activities engaged in, which are in turn related to diverse kinds of musical understanding. He also warned that excessively detailed evaluations of composition might make students overwhelmed, and he exemplified the point drawing on his past experiences.

> Mr. Stanley: To me, if I give out a concept to the kids and I throw a quiz at them and they don't get 'it', what it shows me is that I didn't present to those kids in a way that they understood it… If they are doing composition or something like that, assessment in the arts, again, uses the same kind of mode that we were just talking about in improvisation and composition. They want to assess kids. They want to teach kids to improvise, but they are using the same tools that they do through concert band (Interview, November 20th, 2009).

His philosophy of teaching and evaluation were ultimately related to his emphasis on tending the learner's motivation and agency. He emphasized the significance of intrinsic motivations while discussing the pitfalls of evaluation in promoting extrinsic motivations instead.

> Mr. Stanley: I'd like to develop an attitude of neutrality around grades because I do think that there's this sense of punishment and different things like that. Those are extrinsic rewards…I like the internal rewards and it's the key. If that narrative comes out, they're writing a piece and suddenly the vision fades, there's not too much more that you're going to do there….I gave him some positive strokes and that's where that getting his thing chosen is really an interesting motivator, because it is an honor (Interview, November 20th, 2009).

Duet-finding the tonic *(Vignette, November 20th, 2009).* Today I witnessed something most exciting for a fieldworker. If a student can immediately write down music that is inside of his mind without any problems, that is wonderful. However, in practice, students, even composers, usually experience difficulty representing their thoughts in the shape of musical sounds. Mr. Stanley and his student Allen showed me how a student wrestling with musical expression and how the teacher was supporting this labored over child. The class was as beautiful as a choreographed movie; there were so many conversations woven out of the musical sounds that students were creating. The class included Allen's effort to find a relevant key center from his musical ideas, Sam's strain to launch new ideas onto a blank sheet of paper, which was actually the blank screen of *Sibelius*, and most of all, the dynamic power of this passionate teacher supporting students' beginning stage of composing.

After the Opus 19 selection for Fall 2009, Mr. Stanley's students immediately began the Opus 20 for the following spring. Students began with their short motif. Sam, who won the Opus 19, slowly but carefully developed melodies by himself, so Mr. Stanley did not need to help him build the piece. Instead, he sang the short melody and played the saxophone before using the playback on *Sibelius*; this process definitely breathed life into Sam's initial phrase. He also had Sam play the melody on the piano and talked about the intervals in the melody.

The teacher also worked with Allen. Because Allen had a strong rock music background, he seemed to be more familiar with repeated patterns than with the progressive melodies in traditional Western classical music. Instead of making harmonic progress converge into tonic, Allen used repeated sequential patterns for his chord progressions, a format that can be widely found in rock music. Moreover, Allen seemed to have something in his mind but was wrestled with notating. Thus, Mr. Stanley made Allen play bass guitar, which was his preferred instrument, to develop a melody while finding the right key center by ear. The teacher also played saxophone to support Allen providing more solid chord progressions. While all the above activities took place, I was able to listen to more music than conversation.

Instead of an isolated struggle, the composition process in Mr. Stanley's teaching context is communicative, interactive, and collaborative. In the seemingly solitary moment of bringing something up from the inside of the mind, Mr. Stanley works together with his students to provide need support. By playing saxophone alongside Allen's bass guitar, he helped to draw out a melody that was inside of Allen. The teacher encouraged Allen's music simply by explaining why his music was theoretically appropriate and consequently sounded good instead of just praising the musical sounds themselves. Isolation is thus not a must for creating music. I found that good teachers and good mentors can catch the moments when it is appropriate to offer

struggling students support, even as they can also discover potential value in students' musical ideas and can nurture tiny melodies with positive and respectful stances.

Elliot's Visit and Matthew's Improvisation *(Vignette, November 4th, 2009).* Mr. Stanley had had in-person contact with mentors in addition to online communications, and his school formally supported mentors' instructional visits. Every semester, Mr. Stanley invited a mentor to his classroom and thus provided an opportunity for his students to come face-to-face with the figure who had commented on, praised, and encouraged in their compositions via the computer screen. In the fall of 2009, Mr. Stanley invited Elliot to his class with the support of his school. Since Elliot was the local artist for the Roosevelt High School, Mr. Stanley invited him for composer's visit for his class. Mr. Stanley was very excited and positive to the mentors:

> Mr. Stanley: For me, listening to Elliot and listening for David, I was trying to internalize that and bring that out… I like the culture around it. I, personally, have learned a lot. David [Name of mentor] has come in a couple times. He's come in here and talked to the kids. Super interesting guy! I really like Elliot. I just have to book him and he comes in. He's got a nice touch (Interview, November 20th, 2009).

In the morning, every student registered in the Music Composition and Theory class came to the composer's lectures. Originally, 4-5 students registered for this course, but only Allen and Sam attended every class and actively revised their pieces through on-line mentoring. Other students participated in the class more flexibly. Elliot began by discussing the nature of the composition process, and then moved to check on each student's own compositional processes and challenges as a continuation of the online mentoring.

When it was Matthew's turn, he began by playing his music without a score. Although his piece was improvisational, it had an ABA form and a climax in the B section; he improvised music in his mind for 5 minutes and 17 seconds. After he played, Mr. Stanley, Elliot, and Matthew talked about his concerns over notation; although he had many ideas in his mind and

was even able to improvise over these ideas, he had difficulty with reading and writing notes. In Matthew's case, the border between composing and improvising seemed blurry. He already had specific musical ideas such as forms, melodic process, harmony, and rhythmic patterns and could express them on the keyboard; he simply had not notated these ideas outside of his mind. This case raises the question of how we can define music that is articulated on a piano keyboard but not yet notated by hand.

When I accidently met Matthew in the hallway after the mentor's lecture, I had a chance to briefly interview him about why he had not posted his piece for the current Opus. As a self-taught player of various musical instruments, he took the composition-theory class in the past and already won the Opus 18 in the 2009 spring.

> Matthew: There is a week left, and it takes a long time to do all these things, because I know all the notes, but it takes me a while because I am not too strong in actually reading notes and knowing where they are for treble and bass clef and all that. So it takes me a while. I have to get the right time signatures… As long as I can keep finding ideas, then I will use them again later... I play guitar, bass, piano and drums too. So, guitar is just, everything is easier on that for me. I am self-taught, all my music, instrument-wise (Interview, November 4th, 2009).

As Matthew's concerns show, while technology provided conveniences that could overcome notation barriers, the asynchronous mentoring environment also ultimately required students to notate their music. As mentors and students are only able to communicate via verbalized written language, mentors are able to comment only on notated music.

Sam's Story: The Energy-Saving Student

Feeling pretty good about my piece, I finally have it where I want it to be.
When putting together, I definitely spent a lot of time on it.
I realized that I can compose actually,
not just like little bits and pieces like it was when it started.
So, it really came a long, I am pretty proud of it
(Sam, Interview, November 13th, 2009).

During class, Sam is very calm; he focuses closely on reading comments and revising. He quickly grasps Mr. Stanley's directions; the teacher does not need many detailed explanations in order to teach Sam. When interviewing him, I was surprised by his fluency in discussing himself, his music, his compositional process, and his thoughts and emotions during it. Mr. Stanley also agreed that, "*Sam's pretty smart and he can pick up on things. Absolutely and I really like that about him."* With full confidence in himself and his piece, this 11th grade boy recognizes his goals from the beginning, weaves mentors' comments and his teacher's guidance into his endeavors, and finally, earns the privileged achievement of the Opus. Furthermore, at the Opus event, Sam was, in his suit, the most formally dressed student-composer among Opus winners.

As his piece's skilled piano parts show, Sam has been taking private classical piano lessons for nine years. Sam expressed precisely how he saw the differences between playing and composing.

> Sam: When I am playing, it kind of feels like I am someone else. I am playing someone else's music, so it's really not me. But when I am composing, it's all me. I can put in whatever I want. It's definitely a fun experience being able to put down your ideas instead of being restricted to what someone has written. You're actually being the composer, and you can pretty much put in whatever you want, however you feel like you can just write it in music (Interview, November 13th, 2009).

Since the 9th grade, he has also started taking drum lessons. At school, he is involved with the Senior High Jazz band, which Mr. Stanley teaches every Tuesday, Wednesday, and Thursday mornings at 7:15 AM. Sam plans to minor in music when he goes to college.

> Sam: My family is definitely very supportive of my music. My brother is not like a professional musician, but he wants to make the CD of just himself. He has a different style than me. He is more like a composer than I am (Interview, November 13th, 2009).

In addition to his fundamental interests in music, the innovative aspects of the online mentoring system also motivated Sam: technology and online community for composers. He is the ideal case in which prolonged music learning, including private lessons in piano and drum, meets innovative features of technology, such as using computers and Internet technology as well as participating in a community of professional composers and a live audience.

> Sam: I am really interested in music, and I really enjoyed music…Probably the most interesting part is how it is all on computers and all online. You write the piece using *Sibelius*. And then being able to post it online and have professional composers listening to it, and comment, and other people to be able to listen to it. It's probably the most interesting part. Not how it used to be, you write a piece, and hope that it caught on. Things have really changed (Interview, November 13th, 2009).

Transistor Lamp Professor Pt. 1.

Through the ensemble of piano and percussions-- xylophone, tom-toms, snare drum, and cymbals—I agreed that Sam could express his idea of the crazy scientists' lab in his music; its balanced structure, effective orchestration, and abundant harmonic content made his composition reach an expressive level.

> Sam: I got the title of this song from this online generator, and it really caught my attention. Just seems like, to me, crazy scientists look like a bunch of flashing light everything working on a single lamp (Interview, November 20th, 2009).

The beginning, the most difficult part for Sam.

Like other students, Sam could not avoid the critical moment of facing a blank sheet of paper, the most difficult of the composing process. For him, however, the blank sheet of paper was just a moment. He said that once he entered the most of progressing, the music began to flow. In this case of a trained pianist, once something had been initiated, the composing process

might progress efficiently. I asked Sam to verbally describe his ideas and the structure and content of his piece, and he fluently described his music.

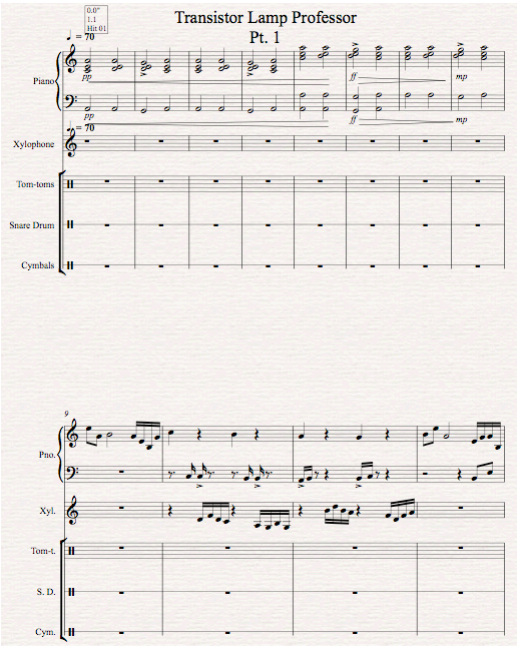
> Sam: It was first starting the piece. I was, I have been playing piano for 9 years. And I am really classically trained, so it is hard for me to look at a blank piece of paper and be able to write a piece. I am really used to playing other people's pieces. So it was a challenge getting started… In the beginning, there is an idea for the whole intro, and then you get to working on it. And then once in two there is struggle and you have to go back and maybe fix something and continue on. And then in the end, it seems like in my mind that is when it has its finish. So now it seems like the idea has to be put out there and see what people think about it (Interview, November 20th, 2009).

Mr. Stanley usually encouraged his students to begin new pieces as soon as the Opus selection took place, so after a couple of short sessions devoted to theory, Allen and Sam started to write their next Opus piece. Consequently, their first postings for the Opus 19 showed more developed shape than those of other students; unlike Jonathan's first posting, his piece was already developed in its ideas as well as structured in its patterns.

Although this piece was Sam's first composition, it showed a basic knowledge of music theory; Sam's long history of piano lessons enabled him to already recognize theoretical information such as form and key. Sam was able to address his inspiration in the band *Primus,* as well as his reasons for decisions about his piece's level of difficulty with regard to both style and instrument selections. In addition, Sam was able to refer to mentors' comments on other students' compositions. He also requested mentor comments on specific content in his piece; this meant that he tried to recognize directions in which to develop his piece and to begin finding his own solutions to problems.

Table 29

Sam's First Posting with "Description of Piece" and "Request for Mentor Feedback"

Criteria	Content
Score	
Description of Piece	This is the first time that I have written and submitted for an Opus project. I originally was going to write a Latin style song, but it was too much of a jump for the first time composing a piece. The inspiration for this piece came from the band Primus by using their general form (ABABC) and using a minor key. I also wrote this piece based off of some comments that I read on other pieces about having too much wind instruments by making it a percussion, piano, xylophone piece. Right now I know of some improvements that can be done to the piece (transitions and more dynamics), but our computer system crashed yesterday making it difficult to edit the piece. I will edit this for next submission.
Request for Mentor Feedback	Suggestions on different transitions between the parts, and development of themes.

Simply but exactly: How Sam communicated with mentors. A unique aspect of Sam's composing and commenting process were his systematic written replies attached to each of his revisions. Not only in creating music, but also in replying to mentors, Sam addressed his ideas and plans very effectively if concisely; just as his composition contained only the notes that the

music required, his replies to mentors were boiled down to their essentials. Unlike Jonathan, Sam did not have any personal relationships with the mentors; Elliot had visited his class only once to give in-person instruction on composing strategies. Thus, Sam's written replies were relatively simple and direct; he summarized what he had done, what problems he could not solve, and what he planned to do in the next revision, without any other individualized interactions.

Sam's discussions of his plans for his next posting were particularly emblematic of his strategies for developing his own pieces. Usually, other students would report only what they had already done without addressing their future plans. Sam's pattern certainly influenced Elliot's comments, because mentors generally addressed students' requests and questions first.

The next table compares Sam's and Elliot's thoughts and perspectives on Sam's revisions, revealing how a novice and an expert looked at the process differently. I paired Sam's replies with Elliot's comments, because while other mentors had also commented in response to Sam's requests, Elliot played the role of Sam's main mentor, continuously commenting throughout all of his revisions just as Martin did for Jonathan. While the young composer simply reported what he had revised and developed, the accomplished mentor described results with a variety of rich expressions: "*to turn into a harmonic bassline with some real interest*," "*your interplay among the instruments is more successful*," "*your rhythmic variety makes the piece keep us on our toes since accents keep changing*," "*harmonic center and the language used by the piano. This shows promise*," and "*The little changes you've made at C and elsewhere to fill in the sound…have really made the piece richer*."

Table 30

Sam's Written Replies to Mentors and Elliot's Comments

Stage	Type	Sam' s Replies	Elliot's Comment
Sam's 1st Revision	What was done	In this version, I mainly worked on the development of the harmony and melody in the A part. The biggest [p]art that i edited was completely reworking the beginning of the A part. I also did a lot of minor edits to other parts.	The piano left hand is beginning to turn into a harmonic bassline with some real interest, your interplay among the instruments is more successful and your rhythmic variety makes the piece keep us on our toes since accents keep changing.
	Plan for next	As of now I know of other parts that I still need to work on, such as the development of the B part, and the transition into the ending. I am also still looking for any ideas on transitions, and how the other parts should be developed.	Now I'd urge you to move the harmonic material on to the next level. Second, I'd try to increase the pitch choices.
Sam's 2nd Revision	What was done	The biggest edit in this version is the melody in part B, and made the tempo faster since it is a whole different feel from the A part. I also redid the dynamic in the beginning, and the initial melody and harmony.	You have made some changes, especially in the middle of the piece, beginning at bar 25, where there is not only a slight tempo change, but also a real change of both harmonic center and the language used by the piano. This shows promise.
	Request	At bar 33, it felt like it needed something to break up part B from the ending. I don't know exactly where it is heading yet, or if it even fits.	When I said language change, what I meant was that the material in your B section, at least in the piano in bars 25-32, shows much more jazz influence in the chords used, though not the rhythm.
	Plan for next	For the next submission, I am going to work on that part and see what I can come up with.	

(Continued)

Table 30 (continued)

Stage	Type	Sam' s Replies	Elliot's Comment
Sam's 3rd Revision	What was done	I did a lot of work with the percussion in part B. I also extended it to make a more fluid entrance into part C [from measure 41]. I also did some work in part C with adding in the piano.	You've made a good deal of progress, especially in your greater integration of parts in areas like B and your new material at C.
	Plan for next	I plan on doing more work with the piano in part C.	The percussionists could still use more integration into the texture, especially in bars 37 and 46 where the xylophone just stops abruptly. In addition, the unpitched percussion is really underutilized in much of the piece, such as in the first 22 bars and 33-48. Even little entrances now and again will help.
Sam's 4th Revision	What was done	I plan on submitting another version tomorrow as my final. For this version I made a lot of minor details all working up to final. The biggest change I made was taking out the original C part, and replacing it with the xylophone piece from Part A.	The little changes you've made at C and elsewhere to fill in the sound, such as in bar 12, have really made the piece richer.
	Request	There was no way that I could get the part C to fit in with the rest of the song.	I'd urge you to keep filling in places which sound empty, such as the opening 24 bars (there are surely some places where unpitched percussion would make a nice addition) and 43-44.
	Plan for next	For the final version, I am going to add in more percussion parts, and improve on what I already have.	
Sam's 5th Revision	What was done	The final version of Transistor Lamp Professor Part 1. I have worked long and hard over the past few months composing the piece, and now I feel like I have the piece where I want it. For the final edit, the biggest change I made was putting the percussion parts into one stave. I also did a lot of gap filling, and adding in percussion. I also extended the climax before the ending a few measures. Finally, the other edit I did was finish the C part.	Thanks for making your final posting. Wow, you got a lot done yesterday evening and the improvement is marked.
	Plan for next	I have enjoyed my time with Opus 19, and I plan to submit a new piece for Opus 20.	Congratulations again and I really look forward to working with you for Opus 20.

Praise for the smart young composer. Although this piece was Sam's first experience with composition as well as with mentoring, he had a keen insight into the essential nature of mentoring; he articulated his understanding of the mentoring process in detail. In particular, he also distinguished between flowery praise and critique with reflection and reasons.

> Sam: I feel excited a little bit that they [mentors] took the time to listen to my piece and thoughtfully comment and spend time to tell me what I can fix. It's definitely different than having a bunch of people comment, "Oh, that is a good song." And they might have not even listen to it, and just read all the other people's comment. But to have someone actually sit down and listen to it and reflect on it is definitely very exciting (Interview, November 20th, 2009).

Like the comments on Jonathan's piece, the beginning praise of Sam's addresses the promise of his initial posting. Mentors tend to summarize and recognize what a student has revised and developed, and to provide an admiring attitude.

Table 31

Beginning Praise

Stage	Mentor	Comment
Sam's Original Posting	Elliot	You have some interesting ideas, including your use of echo and call and response, different registers and increasing density to build tension. These are all very positive signs, especially in a first piece.
	Ross	This is a really great start for a first piece! Your ideas are quite compelling, and you now have a lot of material.
Sam's 1st Revision	Elliot	You have really started to develop your material. The piano left hand is beginning to turn into a harmonic bassline with some real interest, your interplay among the instruments is more successful and your rhythmic variety makes the piece keep us on our toes since accents keep changing.
Sam's 3rd Revision	Moore	Nice work with your revisions. I feel that your melody is now more clearly defined/ less muddled, which helps hold everything together.
	Elliot	You've made a good deal of progress, especially in your greater integration of parts in areas like B and your new material at C. There isn't much time left so let me just give you a few little bits of advice.

The closing compliments contain directions intended to encourage and develop the next revision. Considering Sam's strength in "creativity" and "inventiveness," Elliot suggested how he could use this ability to make progress in future revisions. Ross's praise also included the reasons why he liked Sam's piece and how it had impacted him.

Table 32

Closing Praise

Stage	Mentor	Comment
Sam's Original Posting	Elliot	Sam, you have shown creativity and inventiveness in a lot of your work in the middle of the piece. Now if you can put the same creativity to work developing your main theme so it's stronger and more interesting, the entire piece will benefit and you'll have an easier time moving forward.
	Ross	I really like the ending, and feel like it sums up the piece perfectly! I look forward to hearing a recording of live musicians playing this!
Sam's 1st Revision	Elliot	Sam, you have some good material and a strong sense of rhythm and use of your instruments. Now if you can continue to develop your material and think about the things I've suggested you ought to make more progress
Sam's 4th Revision	Elliot	Sam, your piece has real interest and you've worked hard on it. I'll try to check back before the deadline, but I doubt I'll have time. So I'll congratulate you now on all your work and progress. I look forward to working with you again soon.

Move forward.

Giving directions for expanding. Although Sam addressed what areas he struggled with and where he was ready to move forward to the best of his ability, mentors gave larger and broader directions for making progress from their perspective as professional composers. Early in the development of Sam's piece, Elliot offered overall directions for future progress that attempted to address the "static feel" of Sam's composition.

Table 33

Directions for Expanding (a)

Stage	The Pattern	Comment
Elliot's Comment on Sam's Original Posting	praise	This work will pay off as it will be more interesting and will also give you more to work with. At the moment what happens after bar 8 is really limited by the narrow scope of the opening.
	critique	The piece has a static feel as if it's not going anywhere, despite how inventive you are in your use of rhythms, percussion and range in bars 9-16 and 25-44 in particular.
	suggestion	Once you have stronger basic material to work with I think you'll find that you will get a better idea of forward motion and development because your A idea is more fully realized.

Ally's comment encouraged reflective self-analysis from a macro-perspective. Elliot instead offered specific strategies to expand Sam's progress in instrumentation, transitions, tempo, and his piece's closing.

Table 34

Directions for Expanding (b)

Stage	Mentor	Comment
Sam's 1st Revision	Ally	In brief, please, attempt to evaluate your work on a large-scale and reconsider your phrases and sections in view of the long-term development of your piece.
Sam's 2nd Revision	Elliot	Sam, you have definitely made progress. Now if you can integrate the percussion parts with the piano more, create some effective transitions, work on your ending and consider moving the tempo up at B a bit more, your piece will continue to develop.

But as Sam neared the ending of his composition because of the impending Opus selection, mentors' comments tended to move from scaffolding to direct coaching; instead of suggesting that he adopt a global perspective on expanding his music and instead of commenting on generalized ideas, mentors pointed out notational issues, expressive issues such as dynamics and tempos, and offered simple corrections of harmonics and instrumentations.

Table 35

Directions for Expanding (c)

Stage	Comment
Ally's Comment on Sam's 3rd Revision	As there is not much time left, I will only comment on the most apparent things, as you have already read my previous comments. I will this time call your attention inconsistent usage of dynamics and missing pedal markings in the piano. Also, when you type in the dynamics, press the control key down (if you are using PC). The dynamics need to be bolder in order for them to be legible. You also need to be very specific with these. In addition, your staves clash with one another and this makes the music difficult to read. Please, do fix these in your final posting, in addition to finish adding new music.
Elliot's Comment on Sam's 3rd Revision	A long crescendo such as you have in piano from 17-24 will be difficult to bring off. I'd just crescendo from the second half of 22 on. Also on piano, at B watch out for a left hand which duplicates right-hand notes or is above the right because it's so high in places. You can move the right hand up or the left hand down in such locations. Finally, do you really want everyone playing softly on the final chord except for the crescendo on the tom-tom? Is that really what you want to leave folks with? It seems like overkill to me.

Zooming in and refining.

Comments from the percussion specialist. As a percussion specialist and composer of contemporary music, Ross gave comprehensive comments about percussion that ranged from notational practices to ways of creating the most effective and practical sound effects in concert halls. Ross's depth of knowledge and practical skills about the role of percussion at every stage of the musical process, from composing to performing allowed him to offer Sam a rich range of comments on (a) performing techniques, such as rolling and tremolo, (b) how to approach percussion instruments as a group rather than as a list of individual instruments, (c) tips for how to select appropriate percussions among such group-concept instruments, and (d) practical notation. These tips allowed Sam to navigate the unique role of percussion instruments in compositions. For example, unlike other instruments that are each played by one musician, an entire group of percussion instruments is generally played by one or two percussionists.

Moreover, without any standardized or fixed rules, composers usually make decisions about appropriate percussion instruments based on their own musical ideas. Therefore, this percussionist-composer's detailed comments helped Sam's music come alive and provided Sam with a precious opportunity to learn a specialized set of techniques and knowledge.

Table 36

The Percussionist-Composer's Comments for Zooming in and Refining

Stage	Ross' Comments about Percussion
Sam's Original Posting	My next comments are re. percussion. I would check out some snare drum etude books and recording for ideas on how to make the snare drum part more interesting. As it stands, you're treating it like an "off beat" snare drum in a drum set part, which is OK, but there's so much more you can do, such as incorporating more rhythm (percussionist are really good with complex rhythms), flams, ruffs (Google those to see what I'm talking about), and so on. In 41, I would change the tom tom half note to a quarter, otherwise, they might try to roll that, but maybe that's what you want. Essentially, I think you were really thinking of a drumset part in the piece, but perhaps didn't want to write for drumset. You also might try looking at a few symphonic/wind band scores to see how other composers write for percussion to get some ideas. In m. 21, I would think about adding something more to the percussion part, or remove the the snare drum note. In the xylophone part, you could ask the player to roll, which is how you elongate notes, particularly in the last measure.
Sam's 4th Revision	Definitely not half or whole notes without tremolo markings. In general, from a logistical and notational standpoint, it really seems like what you really want is a drum set and not three separate percussion parts (not including the xylophone). Why don't you consider combining all of those parts onto one staff so one player can more easily perform the part? That way you really only need two percussionists. In that case, the toms could be on the spaces, the triangle one ledger line above the staff, and even possibly as a triangle note head. (Some composers don't like using triangle note heads for triangle, but I like them since they differentiate the note heads from the others). At Rehearsal C, why is the tom tom piano while the xylophone is forte? That makes no sense, unless you are going for a very unusual effect, but what it seems like is that you are using your MIDI ear, and going by what MIDI playback sounds like, rather than what will sound in a real performance. Your choice, but it looks very strange and not effective.

Allen, Rock the Opus!

I'd like to go into a major of rock and roll because
that's where a lot of my influences go...
Some of my influences do come from the classical era...
But then I also think about how classical and rock and roll can mix
(Allen, Interview, November 4th, 2009).

Allen is in the 11th grade at Roosevelt High School. He has grown up in a musical family; his father plays guitar, his sister plays violin, and his mother plays cello. From the age of 9, he has had private guitar lessons. Allen's motivation for composing is intrinsic and his emotion is the recourse.

> Allen: I take it because I think it would be nice to expand my knowledge on the art of composing or... knowledge of music and notes and meanings of certain things. Because if I have that knowledge, [it] gives me the advantage to expand more than where I am, it gives me fresh ideas...for if I wanted to start something new. I can just come up with an idea, know what I want, if I see a mistake, I know what that mistake is.
>
> I composed a little but it was all simple stuff mainly in my own, home environment. I compose because I think it's the way to express feelings. You can either write something that is really happy or something you can dance to, something that can make people think happy thoughts... Or you can write sad, depressing pieces. I compose based on what I'm feeling. If I'm feeling happy that's what I base it around, if I'm not happy that's what I base it around... It's sort of like an emotional kind of thing (Interview, November 4th, 2009).

He plans to study music further in the future, particularly rock and roll; Allen is very enthusiastic about Rock and Roll and this is something Mr. Stanley appreciated about him.

> Mr. Stanley: Allen had really turned around, I think at the beginning of the year, he's a rock 'n roller! He likes rock 'n roll. He plays rock 'n roll. He believes in that mythology. Repeating patterns. He's got interesting melodies when he opens up, very positive. He's got great bright spirit, Allen. It's a matter of taking his intention and expanding on it (Interview, November 20th, 2009).

Allen also feels largely satisfied with his ideas for his next steps; his confidence is based on comprehensive factors, including the ideas in his mind, confirmation from mentors, notational

issues, and most of all, the production of satisfying sounds. While having a sense of direction produced the most satisfying moments for Allen, uncertainty, by contrast, became a challenge.

> Allen: Writing, coming up with the music… My ideas start out small and then they evolve into something big… Like when you get started and when you're working for that idea, because, yes, you do have an idea but you're also thinking about so many other ideas that could work well and then you're deciding what idea should I use and which one would sound better. So the beginning part is a struggle because you have so many ideas... Sometimes you make a mistake on which one to use (Interview, November 20th, 2009).

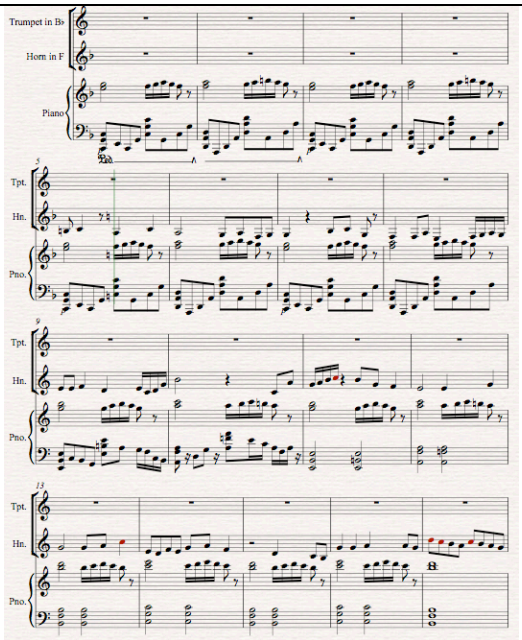
Rain Rain Plus Sunshine Then Rain Again.

For the class project as well as the Opus application, Allen composed *Rain Rain Plus Sunshine Then Rain Again* for trumpet, horn, and piano. This was his second attempt within the mentoring project. Like other students, Allen began with ideas in his mind and then moved to playing them on his favorite instrument or jotting them down. Allen described how he felt and thought in the beginning stages of composing:

> Allen: When I do have more time here I will sometimes go down to the music room, log in, and do what I need to do for my piece... I usually have the idea in my head, I play it around in my head a couple of times, figure out what the notes are. Once I do like it, finally and then I play it again in my head and I slowly write it down… I would just sit down, pick up my instrument and just start either strumming something...and coming up with something very simple, very basic, and trying to make it sound good. Sometimes I did come up with a lot of stuff... Today I look back and say to myself, "how did I come up with that?" Because I would have not known what that was if somebody asked me what I was doing... I would have just looked at them and just playing my instrument. (Interview, November 20th, 2009).

Table 37

Allen's First Posting with "Description of Piece" and "Request for Mentor Feedback"

Criteria	Content
Composition	
Description of piece	It is supposed to be a piano, trumpet, French horn trio. But I am still working on the French horn part, which you will not hear in the piece at the time. There are other things that I still need to work on, but it is still a work in progress. I was inspired to create this piece when I was sitting at the piano and started to play *chord sequences*. I then created the horn piece on the piano also. This piece gives you a little bit of what emotion can be like and how it can go *from sad to happy and back to sad again.*
Request for Mentor Feedback	I would like some suggestions for my piano part and even my trumpet solo.

This elaborate piano part indicated how just how hard Allen worked on his compositions. Nevertheless, when I first listened to his music, I actually was struck by some incongruencies; for example, some visibly repetitive sequences, which did not belong to any specific fixed tonality or macro-structures. Even though Allen initially intended to express emotional dimensions, as he described above—from sad to happy and back to sad again— his music did not seem to flow along with the intended emotional arc; compared to Allen's passion and endeavor to create music, I was able to perceive something strange—an imbalance or

awkwardness among instruments, musical styles, the melodic process, and the harmony. Later, through interviews with Allen, Mr. Stanley, and mentors who had commented on Allen's compositions, as well as through observations of Allen's compositional process in classrooms, I found this young composer's situation ironic—like a "*wrong pairs of pants*," an analogy that Martin later used to explain issues of genre. Allen's native music was rock, while the proposed musical frame of this mentoring system—which involved form, harmonic structure, and instrumentation—was classical music. Moreover, although mentors were flexible and broadly able to cover diverse areas of music from Jazz to contemporary atonal music, rock fell somewhat outside their coverage. Thus, ironically, Allen had to pursue his composition within a system that to some extent rendered it illegible as a form. This irony kept haunting Allen's composing process, as well as obviously influencing his interactions with mentors, as well.

Throughout Allen's composing process, mentors, mainly Elliot, pointed out repetitions in melody, including repetitive sequences and floating harmonic progressions: "*there is too much exact repetition of material moving in parallel motion up or down a step*." Elliot noted that the sequence itself was not meaningless, but that Allen used it too much. Accordingly, his piece showed a lack of harmonic progression. Elliot explained the probable consequence of this repetitive "cut-and-paste" pattern: "*listeners realize nothing new is going to happen they'll stop paying attention.*" Finally, he suggested a step-by-step solution: "*develop the solo rhythmically the first time*" and then "*vary it in different ways in subsequent repetitions*."

This generic influence on the character of Allen's music sometimes produced disagreements over the directions of the mentoring system. Although the project supports various types of music, mentors' comments were fundamentally based on classical music theory. Even though mentors were open to other genres, their musical and educational backgrounds were

generally in classical music. Moreover, the Opus, which Allen wanted to win, also presumes a classical music tradition in its instrumentations and performances.

Table 38

Elliot's Comment on Moving Forward

Stage	Mentor	Comment
Allen's Original Posting	Elliot	The first is your piano writing, which relies a great deal on sequences. Sequences are part of much composition, but they must be used with care lest the music sound more like an exercise than a work of art. In the case of your piece, there is too much exact repetition of material moving in parallel motion up or down a step. Check out the first four bars and then bars 13-16 to see what I mean. The material itself has some interest, but hearing the same idea over and over in such an inflexible way over the course of 32 bars or so is way too much.
		I'd also work on the piano underpinning so it's less dependent on parallel motion sequences which are exact repetitions and so it's more flexible and has a more interesting harmonic progression. If you can do this, and yes, for me that means probably eliminating a lot of the repetitious material you have and paring the music down to essentials to start, your piece will be clearer both to you and your listeners and you will really make progress.
	Paul	You have a very repetitive ostinato figure in the right hand of the piano, which I think you need to vary sometimes.
Allen's 1st Revision	Elliot	The biggest issue I have with the piece is still the opening piano part and the overall lack of strong harmonic progression. As I wrote in my opening comment, all those chords moving up and down by a step in parallel motion just aren't interesting enough to underpin the piece. The opening horn line is also too long and unfocussed to be effective. It may be you've heard this now so often on the computer that you can't envision it any other way (that's one of the dangers of using a computer for composing), in which case nothing I say may make any difference. However, it's my job to point out that the piece will be much stronger if it has a more effective chord progression and horn part near the beginning. Come to think of it, why not just start with the main melody in trumpet earlier. Why do we have to wait until bar 21 to hear it? Allen, you have definitely made progress on your trio.Now if you can turn your attention to the piano part and your opening in general, you may be able to make some changes which will make it more effective. Even changing a chord here and there and breaking the sequences by changing a bar every two or three measures will make a significant difference.
Allen's 2nd Revision	Elliot	The second thing is your use of a rhythmic pattern in the right hand which repeats exactly every bar. This becomes predictable, even more so when it becomes clear that in the later iterations of the solo it's still exactly the same as the original statement. Such cutting and pasting really doesn't help the piece as once listeners realize nothing new is going to happen they'll stop paying attention. So work to develop the solo rhythmically the first time and to vary it in different ways in subsequent repetitions.

Conclusion of Mr. Stanley's Case

Mr. Stanley showed that his relationship with students took precedence over mentors' relationships with them. Throughout interviews, class observations, and Opus rehearsals, I was impressed by Mr. Stanley as one of his student's colleagues; he considered his students as musical peers and he regarded his class as an ongoing concert. He noted that he and his students were inspired by each other. Although he generously allowed students to refer to mentors' comments, he more actively turned mentors' comments into his own teaching materials. Moreover, he actively concerned himself with students' compositional processes by asking questions on their compositions; developing theoretical examples using those compositions; and encouraging students to improvise during their revising efforts.

The most distinctive feature of Mr. Stanley's strategy is adapting improvisation to the teaching of music composition. Rather than teaching improvisation itself, he relied on improvising as one teaching method–a way to create musical examples and to help students experience the live nature of music. Mr. Stanley does not make students improvise, but he encourages them to play instruments they have handy or occasionally improvises around students' melodies himself; with real musical sounds and inspiration, he provides a fresh take on sticking points in the struggle to create.

Mr. Stanley also teaches theory in combination with composition. He taught theory using students' own compositions, just as he used mentors' comments. When reviewing and analyzing students' compositions, he explained the theory relevant to their work, and thus turned their work into his own teaching materials. Mr. Stanley focused particularly on the sounds of students' music, using theory to explain their appropriateness or inappropriateness. Thus, students arrived at an effective understanding of theory while analyzing their own works. At the start of students'

composing efforts, Mr. Stanley provided them the chance to listen to various musical sounds from their motifs. In addition to computer-generated sounds, he played saxophone and piano and had students play their main instruments.

Energy-saving triad: Mr. Stanley-Sam-Elliot and Ross

My impression of Sam's triad can be expressed by words like smart, systematic, simple, and exact. Throughout this consummately pianistic piece, I was able to explore a smart young composer's fast absorption of mentors' knowledge and skills. His previous piano-playing experience was very effectively transferred to creating music; drawing on his pre-existing knowledge of music theory, Sam effectively implemented many characteristics of piano-playing, from keyboard elements (arpeggios, chords, and broad ranges) to percussive elements, which successfully corresponded with his use of percussion instruments themselves. In particular, the percussion specialist mentors' detailed comments strengthened the technical and instrumental aspects of Sam's piece.

Consequently, Sam's composing and mentoring process illustrates an advanced case; when a young composer was able to carefully plan and develop his music with knowledge of fundamental factors in composing, mentors were also able to guide him forward towards a more advanced place through the sophisticated use of instrumentation, which made the piece more musical and effective. As a result, at the Opus concert, Sam's piece created an abundant effect in sound, form, and instrumentation, and successfully resulted in a contradiction for variety such as tension and release, which was caused by both the emptiness and fullness of his notes.

Rocker's triad: Mr. Stanley-Eli-mentors (mainly Mentor Elliot and other mentors)

Allen was the lone rocker in the mentoring system. Fortunately, his music teacher, Mr. Stanley, kept an open perspective about musical genre, and was capable of teaching everything

from Jazz to classical music. Thus, Allen was able to use a bass guitar to improvise while composing during class. However, within the paradigm of this mentoring system, which is rooted in the traditional harmony of classical music, Allen's music was always marked as somewhat different. Elliot was his main mentor, because he visited once per semester as the resident artist for the town. Elliot's relationship with Allen influenced interactions such as Martin's situation in Mrs. Campbell's class. Elliot continuously pointed out Allen's repetitive habit in making melodic and harmonic progress, a habit that was caused by Allen's strong musical investment in rock. Throughout his composing and mentoring process, this conflict between genre and composing style persisted.

Chapter Six

Miss Gibson: The Composition Club of Elementary Kids

My 3rd case is Miss Gibson's elementary composition classes. In addition to her philosophy of and motivation for teaching music composition, which I explored in the previous two high school cases, I focus on the specific features and interactions that characterize composing and mentoring activities at the elementary level. Miss Gibson viewed her composition teaching the successful completion of all of her teaching practice, which is firmly rooted in the learning theory of *Conversational Solfege*. Thus, I go on to review children's composing activities, comparing general music classrooms and the after school class known as the Composition Club.

Miss Gibson

At our first meeting in July 2009, Miss Gibson struck me as delicate and warmhearted. She was always calm, even when she faced the many kids in her classes or the rushed atmosphere of impending deadlines. She always calmly concentrated on the task before her, whenever she taught or gave an interview. Miss Gibson also actively supported my study: *"Come visit my class as many times as you want,"* she said. When I interviewed her about her teaching practices, content, and lesson plans, she willingly provided copies of learning standards and plans for each grade level. She was also socially supportive, as well.

Miss Gibson's Philosophy and Perspectives on Teaching Music Composition

The terminus: Is composition a destination of music learning theories?

The learning theory, it ends in composition.
You can't be literate in a piece of a tonal, rhythmic or melodic line
unless you can hear it and know what it is with understanding
(Miss Gibson, Interview, July 17th, 2009).

For Miss Gibson, the fundamental reason for teaching composition is rooted in her devotion to the teaching and learning theory called *Conversational Solfege*. Strongly influenced of Dr. Feierabend, who created that learning theory, Miss Gibson's teaching practice also takes in Gordon's and Kodaly's music learning theories.

> Miss Gibson: For more than 10 years, first of all, my training began with Gordon's learning theory that became echoed in the *Conversational Solfege*, which is another pedagogy process, which is also echoed in Kodaly. That's my motivation. It fits in nicely with my pedagogy, with my learning sequence of how I teach. It's the ultimate goal of taking the material that they know (Interview, July 17th, 2009).

During our interviews, Miss Gibson articulately elucidated the core concept of each stage of the *Conversational Solfege* from the aural-oral to the symbolic. After simply but cogently explaining each of those stages, Miss Gibson emphasized composition as the ultimate endpoint of her teaching. Through my own later observations of her classes between October and December of 2009, I was able to confirm that indeed *Conversational Solfege* was entirely absorbed into Miss Gibson's teaching practice; while teaching based on the theory, Miss Gibson seemed confident, strong, natural, and even happy. I could tell that the theory had become a scaffold for her teaching.

> Miss Gibson: When you get to composition, it's the highest point, because there you have complete control. But you're also now having to add another piece to it, which is the notation piece. Reading and writing also include the dictation issue, too, that of hearing familiar patterns. So *Conversational Solfege*, more or less in *Kodaly*—people will probably argue with me—but they follow a learning sequence, the same idea of coming from an oral standpoint and going through to a symbolic standpoint. So composition was a natural ending to my teaching, my pedagogy. Composition is the outcome of all the

> music literacy. I'm teaching them how to read properly with their ears and with understanding. So they can look at a piece of music and know what it sounds like rather than having to pick up their instrument to play it to find out or take it out on a piano to hear it. They can look at it and understand what it might be (Interview, July 17th, 2009).

Conversational Solfege, like other learning theories such as Gordon's and Kodaly's, assign composing and improvising to the later stages of music learning. Consequently, the Composition Club provides opportunities for young children who want to compose to experience an advanced stage of learning that goes beyond their classroom activities. But if composition (and improvisation) is the ultimate end of music learning theories, what does this mean: is composing the most difficult among all musical activities, from performing to listening? Or can only the most advanced or talented students learn to compose? What is the meaning or function of composing activity in relation to other musical areas?

Musical person.

Singing kids *(Vignette, November 19th, 2009).* When I interviewed Miss Gibson at the library, which was located in the middle of the school building, two girls approached us. They looked like they were in the second or third grade. At that point, Miss Gibson had been talking about the philosophy behind her teaching practice. Laughing very cheerfully, the girls shouted: "*Miss Gibson, we made a song!*" Then they immediately launched into singing. Although the lyric consisted entirely of a repetition of "*Mrs. Elizabeth*," which was the name of Miss Gibson's student-teacher, and the melody was very familiar to my ears, the children sang in an engagingly humorous *a capella* that employed exact rhythm and pitch and expressed their emotions of joy, appreciation, familiarity, as well as their excitement in singing itself. That seemed truly an extension of musical conversation from inside that of the classroom. After the girls left, Miss Gibson was still smiling. This, I thought, is *musical person*.

> Miss Gibson: Everyone should be a *musical person* and that's not a person who can read music, it's a person who can do music. Who can sing comfortably, who can move comfortably to music and understand the sensitivity or the expressiveness of music (Interview, November 19th, 2009).

In *Conversational Solfege*, each small class session, assignment, and activity aim to naturally help each child become a *musical person*; Miss Gibson's teaching ultimately aims to help students include "their music in their daily lives." She pursued a comprehensive approach to her students' musical experiences, attending to the aesthetic, social, and affective aspects of her students' musical pursuits. Her greatest pleasure in teaching came from her students' pleasure in participating in musical activities.

> Miss Gibson: The most biggest is that the students really can participate in music. They are as happy sitting around a camp fire as they are sitting in a classical music concert: they can participate socially. And they also have the ability to have the foundation to go on with their music if they want to. They are beginning to become music artists so if they want to go further and take an instrument or sing in a choir or chorus and understand what it means to become a performer, they're able to do that. That's the biggest satisfaction (Interview, July 17th, 2009).

In accordance with her desire to help students become their own musical persons, what she called, Miss Gibson encouraged students to sing with their own voices rather than to imitate their teacher's melody, as well as to create their own music rather than to transcribe or unconditionally accept the opinions of others.

> Miss Gibson: They are independent of me. They don't need me to sing a song or to do what they want. I never sing with my students. I sing for them. So if I'm teaching a song, they listen. And then when they've heard it enough, I'll say "OK, it's your turn." Independence is really high-ranking here, important to me. I think that gives them the confidence also. If somebody says, "Who wants to come up to the microphone and sing this?" all their hands will go up. You don't want to have classes where nobody wants to participate but instead kids who are eager to participate. That's what I really like about teaching this way. They're happy (Interview, July 17th, 2009).

Figure 5. Signs about *musical person* in Miss Gibson's classroom.

Musical autonomy and independence.

Students' autonomy and musical independence are two of the essential conditions of becoming a *musical person*. Thus, initially, students in the Composition Club were volunteers. They were able to access information about the after-school activity from various resources: teacher's suggestions or friends' participation in the Opus. However they learned about it, though, the children decided to participate in this afterschool activity for music composition for themselves.

> Miss Gibson: I teach 80 of 4th and 5th graders. But only 11 of them said that they wanted to go on and try to work with a mentor and create their own work that way beyond what my initiatives were… There are kids in the classroom that I say, "if you want to do more composition or have the opportunity to write your own music, this is the time and place to do it." So I'm not choosing the students, they're self selecting. In other words, they're coming to me and saying, "OK, I want to be in that club, is there room for me?" "To come and compose on Wednesday." They're the ones that chose to be there. I didn't ask any of them to be there. They're motivated because they come motivated they come saying I want to do this (Interview, July 17th, 2009).

But how do students become motivated to make this choice? Young students' compositions originally began mostly with classroom activities; they sought more time and opportunities to create their own music as a natural consequence of their composition experiences in the general music classrooms. Most students wanted to write more music, while some students made unexpected progress even within the school curriculum.

> Miss Gibson: Most of them say, "I want to write more than what we're just doing in class." They ask me in class, "Can I have another sheet of paper?" (Interview, July 17th, 2009)

Once the students had become participants in the club, the principle of learner's agency allowed them to make decisions about whether to accept or reject mentor comments. Miss Gibson emphasized the notion of 'their music' in this regard; she noted that students not only needed to learn how to compose, but also how to receive critiques of their compositions. She stressed, however, that trying mentors' suggestions out was important, even if students ultimately did not accept them. Even though young students could ultimately choose what to do with feedback, their ability to grasp its implications is questionable, for a student's inner *audiation* abilities may not be developed fully enough to allow for genuine musical understanding and thinking without trials. Thus, students needed to experience how mentors' recommendations about music actually sounded.

> Miss Gibson: Usually they get 2-3 comments... When they read them, they'll decide what they want to save. I ask that they always try it first, try the suggestion. If they don't like it, change it back… They need to at least try. They might not really understand until they've tried it (Interview, October 28th, 2009).

Miss Gibson discussed the reaction of a student who was good at accepting and handling mentor comments: Jake showed that this ability was related to a student's ability to deal with his or her music along with information and ideas from outside. Consequently, the Composition Club activities emphasized students' independence not only in the form of their participation but also in their control over the content and process of their learning. In particular, although Miss Gibson managed all the features of the Club's processes, she did so in a way that facilitated the independence of her students and their mentors.

Personal growth.

Miss Gibson experienced a prolonged feeling of development in this mentoring project; she felt both her own progress in teaching and her students' development in composing. Mrs. Hamilton shared her opinion that all participants in the Project, including mentors, teachers, and students, get better and better. The teachers' feeling of growth and development cannot be easily and immediately investigated. Nevertheless, this congruent experience of both core teachers, who had extended participation in the Vermont MIDI Project, is no doubt a significant factor in teachers' levels of motivation.

> Miss Gibson: Now new people are stepping in trying to help the project keep moving, go in its direction, and see the value and development that was happening year after year. And for some reason, the students got better, and we all got better at helping them become creative musicians and writing their own music (Interview, July 17th, 2009).

Figure 6. *Miss Gibson's classroom.*

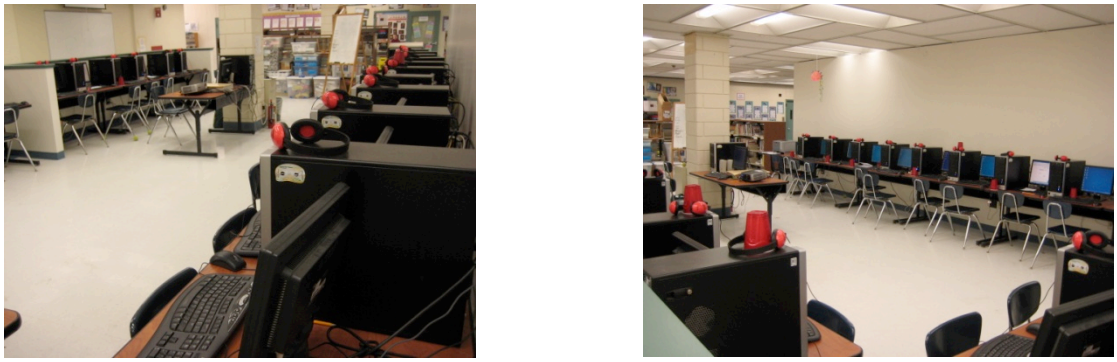


Figure 7. *Computer lab in the North Lake Elementary School*

Teaching Elementary Composition

General music classes.

As soon as the children entered the music room, I became excited, because the sounds and movements that they and the teacher made suddenly changed the mood of the room. Immediately, Miss Gibson was in front of her digital piano and began to play a song of morning greetings, which were full of joy and energy. Most of all, every behavior of the teachers and children was natural and smooth. From the opening song, these routines seemed to be familiar to all of the students.

In each class, Miss Gibson uses detailed lesson plans, which have a well-structured order based on *Conversational Solfege*. Each component was closely related to a category of her teaching standards, such as (a) opening-closing activities, (b) music literacy, (c) group vocal techniques, and (d) solo vocals activity. These categories are supported by the learning standards from Conversational Solfege, and are represented by categories of '*knowing'* and '*doing*.' The '*knowing'* standards refers to conceptual content, such as contrasts in dynamics, tempo, rhythmic and melodic patterns, forms, musical terms, and the role of music in our daily lives; the '*doing'* standard includes actual activities like singing, moving, playing instruments, improvising, creating, and listening. Thus, in teaching each class Miss Gibson weaves two-crossed axis of musical concepts and behaviors.

Since Miss Gibson's general music class curriculum is firmly structured based on the learning theory of *Conversational Solfege*, managing a teaching schedule that includes multiple-age classes with students at different developmental stages became the main challenge in her teaching practice.

In general music classes, composing is one of the activities in the *Conversational Solfege*

method. It begins with all students participating in collaborative pattern-making activities, like answering various rhythmic patterns or filling in an empty measure after a given pattern, rather than with prolonged individual efforts at writing.

> Miss Gibson: This is teaching music literacy… This is what all my students do in their music literacy. That's my goal to get them to this point… So what happens is in a class time, they do their structured compositional pieces that are within their music literacy with what we are learning. Then when they finish that and they are able to put it, they translate it into *Sibelius*, and put it in there. Then the next thing I say is, "You can now do what you want with this piece or you can write something of your very own." (Interview, July 17th, 2009)

Miss Gibson explained the differences between composing activities in the general classrooms and in the Composition Club: the Club revolved around more individualized learning, which resulted in a more independent and learner-centered composition environment.

> Miss Gibson: Whereas the classroom [composition] is very structured and follows the learning sequence of *Conversational Solfege*, the Composition Club provides the volunteer kids for more individualized opportunities to create their music, which are extended from the general music learning… It's just an organic process (Interview, October 28th, 2009).

Thus, dependence on computer software and mentoring were an important part of the difference; Miss Gibson's composition instruction in general music classes did not include mentoring. Students in the after-school classes, on the other hand, composed using computer software and contacted mentors directly via the Internet.

The Composition Club.

For more than ten years, Miss Gibson has taught the Composition Club as an after-school activity. In Fall 2009, every Wednesday between 2:30 p.m. and 4:30 p.m., young composers came to the computer lab located at the center of the North Lake Elementary School to create their music with the aid of computers. For two and a half hours, these young composers work, starting out by reviewing their mentors' comments. During this semester, eleven children

volunteered for the Composition Club and one student-teacher assisted Miss Gibson: Mrs. Elizabeth, who had majored in performance as an undergraduate and was currently completing a music education major at the University of Vermont for teacher certification; most importantly, she also had a background in computer software. She was ideally positioned to assist the composition class as they used technology.

I observed and interviewed the students in the Composition Club, focusing on Jake and Kelly; Jake and Kelly won the Opus. I chose these students because they seemed the most focused and active during the Club meetings. I was moved by the concentration and seriousness of these young students. Before this extracurricular class, Miss Gibson printed the mentors' comments and underlined the significant content that students should check. Each child read their comments, logged into their computer station with their password, and opened *Sibelius*. Some experienced students, who had taken the class last year or were familiar with computers, immediately revised their compositions based on their mentors' comments. Miss Gibson or Elizabeth helped the children as needed, providing technical assistance with logins or *Sibelius*, reading mentors' comments along with the children and explaining various terms, or answering their questions about music. At the end of class, the teacher instructed children to wrap up their pieces: the students then saved their pieces with their own file names, which were to indicate the week of each revision, and wrote replies to their mentors' comments.

Although each child had his or her own style of approaching and creating music, their results did not fall within specific styles, such as Jazz or rock. This fact suggested that inside students' minds, particular genres or styles were not yet fixed as compositional frameworks. Nevertheless, they definitely produced much more complicated, long, and structured pieces than the songs or performance pieces that they would find in their textbooks.

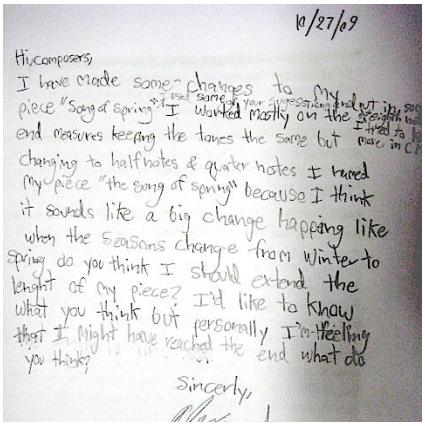
> Miss Gibson: They don't really have a style at this age. They're just experimenting, honestly they're just experimenting. Using what is closest to what they've heard…either with their families, what they've had with me (Interview, October 28th, 2009).

Composing as playing. If music creation is approached as play or as a curious experiment, it can become more natural for children than for adults. In my field stay, I visited three schools, including two high schools and one elementary school. Sometimes, I visited Roosevelt High School in the early morning and then observed its Composition Club in the afternoon. At the club, I never saw even one child who was seriously struggling with his or her so-called masterpiece. Young children's music-creating activities were more playful, more natural, more spontaneous, and more experimental than those of older students; the children looked very curious about creating, as if they were painting in sounds with a computer mouse.

Ricky, for example, was very proud of his piece because he was able to include 5 instruments in his ensemble; he was excited to call himself the composer of a five-instrument work! He also enjoyed his experiments in creating strange and funny sounds using the notation software; *Sibelius* could make any sound that Ricky added into the five lines. In fact, he shared his music with his friends to share its humor. Moreover, this fun did make any noises; in fact, everything proceeded very quickly, because children of the digital generation operated computer software adeptly and every note sounded only through headphones.

> Martin: An elementary student, I assume, has less time to be writing their music, and I assume, will also not handle criticism as constructively. But in elementary school, it will be overwhelming to think that I am doing this fun project in music class, and then have this huge laundry list of things that the mentors say aren't good about your piece. That is not the way to inspire a 6th grader or 5th grader (Interview, November 25th, 2009).

Letters for mentors: Communication with mentors.

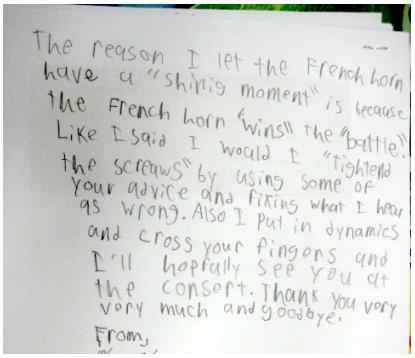


10/27/09

Hi, composers,

I have made some changes to my piece "Song of spring" I used some of your suggestions and put it in some end measures keeping the tones the same but I tried to make it in C changing to half notes & quater notes I named my piece "the song of spring" because I think it sounds like a big change happing like when the seasons change from winter to spring do you think I should extend the lenght of my piece? I'd like to know what you think but personally I'm feeling that I might have reached the end what do you think?

Sincerly,



The reason I let the French horn have a "shinig moment" is because the French horn "wins" the "battle" Like I said I would I "tighted the screaws" by using some of your advice and fixing what I hear as wrong. Also I put in dynamics and cross your fingers and I'll hopfully see you at the consert. Thank you very much and goodbye.

From,

Figure 8. Elementary students' hand-written replies to mentors.

Two and a half hours once per week might not be enough time for elementary school children to finish a musical piece in one semester, and the students compose only at the Club's lab and only on Wednesday afternoon. Nevertheless, the children spent their scarce lab time not only composing, but also writing replies to mentors. After students had saved their work at their computers and composed their replies, Miss Gibson logged into the Vermont MIDI site and typed the children's replies as they read them; it was a remarkable phenomenon. Children read their letters with utter seriousness and sincerity, highly conscious of themselves as young composers writing to real professional composers about their own music. I cannot express in writing how these small children became utterly solemn about their compositions and about writing replies to the mentors who would read them. This was the real setting and community of arts, which other teachers and mentors emphasized.

Miss Gibson never commented on students' replies, never interrupting the communication between her students and their professional mentors. At these moments of transcription, Miss Gibson seemed very pleased with the children's charming and earnest conversations, which always expressed thanks and respect. During the semester I observed, she

had eleven children's replies to upload, and she needed to work more on other days to compensate for the time that took.

> Miss Gibson: I don't do anything. It's the mentors. They [Students] use their own words. I sit there and type and they talk to me. Or I have them write out the first one. "Describe your piece. Tell them a little bit about yourself." And I correct it. I'm not worried about all that. I guess I could be more, but I'm not. They write very much in their own words. I don't change anything. The only thing I always remind them is "Did you thank your mentor?" If I give them their feedback, they read it… I don't do anything in the after-school class except upload and download their pieces and help them figure out feedback questions for the mentors. It's independent work between them and their mentor. Nothing other than maybe guiding them when they ask "I don't know how to write this" or "I don't know how to do this." (Interview, July 17th, 2009)

Challenges in the Composition Club. In the Composition Club, Miss Gibson did not directly teach composition; however, she still encountered various challenges related to it. Most of these challenges involved a lack of time and attention (i.e., she managed too many students). The Club offers a short time for reviewing mentors' comments, composing, answering children's questions about the composition process and software use, and uploading materials, and requires more tasks even after the children have left. This situation reflects the practical concerns that in-service music teachers encounter in the music classroom. Strand (2006) states that future research is required how classroom music teachers who incorporate music composition into their regular teaching practices overcome fears related to class size, intricate class schedules with limited time, and conflicting priorities. In this case, Miss Gibson generally worked more additional hours in every week on the Composition Club. She also consistently questioned the number of students she could afford to have in it.

> Miss Gibson: It's hard for me because I have so many students. Ideally I should be highlighting certain things from the comments that the students can understand (Interview, October 28th, 2009).

Unlike her general music classroom instruction, Miss Gibson's Composition Club leadership needed to manage each student independently, because each student received different

comments on their work. The individual interaction between a student and a mentor influences teaching practices and the teacher-student relationship. Thus, Miss Gibson's teaching practice tended to depend on "asking"—i.e., she must check, through conversations with her students, to see whether or not they understand their progress and direction. Teachers and mentors cannot see or listen to the inner cognitive activities of their students, so they instead depend on verbalized or notated proof of it, including oral conversations with teachers and written replies to mentors' comments. In other words, in addition to their compositions, students' spoken and written verbalized content about their musical ideas, their processes of composing, and their intended sounds, could indicate their inner thinking, understanding, and reflecting.

> Miss Gibson: If the comments are way over their heads, too high, too long, and too sophisticated, they don't do any changes based on the comments. They just do their own changes… It's almost like you need to work on them individually rather than in a group, like that they do need the individual attention of going through their comments with them. Best I can say is, "did you understand what you got back?" If they say, "No, I don't," then I go back with them and try to look (Interview, October 28th, 2009).

The blank sheet of paper in elementary composition.

In teaching and learning composition with computers, the beginning stage refers to a couple of tasks: facing a blank sheet of paper or screen, turning to a computer and opening notation software, singing or playing instruments for inspiration, or sometimes jotting initial musical ideas, as the high school students discussed above did. Miss Gibson's elementary students tended to be particularly experimental and playful with computers, and had various approaches to initiating the compositional process. She described a variety of habits at her students' beginning stages. Miss Gibson thus fully recognized the compositional processes and approaches of each student. Through the lens of her intimate experiences with children, I was able to understand the compositional strategies of young elementary school students, which were less influenced by previous musical experiences than those of older students. I found that young

students' compositional strategies were revealed through their behaviors, such as asking questions or asking for help.

> Miss Gibson: It's kind of like some of it happens by chance. In the beginning really does. Some kids have a definite idea. They want certain things to come in and happen. Some are very random, they're just clicking notes here and there. Some students are listening very carefully and they're readjusting back and forth. Jake is trying lots of different ideas… They're all in different places so it's kind of differentiated from the start…However, some children are so random. They're not using their ears at all. Some students have ideas of what they want in very specific ways, but they have a hard time trying to connect to their ears, what they're writing and figuring out and how to make those sounds… So it's really individualized.
>
> Most kids are programmatic in their writing. They already have a picture in their mind or a story in their mind about how they want their music to sound like. Not many write just for writing the music in sound. Usually comes out with an idea… I keep reminding them to go back and really listen to that, "Is that really what you wanted it to sound like?' (Interview, October 28th, 2009)

Miss Gibson approached the general teaching of music and her after-school classes in different ways. In classes, she tended to teach the creation of music as being more related to music learning sequences that included other activities, while the Composition Club focused more on individual composition.

> Miss Gibson: I use phrase. I don't use motive, yet. Motive is another way of taking something that they've written and repeating it, but generally I don't get into that. It's the after-school kids that get into that. But in a general music class, the whole school class, composition is not approached that way. So they all have experiences with creating something and putting it together, and understanding that there are musical sentences, so to speak, phrases. There are repetitions, there's contrast, there're choices of major or minor, duple and triple, choices of timbre, tonality, meter, dynamic. All these things are choices (Interview, July 17th, 2009).

Miss Gibson also appropriately applied both freedom and constraint (Barrett, 2003) to this individual process when she began teaching her students to compose. She understood the fear and stress that some children might experience if they were left alone with blank pieces of paper. Thus, she occasionally provided specific details for her students, and through conversations, she encouraged them to think about, and reflect on, their musical ideas with

sounds. She discussed her questions with me:

> Miss Gibson: I never give them a blank and just leave it open to them for when they are first starting because it's too overwhelming. That's why we start within their music literacy. So it's very specific. "You're now going to write me a phrase using quarter notes and eighth notes, using Do Re and Mi in F Major. Do that now. How would you like it to sound? Put it together? Where are you going to end? Are you going to end on Re, in a question or are you going to end on Do as an answer? Where are you going to end your phrase? Are you going to make a question phrase or are you going to make it an ending phrase? Write that now. Make it 4 measures long." So you give them an exercise to get started so that they can begin to have success with writing small pieces (Interview, July 17th, 2009).

Through questions and reminders in conversations, which provided a scaffold for student's musical thoughts, Miss Gibson encouraged her students to express and represent their plans and ideas; throughout this process, children became able to articulate ideas they had in their minds. When answering the teacher's questions, the students also had many opportunities to reflect on what they really wanted their music to create and to express and how they sounded in practice.

Kelly

Kelly was a very shy and quiet girl. She attended this after-school club with her younger brother, Ben, who was also quiet. Along with Jake, Kelly was my focal student and was selected for the Opus. Kelly's previous experience in learning piano influenced her initial motivation for participating in the Composition Club: *"I have been playing piano for 4 years, so I decided to try doing a little writing for Opus 19."*

> I enjoy listening to, composing, and playing music on the piano… We have a composing program at North Lake [Elementary School], and this is my first time participating, as well as having my piece played professionally. I enjoyed composing this piece, and I want to thank all the mentors who helped me make this piece what it is now (*2009, Kelly, The program of the Opus event*).

A Jolly Song.

Kelly composed this adorable piano solo piece, which reflected her shy and serene

character. In her composing process, Kelly's communication with mentors was the most noticeable feature of her composing habits; in every class, she finished compositional revisions very quickly and then spent most of her time writing long and beautiful responses to her mentors.

Unlike Jonathan and other repeated students, she did not have any personal relationship with the mentors and moreover, because this was her first participation in the mentoring project. Nevertheless, more mentors commented on Kelly's compositions than on any other students'; while a couple of mentors usually commented on each work, a total of six mentors commented on Kelly's composition—Elliot and Ally most consistently. During the Composition Club, even though other children spent most of their time composing and revising music, Kelly also allotted more time to writing replies to her mentors; she hand-wrote letters with great care. Finally, in her last posting, Kelly composed a set of reflections on her experience with mentoring; she addressed in detail how she had felt, thought, and developed her composition using mentors' suggestions and critiques *(See Appendix C)*. These written verbalizations revealed that this young composer realized and articulated her composing progress during her active interactions with mentors.

Beginning with various comments from four mentors. This novice young composer already had her own composing strategy when she began: "*I started by putting a few things together and then adding things from there*." Although Kelly knew what she planned to do, she still needed her mentors' confirmation. Moreover, Kelly recognized the unresolved issues in her composing process and actively sought out her mentors' suggestions; she was not able to resolve the "sour" parts of her music on her own: "*I know that I have some sour parts and I also need suggestions about those*."

Atypically, Kelly's mentoring experience began with diverse comments from five

mentors—even though mentors were cautious about giving too many critiques to elementary school children. Martin's response to Kelly's work first suggested one general and one specific possibility, at the same time emphasizing other alternatives: *"Keep in mind this is just one of a thousand ideas that might work."* Ally provided questions for brainstorming while giving examples of compositional strategies regarding instrumental ranges: *"Do you know where you would like the piece to go next?" "Have you thought of splitting the hands apart so that one of them plays very high while the other one plays very low?" "Or both of them playing high? Or both of them low?"* Elliot gave the last answer, which built on the comments of the previous four mentors; rather than merely agree with the other mentors' comments, Elliot compiled and reinforced them with detailed reasons: *"...but in bar 4 they lock together in parallel motion at the interval of a fourth and it really disrupts the wonderful feeling of two lines you had up to that point so I'd suggest you follow Martin's advice about changing one note in that bar."*

Kelly's request for directions for developing the left hand might have been too open-ended. Nevertheless, mentors (a) provided diverse possibilities, all of which made sense with Kelly's original music and were appropriate for her grade level and first experience with composing, (b) reminded this young composer about flexibility in creating music, (c) emphasized Kelly's ownership of decisions about her music, and (d) encouraged specific strategies while providing scaffolding.

Table 39

Kelly's First Posting with "Description of Piece" and "Request for Mentor Feedback"

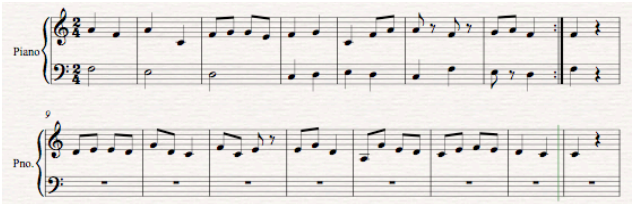
Criteria	Content
Score	
Description Of Piece	I started by putting a few things together and then adding things from there.
Request for Mentor Feedback	Any feedback would be great, but right now I am trying to make another few measures at the end that involve the left hand, unless you think I should leave it like this. If you have any better suggestions, please tell me. I know that I have some sour parts and I also need suggestions about those. Thank you so much!

Table 40

Five Mentors' Comments on Kelly's Original Posting

Mentor	Comment
Martin	As an idea for your left hand in the second half, you just keep it on C the whole time. Keep in mind this is just one of a thousand ideas that might work. But it would contrast your actively moving left hand part in the beginning. Just sticking to C half notes, or half notes tied to one another. Then this emphasizes the need to return to F after this whole second section.
Paul	I would like to suggest you answer this in the left hand of the piano and then perhaps bring both hands in together.
Ally	Do you know where you would like the piece to go next? In view of the work's future direction I recommend you add the bass part in your continuation and then try to make the piano progress to a different register in order to be able to sustain the development in your piece. Have you thought of splitting the hands apart so that one of them plays very high while the other one plays very low? Or both of them playing high? Or both of them low?
Elliot	You've already received great comments from Martin, Patricia and Alexandra with which I agree, so I'll only add two little ones. One place which is important for me to point out is bar 4. Up to that point the two hands have moved independently but in harmony, but in bar 4 they lock together in parallel motion at the interval of a fourth and it really disrupts the wonderful feeling of two lines you had up to that point, so I'd suggest you follow Martin's advice about changing one note in that bar. This is also important to keep in mind for how you write future measures in your piece.
Danny	The suggestions you have received so far have been great, so I will add only two more ideas at this point. First of all, I'd like to propose another possible solution for measure 4. You could simply have the left hand play a half note C. This would honor your descending bass line idea.

Collaboration of mentors. The dynamic communications and interactions of the online mentoring process resulted in an active collaboration among all six mentors. For the most part, this collaboration intensified agreements among the six mentors, but sometimes it elicited multiple differing perspectives.

In her reply to mentors accompanying her second revision, Kelly recognized challenges in developing her piece, which shed needed mentors' help to move past. Following Elliot's answers, Ally offered her own answers to Kelly's questions; she agreed with Elliot's thoughts about Bar 5, added more options regarding Bar 29, and offered different ideas about the use of eighth notes and rests, which were coupled with quarter notes in Bars 6, 13, 15, 18, and 29. Although Kelly did not explicitly acknowledge Elliot's comments, her next revision seemed to accept them. In this case, although each comment offered coaching, the synergy of two different perspectives resulted in scaffolding for the student.

> I also need to find some sort of left hand part for the few new lines at the end. Also, I'm on the edge about the length of my piece. What do you think? I tried changing the notes that repeated immediately, and it mostly sounds good, but when I changed the left hand alone parts, I ended up with some clashing notes that I need help fixing, especially in bars 5, 14, and 29. Bar 31 needs some help too (*Kelly's written request for comments*).

Table 41

Diverse Answers from Mentor Elliot and Ally

	Elliot's Comment	Ally's Comment
Opening	First, the length of the piece is good, though I think you could also add your opening 15 bars with a change or two at the end to give the piece and the listeners some more repetition.	
Bar 5	As for bar 5, if you move the left hand first note from middle C down to the E you had before (third space in bass clef), you'll be fine.	Elliot's advice is very good, change the left hand to an E. Part of why it probably doesn't sound too good for you, is because both hands play the same note and the texture is down to one note at a time instead of two.
Bar 14-15	In bar 14 there's no problem I can see, so I think you mean 15, as it's the same as 29. They both have the same clash but in opposite hands. That is, in 15 change the right hand from E to F and in 29 it's the left hand that needs to go from E to F.	Bar 15, I assume, not 14? Change the left hand to a C natural and see what you think. This change will result in parallel thirds between the beats of these couple of measures. Parallel thirds are consonant and considering your piece is tonal, thirds are associated with good voice leading. The other good tip is use parallel sixths.
Bar 29		Change the left hand to either an F or an A. Same basic principle as above - use parallel 3rds or 6ths!
Bar 31	(Elliot did not mention about Bar 31)	Bar 31: I actually don't see a problem there.... but may be you don't like the fact that the G repeats over the bar line? Try changing the G in bar 31 to an A and you may be happier with how it sounds!
General Comments	The other thing I'd ask you to think about changing is the places where there are eighth notes and eighth rests instead of quarter notes, such as bar 6 in the right hand, bar 13 in the right hand, bar 15 (and 29) in both hands and bar 18 in right hand. The eighths in these bars really sound too short to to my ears and in places where one hand has quarters and the other has eighths like bar 6 there's no real reason for it so it won't sound as good and it will be harder to play.	In contrast to Elliot I actually do not have any problems with the 8th notes, as they give a variety in what could otherwise become monotonous. The only time I do think it would sound like a mistake in m. 6 - this is the only time you use quarter note in one hand vs. an 8th in the other. This might come out as a mistake on behalf of the pianist considering you never reuse it. I recommend you make them the same duration - either 8th notes or quarter notes, to your liking.

Moving forward*: *Catching the appropriate time. In elementary school cases, the *Praise-Critique-Suggestion* pattern also works as a main framework for commenting; from the very beginning of the process, mentors usually began comments with praise in order to acknowledge what the children had composed and revised and to offer an overview analysis of the entire work, as well.

Receiving a storm of comments from five mentors led Kelly to move toward the next dimensions of her composition: to move forward and to zoom in and refine. Kelly's three successive revisions demonstrated that her composition progressed both in length and depth as she engaged with mentors' comments.

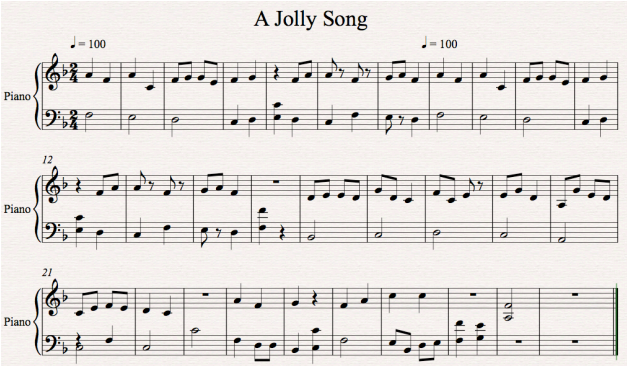


Figure 9. Kelly's 2nd revision after the detailed and various comments.

When Ally believed that Kelly had moved through the initial phase of her composing process and had entered the main developmental stage, she began commenting on harmony. She believed in building up students' comprehensive knowledge of harmony as one of the most significant aspects of composition. This is another way of supporting students to move on to the next stages in the compositional process.

Since mentors cannot know each student' pre-existing theoretical knowledge, they need to adjust the level of difficulty of their feedback and the timing at which they deliver it. Beginning with general rules in harmony, Ally connected those rules to the specific contents of

Kelly's composition, using her phrase as an example and Elliot provided suggestions for filling out the already-developed melody in order to maintain Kelly's progress.

Table 42

Comments for Moving Forward

Stage	Mentor's Comments
Ally's Comment on Kelly's 1st Revision	Your piece has grown and improved, so my comments will focus on what I consider the most important aspect – the harmony. I don't know whether you have studied harmony or not, but I here lay out a couple of simple rules which will help you when you revise what you have already written. Tonal harmonies are build on thirds. A chord consists of 3 or 4 notes, which you can arrange differently once you know what they are. The notes which partake in the chord are the main notes. Chords should change across bar lines regularly. For example, if you use an F chord for 2 bars, the your next 2 bars should have a different chord. If you look at your m. 13, for example, your second beat would sound better with a C-natural in the left hand and a G in the right. Try it out and you will see – then the F afterwards sounds like a resolution.
Elliot's Comment on Kelly's 2nd Revision	Kelly, you have made a lot of melodic progress in your piece. Now if you can add a left hand in the later bars and also start to add dynamics as well as think about the changes I've suggested your piece will continue to grow and improve. I look forward to your next posting.

Shared experiences as support-building materials. Even trivial private experiences, like episodes and memories, reinforced mentors' intimacy with young composers, and they consistently expressed their understanding as students encountered difficulties they had felt before. Throughout this sharing of experiences, the mentor Danny provided generalized notation information; Danny suggested that unless a composer intends to achieve specific sound effects or melodic progress, she should use consistent note length for both hands. Of course, Kelly replied to Danny about how this approach worked for her and how she felt about it.

> Kelly: It helped a bunch and I tried to fit the note lengths so they matched…Also, thank you for sharing your composition teacher's advice and I have a feeling it will be very helpful in the future with the composing I do (*Kelly's written reply to mentors*).

Table 43

Shared Experiences As Support-Building Materials

Stage	Mentor's Sharing
Danny's Comment on Kelly's Original Posting	Congratulations on writing a fine melody and accompaniment part for your piece, "A Jolly Song". It reminds me of my first piece, which I wrote in fifth grade, too! :) I'd like to share what one of my composition teachers told me about using eighth note and eighth rests, like you have written in measure 6. My teacher said that when you are writing music, you want to give your performer as little information as possible, so if you want them to play short, simply write quarter notes but place staccato dots on your notes instead. The way you have it, the left hand is holding out the quarter notes and the right hand has to play the eighth notes short...this is tricky for any pianist. Think about making the note lengths match in both hands.

Jake

I have some questions for you if you could answer some of them
(Jake's written reply to mentors).

Jake was a 5th grader and had participated in the Composition Club since the previous semester. When I observed students in the Club, I sat mainly beside Jake. During my observations of him, I was surprised to find that he exhibited exactly those qualifications of a good composer that Miss Gibson had mentioned: "*more patient, like tenacious, individual…just take wherever they are whatever they decide*."

I was constantly astonished by Jake's ability to work very quickly and with great focus. When I was in the lab, I never saw him talking with other children while he was composing. Sometimes, even when other children asked Jake to listen to their compositions via headphones, his eyes still stayed on his own computer screens. He ran into the computer lab every Wednesday, immediately reviewed mentors' comments that Miss Gibson distributed at the beginning of each class, and rapidly located his ongoing project on the computer—while some students took time to find their working files because they did not always follow guidelines to title their files differently each week. Jake then began to revise without delay based on mentors'

comments; he checked every word in detail and in order. Interestingly, he did not often listen to his music as he worked. More interestingly, at the end of class, when he finally listened to his composition to check it before uploading, he still did not make many changes.

> Miss Gibson: Jake is very good at trying comments. He'll try every single one as many as he can… Very good at taking their feedbacks and giving it a chance. He changed his piece quite a bit based upon comments already… switched parts from high and low, back and forth so he's done quite a bit of change already (Interview, October 28th, 2009).

Jake's motivation for participating in the Composition Club drew on a long history of interest in music that began in early childhood. In addition to his interest in making music, the method of composition using computer technology stimulated him, as well. Most of all, Jake had a strong desire for extended music-creating activities from the general music classes, where composition was assigned as the last stage of learning theory.

> I first got inspired by music in kindergarten by seeing written music. I used to go to my neighbor's house and improvise on their piano. In 3rd grade I learned to play the recorder. Later that year I started playing the flute. That same year our music teacher showed us Sibelius and I was psyched. Last year I entered the Vermont MIDI Project Opus and loved the concept. And this year I entered again and won (*Biography on the program of the Opus event written by Jake*).

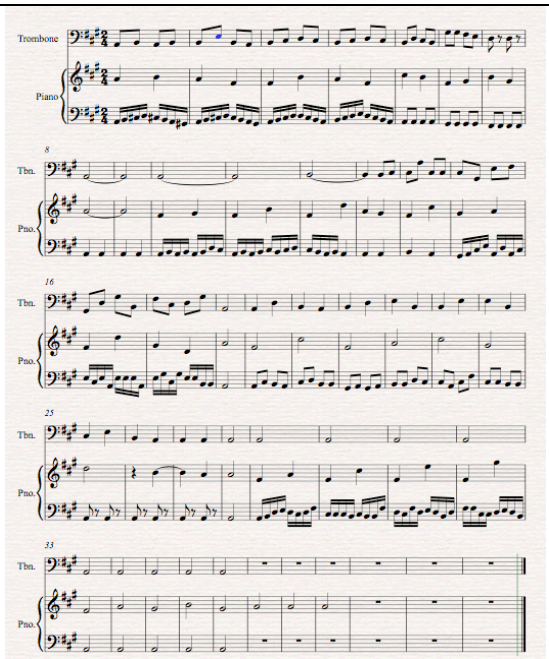
> Miss Gibson: Jake is drawing the pictures. Jake is trying lots of different ideas…[At the general music class,] Jake is always going beyond and writing something different than what the assignment is. I'd say, "we can't do that yet we're not there," and he says "but I want to!" "Then you need to come to the after school club. Go beyond have time to go beyond (Interview, November 19th, 2009).

Change up.

During his second experience participating in the afterschool Composition Club, Jake composed a piece for solo trombone and piano accompaniment. This young composer seemed to have become particularly interested in tempo changes. Jake laid out his initial musical ideas in his opening description of his piece and the ideas were already expressed in the first posting.

Table 44

Jake's First Posting with "Description of Piece" and "Request for Mentor Feedback"

Criteria	Content
Score	
Description of piece	This piece starts with scales and the trombone doing its own thing. Then it changes and all the parts go faster or slower and then changes back.
Request for Mentor Feedback	Do I have enough phrases? Do you think I should have the half rest in between the changes? Do you think I should try and slow down some parts? I know I have some clashes and will work on them later. Thanks for all your help, Jake

Active questioning by young children. Like other students, Jake's mentoring interactions included opening and closing compliments as well as comments prompting him to 'move forward' and 'to zoom in and refine,' all within the praise-critique-suggestion format. Nevertheless, Jake's active questioning definitely impacted and altered the framework of the commenting process and his interactions with mentors.

Even if students did ask any questions or seek any kind of confirmation, it was the still the job of mentors to provide critiques. Nevertheless, Jake asked questions and confirmations at

almost every stage of his revision. Compared to Kelly, who tended to communicate with mentors without asking for specific kinds of comments, Jake tended to accumulate an intense list of highly specific questions and request for confirmation.

Throughout Jake's composing and revising process, his questions were mainly devoted to seeking confirmation for what he had already done, and seeking directions for the future, including directions about specific content (such as "*the half rest*" or "*transitioning from m.51-57.*") rather than only for the overall piece. Jake asked these kinds of questions from his very first post. When I first met him, I was able to imagine the tone with which he conceived of them, one eager for knowledge and full of curiosity.

Elliot offered detailed answers to Jake's questions, as the main mentor to respond to almost every stage of Jake's revisions; mentor Danny and Moore offered supplemental comments. However, in addition to providing answers to the questions Jake has posed, Elliot used his experience as a mentor to encourage Jake to consider new issues that would help him develop and refine his thoughts: "*The real question is what are the phrases like*?" Even as he respected the young student's questions, Elliot also delivered the core of mentoring, including independent compliments, critiques, and suggestions.

Table 45

Elliot's Answers for Jake's Questions

Stage	Jake's Questions	Elliot's Answers
Original Posting	Do I have enough phrases?	I actually think you have enough phrases, but the real question is what are the phrases like? I think your phrases in trombone need more attention. They continue to circle back to low A too often. Try to think of singing your first idea and see whether you can create a melody which uses rhythmic patterns, such a dotted quarter and eighth followed by four eighth notes, to give us a phrase which has some structure. Also think about the shape, trying to make the melody move up and away from A toward the middle of the phrase and then back to to A at the end. I'm not saying there can't be an A in between the beginning and end, just not quite so much.
	Do you think I should try and slow down some parts?	I also think that the piano is a bit too busy and distracts from the trombone, especially as they are both in exactly the same register. So yes, I think you might want to slow down the piano left hand some so it doesn't compete with the trombone so much.
	Do you think I should have the half rest in between the changes?	I don't see any half rest, so I'm not sure whether you want to add one in between phrases or not, but I think it would be a good idea in trombone as it will give the player some time to breathe and that's really important.
Jake's 1st Revision	At the beginning, I tried a dotted eighth followed by a sixteenth note, should I keep it?	You have already made some progress, especially at the beginning in trombone. Your dotted eighth-sixteenth idea really gives the trombone part character right off the bat and putting it up higher gets it away from the piano.

(continued)

Table 45 (continued)

Stage	Jake's Questions	Elliot's Answers
Jake's 3rd Revision	Also, I gave the piano a rest and did a solo trombone part. I tried to make the piano part more playable in measures 15-17. What do you think?	You confused me when you talked about giving the piano a rest. Usually that means the instrument doesn't play at all and that leads me to one point I've made before, namely the need for some real rest for the players. Other than a 16th rest in bar 17 and an eighth rest in bars 42 and 44, the trombone plays constantly, as does the piano. Not only is this really tiring, especially for the trombonist, but it will wear out the listener. We need time to absorb the ideas and all those long A notes don't do anything for the piece or for us.
	First, I was wondering what I should do about transitioning from m.51-57 where it is mf to forte?	My suggestion for 51-57 is to make 51 p in both instruments. I would get there by making a decrescendo in both instruments starting at bar 45. So much of your piece is loud that to have a little section which begins softly would provide a nice contrast. You can then have both instruments make a crescendo starting at bar 53 to arrive at f by 57. By the way, I think the fff at 61 is too loud for such a piece. And I'm in agreement with Sam and Wes that varying the trombone part more at 57-65 will really improve the ending. And do you mean to have the instruments not end together as you have it now?
Jake's 4th Revision	Also, I was wondering about should I make the left hand of the piano louder in m.19-27?	As for the left hand at 19-27 it's already f and I think that's loud enough. One final thing. Is there any chance you could give the trombone some real rest, that is, some bars off? One place I'd suggest is 19-27. The trombone part there isn't as interesting as the piano part and it would make the re-entrance at 28 even more striking. Think about that.

Last sprint for Opus submission *(Vignette, November 18th, 2009).* I was present in class on the Opus due date, the most hectic day of the semester when all children needed to complete their pieces and Miss Gibson needed to take care of every last detail, from notation to the content of compositions, during a single class session. As the teacher and student-teacher became consumed with the questions of each and every child, Miss Gibson asked me to help Jake check the notation and editing of his piece; we were thus able to interact directly. I have taught older students, usually at the high school and college level, so interaction with this young composer was fresh and fascinating. As his teacher suggested, Jake was very quick and focused; he paid

full attention to the revision process. He gripped the printed comments while quickly moving the mouse with his right hand; without his headphones, he seemed not to hear any sounds except the music in his mind.

We worked with a written description, in which Elliot provided detailed directions for the final revision of Jake's Opus submission. As he did for all students, Elliot provided direct and detailed comments that would coach students to wrap up the pieces rather than to further develop them.

Table 46

Elliot's Comment on Jake's Final Revision

Stage	Content
Elliot's Comment on Jake's 4th Revision	Dear Jake, Thanks for posting the latest revision of your piece. This is a big improvement, especially at the beginning, where your changes have really made the opening much more successful. Let me try to answer your questions and then get to a couple of comments of my own. My suggestion for 51-57 is to make 51 p in both instruments. I would get there by making a decrescendo in both instruments starting at bar 45. So much of your piece is loud that to have a little section which begins softly would provide a nice contrast. You can then have both instruments make a crescendo starting at bar 53 to arrive at f by 57. By the way, I think the fff at 61 is too loud for such a piece. And I'm in agreement with Sam and Wes that varying the trombone part more at 57-65 will really improve the ending. And do you mean to have the instruments not end together as you have it now? As for the left hand at 19-27 it's already f and I think that's loud enough. One final thing. Is there any chance you could give the trombone some real rest, that is, some bars off? One place I'd suggest is 19-27. The trombone part there isn't as interesting as the piano part and it would make the re-entrance at 28 even more striking. Think about that. Jake, your piece has made great strides. No matter whether you finish it by the Wednesday Opus deadline or not, I think you can feel a real sense of accomplishment as to how much you have done. However, of course, I do hope you are able to finish the piece in time for the deadline, so I look forward to your next posting.

Except for a couple of small questions about expression and dynamic marks in *Sibelius*, Jake did not particularly need my help with in musical issues. However, sitting next to him, I was able to take in a close-up view of this young composer's ethos; how carefully he focused on the

mentors' comments and how seriously he handled his piece. Finally, he checked the revised piece through his headphones and then wrote his final reply to his mentors.

> First I would like to say a huge thanks for helping me for the past weeks. Without your help my piece would not be as good as it is now. So again thank you. I did all of your suggestions as best as I could. I tried to change the trombone part in the ending by moving it up a perfect octave. I also silenced the trombone in m. 19-27.
> Thanks again for all your time you devoted to help me (Jake's written reply of 5th revision).

Conclusion of Miss Gibson's Case

With regard to teaching music composition in the elementary school setting, the uniqueness of Miss Gibson's case indicates how teaching composition becomes visible as the end of the music learning sequence. Miss Gibson views the teaching of composition as the final goal of any amalgamation of the various music learning theories. Over her own teaching career, Miss Gibson has studied and woven together the music learning theories of Gordon, Kodaly, and Feierabend in a way that culminates in that ultimate end.

She pursues that end not only in teaching composition in the general music classroom, but also by managing the after-school Composition Club, where elementary children truly focus on creating their own music through mentoring. The after-school class successfully expands on the general music class by providing advanced content in music composition and by adapting mentoring projects to an online environment, via the Internet and computer software. As the ultimate end of learning theory, teaching and learning composition helps the students in the after-school class become "*musical persons*," which is Miss Gibson's fundamental aim in teaching music.

Characteristic of elementary composition with computers.

While technology is generally thought of as a neutral object for adults, it has become a living environment for our students. Unlike passive consumers of the media in the past, today's

students became active users, even creators or producers (Jenkins, 2006a, 2006b).

Before listening to their composed music, elementary school children were excited to click notes with a computer mouse. Whatever adults thought about their creating behaviors, the children were enthusiastic about drawing notes on the screen, just as real composers did, and were interested in communicating with composers via email. For young children, creating did not mean overcoming complicated struggles, but simply drawing notes, instantly listening to the musical results, and expecting compliments and encouragement from professional composers. Teachers and mentors understood what they could expect and ask of elementary children working with fine materials and in an ideal environment.

Elementary children complete their musical "drawings" with a computer mouse, and tend to explore, enjoy, and sketch rather than pore over musical ideas in a labored way. They are interested in music-making behaviors, like producing notes by clicking, they are curious about the diverse instruments available via computer-generated sounds, and are even eager to write replies to composer-mentors. The young children's composition processes tend to consist more of activities in class than of isolated creative endeavors.

Nevertheless, composition in elementary school music classes also addresses the significance of thinking about ideas before composing with computers, although compositional methods differed from those in high school settings. While Miss Gibson's students were just at the elementary level, some of them had plans and sketches in their minds prior to writing music, just as the older students did; some students exhibited features of experienced composers while revising their compositions, including meta-cognitive thinking, a mature style of communication with mentors, individualization of composing tasks, and patience in overcoming various challenges in creating music. Although they were young children, they already had their own

strategies and ideas for beginning their pieces.

Whatever their compositional stage and strategies, they drew music first and then checked the results by ear, only gradually generating structured music that also, incidentally, satisfied theoretical concerns. Thus, while children obviously experienced music prior to its theoretical regulation, they were also naturally able to learn that theory is the result of good music.

Their mentors' strong understanding of the cognitive developmental stages of elementary children, and their pre-existing knowledge of music theory, allowed them to lead students in this process. Mentors articulated their comments in simple language, with analogies to explain musical concepts and a focus on sharing their own experiences with children. Diverse methods of supporting student progress are generally intertwined (a) with compliments, which represents a respectful attitude; (b) with sharing of personal experiences, which establishes rapport and intimacy; and (c) with critiques or suggestions regarding relevant theories and composition strategies.

From student examples, we can see that solid learning in the general music classroom produces a basis on which to compose as well as to play. These students could become musical persons in their daily lives in a digital area, for they were accustomed to creating and singing in various musical patterns in accordance with each stage of learning theory.

Triad of Kelly-Miss Gibson-six mentors.

I was deeply intrigued by Kelly's process of writing replies to her mentors. When Kelly asked for directions and shared her reflections, mentors answered from their own perspectives in addition to echoing each other's thoughts. Thus, even when mentors answered young students' simple or general questions, those young composers became able to articulate diverse

perspectives on their own problems. Because so many mentors engaged in her composing process, Kelly was naturally able to experience great diversity and flexibility in the process of creating and revising music.

Triad of Jake- Miss Gibson-Elliot and other mentors.

The most visible feature of Jake's composing and mentoring process is his dynamic interactions with mentors as a consequence of his vigorous questioning. Throughout Jake's composing and revising process, his questions consistently sought confirmation for what he had already done as well as directions for the future. When he requested directions for further development, he also noted his specific ideas and compositional strategies rather than limiting himself to requests for overall guidance.

This behavior weighted the overall emphasis of mentoring interactions toward requests, for several reasons. First, mentors generally address students' answers first in the Vermont MIDI project. In addition, out of consideration for their developmental stage, mentors would try not to overwhelm elementary school children with too many critiques. These two factors together made it likely that mentors' comments would accrue enough quantity and quality merely in their answers to Jake's questions, before they had ever broached their own independent responses to his music; thus, insofar as he asked questions first and actively, Jake tended to frame the mentoring relationship. Therefore, the experienced mentor Elliot tried to offer answers to Jake's questions in a way that conveyed Elliot's own compliments, critiques, and suggestions.

Chapter Seven

Composers Talk about Teaching Composition

Since the summer of 2007, the first time I met the mentors, Elliot and Martin made a deep impression on me. I have met various types of composers as my teachers, colleagues, and classmates. Nonetheless, they were distinctive. I was intrigued by their capacity for detailed nuanced verbalization; interviews with them went far beyond conversations about their thoughts and experiences. I have studied diverse areas from performance to composition, and to music education. Thus, I fully recognized the value of the ability to verbalize musical concepts and content as well as to articulate the process of teaching and learning interactions.

Mentors for the Vermont MIDI Project were professional composers but at the same time, the online mentoring experience allowed them to interact with students in the classrooms via the Internet. Through asynchronous communications, they commented on students' uploaded scores and MIDI files instead of teaching or giving in-person lessons.

In this chapter, I discuss the insights and experiences that the mentors shared regarding a range of issues in composition and teaching composition, including their motivations, challenges, and satisfactions with respect to this particular mentoring project. I also address their rationales as outsiders for teaching composition in the school music context. Finally, I revisit issues raised by the previous chapter on teachers' strategies for supporting students' autonomy and agency, including mentors' interactions with students and teachers as well as the expected role of teachers from the mentors' perspectives. Throughout my discussion of these issues, I aim to consider the way that mentors' unique role influenced teaching and learning interactions overall.

Issues of composing with computers and relationships with students conducted via the Internet will be addressed in the next chapter about technology.

Why the Professional Composers Participate in the Online Mentoring

Mentoring for the project certainly helped mentors to make their living through composition, whether composing was their only other work as was true for Elliot; or whether they had other part-time work as well as was true for all the other mentors. Martin's remark above captures this economic reality of a promising and talented young composer. Nevertheless, money was not the mentors' first concern. For Martin, mentoring was *"pouring his heart and soul"* into the comments rather than just filling in the allotted time to earn his pay. That level of dedication is what requires mentors to be able to recognize and anticipate how much students are capable of and what they want.

> Martin: As a composer, there is not a lot of work that you can get paid a decent hourly rate for. But it's certainly about more than the money. The mentors feed off of meaningful interactions with students. If students seem unresponsive to the feedback I offer, it effects how invested I get in their piece. I won't stop critiquing their work, but I certainly stop pouring my heart and soul into the responses. (Interview July 14th, 2009).

Martin, from a student to mentor.

Martin is unique in this study because he had experienced various roles in the Vermont MIDI project, from student to mentor to instructor at the Summer Institute for in-service teachers. As a student, Martin had previously studied under Mrs. Campbell: "Mrs. Campbell and I have become very great friends. Since she used to be my 7th grade music teacher, and now she and I are great friends (Personal conversation with Martin)." He had finished his undergraduate in music composition and was completing his master's degree in New York. Unlike other mentors, Martin has specific personal reasons for working as a mentor.

> Martin: Because I was a student of the Vermont MIDI Project first, I know what satisfaction there is when I'm writing to that student. I remember when I was in that position, and I was waiting for the feedback. I know what kinds of comments are really helpful and what kinds of comments are not helpful. So I feel like I have a good perspective on what a student needs, and I find it very satisfying to be able to provide that (Martin, Interview July 14th, 2009).

He himself had benefited from the opportunities that the mentoring project offers, most importantly the opportunity for students who have musical interests and talents but who are not drawn to performance to discover new areas of music to pursue. Ultimately, though, distance learning raises equity issues, and Martin was a lucky case. As the most accomplished beneficiary and success story of this mentoring project, Martin was able to use online mentoring to prepare to enter a music school in the United States. He was able not only to discover his aptitude but also to find a track along which he could pursue appropriate and steady progress. As a live testament to the Vermont MIDI Project, he reflected how he had begun and continued composition.

> Martin: As a musician? Well, it totally shaped my personal goal as a musician… I certainly wouldn't have become a composition major in my undergrad if I didn't start the MIDI project. It just gave me that path, it showed me, it just lit up a path that I wouldn't see otherwise… It was like the outlet I needed to feel to be in touch with my musicality. In a nutshell, it has provided education in an art form that is rarely given to rural communities, it provides equal opportunity. I get the same experience that some hot shot that goes to a Julliard Manic school gets, he is getting private composition lessons every week, and I am getting three private lessons a week from all these different mentors (Interview, July 16th, 2009).

Martin's enthusiasm was also rooted in personal relationships and emotional fulfillment. Mentors could discover students' appreciation and satisfaction in two ways: reflected in the application of their comments and directions to the students' compositions and directly expressed in students' replies. Therefore, the foremost motivations Martin mentions are his emotional commitment to and appreciation for the people and the community involved in the project. His strong "commitment and dedication" have led him to persistently participate in the project.

> Martin: The passion for education and for trying to give back to community that provided me with everything that I needed. I am at one of the top music schools in the world right now, because I was provided with these opportunities. So, I feel a strong sense of commitment and dedication and you know, to give back as much as I can… At the stage of my career that I come into a project that helped me to get what a certain kid is going through, I can hear my old mentor saying to me. It's like the wise voice, the voice in the

> cloud that you want to give to someone else. And it's just very satisfying to be able to help in the same way that you were helped (Interview, July 14th, 2009).

Elliot, the ambassador of the project.

In the beginning, Elliot hesitated to get involved in the online mentoring project, although he had known of it for years. Because of his traditional views of composition-- which can be summarized as at home, with pencil and paper, and sitting at the piano— he was not fond of technology as an appropriate compositional medium. He also questioned the quality of music that students could create with the MIDI instruments. Nevertheless, after the experience of visiting a classroom, he became increasingly interested. Through his two years of experience mentoring in this project, Elliot finally came to appreciate technology as a valid tool for helping students and creating works. He expressed to me his sincere commitment.

> Elliot: It's really important to me because I like this work. I like taking my mission, which is I'm trying in my own tiny way to make the world a better place through my work. And work is my own composition and my work is also helping other people with their compositions (Interview, July 14th, 2007).

At a quite practical level, mentoring influenced the direction of Elliot's life; it helped him to continue to make his living through composition. He alone among the mentors makes his living solely through composition, while the other mentors have other part-time jobs.

Elliot and I had several encounters. Following our first interview at the Summer Institute 2007, I also interacted with him at the Summer Institute 2009, at Mr. Stanley's music class for visiting composers, during interviews at his home, and finally at the Opus event. Thus, I was able to witness diverse aspects of this main mentor's activities both on and offline. Throughout these various meetings—including interviews, observations of lectures and work with students at concert rehearsals, personal conversations, and most of all, written comments on students' compositions—I learned that the one certain thing driving Elliot's participation is his heartfelt

desire to help others, to give something to others. As Martin put it, the value of the program would evaporate if he stopped pouring his spirit into the responses.

Ross in Manhattan.

> *About seeing how they grow and seeing how they learn.*
> *The rewarding part for me is*
> *being able to touch the life of and to help a student*
> *that otherwise won't have access to somebody like me, or all the other mentors*
> *(Ross, Interview, November 13th, 2009).*

When I interviewed Ross, I felt something different. He was not a Vermont resident: He lived in Manhattan and was visiting Vermont for an art project that supported him. Thus, I was able to offer him the sympathy of a fellow outsider; however, although we were both outsiders, we looked upon this unique mentoring system with wonder. Personally, he had experienced difficulties in finding teachers who were able to teach composition. Thus, he fully recognized the advantages of the online mentoring system. Beside, Ross is a composer and percussionist, so he wound up giving detailed and specific comments on the Opus 19 pieces, which required brass and percussion.

> Ross: While I was growing up, when I was in school, I first took composition from a guy, who was teaching in Buffalo, New York. I didn't have the access to the professors at the school, the higher ups. But he was an adjunct professor and I was lucky to have access to him, because schools where I went to have no composition programs at all, or very little (Interview, November 13th, 2009).

Ross is full of artistic and creative inspiration. During a one-hour interview, I came to understand some of the source of his mood and nature: his parents were artists and his wife is also a musician. He himself is a composer and percussion player. His life is thus full of contemporary music, both that he has composed and played.

Ally in Canada.

Ally was born in Europe. As a young child, she had participated in a gifted child program in piano performance. When I interviewed her, she was completing a composition major in a doctoral program in Canada. Unlike other mentors, Ally had requested that I send interview questions via email prior to meeting her, and then later she gave me a written description of her motivations for mentoring and her thoughts about teaching composition. Her responses offered comprehensive and keen insights into the most significant rules and principles in her mind while commenting.

On my way to Montreal, I picked Ally up and we drove to Burlington together to attend the Opus event. For about 2 hours, she continuously and passionately shared information about her family, educational background as a musician, philosophy of music composition, and her dedication to younger composers. Although we had a personal conversation, she enthusiastically shared how much she respected young students' musicality, was inspired by their ideas, encouraged them to consider multiple aspects of music, and tried to articulate as accurately in conversation with them as she did in her written answers to my interview questions.

The collective motivation: Musical refreshment and inspiration.

> *I treat the students in the Vermont MIDI project as younger colleagues.*
> *I keep their present skill level and breadth of education in mind*
> *when commenting on their work,*
> *but in the long term,*
> *I retain the awareness that art is ageless and timeless*
> *(Ally, Interview, December 3rd, 2009).*

Beyond economic rewards, titles, or other honors, the mentors agreed that their most fundamental reason for participating in mentoring was the opportunity for daily refreshment and mental stimulus that it provided them as professionals; young composers actually inspired the professional composers employed to advise them. In other words, students were not the only

learners in the mentoring process. Mentors also gained opportunities to continue developing knowledge and skills both in composing and in teaching composition. For Martin, the mentoring process offered a chance to maintain leaning as an educator as well as a composer. Martin described his reflections during the mentoring process; while commenting on students' composition, he would make his comments into a mental rehearsal for his own composing and revising.

> Martin: I learn a ton from doing it. If I wasn't learning, I try not to involve myself in any musical projects that I don't think I can still grow from. Even if I am the teacher I still want some sense of growth from them. And the MIDI project is certainly one of my biggest point of growth in my skill as an educator and my skill as a composer… I will get into something I am writing the comment then I think, I can probably listen to my own advice in the piece I am writing right now. Just articulating what's wrong with one piece, or what can strengthen one piece helps me keep that in the front of my own brain when I am composing.
>
> A lot of composition teachers that I have talked to in universities say the same thing about once they started teaching composition privately, they thought that their own writing improved because of it. Absolutely, that is an important part… Some people hardly speak about their own music, never mind trying to give you some advices about yours…That is actually why the writing does come in handy, it forces you to really slow down your thoughts and articulate very carefully what you want to say (Interview, July 14th, 2009).

Elliot went beyond Martin's remark to note that he was inspired by students' compositions themselves. He certainly recognized that he had developed and sharpened his critical and articulation skills in the process of explaining his responses to their pieces, and verbalization about musical phenomena is indeed a significant component of compositional knowledge. However, Elliot mentioned that the optimistic confidence and fresh energy of the students, without any limitation or biases, also made him feel inspired and encouraged:

> Elliot: Helping young people to compose. Helping them to develop both as composers and as people is something that is wonderful. Plus, I love working with young people. They're enthusiastic. They're grateful for everything that you tell them and the time that you take to work with them. And they get it.

> I learned a lot from students' compositions, especially the advanced ones…Sometimes you can see rather narrowly, in terms of what your options are, what you can try in a piece whereas students have a wide open view… Before we have a chance to say, "*Oh, those won't work*," they've done it a way that does work. And so I find that really inspiring. I think how they put their ideas together and often how much energy their ideas have. Their ideas are often very energetic…They are just loaded with energy. They're just sort of bursting with ideas and with confidence.
>
> The confidence of a young person who thinks that anything is possible. When we're adults, we don't think so many things are possible, even as composers. Young people don't have that limitation. That optimism comes out in their music. And that is something that I find very inspiring (Interview, July 15th, 2009).

Ally also explained what she gains from mentoring in the same terms:

> Ally: Having had a number of extraordinary teachers, I find artistic and intellectual stimulation in the exchanges between student and teacher, regardless of what role I find myself filling. The fresh/unusual/interesting/unexpected perspective offered by someone of different level of experience (student or teacher) assists the continuous evaluation and re-evaluation of my artistic opinions and my keeping an open mind (Interview, December 3rd, 2009).

As a consequence of the respect, emotional support, and collaborative interactions in the mentoring process, mutual relationships frequently grew between mentors and students. Based on student confidence and ideas, mentors can suggest options when students need directions. Elliot also stressed the significance of sincere elaboration by students, which enables them to develop ideas for musical work.

Pedagogical rewards: Joy in being able to give appropriate directions.

This is absolutely the kind of revision that reminds me
why I love composition mentoring!
You really took my suggestions to heart in a very effective way, and
found your own solutions that have strengthened your piece in a huge way.
Really great work.
It's not easy to take a rather abstract musical concept from
one of my rambling comments and really grasp it the way you have
(Martin's comment on Jonathan's posting).

The factor that most clearly led mentors to remain in the project for prolonged periods is students' musical development under their interactions; like the three focal teachers, mentors felt

most excited when student compositions took the shape of real music. Thus, mentors' foremost reward in mentoring is to support students' own musical achievements. If teachers are a witness to this process, mentors might be its managers, who directly impact a piece's evolution.

> Elliot: When I see a piece starting to come together. When I see a student that has made a big leap forward, just suddenly something that is making sense and is really working, I get really excited about that. Sometimes students start right off the bat with something that is really exciting. Especially if it is a little crazy, unusual, then I really like that. Then I always will say, "Wow, I love what you are doing!" I think because I comment on so many students' work, when something is unusual that really is fun for me. That is because it wakes me up (Interview, November 17th, 2009).

Martin was satisfied by the same things that determined the satisfaction of students like Harry and Sam with their mentors—they were generally frustrated when they lost thee sense of direction in their compositions. Martin felt most satisfied when he gave directions that could facilitate the development of students' own thoughts rather than require exact outcomes. Nevertheless, beyond giving comments, he valued the moment when he listened to students' revised compositions and found that they represented collaboration among his comments, the students' autonomy, and the revision process itself.

> Martin: When I comment on a kid's piece, and I don't necessarily say "Oh, change this note to that note." If I give them a comment that I am specifically and strategically trying to guide them toward a certain direction, and they totally get it and it clicks. And they write back and say, "that is exactly what I needed to hear, I totally understand what you are saying now. I changed this and that and that." …You didn't give them the answer, but you taught them how to think differently about their own piece… Some kid tried the suggestion online and they loved it. Or they didn't like my suggestion but it led them to something else. (Interview, July 14th, 2009).

Ross also mentioned the rewards of witnessing students' musical growth. In particular, he was excited by the interplay between logical ideas and musical content.

> Ross: I open up each progressive revision and see that they are learning something from this. I like to try to think of how things are related and then say, Okay, this lead to something good down the road and seeing one thing can lead to another. That made me really enthusiastic about this because I saw that there was something really wonderful being done through this process (Interview, November 13th, 2009).

How Mentors Think

If composition could be taught through the delivery of knowledge and skills recorded in books and manuals, music teachers might more easily teach composition in their classrooms. However, while such methods are not effective, teaching music composition, and particularly guiding student to compose within the school music context, also requires more comprehensive methods than allowing them simply to create random sounds or instantly improvise. In this section, I explore how the professional composers understand the teaching of composition in the school context and their young students' developmental stages. The data from interviews allow me to consider diverse stances, especially those that differ from music teachers' perspectives.

About their students.

Although the mentors are musicians rather than trained educators, they also need to carefully consider students' ages and development stage in making their comments. Mentors recognized cognitive differences that accompanied these developmental stages. Usually, they controlled the volume of their comments accordingly; for an elementary school student, mentors gave a couple of comments, while they offered in-depth critiques to high school students. Older or upper-level students, such as high school students, already have the capacity for self-evaluation, so they tend to want to fully understand their mentors' responses in order to undertake further revisions. While younger children want to find encouragement and praise in the verbal reactions of their mentors, upper-level students tend to need more specific critiques to reach a higher level in their compositional abilities.

Mentors made adjustments based on how well they believed students could engage with mentors' critiques and how effectively they could reflect on their own revision processes. Interestingly, Martin had positive memories about digesting plenty of mentor comments when he

participated in this project as a high school student.

> Martin: The amount of information I give them is a big component… I remember when I was in high school, I loved the mentors who would just give me tons and tons and tons of comments, because I had time to sort through it and read it and absorb it carefully. But, in elementary school it will be overwhelming to think that I am doing this fun project in music class, and then have this huge laundry list of things that the mentors critique about your piece. That is not the way to inspire a 6th grader or 5th grader so the amount of content I think is important. Only mention one or two criticism in a piece that they could focus on rather than giving them too much stuff they don't even know how to handle (Interview, November 25th, 2009).

All mentors in the Vermont MIDI project can flexibly comment at any level. As one of the most active and experienced mentors, however, Elliot tends to be more direct in upper-level mentoring cases, because he believes that students at that level need straight talk. In spite of a lack of time and other challenges, Elliot also knew to deal with younger composers using various simple analogies and metaphors, which were matched to the elementary children's knowledge and comprehension skills.

> Elliot: I like working with elementary students because it is a challenge; because you have to be able to say only a few things. Simple enough so they can get it and so you are not wearing them out… We sometimes overwhelm them and we all feel badly about that when that happens. So there are special challenges about writing to younger students. Pick one or two things to say. And try not to assume that the student has much background. So you don't talk very technically to the student because a lot of students don't understand if you are talking about a dominant chord.
>
> I say, "walk out your house in the morning, you go some place, you have an adventure and you come home at night. Well, that is your note, G in this piece, that is home. And we've got to feel that we have really arrive some place when come back to that note. And that all depends on how your surround that note, what the other notes are" (Interview, November 17th, 2009).

Ally tended to adjust her language in writing for younger students while still seeking to deliver fundamental concepts.

> Ally: As a matter of principle, I do simplify my language to make certain ideas more easily comprehensible by younger people. I employ shorter sentences, small verbs and give more examples, but nevertheless I do not avoid any important concepts (Interview,

December 3rd, 2009).

About school music composition.

Fundamentally, this mentoring project has been established in order to help music educators, mainly in-service teachers, to teach music composition in their classrooms. Martin noted that, "*we have these standards in music education that involve composition and improvisation too, of which I think most music educators aren't really trained to do*." Thus, although mentors would generally not have public school teaching experience, they nonetheless need to understand salient elements in the working environment music teachers, such as the rushed classroom schedules they juggle and the many students they are responsible for. For example, even though mentors comment online, students and teachers employ their comments during class meetings. Therefore, mentors need to understand how busy teachers are with numerous unexpected difficulties and how governmental and educational administrators view school music.

Based on his more than 20 years teaching experiences, in both private and public as well as online and offline settings, Elliot pointed out what he considered a problematic tendency in school music. Unlike fine arts, he noted, music in classrooms was biased toward classical music. He argued that school music was more focused on reproductions rather than on providing students opportunities to create music anew.

> Elliot: That is tremendous. Because a lot of students get out of school, and what they know how to do is take notes, think critically, that is take things that other people have said and figure out whether they agree with it or not. But not, be able to start something from nothing and create something out of it, unless they are involved in the arts. In the visual arts, there are opportunities at schools, and that had happened for years for students to create sculpture and painting and drawing (Interview, November 17th, 2009).

With regard to the fundamental issue of why composition is difficult, Ross also offered an astute and insightful perspective. Most interestingly, he claimed that

> Ross: Because it's such a visual world. We live in a very visual culture worldwide. People are very used to writing, reading, seeing, watching TV, painting, using their hands, colors and so on. Only I think our ears are generally behind our eyes…Actually I think our ears aren't as developed as a culture as our eyes (Interview, November 13th, 2009).

I concur with their thoughts; even if we recognize the significance of early education in music as compared to other arts, because the ears need to be developed as early as possible, nevertheless, our ordinary life experiences often provide fewer opportunities for our ears to be developed than our eyes.

The National Standard has provided formal advocacy for teaching composition in the classroom. Nevertheless, teaching and learning composition is still latent (Strand, 2006). Elliot believed the reason was teachers' inaction. Through the mentoring process, the Summer Institute for teachers, and various other workshops in which he worked with the mentoring project board members, Elliot had met numerous music teachers who were 'scared' to teach music composition in their classrooms.

> Elliot: The problem is, music teachers, for the most part, had no training and no background in it. And so they are scared out of their minds. That is why people like me are much in demand because here is somebody who can actually talk to my students about this (Interview, November 17th, 2009).

Elliot discussed the reality of arts education in the United States in detail. Surprisingly, I find his verdict quite applicable to the Korean situation, as well; we have also struggled to gain social recognition of the value of arts in the public education system

> Elliot: I think it is going to get better because of the United States National Standards. I think that is going to help. Because so often the pressure on music teachers who teach choir or band or orchestra is to always be performing. To put on concerts, because the arts are not very important in the United States, and unless people see the kids out there performing, they are going to say, "well, what are we spending our tax dollars on, we don't need music classes, what do they do, they don't do anything" I am not saying that all people say that.
>
> So unless school administrators see them out there with their shiny instruments,

> especially if they see them marching out there in football fields. Unless they see something tangible, then they think it's got no educational value. And it's very hard to get administrators, not all of them, a lot of them. Unless we put it in terms of how it helps students do academic work, which always makes me very angry. Because the arts have value in and of themselves (Interview, November 17th, 2009).

Ross was more broadly concerned about reductions in support for music programs overall, not just for composition, within the public education system.

> Ross: The education system, they have cut so much, many schools don't have music programs. I am sure you have seen this around… Definitely not composing, sometimes they don't even have instruments (Interview, November 13th, 2009).

Elliot also ultimately expanded his discussion of the place of composition in music education into broader reflections on the value of composition for the educational system as a whole.

> Elliot: It teaches students. If they are in a performance group, it teaches them to work together towards a common goal. It teaches them self-discipline and this is true if they are creating as well. It teaches them how to respect the works of others. It teaches them how to develop their own idea and their own insights and how to respond positively to constructive criticism. But more important than that, especially if they are creating, it teaches them the power that is inside them… We don't know where our ideas come from. And there are people who would like you to believe that everything can be reduced to a formula, or a set of numbers where we can explain things in quantifiable ways always. And the arts stand in defiance of that. They can't ultimately be explained (Interview, November 17th, 2009).

About musical content.

The theoretical knowledge and skills that are contained in mentors' comments differs from what is in a theory book. Instead of reporting or summarizing objective facts and generalized rules, mentors explain their own understandings, which have been generated through their whole musical lives, adjusting them to each student's case and compositional stage. In particular, mentors explain theory as it is related to students' compositions instead of as isolated information, and this theory in the context of students' own composed music strongly encourages effective situated learning. I explore in this section how mentors reflect on fundamental musical concepts and how they put these concepts into words. These ideas and notions came from

interviews with the mentors, rather than from written and prepared reflections. I was also deeply inspired while interviewing.

Harmony, beyond theory. Some teachers and mentors mentioned harmony as a critical component to teach and to comment upon. Because mentors cannot encounter students directly, they noted, it was difficult not only to explain or describe harmonic content, but also to judge the students' pre-existing knowledge of it. For Mrs. Campbell, the most challenging element in teaching composition is not form, dynamics, or melody, but harmony:

> Mrs. Campbell: For the students to understand how harmony moves and what makes sense, I think that is the biggest challenge they face… It's partly because they're composing at the same time they're learning the theory. Some students can hear so amazingly well. They can hear and write a melody. And when they write the melody, they really hear the harmony of it at the same time while other students write a line (Interview, July 29th, 2009).

Harmony has different meanings to each teacher, student, and mentor. Mentors, of course, are experts in harmony. However, *knowing* and *teaching* harmony are two different things. Like other components of music, harmony is not a theory, but rather a living object that has multi-faceted features that take different form in each composer's creating context. In addition, harmony is not an isolated complexity; it interacts organically with other aspects of music, such as melodic and rhythmic progress.

> Elliot: Certainly harmony takes a lot of time, just describing it and also you have to make so many assumptions on it… The most difficult aspect of harmony for me, getting it across to the student, is that it is not a set of rigid rules, but that the harmony needs to be something living and flexible. That it is something that is comprised of not just vertical sound, not just chords. But that those chords are actually notes in lines that move. And if they all are moving, like this, then that is very rigid (Interview, November 17th, 2009).

Furthermore, composing with computers resulted in unanticipated acoustical issues. As Ross suggested, electronic sounds did not only differ in timber, but also were not sufficient to reproduce harmonics.

> Ross: The acoustic is different. With acoustics of MIDI playback, you are not hearing the interaction of harmony like you have with a real piano, or real instruments. There is a buildup of partials and buildup of sound in real life that isn't like computers. Computers produce sounds just differently (Interview, November 13th, 2009).

Nevertheless, harmony cannot be overlooked in teaching and learning composition. To explain the significance of harmony in mentoring, Elliot expanded the concept of harmony into developing lines in music, including melody. Since composing should be distinguished from theory or harmony exercises, each element in music such as harmony, rhythm, and form should result in a comprehensive shape based on organic relationships and balances. Therefore, instead of mechanically filling in chords, Elliot emphasized voice lines in each part as a component of various compositional elements, which work together for good compositions.

> Elliot: Because it is just a set of four blocks. So you got <D-G-A-Bm> [*He played the chord on the piano.*] It's much more interesting because of how each line moves, the bass line, the tenor line, the alto line, and the soprano line instead of just being chords that sounds with jump around. So, voice leading is the bigger issue in terms of harmony. It's getting students to think of it as something that is living and breathing and flexible instead of just, "ok, we throw down three notes here, then we throw down three notes here." And that is something that takes time, and takes work with chords, to be able to understand (Interview, November 17th, 2009).

Melody, the places where music goes. Elliot emphasized melody as the most fundamental feature in teaching composition, while other teachers and mentors accentuated harmony and structure. Melody is the place where music goes; it pours naturally from composers' hearts rather than being constructed step-by-step based on specific methods.

> Elliot: I would say melody and rhythm, because those are the basic building blocks. And that's what they need to do. And I would say that the most overlooked aspect of music composition teaching throughout and this is including high school, is melody. That teachers may talk about how hard it is to teach harmony, but teaching melody is even harder… And then there will be a melody, but a lot of times it's so ornate that it's really hard to pick out the flow of the melody and the shape. And it's really hard to construct. It's easy to construct a chord progression. It may not be a great chord progression, but it's easy (Interview, November 17th, 2009).

Elliot gave an example of a student who composed with relatively skilled and

complicated chord progressions, but with a less-progressive and repeated melody.

> Elliot: If you think of Ted [*pseudonym of a student*], there is a chord progression, but he didn't have much of a melody. It's much harder for students to come up with a melody. My brother said maybe is because a melody is so personal. And it is. I think he is absolutely right. Because you are saying something, it's like a fingerprint, you're saying something yourself when you construct a melody. A chord progression could belong to almost anybody. But a melody, you have to put something of yourself into it. That's something that really deserves, students need to learn how to do that (Interview, November 17th, 2009).

Thus, Elliot developed a kind of composition pedagogy, which supports students in understanding and creating melody. Unlike other vocal or instrumental pedagogies, composition pedagogy is undeveloped. The very term 'pedagogy' may seem strange in composition because composing is very private and involves inner-cognitive behaviors being applied to instructive strategies.

> Elliot: The melody has to have a clear sense of home, a key note. The melody has to use rhythmic patterns that repeat. Melody has to use mainly steps with a few leaps because steps give the melody continuity. But the leaps give the melody character (Interview, November 17th, 2009).

Regarding the context of education, Elliot once again stressed composition as craftsmanship rather than as flashing moments of an inspired genius. Elliot extracted core elements that such practice had to incorporate: a strong sense of keynote, repetition, a majority of steps going from note to note without overlooking skips, and a good shape. Beyond dictionary definitions, beyond strategies in music theory books, Elliot is able to verbalize each element of music in his own voice and to give composition strategies to students in the form of tips, which can be instantly applied to classroom situations.

Style and genre: "Wrong pair of pants." Since the fall of 2003, I have reviewed students' compositions in the Vermont MIDI Project. The Project does not exactly limit the style or genre of students' compositions, but the instruments assigned for the Opus and the

recommended software influence the genres of composed music. The project suggests instrumentation: some form of brass ensemble for the fall Opus and string instruments for the spring. As a result, students' works fall mainly in contemporary style concert music, and are mostly tonal. In addition, because of the stress on notation, students also tended to use less sequencing software.

Even though the mentors have very orthodox backgrounds as professional composers, who have majored in music composition in college and mainly graduate schools, they are flexible in accommodating students' musical backgrounds and interests. Martin, however, pointed out the imbalances between musical style and instrumental selection, which were caused by differences among the suggested Opus instruments and the diverse musical genres that students experienced in their daily lives.

> Martin: They compose mostly for the Opus concerts so it's contemporary concert music for the most part. There are a couple other genres that happen occasionally; once in a while, someone's writing a jazz piece and occasionally someone's writing like a song, like a singer-songwriter type of piece but for the most part, I'd say 90% of the work, if not more, is all contemporary concert music. There are certain musical backgrounds—that these kids don't necessarily know what the Project objectives are for these concerts right away. Then it's hard to address them the same way because they are coming from such a different place. They should be writing songs, not brass quintets. It's either going to sound like a brass quintet with the wrong pair of pants on or something. It sounds like it is sort of the wrong style for the wrong instrumentation, and is tricky to work with that too… Some of these kids, all they listen to is pop and rock music, which is totally fine, there is nothing wrong with that. They are trying to write these brass quintets that sound like rock songs. That is just not the right venue (Interview, November 25th, 2009).

Martin agreed that various styles should be available to students, but he also suggested that rock music is less capable of being learned via the mentoring process, which revolves around discussion-based critique and reflection. This discussion also touched on concerns about pop and rock music in school music education more broadly, including the nature of pop and rock music in the school context and how educators can approach it.

> Martin: What's great about that music [rock or jazz] is not usually the compositional integrity of the chord progression or of the melodic lines. I mean, occasionally you do find nice melodic lines but the actual substance is often in the production of the song so like what kind of drumbeat you have, what kind of guitar sound, or having an electric bass. If you just upload the chord progression, it's like "Okay, that chord progression's fine." There's less to talk about, less enriching discussion happening from that music (Interview, July 14th, 2009).

Martin is also a keyboard player and performs regularly as a jazz pianist. Compared to rock and pop, he addressed reasons why jazz was a more legitimate genre for critique and reflection-based learning.

> Martin: I think jazz music has a lot more to offer in terms of discussion-based critique because there's so much more harmonic complexity and melodic complexity in a lot of jazz music, especially contemporary jazz music… Kids often play in jazz bands at school and they love the music but hardly any of them are writing it. I think that's another way we could expand. Even in the live concert series, we could do, you're going to write a tune for a jazz quintet or quartet or something like that and you can save a number of musicians (Interview, July 14th, 2009).

Like Martin, Elliot also considered the structure and organic construction of each element in a piece to be a very significant feature in composing. Nevertheless, the shape of that structure is rooted in the original ideas of the students.

> Elliot: Not all composers work that way but I find that the more structure there is, the easier it is for me at least. The most important thing is the quality of the students' ideas and whether the ideas actually are doing what students want them to do. And, how the ideas are fit together, the structure of the pieces. I find myself talking more about structure, as a big picture sort of an idea. I try and get students to step back, and say how does this all fit together… It was organic. That is it seems to make sense to go from this idea to this idea. Get bigger and then smaller, and then have them all fade out in the end. Or whatever happens, that makes sense. So I try to get students to put their ideas in a context (Interview, November 17th, 2009).

Elliot provides Podcasts to illuminate different aspects of music composition. These Podcasts are full of verbalizations of musical elements; describing musical examples with sounds; and outlining the composition process, which mentors would not do in the usual one-on-one mentoring process because of a lack of time and space. By providing insights and tips from a

real, experienced composer, he proposes to help young composers find their own voice and to write effective music. Through a series of Podcasts illuminating each procedure as practiced by an experienced composer, he makes composing into a gradual and systematic set of cognitive activities rather than a collection of inspired moments of genius, which cannot be easily explained.

What Mentors Do

> *Whenever it has happened that mentors disagree on specific issues, we do express our differences in a professional and respectful manner and we allow the student to make an informed choice as to which advice to accept (Ally, Interview, December 3rd, 2009).*

> *I usually have a battle with myself about how much information to give them to help guide them toward what I want them to understand and how much to just tell them "I think this measure would be better if you did such and such" (Martin, Interview, July 14th, 2009).*

In keeping with the unique attributes of online as opposed to face-to-face conversations, as well as the curricular context and developmental stage of each student, mentors are asked to respond to pieces in a timely manner with two or three suggestions that will not overwhelm young composers. Comments should be constructed to help a student revise and improve. Most of all, they should be suggestions rather than changes and should be persuasive and encouraging rather than directive. The ultimate goals of mentoring are to lead students to discover what their piece can be and where they are in the process of developing it, as well as to facilitate the letting go of a piece when the student is ready to move on (http://www.vtmidi.org/mentorguidelines.htm). I explore mentors' role beyond these basic parameters using mentors' detailed comments regarding the mentoring process and content as well as interactions with students and teachers.

The basic role of a mentor is to respond online to students with verbal critiques of their

compositions, following already established protocols. At its most basic, mentoring assumes and depends on a respectful attitude toward student composers and their musical works. However, the respectful environment is about more than a polite attitude; respectful manners are related to mentors' entire philosophical approach to students' musical works.

Consequently, for students, the result is that mentoring provides a truly personal, musical, and affectively satisfying experience as they build music together with their mentors. Elliot explained that he tried to be even more careful during online mentoring than in an in-person lesson. In particular, with a student who he has never contacted before, he tried to be extremely cautious in order to earn the student's trust. As he asked, "Why should the student believe anything I have to say?" – that is, "Why should students trust the mentor who is sitting at the other end of the computer terminal? How does each mentor establish that he/she is trustworthy? How can they convince their students that they are not saying something that would hurt them?"

Elliot has recognized how students understand mentors and the mentoring process. He stressed that mentors' seriousness was the key to a respectful relationship with students.

> Elliot: This is one of the only chances they get when they are at school to actually do something where they are creating it. And we're their people, out there some place, whose job it is to help them with it, with their work. And so once they realized that we take them seriously, and we take their work seriously, then for the most part, they are not only grateful that we are respecting them so much. Because we are telling them seriously what we are thinking about their piece, that shows a great deal of respect for them and their intelligence (Interview, November 17th, 2009).

Elliot offered his reflections on the connection between students' attitudes and intellectual development and eventual creativity. He suggested that a respectful attitude to students' music strengthened the growth of their intellect and spirit. He stressed in particular that the struggle to create developed students' maturity because creating involves struggling with oneself. Students experienced somewhat abstract challenges. They encountered their limitations

as well as potential, and then finally experienced pure achievement. Most of all, ownership made this process possible, because students had endeavored to work through their own thoughts, emotions, and minds in their music.

> Elliot: They also then learn to respect their own work. It means that they have the opportunity to really grow personally a great deal through this because I don't think that there is anything that helps a person grow as much as creating. Because there is so much struggle involved, there is so much work involved, and there is so much joy involved. I mean, you can fail miserably, and it can be very frustrating. But once something starts to go right it is so exciting, there is nothing else like it. Because it's yours. It's your work. And for me, I think that creative work is life changing for these students. I mean, because it shows what they are capable of achieving. Even if after they graduate from high school they never write another note of original music (Interview, November 17th, 2009).

A respectful manner also influences emotional elements of students' confidence. As the Project advised, decontextualized praise and compliments never bring about true change; only a heartfelt relationship between mentors and students could become a beautiful woven cloth of musical sounds as well as a meaningful personal and aesthetic experience.

> Elliot: Somebody criticizing your children! This is my baby standing upon the stage, being naked! Do you want somebody saying your baby… with his nose? You know cross-eyed, you know, or one-ear like this? I try to be very very careful (Interview, July 14th, 2009).

Thus, in music teaching and learning, one of the most essential ingredients of encouragement is an attitude of sincere respect for students and their music. If teachers are concerned about the impact of their comments on students' affective and emotional states--including their confidence, encouragement, motivation, and curiosity—the appropriate attitude is also respect for students' music and their music-making activities.

In addition to providing critiques of compositional content, mentors also control the contraction and relaxation of each stage of students' compositions, from the beginning to completion. They deploy this control for a range of purposes: (a) to make students trust that they are on the right track, (b) to convince them that their creating behaviors are valuable, (c) to

indicate that the mentors are waiting for their next revision with high expectations, (d) to express that mentors are excited by their compositions, and (e) to recognize young students as musical colleagues and novice composers.

How to help students who are stuck.

When do students most urgently need help? What is the most critical part of mentoring? Mentors provide critiques, make suggestions, ask questions, and most of all encourage students. Nevertheless, the most critical point is providing directions, particularly when young composers are struggling.

From her first composing experience, Clara had already experienced creative difficulties. This novice composer had the sense of being *stuck*, being *frustrated*, and *lacking knowledge* as soon as she entered the world of creation.

> Clara (Mrs. Campbell's student): Lots of times I get stuck in my own head, and I get frustrated, because I will try to create a sound and I can't do it. I try to create a specific sound that I have in my head and I can't, I don't know enough theory to just know what notes to put for it... I can't just click the notes in there and have it be what I want. I have to listen for it, and a lot of times it is not what I want, so I have to work at it a lot. I have to stop, I have to leave. And then, couple days later, or maybe just a day later, come back and listen to it and then try to hear something else in my head.
>
> Hae-Kyung: Does it mean you remember what you were working with.
>
> Clara: Yea. Or I can write it down on that *black book*, too, that we have (Interview, November 10th, 2009).

As professional composers, mentors are experts in the struggles involved in the creating process. Based on their own experiences becoming stuck and pursuing dead ends, mentors first recognized students' struggles as a natural component of the composing process.

> Ally: This depends on the nature of the struggle. Anyone can experience a writers' block. In this case a brief rest helps. I also provide lists with listening examples to serve as inspiration (Interview, December 3rd, 2009).

Drawing on his more than 30 years of composing, Elliot also broadly noted some

difficulties in composition. Not only is it difficult to make a living as a composer, but there are also tensions from endless moments of unlimited choices. Since Elliot has already experienced these lonely and frightening moments, he is able to approach students with an understanding of them.

> Elliot: Composing is difficult, that is why there are so few of us that do it. Aside from the fact that it is really hard to make a living out of it... I think one of the things that is really really daunting for young students is a little less daunting when you have been doing it for a long time but it's still daunting is that when you start a fresh piece you are faced with unlimited choices and that is very frightening, which is why one of the best things you can do when you start, is to really start limiting what you're looking at. Because then you can put your energy into this number of instruments, and it's this long a piece, and I want it to be in this key, and I want it to be this speed, this form. And I always tell students that for me, the more of those big questions I can answer first, the easier it is once I get to the actual notes.
>
> They [Students] say, "Why can't I put these things together? Why not? I want to try this." What I try to do is give them options. If they say, "I don't know where to go with this idea." After I listed four or five things I will go or…try different ways of using the material that you already have. A lot of times, students don't realize it's not enough just to have the idea and state it. "You need to work with it and develop it." And a lot of times the biggest single difficulty for them, is not to immediately go to a different idea (Interview, November 17th, 2009).

As a composer, Martin also reflected on his own experience: he fully recognized his strengths and weaknesses. When asked to identify his struggles as a composer, as well as a mentor, he discussed strategies for "organic development processes" and "lack of knowledge of actual good music." Interestingly, his challenges accord with the features of good compositions that he used for the Opus selection as well as the advantages of online mentoring.

> Martin: It's tough though, cause you have to sort of assume what you think the student's goal is. There is some responsibility you have as a mentor to make a decision. I don't know, I have never been a parent, but I imagine similar to parenting. Sometimes there are decisions that are arbitrary and you just have to make them because the kids need guidance rather like "you can do this and can't do that," and sometimes you can reason your way to a great answer, and sometimes there isn't really a clear answer and you just have to make a decision and say, suggest something and another mentor might suggest something else and you let the kid sort it out (Interview, November 25th, 2009).

> What I struggle with, which I think is what most young composers, not even young composers, all composers struggle with, is just an organic development process… I would write something, I would layer something on every four measures, and it was just, all my early pieces are just these little layers. And then I layer up or I layer it down… I didn't really know what a good piece necessarily sounded like. Or have different good pieces that I can compare to (Interview, July 16th, 2009).

Mentoring to support learner agency: Mentoring as "musical parenting"

Being treated as a colleague--being recognized by others as a young composer--does not produce a flash moment of emotional transformation, but rather exerts a prolonged influence on students' musical development even as it encourages students to persist in composing activities and to communicate with their mentors as they do so.

> Martin: Sometimes it can be really easy to say, "you have parallel fifth here". I am not that kind of mentor. Because there are certain types of music that you don't use certain devices, and somewhere you do… They have an understanding of what they are doing theoretically. They are really in control of their own compositional content, but without putting them in a box of common practices that you do in theory exercises. That is the most difficult part for me… I think for a lot of students that is an exciting thing to have the idea that I could write a piece of music. Especially the Opus concert, it can be performed in a concert… It's just like a different sense of ownership of what you are doing (Interview, November 25th, 2009).

Just as focal teachers' collective motivations presume students' musical independence and pursuit of their own musical voices, mentors also considered an attitude of deference to students' control over their compositions to be one of the most representative features of their interactions with students. This attitude results in students' strong sense of ownership as composers. Like the teachers, the mentors approach their students as composers and admire their musical talents.

> Ross: As a composition teacher personally, as I have taught in the past, I find it very important to not want to impose your own voice on your students. I like students to have their own voice even if they are young. But you are also trying to help them, also see how things can be effective, so their ideas are coming across (Interview, November 13th, 2009).

> Ally: Respect for the principal musical idea – I do not attempt to change the musical purpose of a piece. If a piece does not have a clearly defined musical idea, I do my best to

help the student uncover it and/or decide upon one (Interview, December 3rd, 2009).

Most of all, prolonged online conversations with mentors are crucial in confirming each student's identity as a composer. Although in the beginning students post only brief ideas with simple notes and with great excitement and nervousness, they become composers at the moment when their mentor's response begins "Dear Young composer!" Naming students composers calls them to recognize themselves as owners of their music and thus also to recognize their agency in their compositions and the creative process.

Moreover, students' conversations with mentors--which are full of insights, musical knowledge, compositional strategies and simple tips, encouragement and respect, and finally, of the joy and beauty of creating—strongly drive young composers simply to continue composing. These young composers are eager to read their mentors' comments immediately after posting their revisions.

Martin also discussed the converse situation, where there are deficiencies in students' ownership of composing activities and desultory participation in mentoring communications. The mentor-student relationship depends on a fully two-way and mutual collaboration. Thus these asymmetrical relationships resulted in failed communications and discouraged this young and dedicated mentor.

> Martin: They don't know what your experience is, they don't know who I am, they don't even know who they're talking to. So if I provide them with something, they're like, "Ok, that's cool". And then they go work on their piece. They didn't read it. Or even if they read it, they didn't incorporate it, or they don't know how to incorporate it, and you can't be there to guide them through that... And, you can't know it is going to happen until it does. And then, it's like how much more time do I waste on a kid that is not going to listen to what I have to say (Interview, July 14th, 2009).

Elliot's most challenging moments in mentoring were also related to deficiency of learner agency and students' autonomy. When students do not recognize problems in their own

compositions, do not request their mentors' help or comments, or do not seem to have a desire for improvement, Elliot feels impeded in his work. In these intellectually disengaged circumstances, mentors feel challenged rather than just short of time and energy.

> Elliot: Sometimes it's difficult. Especially if there is not much happening, and especially if the student hasn't given us much in a way of request for feedback, or much description. Because, even if the piece needs a lot of work, if the student is saying, "I know this needs a lot of work, and I really just don't know where to go with this, I don't know how to start a melody." I can help a student with it… I frankly have more trouble with students who don't write anything. Or, who write as if the piece is all finished… Or, who write as if the piece is all finished… Sometimes the student really isn't interested in changing his or her idea (Interview, November 17th, 2009).

Mentors' respect for students' agency ultimately represented a complex responsibility and opportunity for students. Although mentors needed to comment directly on composing strategies or other theoretical content, they still respected students' ownership in decision-making. Elliot would not only suggest options, but would invite students to "*see what you think*" of them, emphasizing the students' own decision-making and reflection.

> First, I think the piece might sound better with a quicker tempo, not racelike, but a bit livelier, such as dotted quarter = 72 or even 80. Try these and see what you think (*Elliot's Comment on Clara's posting*).
>
> Of course, what you do there is up to you, but if you did repeat the A section it would give you an opening large section of your piece which had an aaba form and which I think would be quite successful. In any case, please consider it (*Elliot's Comment on Kelly's posting*).

What Mentors Expect from Teachers

Mentors' roles are definitely related to their relationships with classroom teachers. The teachers' and mentor's roles with respect to students result in a very unique relationship between themselves, as well. Teachers and mentors do not physically encounter each other, nor do they communicate via email or phone except in some unusual cases. Mentors have knowledge and authority as professional composers, while teachers have pedagogical expertise and an intimate

relationship with their students. Teachers thus want mentors to understand their practical teaching environments as well as the ability of each student, while mentors want teachers to experience the process of creating music as a way of better understanding what their students are going through; these different perspectives create struggles but also motivate the participants to continue through these difficulties.

In the previous chapters, I explored teachers' roles in the mentoring process from their own perspectives. Here, I revisit teachers' tasks in their relationship with mentors by adopting the mentors' stances. Drawing on Martin's point of view as a past student, I asked how his teachers–and specifically Mrs. Campbell in this study--acted during the mentoring process. He reported that Mrs. Campbell asked various questions of her students, which led them toward reflective and critical thinking as well as toward greater engagement with their mentors. Her teaching practice from my observation and interview were consonant with Martin's memory.

> Martin: The teacher always has to read it, but we always write it, and she would check and say, "Why don't you." If I ask her a question she would say, "Why don't you ask the same question online?" She kind of knows how to get the most information out of the mentors. Or she would ask me about my piece in order to get me to articulate more details about it… So it was a joint effort, but it was always like the student initiating it, and then the teacher guiding (Interview, July 16th, 2009).

Teachers actively implemented the mentoring system alongside their own teaching practices and managed the resulting overall learning situation. Teachers fully respected mentors' authority regarding musical and pedagogical content. On the other hand, teacher-student relations were less limited and more direct than mentor-student interactions over the Internet. Thus, at the same time that students were composing, teachers kept connecting their created work to the content of their classroom teaching.

> Martin: It feels like you are exceeding being just a mentor, and you are suddenly also trying to cover for the classroom teacher. To give a better assignment, because that is an important thing if you're uncomfortable in writing music, it's to have an idea of what you

> are trying to accomplish. Even if you don't know how to write the piece, at least you should say, "well, at least I want my piece to be this long and to be for these instruments." They get all these wild conversations of instruments, pieces that are totally not playable by live performers. So it is hard to tell what they were even told to do (Interview, July 14th, 2009).

Teacher agency. In addition to emphasizing student autonomy, the mentoring system also weights teachers' autonomy because their degree of involvement in the mentoring process is left to their discretion. Specifically, teachers physically interact with students and mediate between students and mentors. Thus, teacher agency definitely influences student-mentor relationships as well as students' learning progress. Teachers are able to actively teach composition while taking advantage of mentors' support for their teaching. Moreover, some teachers acquire a keen understanding of how mentors critique and comment.

> Martin: The whole point of the Project is to allow the students to get an education that the teacher isn't necessarily qualified to give them and the teachers can become more qualified to give it to them if they become involved. If they say, "Oh this isn't my area," then they are going to stay unqualified as long as they keep doing it. However, if they are actually taking the comments from the mentors to the kids and talking it through with the kids, then next time the kids write a piece, the teacher might have that idea before they could even post it online. And then the quality of the work goes up, because the initial posting is at a higher quality.
>
> The teachers are already starting to learn from the mentors, which I think is really important part of the process, the teachers learning how to teach composition. It's not just an alternative. Teachers don't know how to do this. We will get these other people to bring in the troops, and they really help. It's really to help train teachers as well as students (Interview, November 25th, 2009).

Do understand your students. In the context of this mentoring project, the nature of teaching composition begins with having the participating teachers understand and, if possible, experience the same compositional processes as their students do. Teachers are usually not expected to compose during their pre-service teacher work. The terms composition and composer are virtually non-existent in their music education program, except in reference to the history of music. Why has composition been considered separate from other musical activities in

the pre-service curriculum? Compared with literacy education, this unbalanced situation in music education seems questionable. Prior to teaching and passing on knowledge, therefore, mentors recommend that teachers learn to feel the ways their students do as the students are composing.

> Martin: I understand as a non-composer, it can be very intimidating to give a project that you don't necessarily feel qualified to do yourself. That is what a lot of the teachers are saying, like "how can I ask my kids to write a piece of music if I am not even comfortable doing it?" So, I would say that the best thing they can do is, even if they don't want to show anyone their pieces, to practice writing music, just to try and put yourself out there… That way they can understand the frustration of a 5th grader or 6th grader that doesn't understand what a mentor says. If the teachers have never written a piece, they are not necessarily sure how to guide them towards that. They might agree with that, but they are not sure how to help the child (Interview, July 14th, 2009).

Elliot also pointed out the significance of teachers having the same experiences as their students. However, despite working with the same music and the same technology under the same conditions, adults are less adventurous than young children. Adults have had "bad experiences" and so are "hesitant" to be challenged. Thus, adult music teachers' greater musical background compared to younger children can ironically bring about failure. A better grasp of theoretical knowledge, such as harmony, turns out to be less important than a willingness to be daring. Adults try different things less often, whereas students often try putting ideas together, asking simply "Why not?"

> Elliot: It's even really helpful when we don't agree, because they can see that, as I said to one student, "It's good, because you see that there isn't one right answer. They are just different perspectives on things." It's not like mathematics problem. When they get different things, they can find what they agree with and what they don't agree with (Interview, November 17th, 2009).

As the most intimate witnesses to students' compositional processes, music teachers are able to influence students' emotions and thoughts in an immediate and nuanced way, which mentors cannot do. Teachers are thus able to influence the mentor-student relationships. In the triad of student-teacher-mentor, mentors and students are experiencing the same process of

moving from a blank sheet of paper, through a variety of struggles, to the final accomplishment. Because teachers are effectively mediating between mentors and students in this process, Martin strongly recommended that music teachers should experience that process of composition even though they are not a composer.

> Martin: If the kid doesn't really know what it is, and the teacher says write a piece, they will click whatever. But if the teacher introduces the ideas of form as a way to write the piece. "We're going to write an A B A piece." Or "we're going to write a rondo" or "we're going to write an 8 measures phrase." Or, whatever it is, using musical idea to guide the composition process. You see so many kids that obviously have no goal in mind when they are writing a piece. That is the frustrating thing as a mentor (Interview, July 14th, 2009).

Teaching vs. mentoring. Elliot and other teachers pointed out an interesting phenomenon. In most cases, teachers had already commented on students' compositions before mentors did so, but students tended to ignore their teachers' comments. Whatever mentality motivated this behavior made mentoring from outside inherently more effective.

> Elliot: A lot of times we are saying something that the teacher has already said to the student. But, the student has turned off the teacher and doesn't listen, but if we say it, then the students listen. I have had so many teachers say, "I said the same thing about six times to so and so, and he didn't change his piece. But as soon as you said the same thing, then he said oh I better change this." If I were their teacher, the same thing would happen with my comments, but because I'm coming from the outside, suddenly it gives my comments greater weight, greater credibility… Students get kind of teacher deaf, they turn off the teacher (Interview, November 17th, 2009).

Elliot explained the differences between how mentors and teachers approach student compositions and the composition process. Mentors approach them from a stance of creating and constructing their music, while teachers usually do not experience the situation of feeling "stuck" if they have never composed personally.

> Elliot: With very few exceptions, most of the teachers are not composers. So, they don't approach it the same way that we do. We approach it the way we approach our own pieces. We are asking students a lot of the questions we ask ourselves when we are working. That's the process. And so the process works in a particular way for a composer and might not work the same way for another composer but we're all dealing with the

> same sorts of issues, the same sort of problems, and the same sort of questions. So we know what those students are going through. I get stuck all the time. It's just part of being a composer. But sometimes being stuck only last only a couple of minutes, and sometimes it last days (Interview, November 17th, 2009).

Thus, comparing teachers' and mentors' roles in online mentoring, he concluded that mentors recognized only one dimension of students' development through their uploaded compositions and replies, while teachers can directly identify each students' detailed components and processes.

> Elliot: They [Teachers] work with them [students] first. A lot of ways to get them to understand what the building blocks are in composing, so that when they actually are writing their own pieces, they have an idea that they need to have a melody. They need to have rhythmic variety, they need to have some repetition. A lot of things like that, and that comes from the teacher. Because as a mentor, I can only respond to what they show us so we can give them some help on the piece and some background. But we can't write 20 pages to each one what they need to learn and what things they need to be working on (Interview, November 17th, 2009).

Finally, effective teacher-mentor collaborations ultimately converged onto students' ownerships and self-awareness. Mentors' comments and teachers' strategies promoted students' agency, not just their motivation. They helped students understand what they were doing and how they could do more; they confirmed the value of their compositions and the remarkable degree of their proficiency. Students were able to experience the moment of accomplishment, which was clarified by professionals. Their self-consciousness about their abilities, gifts, and achievements finally influenced their lives.

> Elliot: Once they start seeing how much better the piece keeps getting, it gives them further motivation to keep going. At the end, they have a real sense of accomplishment. They recognize, sometimes for the first time in their lives, what they're capable of…what they can actually produce. They can create this. This came from inside them. Nobody else did this. They did it. They had help, but they created this and they start to talk about MY piece, and that's tremendously powerful, because it shows them what they have inside… Most of them do not go on to become professional musicians, but it gives them a sense that they can accomplish whatever they choose to accomplish in life. Because they've taken something where they started from absolutely nothing and created a piece of music. Not just any piece of music, not just notes thrown together, but something that

> really is successful. It's amazing how powerful an experience that is. It can really change their lives completely (Interview, July 15th, 2009).

Conclusion: Who Are the Mentors and Why Do They Mentor?

Unlike traditional one-way notions of mentor-mentee relationships, the mentoring relationship in this study was mutual and reciprocal. Individual relationships between students and mentors were expected to influence teaching and learning interactions in classroom settings. Mentoring supported the independence of each student's learning procedures and made it possible for each student's personalized learning to fall under the teacher's control.

Understanding music teachers' real classroom situations and their students on the one hand, and recognizing the educational value of learning composition on the other, are the starting points of mentoring. Mentors fully recognize practical concerns in public school music classrooms and in students' developmental stages, as well.

Mentors are required to take a broader perspective, considering everything from the whole context of each student's learning to the larger audience of the Vermont MIDI community, even as they concentrate on the verbal communication of musical content and on cognitive processes, such as thinking and understanding. Moreover, in spite of the different roles the two groups play, mentors may ultimately fill the teacher's role when teachers are not able to give exact directions to students.

In conclusion, interactions with the members of these triads mutually support each participant's motivations: (a) Mentor-student relations contribute to teachers' motivations, such as learner-agency and professional growth, (b) Teacher-mentor collaborations provide systematic teaching practices to support student motivations for composing from beginning to end, (c) students refresh mentors and give them new insights, and (d) students' achievements also satisfy teacher's interests in guiding them to find their own musical voices.

Chapter Eight

Pencil or Mouse: Technological Issues in Composing and Mentoring

I actually sketch first using pencil and paper, which seems antiquated
(Ross, Interview, December 3rd, 2009).

Technology has already become a learning ecology, not just an educational tool. All of the teaching and learning phenomena discussed in this study took for granted the use of computers and Internet technology: furthermore, in addition to pedagogical activities, most communication in the Vermont MIDI Project also occurred in cyberspace, even though teachers and students met in real music classrooms. If music teachers and their students were to attempt all of these activities via traditional means, they would not have the time, finances, nor effort necessary to achieve such profound effects with any more than a small handful of students.

In this chapter, I offer a comprehensive review of technology-related issues in teaching and learning composition via online mentoring systems. Through mentors' experiences, interviews, and classroom vignettes, I explore the implementation of computers and information technology, not only of tools like notation software, but also of technologically- mediated communication methods and their influence on interactions, learning content, in particular, musical integrity, and teaching practices. In the first part of this chapter, I explore pros and cons of teaching and learning composition with computers, and in the second part, I focus on issues in communication and relationships conducted over the Internet.

Technology Promotes, Motivates, Or Sometimes Delays

To create their own music, students in this mentoring project use not pencil and paper but computer software and hardware. These mediating technologies help them to compose and enable them to listen to their output immediately without being distracted by musical and notational rules, as in traditional pencil-and-paper methods of composition.

Mrs. Campbell, one of the Project's teachers, addressed several positive features of using computers and network technology to teach composition. The most visible benefit is the mentors themselves; the Project is able to involve them despite its limited budget, and teachers and students can access their comments without any limitations of time, place, or even identity, —as Mrs. Campbell noted, "everyone can see everything." Most of all, interestingly, technology did not just mediate students' experience but motivated them to actively engage in it.

> Mrs. Campbell: Having it on the website is very motivating for students; they feel important. Something about having it written down there on the website makes them feel very good. Lastly, the website provides a record of their compositions and comments; the progress from the first posting to the last posting. Many times, students look at their first posting, and they think "Oh, I thought it was so good, and now look what I did" (Interview, July 29th, 2009).

Miss Gibson also mentioned this advantage. As the elementary school teacher, she was well-positioned to observe this effect, for technology had a particularly strong influence on elementary children's motivation to compose; the young composers were able to attempt various musical experiments that would not be available in their daily music experiences.

> Miss Gibson: it's very exciting it's one thing to write your piece and have your friend play it…to put it on a computer and have any instrument, any sound play it… or manipulate it in ways… Computer becomes the motivator…having *Sibelius* becomes the motivator… It motivates them to be able to choose the instrument sounds to use sounds…. We don't have an orchestra here or a band here… We can write for clarinet but there's nobody to play it but the computer can at least play it back for them. So the huge motivator becomes the opportunity to be able to use the computer, they get very excited being able to go to the computer lab (Interview, October 28th, 2009).

Miss Gibson explained this advantage by musing that notation software closely mimics people's natural relation to musical sounds. She emphasized that people experience musical sounds prior to learning their notation, and observed that the computer software reinforces that experience as the first element of composition. Moreover, the notation software helped students overcome the barriers of learning and teaching notation, so they could compose in ways that exceeded their ability to record their compositions. Miss Gibson used the metaphor of baby talk

to explain her understanding.

> Miss Gibson: It [Technology] allows them to write more complicated music that they can understand but cannot necessarily notate. It is like when you have a baby that can speak that can understand what you're saying but can't verbally repeat what they're saying. So they can hear it and understand but can't turn it around and notate it… That's where these kids are and the computer plays it back for them their thoughts, lets them move beyond a little bit from what they normally have in the classroom situation. So what happens is the computer sort of enables them to hear things that they don't normally know what they are. Many of my students that wrote this past spring can't even read the bass clef. But they are using their ears. It's like Bob, he would sing it for me and sometimes he just says, "This is the note I want but I can't find it. Can you find it for me?" But eventually he got better at knowing what those notes were that he wanted. Granted, he didn't know the names but he could find them (Interview, October 28th, 2009).

As Martin also noted, the strengths are more obvious than the weaknesses of composing using software, particularly in light of technology's conveniences. He noted that specific functions of notation software automatically provide formats and structures for scores.

> Martin: If you write a brass quintet, the parts create themselves; as soon as you're done with the score, the parts are already made for you. You don't have to recopy: you don't have to transpose in your head; you don't have to do any of that tedious work (Interview, July 14th, 2009).

The tech disaster at the Composition Club (*Vignette, October 21st, 2009).*

Unfortunately, however, technology did not always support teachers and students. Although everything would generally go well, the Composition Club for elementary children always required a great deal of the teacher's energy. Miss Gibson oversaw eleven children as they logged onto their computers, opened *Sibelius,* and accessed their previously saved files; delivered mentors' comments, which she printed out and highlighted before class to get students started, and answered ongoing questions about software use as students worked; checked the names of newly saved files, typed children's replies to their mentors, and uploaded their work when they were finished. Although one student-teacher assisted her, this dense class schedule meant that if even some tiny thing went wrong, every process felt the impact.

October 26th, the day of my first observation of the Composition Club, was a stormy one in the classroom due to a computer login problem. Within the live classroom, this technological difficulty was much more serious than I would have anticipated and certainly more disruptive than it would have been for older students, at the high school or college level. Miss Gibson told me that they were usually able to login without any difficulty, but that day they encountered problems. After solving the login issues, the Composition Club encountered the next problem, which involved software disruptions. At the beginning of that day's meeting, Miss Gibson offered students a detailed explanation of how to login to their computers, how to open *Sibelius*, and how to save to the appropriate folder. However, *Sibelius* did not allow the children to save. Clearly, every step of using the technology was not simple.

> Miss Gibson: After school the *Sibelius* issues had something to do with our computers themselves. Our web network manager thought it was *Sibelius* and called them and found out it was our issue and so he came down personally yesterday or the day before and fixed all the problems so now everybody will be able to get on to *Sibelius* without ever being kicked off… We have enough copies to run… We have a district-wide cite license in that we have 75 copies [of *Sibelius*] for just the elementary school. There will never be 75 kids on at one time… But the Wednesday afternoon there were only 4 students using *Sibelius,* they were our students, and none of them could get on. So it was our issue and they fixed it… There are glitches every now and then either with the program itself, like getting sound or that type of thing that happens, and it does delay, technology can delay (Interview, October 28th, 2009).

Days like this one made even more visible one of the most salient features of the Composition Club: it depended exclusively on technology not only in equipment, but also in composing strategies.

> Miss Gibson: In class we use their ears as how they do it, so they can sing and play the songs that they are writing. However when they go into the computer lab for the afternoon composing the approach is very different, the approach now is a very organic approach and they are using their computer to play back what they don't know what they are writing… So then they have to judge by what they hear if they're going to keep what they wrote… Because they are writing beyond what they can write in a sense but not what they can't hear or understand (Interview, October 28th, 2009).

Technology in the classroom is complicated because it is a matter of neither pedagogy nor teaching content. Moreover, for teachers, technology is not like other simple teaching tools. Problems with technology might be caused by hardware, software, or occasionally networks. As Miss Gibson explained, technology problems could be caused by any of a wide variety of factors. Miss Gibson's trouble raises the question of who can make up for it, or who is responsible for it. Although the school and district were very supportive of technology in the classroom—they provided tech-support crews and plenty of copies of software--nevertheless, the delayed curriculums and disrupted classrooms were ultimately the teacher's dilemma. Unless technological issues were immediately resolved, nobody could make up for a lost class.

MIDI Playback

Hae-Kyung: Like fast food?
Mentor Martin: Yeah, fast food. That's a great analogy.
I mean it is food, it is a hamburger but it's not quite a hamburger.
It's important to get beyond that
(Interview, July 14th, 2009).

The other side of the coin.

Although notation software provides ready-to use templates for notating music that save teachers' and students' time and effort, teachers are still responsible not only for recognizing and teaching music theories that shape students' musical ideas, but also for making sure that software idiosyncrasies are accounted for in the way that students engage with these convenient technologies. Mentors, music teachers, and even some students agreed that the most radical drawback of composing with notation software was instant MIDI playback. They identified a variety of challenges, starting with the not-quite-perfect fit between MIDI representations and the technical possibilities for specific musical sounds in the real world.

> Martin: At the same time, you need to know what the transpositions of instruments are as a composer; you need to learn the ranges of the instruments and all that. That can be the weakness of using the software. It's not really a weakness of the software but if the teacher doesn't supplement composition software with actual information about instruments, then it can get dangerous. So that's putting the responsibility on the teacher to make sure that the student understands that the trumpet player's reading something that looks like it's in a different key and explain why that happens when you're figuring out the range of a trumpet. (Interview, July 14th, 2009).

Martin also mentioned that the timbre of MIDI instruments influenced students' musical imagination. Sometimes, we can better imagine a scene while reading a book or story than while watching a movie adaptation of it. Imagining the timber of musical instruments and the colors or hues of musical sounds while only reading a score may work in the same way. Specifically, Martin pointed out the sound quality of one specific instrument: percussion.

> Martin: I think as helpful as MIDI playback can be to hear the harmonic progression you're doing. I think the timbre of MIDI Sounds is almost worse than just playing it on the piano… because it's *deceiving* how you actually hear the piece. I think that in order to appreciate a live instrument, it's important to not get too bogged down by the idea you listen to MIDI Sounds. Even in this class [of the Summer Institute], there are people that spend so much time on the mixer, making sure that their clarinet is just as loud as their flute. It's sort of missing the point of the notation programs (Interview, July 14th, 2009).

> Sometimes the percussion play back specifically is totally awful, the wrong instrument. It is like if you are hearing vibraphone instead of triangle, it totally changes the character of the piece (Interview, November 25th, 2009).

One student composer raised sound concerns, as well. From his Church and school band to the Opus, Jonathan had experienced various instruments under diverse circumstances. Although the notation software was getting better at duplicating real sounds, he was convinced of the superiority of the real sounds of live performance, as his mentors noted. Not only was he able to perceive the differences between sounds from the computer and from real instruments, but he also recognized "expressiveness" and "a flowing wavelength of music."

> Jonathan: It is very different in technique. It is too robotic in the MIDI room. I think in a sense it's my emotion kicking in. When you hear it, they are actually meant to play it, and the way they play it is expressive… In there I think it's just electronic sounds. I know my

> harmonies and stuff like that. That's how I really think of it. When it's here it's like a flowing wavelength of music that is entirely different (Interview, November 6th, 2009).

Furthermore, Martin guessed that the playback feature of notation software might limit the genres in which students compose. For instance, the most radical topic was choral music. Although choral music is one of the genres nearest to students' school music, MIDI playback does not support human voice sounds. Thus, students tend not to compose vocal music at all. Emphasizing a more proactive application of technology to accord with students' inclinations, Martin finally suggested expanding the genres supported by the online mentoring environment.

> Martin: There's very little vocal music that goes onto the website. You can't hear a choir on *Sibelius* singing the text so the kids aren't writing it… So it's kind of peculiar that it's generally more accessible but none of these kids are writing it because they don't have that instant gratification of hearing it back on the computer the way they do if they write a brass quintet or something like that. So the technology definitely affects them in that way and in the same way we don't have a lot of singer-songwriter types either because until recently the technology wasn't really there to upload mp3's very easily.
>
> Where the MIDI project can really spread out a little bit more is that exact issue of genre… As that technology gets easier to use, I think we could take advantage of the live audio; if someone wants to sing something while playing guitar, rather than uploading a *Sibelius* file where the guitar chord symbol doesn't play anything, you know you could actually play it on the guitar. We can do more folk songs; we can do rock songs (Interview, July 14th, 2009).

Makes students unable to think. The example of Allen introduces a potentially more serious problem with MIDI playback. Before or after his composition class, Allen--who was Mr. Stanley's student--occasionally checked his piece on the piano even though he could also check the sound using the MIDI playback feature on *Sibelius*. On the piano keyboard, he was able to try various chords and melodies that he wanted to create.

> Allen (Mr. Stanley's student): On the piano if you make mistakes, you can think about it and figure out ways to fix the mistakes. On a computer you're just clicking on notes and the only way you can find the mistakes is if you look at it and then... You think to yourself how can I fix that? I usually need something that I can go back to actually play what I think sounds wrong…and then fix it so then I don't have to be messing around with the note positions (Interview, November 4th, 2009).

Mentors warned that the unlimited repetition of MIDI playback, which automatically generates sounds, might numb a young composer's ability to do the kind of critical musical thinking that Allen describes, for by playing music before students have thought about it, computers can actually supplant thinking. Elliot also argued that for that reason, students might not develop *audiation* ability; they could become dependent on the MIDI playback instead of imagining sounds in their mind. In particular, Elliot noted that these hazards of instant playback more strongly impact beginning students.

> Elliot: The problem is he couldn't seem to get away from his first idea and the first idea was where we were all having the problems. That's another danger of having computer play back.
>
> Hae-Kyung: Why?
>
> Elliot: Is that you're playing it over and over again as you are working, after a while you can't hear the piece being any other way than the way it sounds. Because you have heard it 25 times. You really have to work very hard then to step back and hear it the way other people hear it. Because then you hear it and say, oh this is part of the piece, even if it's something that really really needs to be re-worked a great deal… For students who are advanced, it's less dangerous, because they know how to listen, and they know how to make adjustments. But for beginning students, who don't have a very secure sense yet of what to do and how they work as composers, well, if they are playing around and it looks great on the computer, and they hear it play back, it sounds like a piece of music. (Interview, July 15th, 2009).

Martin himself echoed Elliot's thoughts in his own interview, although I had not asked about the issue:

> Martin: I would say that I used to be very dependent on the software too. That may be a flaw in the way the project is designed… But after a certain level, that is not going to be an effective way to write a piece as much as it is an effective way to play around and explore. It's really easy to become too dependent on the software when you are a young composer (Interview, November 25th, 2009).

Finally, Ally combined both Elliot's and Martin's warnings:

> Ally: Composing only with the aid of a computer could potentially handicap a student's musicianship skills as s/he can always verify a particular sound and does not need to conceptualize and imagine it in his or her head. In addition, students assume that the

> limits of their computer engraving abilities constitute the limits of notation and consequently the limits of writing, whereas this cannot rest further from the truth. Lastly, the "copy-paste" feature tends to lead to easy and even simplistic solutions to the problematic of texture, repetition and development… It is important that more advanced students be reminded of the benefits of composing away from a computer, and even away from a piano or another acoustic instrument. (Interview, December 13th, 2009)

While technology provided several vital advantages, which definitely enabled the teaching of composition in classrooms, teachers addressed its pitfalls too. Mrs. Campbell, like the mentors, worried about digital playback, for example, because she believed that this function replaced a process of thinking or reflecting on music with a process of becoming steadily more unable to think of anything but that music in its current form. Mrs. Campbell's experiences with students' use of repeated computer playback suggested that unlimited repetition so thoroughly trained students' ears to their music that they became stubborn when mentors and teachers did not agree with their assessments of it.

> Mrs. Campbell: The part of the problem is that they put something on the computer and they think "it's mine; I don't want to change." And they listen so many times that it sounds good… I had a student who listened to a lot of minimalist music, which stays the same--the harmonies don't move. He listens to that and he was writing something like that. One of the mentors said, "I really want to hear something else." And he said, "No, this is what I'm doing." His piece was not picked for Opus, but he was true. He had an idea of what he wanted to say, and he was saying it. That's the way it is, with art. Who's right? I don't know (Interview, July, 29th, 2009).

Earlier in the process but for similar reasons, Mrs. Campbell believed, computers and notation software allowed students to compose too easily, even randomly. Before imagining or even thinking about the sound of their music, students tended to play notes; the instant playback might then interrupt their *audiation* abilities. They tended to reply to visual images, which are notated by software, rather than listening to and thinking over sounds; they just "hear something" rather than pursue their intentions.

> Mrs. Campbell: On computers, it makes it easy to compose. They can hear it right away, and they can change things so easily and they can hear what happens when you change

> things. But I think that's also a negative, too, because you could write fifteen pages and not ever think about what you are doing… I find that a lot of students, when they're composing, they are doing it by what they see. And then they play it and they say "Oh, that sounds like that! Oh, OK," not "I'm hearing something, and I'm going to write it." (Interview, November, 29th, 2009)

Elliot addressed another fatal danger of the instant playback enabled by computer software. Students might consider *sounds* that the computer played "music," whether the sounds had melody and structure or not.

> Elliot: They can play a little bit and so they made up a little idea, very short little idea, two chords. And they say, "Oh this is good." And they go on for a while, and they go on more, same two chords, and there is no melody. And when somebody points out there is no melody, "oh what is that?" A melody is the face in a portrait. The harmony is the shirt, and the pants. If it is a portrait, we are interested in the face. If the face is blank, no matter how nice the clothing is, it's not a very interesting portrait. I try to use images like that to get students' attention (Interview, July 15th, 2009).

What random clicking means. Miss Gibson considered the dangers of computer playback in relation to elementary students, in particular, and was quite concerned about its effects on musical development She believed that it led students to become dependent on machine-generated sounds rather than developing inner *audiation* ability or sensitivity. This dependence promoted a kind of braveness unmixed with caution, in which students engaged in random clicking without any hesitation–a habit that might stem in part from their daily Internet use, as well.

> Miss Gibson: Sometimes, it turns off their ears. They stop listening. It's like that random clicking again.
>
> Hae-Kyung: How do you recognize that they are randomly clicking?
>
> Miss Gibson: When they're just randomly clicking and not really having intent what they're doing, just clicking down notes, you ask them to describe what they wrote, they can't really *describe* it or really have a reason for why they put what they did. "Do you want this to sound like music people would go and listen to? Do you want it to sound like wild and crazy, Nuevo 21st century music or classical that we listened to in our class? Jazz? Rock band? What do you want it to sound like?" They can start *explaining*, *thinking* and *reconnecting* to what they know (Interview, October 28th, 2009).

Miss Gibson viewed students' ability to *describe, explain, think,* and *connect* as signs of musical thinking during composition activities, and emphasized that such abilities were opposed to random clicking and dictating. Thus, the teacher tried to reinforce a balance of experimentation and criticism by posing reflective questions and beginning conversations with students. She emphasized: "Use your ear what do you want it to sound like. What are you thinking of here? Always going back and asking why did you write it that way? Was it just a point and click? Did you write with an intention? What did you want?"

Miss Gibson noted that sometimes, these conversations and questions resulted in productive discussions about children's compositional plans and strategies. She noted, for example, that her students said, "I wanted the drums to sound *really wild and crazy, I want them to sound like a war."* That led her to summarize her responsibility as a teacher: *"Then you have to help them write it in a way that people can play it and still gives them the effect of what they want" (Interview, October 28th, 2009).*

The solution: Musical thinking.

Nevertheless, if they were not using a computer, how could students compose? From the mentors Martin and Elliot to the students Sam, Clara, and even Jonathan, composers discussed inner activities that took place prior to sitting before a computer and filling a screen with notes; they agreed that the only way to prevent an over-dependence on notation software for ideas and sounds was to emphasize ideas and sounds that exist in the mind before any work at a computer takes place. They emphasized "anterior" or "preparatory" thinking in addition to improvisation and stressed the feeling that the "*music itself is flowing"* rather than that "*they make the music flow."*

> Martin: If you didn't let them be dependent on the software, how many of them will compose without it? If it is a way to get them to engage rather than not writing music,

> and then it is totally worth it. But if it is a way to get them to writing music, and using the software only as a tool, and not depending on it then that is more desirable obviously. That is how I think, the best way to write is to either have an idea in your head or on your instrument, or in a musical context that doesn't involve looking at a computer monitor (Interview, November 25th, 2009).

Thus, sometimes, Martin asked young composers to articulate their compositional procedures: "Could you tell me about how you wrote this? Did you point and click the notes into the computer just using the mouse? Did you work it out on the piano first then go input what you worked out? Let me know." Elliot also recommended that before encouraging students to write musical notes, mentors should ask "what do you want to say?" and "how do you want to say it?"

> Elliot: What you want to say and how you want to say it, and the more detail you can give yourself in your answers, right down to specific musical materials, the more likely you will be to get close to what you want to say and the less likely you will be to stumble along from idea to idea with little notion where you're going… I f you sit around waiting for inspiration to hit with no more than a vague notion of what you want to create, you will likely become frustrated and discouraged.
> (from *PodCast#2 of FM-EN, http://www.vtmidi.org/podcasts.htm*)

In keeping with Martin's and Elliot's approaches, Mrs. Campbell's student, Jonathan, spontaneously mentioned his routine for composing music, and emphasized particularly the significance of brainstorming in the early stages.

> Jonathan: Not doing all the computer writing at that. I am thinking something in my head, I play the penny whistle, and I play a whole bunch of different instruments. Usually on a piano or something. Whether I want to be there or not, it's always there, music is flowing through my brain and my ideas and melodies. Usually I get the chance to write them down, and sometimes forget them, but they usually come back. It's a lot of fun (Interview, November 6th, 2009).

Elliot suggested finally that *teachers* were a solution to over-dependence on computers. He emphasized the importance of teachers who understood the pros and cons of composing with computers, and who also appreciated the importance of both constraints and freedom in teaching composition.

> Elliot: Composing directly on the computer is very convenient, but the other side of that is potentially very dangerous for students in terms of their development. So they need to have teachers. We are lucky to have a lot of very good and very experienced teachers in the project who don't just turn them loose and say, "Ok! Write whatever you want." (Interview, November 17th, 2009).

In spite of all the pros and cons of composing with computers, the truth is that music exists prior to a computer; more exactly, it consists of sound and ideas that exist prior to notation.

> Martin: All the creative work is still there—the software is not composing for you. It's much harder to represent that into a computer. It's much harder to keep the pace up on the computer. When you're trying to get a creative flow going on, I think looking at a computer screen can really be detrimental. And it just allows too much trial-and-error composition. Point. Click. Point. Click... Listen Back, "Nah, that's not great." Click a couple things, "Yeah, that's better."
>
> I can't compose directly into the software because it takes too much commitment to write something down. If I'm not committed to a melodic idea, I like to half-scribble it. I'll have a starting note and maybe I'll have the first idea then I'll draw a squiggly line… Just sketching ideas is much more productive to do it by hand, and much more creatively encouraging (Interview, July 14th, 2009).

Mrs. Campbell's black book: Prior to the blank sheet of paper *(Vignette).* When composing with a computer, notation software became another type of medium for students. Just as students who practice clarinet or guitar want to have the instruments at home, so students who use a computer to compose would ideally have a computer and notation software installed on it at home, as well. Nevertheless, Jonathan was the only student in the Vermont MIDI Project who had installed *Sibelius* at home. Thus, the day before his Opus composition was due, he was able to conveniently work at home on the last sprint, while Harry needed to get into school on Saturday to use *Sibelius* in the MIDI Lab.

> Jonathan: I got it after. I didn't have it [*Sibelius*] for the [previous] Opus when I made it. And then after I made the Opus and got selected, I got it at home for Christmas. So I got it upstairs in my computer (Interview, November 16th, 2009).

> Harry: I don't have *Sibelius* at home, so I work here. I came in to school on Saturday this weekend and worked for two and a half hours (Interview, November 2nd, 2009).

Allen and Sam, students of Mr. Stanley's, also did not have *Sibelius* at home. Allen usually composed in the school music room. Sam often thought about his musical ideas away from the computer and beyond class hours. Instead, the band room is a very open space; Mr. Stanley shared the room with another choir teacher and sometimes several other instructors who taught piano and bass guitar. Thus, students could easily access computers to use *Sibelius* and to read mentors' comments.

> Allen: I do only compose in the classroom… That's the only place that I can compose. At home I don't have *Sibelius* and all that kind of good stuff... If I did have that same connection and all that, I would compose more at home (Interview, November 4th, 2009).

> Sam: In this class, I think it was working out to be 3.5 hours a week in class. I would think of ideas at just when I would be watching TV or whatever. And then I would come here and work it in. But then I don't have the application on my computer, so I will just scribble them down or something, and try to remember them. I had some manuscript paper, it's the paper that I can write them down when I have an idea, it's just getting the idea in my head (Interview, November 13th, 2009).

While notation software provides numerous and innovative conveniences, lack of access to it can become a barrier to composing with computers. Originally, to overcome the limitations of access to *Sibelius*, Mrs. Campbell, who always encouraged her students to present and discuss plans and thoughts on their compositions, gave her students small black notebooks with five lines.

> Mrs. Campbell: This year, I'm going to have my students each have a little book of staff paper and to write by hand some ideas and to carry that with them... It's an experiment, but I think I would like to have them do a little bit more by hand, rather than with the computer all the time, and then bring some ideas so that they have little sketches like artists do (Interview, July 29th, 2009).

Using the book, Clara was also able to work with sounds and ideas prior to producing them on the computer. In addition, she noted how her emotions influenced her creation of music.

> Clara: If we are sitting at home, or sitting in class, if we think of a melody or anything we want, we can write it down in the book so we don't forget it. When we come back here we can compose something with it if we want, or we can just forget about it… When I

> write it down I feel really wrong, but it's ok, it still helps me to remember what it is. Because that way I can remember what I was thinking of when I bring it in here. It just feels good to be able to write down something I have been thinking in my head…It kind of depends on how I am feeling at the time for what I hear. If I am sad I will hear a sad song. If I am happy, I will hear some happy thing. And then I just, I do it by ear right now. So when I sit down to do it, I pick a key signature, whichever one, doesn't really matter to me right now. And then I just put the notes on how I hear it in my head (Interview, November 10th, 2009).

This black book enables students not only to record their ideas before using a computer and notation software, but also makes them think about musical sounds without hearing them as well as to remember their musical work in their daily life. These recorded musical thoughts could foster musical thinking separate from the computers.

"*You Can't Sing through an Email*": Communication via the Internet

Nature of asynchronous communication in the mentoring context.

The type of communication in this mentoring system is asynchronous; mentors are asked to comment within 48 hours after students post their compositions. One of the most noticeable aspects of this asynchronous schedule is its verbal communication of musical content.

Verbalizing musical content can require mentors and learners to convey more cognitive features of learning and teaching processes than traditional in-person instruction, which frequently relies on non-verbal communication. Written communication effectively makes the mentoring process itself into a cognitive behavior requiring participants to conceptualize musical content, articulate their creating processes, and finally reflect on their thinking procedures. Thus, the asynchronous features of verbal communication encourage deeper interactions among participants, by promoting frequent exchange of feedback, data, and examples and enabling meta-comments and weaving statements that summarize discussions (Hara et al., 2000; Zhu, 1998).

More convenience and greater effectiveness.

Flexibility of time and space compensate for the unique requirements and inconveniences that exist in on-line mentoring. It is not only teachers and students, who gain the ability to access mentors' comments in their classrooms, who prioritize the conveniences of technology; mentors do so as well, given that more than half of them lived outside of Vermont. Indeed, the convenience that on-line technology provides became another of Martin's and Ross' motivations for participating in the mentoring project. Technology thus also promotes mentors' as well as students' involvement, although the reasons for that common effect may differ.

> Martin: It's in the privacy of your own home. It's very convenient. I can just get up and I can do it. It's totally on your own hours.
>
> Ross: The thing about physical lessons, one on one with people, is that you have the hour, the student has to be there, you have to be there. It's usually during the day light hours. I mean the Vermont MIDI Project, if it's eleven thirty at night, I am writing. If I come out and my son is asleep, and I have 10 minutes, 20 minutes, I can go on and just do it. And so at weird times I can do it. I like that (Interview, November 13th, 2009).

As she lived in Montreal, Canada, and often traveled to Europe to visit her native country, Ally took particular advantage of online mentoring, especially its asynchronous features.

> Ally: Composers do not need the literal "hands-on" relationship that a performance student requires from his or her teacher…The online mentoring process allows for easy and instant communication between individuals residing in different countries. It additionally enhances the exposure of a student's work among his or her peers (Interview, December 3rd, 2009).

Asynchronicity resulted in unexpected improvements in the quality of mentoring, as well, as Martin and Ally could give more attention to a piece than they would have in face-to-face conversation about it.

> Martin: You might not see as much detail as if you really spend a long time looking at it first. When you're in a room with someone, you feel obligated to begin speaking immediately and start teaching them something, whereas online I can spend time alone in my apartment and really take in the piece and then think about it and then let them have my thoughts afterwards (Interview, July 14th, 2009).

> Ally: The need for clarity of expression means that the online interaction increases the attention to detail and encourages good time management (Interview, December 3rd, 2009).

Martin pointed to another reason for this improvement, of online mentoring over in-person lessons. Although the written critique processes were tiresome in the time and effort they required, he pointed out that online situations allowed mentors to concentrate on mentoring alone rather than on other interpersonal issues or physical distractions.

> Martin: It is easy to listen to, well it is not easy, but it can be dangerous to listen to a piece and get into a trap where you just start talking about it, and if you're in a room with a person, you feel obligated to be speaking to them all the time. Like, if you're not speaking to them, they are getting bored. Or they are not getting their money's worth if you're giving them a lesson or whatever. Just, for whatever reason, we need to be interacting all the time.
>
> But if you give me something and leave it in the room, I am much more likely to take some time and look at it before I start really develop my thoughts on it because there is not just that pressure needing to communicate right away. It is a much more introspective process, something that allows you to take time, allows you to be more articulate because you have to write it and you have to make sure you are going to write it in a way that a young person is going to understand. So, there are a lot of benefits to the critique process even if it is tedious sometimes (Interview, July 16th, 2009).

In addition to offering conveniences of time and place, technology records mentoring histories and enables a community of learning unavailable in private lessons.

> Ross: I find it to be really a great use of technology, because I can mentor and teach these students from New York, and we can all comment together, all the mentors. And look at each other's comments, and the students can see all the comments, and unlike a regular composition lesson, all the comments are cataloged for later. So if you want to look back at what a teacher said, but forgot, then you can go back to it later (Interview, November 13th, 2009).

For all these reasons, mentors accepted the unique inconveniences of asynchronous communication, which involves an elaborate process of communicating through written language and considering a complexly constructed '*audience'* rather than just one student.

> Martin: Time, it takes up a lot of time to talk about different section of the piece. You say, on measure 8 on beat 4, such and such and such, they are coming into a room with you, you can just sit down at a piano. And you say this part, and you just play it. That is so much easier...It will be easier to do video conference with the kids, but the idea of the Project is more so to have the public thread that other people can learn from this experience, not just the student you are mentoring (Interview, November 25th, 2009).

> Ross: One more, really great advantage to this program is that the students can read comments on other students' pieces. It's very open, it's open-minded. Not like cloistered, like nobody sees everybody else's work. So you could go on and see your friend's piece, and see what the teacher wrote. I don't know if students take time to do that because they are so busy. But I think if you have a friend who is writing a piece, and you either like or don't like the piece, you could see what kinds of reactions other people have (Interview, November 13th, 2009).

Communication matters.

Although asynchronous communication is more flexible than in-person lessons, that flexibility does not really reduce the time or effort required for mentoring but instead adds to it. Technology requires teachers and learners to have much stronger communication skills that can foster an entire community.

> Martin: I think that the probably the most obvious part of how it affects the MIDI project is that it limits one-on-one, like person-to-person, contact because we are depending on technology to help a role of community all interact about compositional music. So the benefit is that we all get to interact with each other (Interview, July 14th, 2009).

The results certainly enable deeper interactions between mentors and students and more intense reflections for learners. But as there are specific challenges of the asynchronous written methods at the core of the mentoring project that led Martin, in particular, to regard written-language communication as one of its challenges.

First, the endeavors of a writer might not be visible at first glance; written language might provide convenience and accuracy for readers, but the author needs to put more time and effort into it than into spoken formats. And as Ross mentioned, technological glitches can add to that time: a computer system might crash while a mentor is commenting.

> Martin: Sometimes it takes much longer to explain something in writing than it would if you were just face-to-face with someone. You can't sing through an email; you can't clap; you can't do any kind of vocal demonstration of anything (Interview, July 14th, 2009).

Second, he mentioned the practical limitations on asynchronous written communication. Outside of their writing, mentors cannot make any sounds or motions; they cannot sing a melody or make gestures to convey dynamics or contours.

> Martin: Finding that balance is tough, especially working online, because you can't show them good examples as easily. Make examples for them in *Sibelius*, or find YouTube clips that are related to what I am trying to express to them, and really convey the musical ideas rather than just written language ideas. So I was trying to think of a musical example of how they could take the project they were working with and their own idea and bring it to a higher level other than saying, don't use repeating bass line, it's boring… That's coming from my own experience, which is valuable but I don't think it is as valuable as them hearing the great music that has similar goal to their piece (Interview, July 14th, 2009).

Consequently, the mentors' time concerns are directly related to the quality of mentoring. In this asynchronous system, the time devoted to each composition depends solely on the mentor's discretion. The project does not stipulate a minimum number of hours, but it does expect mentors to maintain the quality of their comments without exceeding a certain maximum number. Thus, Martin has his own rule for saving time for both himself and the student-composers.

> Martin: I don't want to spend 10 minutes on a piece if it needs a 20, 30 minutes… I don't want the MIDI project to be less of an in-depth lesson just because it's online. Sometimes you have to spend an hour with a student, that is what you have to do (Interview, November 25th, 2009).

Martin also pointed out that asynchronous communication can lead to misunderstandings about the context of learning and students' capabilities, which may actually waste mentors' time and energy. Music teachers counteract these limitations; they help mentors by providing context about the students and their learning stage. Teachers can do this by contacting mentors directly.

However, they more often do so by guiding students to provide a detailed 'description of a piece' and 'request of mentoring' in their first posting, as well as to create detailed replies that include questions--techniques that also teach students the revision process.

> Martin: The other one is if I say to a student, "Do you know what the dominant 7th chords are?" they can say yes or no. But in an email, I have to sort of assume whether they know that or not and if I assume something they know something that they don't, then the rest of my response kind of goes unused because they didn't understand what I was saying… If I take too much time explaining something they already know, then I've wasted my time making this comment (Interview, July 14th, 2009).

After experiencing Elliot's visiting composer lecture, Mr. Stanley's student, Allen, noted the disadvantages of online mentoring:

> Allen: You read his comments and you sort of get what he's saying. But I think it's better to hear it personally because then you have the opportunity then and now to ask questions if you have questions. On a computer you can't ask questions after you read the comments because you have to like comment back and then you have to wait. By the time he already reacts you're probably already going to be doing something else and forget that question (Interview, November 4th, 2009).

Indeed, while mentors may have to make special efforts in drafting their comments, teachers and students also must devote efforts to understanding the written messages of mentors. Sometimes, teachers mediate between mentors and students; he translates the written language of professional musicians into a student's language.

"*I'm afraid.*"

Another considerable concern of online mentoring was interpersonal. Martin noted that during in-person mentoring, students "*can hear the tone of your voice."* In on-line mentoring, the perceived tonal nuances of comments directly influence the level of trust mentors share with students.

> Martin: You just have to be so careful with written language because the tone of voice doesn't come through, so your writing style is very important to make sure that you are not coming across as too blunt with a kid. Making sure that you are earning their trust, that you really show that you are on their side even though you're critiquing them. If you

> are not giving them criticism, then that is not helpful either. So the barrier of written language I think is difficult (Interview, November 25th, 2009).

For example, even though Allen had never received negative comments, he was worried about that situation:

> Allen: Usually I'm afraid that there will be bad comments... I'm gonna be like uh-oh, they don't like my piece. Sometimes I get nervous. I mean it's a natural thing… If I got a bad comment, I would probably say that...I'd feel really depressed (Interview, November 4th, 2009).

Because Martin had participated in this project as a high school student, he fully understood the nature of online communication from the student's perspective. He acknowledged that students might feel nervous and discussed the way in which online comments could make students more calm and comfortable.

> Martin: I say the strength of it is that, especially with kids, kids can get very defensive about their music in a sense if you suggest a criticism, their immediate response—not all kids but some students—is to defend their piece rather than to listen to what you're saying. "Well I like it this way; I wanted to do this; that's what I was trying to do." So if you're actually having a discussion with them, they can talk to you. If you're just sending them an email, they can't start defending themselves because they have to read through the whole response (Interview, July 14th, 2009).

As Martin's comments suggest, creative activity is a very private behavior intimately related to the affective domain of the human mind. But in online asynchronous communication, mentors and students cannot easily perceive subtle moods and feelings.

> Ally: It does not incorporate a chat system and/or a webcam and thus denies the students a bit more personable aspect of communication (Interview, December 3rd, 2009).

Thus, Martin emphasized the importance of a careful and respectful attitude when criticizing through online communication; respectful conversation, precise word choices, reasonable praise, and acknowledgement of students' ownership are all requirements.

> Martin: Sometimes, as with any email, it can be difficult to interpret the tone of the author. Something can come across as snappy or a little bit antagonistic, when it isn't intended to be that way. If I actually said it to the kid, they can tell by the tone of my

> voice that it's not an attack. Just the whole tone of the communication can be a little bit cold through a written format. Obviously it's a very personal art form, composition, so once you start criticizing it, if you are not careful about the way you're communicating it—or even if you are careful about the way you communicate it—sometimes they will take it in a way that's not very constructive… So it's hard to get through a kid that's getting into that mindset. So the online process allows you to get your entire point across before they start responding, which is good (Interview, July 14th, 2009).

Mrs. Campbell addressed the affective features of online mentoring from a teacher's perspective. The relationship dimension of online communication may cause unexpected misunderstandings among participants, which may not happen during in-person communication. Thus, she noted that in online conversation, people should take pains to be polite, exact, and clear. In online mentoring, Mrs. Campbell warned;

> Mrs. Campbell: When you say something in email, it can sound rude. I think that they have to be really careful not to make things abrupt. You can explain… If you don't say it in the message, you can't make it better. It's difficult. Sometimes it can be misunderstood... mentors may not understand everything about the student, that particular student (Interview, July 29th, 2009).

In particular, she was concerned about students posting for the first time because mentors were only able to recognize students through their posted music and the written information about themselves. If necessary, she may contact mentors to explain what they should know about a given student. Usually, however, she did not need to do that.

> Mrs. Campbell: If this is the first time you've written a piece of music, then you need to say that. You need to say, "I've never written anything before. Be nice to me," because some of them are advanced students. They need to have more detailed comments. But for new students, you need to be gentle with them. I think that's hard… But our community is small, so we can, I can send mentors an email, and I can say "With this student, I would really like for you to talk to this student about how there's no variety in his piece. I'm trying to get him to do that." And the mentors will do that (Interview, July 29th, 2009).

Conclusion of Technology Issues

Computers and information technology are elemental tools that help people communicate beyond the limits of time and space, enabling them to exchange teaching and learning materials effectively and efficiently in a way that also reduces the physical and material costs of (for example) duplication and thus minimizes overall expenses. Providing convenience and heightening the motivations of students and mentors, technology made it possible to create an entirely new community!

Prior to technology: Human intelligence and sensibility.

In spite of all the aforementioned benefits, mentors, teachers, and even some students still warned me about the drawbacks of instant MIDI playback. To prevent over-dependence on notation software, which may cause these various drawbacks, mentors and teachers suggested encouraging young composers to think about their ideas and plans before they existed on a computer and to articulate their thoughts and processes during revising. These reflected and articulated musical ideas and processes foster students' critical thinking ability in music and their independence from computers as tools.

Influences of technology on teaching and learning interactions.

Unlike synchronous communication or in-person lessons, online mentoring provides students an opportunity to recognize their agency in their compositional processes and control over their works. The indirect online communication makes students carefully mediate between their original intention and their mentors' comments.

In particular, this asynchronous interaction results in written communication between mentors and students. As mentors criticize, they cannot use body language, play instruments, or present other recorded musical examples; occasionally, they can link to sites like YouTube, but

for the most part, mentors offer written critiques and students read them. These authentic communication processes, which depend fully on written language, allow both mentors and students to more deeply think about and reflect on their musical and pedagogical ideas. In particular, this written communication naturally provides students opportunities to learn how to verbalize musical concepts and ideas, which places them at a higher stage of learning music theory. Moreover, they are able to learn how to politely and critically review other composers' works. Through mentors' comments, students discover the vital components of critiques, such as analysis and suggestions as well as respect and praise, but they also learn that a respectful and accepting attitude is as important as critical abilities in a learning community.

Moreover, mentors cannot instantly recognize students' reactions to their comments and critiques. Thus, while their communications tend already to be more formal, mentors also need to be more cautious in the content of their criticisms and more polite in the attitude and tonal nuances of their writing. If students are uncertain about the intonation and intention of a critique as a result of the asynchronous communication environment, teachers directly fill in these gaps.

The online asynchronous communication also provides teachers an opportunity to collaborate with mentors. With their students, teachers (a) review comments individually, (b) use comments as new teaching material, (c) use comments to reinforce their own teaching, and (d) use comments as discussion materials during classes.

Chapter Nine

Composing-Mentoring Interactions from the Stance of Cognitive Apprenticeship

In this section, I expand my findings and understandings in this study using the paradigm of cognitive apprenticeship. Using Collins et al. (1989)' *four* components of *learning content, methods, learning sequence,* and *social characteristics*, I examine students' compositional processes as they take shape across their interactions with mentors and teachers in a technology-based learning environment.

Even before new learning theories began to reshape composition instruction, processes of learning and teaching composition already involved some of the strategies and features of cognitive apprenticeship—such as expert composers' possession of qualified domain knowledge, the view of learning as a process of obtaining those experts' skills and knowledge, the reliance of the music creation process on heuristic learning, and the focus on cognitive aspects of musical behavior. Before the emergence of constructivist learning theory or cognitive apprenticeship, composing activities were conceived of as cognitive and constructive mental activities that occurred inside each individual learner, and apprenticeship was the method through which composers most naturally learned.

Compared to typical teacher-student relationships in the classroom setting, the conditions of learning composition in this study include two innovative components: the implementation of computer and information technology as a medium and learning environment, as well as the use of professional composers as outsourced experts and mentors. By combining the aforementioned cognitive aspects of learning composition with the advantages of computer and information technology, this Internet-based mentoring project provides the ideal support for a constructivist teaching and learning environment.

In this situation, the synergistic collaboration between the teacher and mentors became a vital factor in enabling students to continue composing. Mentors' prompt comments, including encouragement and expectations for revisions, directly supported students' attention and agency, because people cannot concentrate on their tasks without a congruence among emotions, goals, and thoughts.

When students are able to get direct feedback on their performances from mentors at the same time that teachers adjust the level of difficulty at which they're working, they are able to make maximum progress (Csikszentmihalyi, 1990). In particular, teachers can provide students with their compositional objectives, from Opus event and term projects to the goals of each class session, while mentors offer detailed responses to each stage of the revision process.

Cognitive Apprenticeship in the Online-Learning Situation

Web-based learning environments can be designed to directly reinforce cognitive apprenticeship learning and teaching interactions (Dennen & Burner, 2007). Collins et al. (1989) have previously addressed the implementation and feasibility of cognitive apprenticeship in computer-based learning situations. They note that computer technology enables coaching and scaffolding while also facilitating more individualized attention for each learner. More specifically, they argue that computer-based apprenticeship helps make the processes and knowledge of experts visible for learners, while also making learners' challenges, requests, and development of understanding visible for teachers.

However, the Vermont MIDI Project was not intentionally designed to produce, nor was it based on, specific cognitive apprenticeship learning theory. As I learned from interviews with the Project Coordinator, Dr. Whithead, although general ideas of constructivist-learning theory had influenced her overall teaching practice since she began working children about music

composition, the cognitive apprenticeship paradigm of the mentoring project was, "*Natural. It developed that way (Personal communication, November 24th, 2009).*" This Project did not intentionally borrow cognitive apprenticeship theory. It brought the traditional method in teaching and learning music composition, which refer to individual interaction between expert and learning, together with cognitive apprenticeship in the technology-based learning environment in a curricular context.

In this study, practitioners with expertise in music education, composition, and technology decided more simply to establish a community of composers that would support teaching and learning composition in the context of school music, and also to adopt distance learning methods via the Internet. Fifteen years of prolonged engagement by the project's board members, composers, music teachers, their students, and performers eventually resulted in a cognitive apprenticeship environment; in other words, a cognitive apprenticeship learning situation is the natural consequence of authentic composing, learner-centered learning, and technology-based learning contexts.

Implications of the *learning content* of cognitive apprenticeship: The nature of mentoring.

I begin by tracing the implications that cognitive apprenticeship theory's *learning content* holds for the composing and mentoring process, using specific and situated examples. All four forms of learning content —*domain knowledge, heuristic strategies, control strategies,* and *learning strategies*—effectively capture the kinds of knowledge and skills revealed in the composing process as it takes shape through interactions between expert and experienced young composers.

Domain knowledge: Generalization of musical concepts and content. Regarding the teaching of composition, I define experts' domain knowledge as the ability to generalize musical

concepts, content, and insights drawn from their lives as composers as well as, in the online mentoring situation, to verbalize this set of knowledge and skills.

What aspects of mentoring enable generalization in the learning of music composition? Above and beyond the basic information and content of music theory, the situated knowledge and skills provided by experienced composers make such information accessible in each individual composing context; the general knowledge and skills in theory books are transformed into practical awareness in the company of experts who can easily verbalize their greater knowledge as well as understand students' developmental stages and the curricular context of school music.

This process sheds light on the workings of mentors' detailed comments to students. I wanted to understand how mentors' descriptive explanations of students' composing strategies and musical content such as orchestrations, voice leading, and use of harmony could facilitate students' own composing and revising. After a long period of deliberative observation and analysis of the mentoring process, I realized that these elaborate explanations in mentors' comments played a role in students' ability to generalize music theory and to evaluate its relevance to the content and context of their individual compositions, or in other words to do just what mentors and experts could do.

Generalized music theory as situated knowledge and skills. Situated knowledge enables customized learning in a student-centered environment. This type of skill and knowledge, which cannot be found in books, is available only through apprenticeship interactions. Mentors' generalizations of musical concepts and content create an opportunity for just such knowledge to develop.

First, the comprehensive and interrelated thinking on display in mentors' generalizations are built up from many multifaceted experiences, while concepts in theory books address isolated content geared only toward learning specific subject matter. Mentors' comments also consider the particular contexts of each young composer's grade level and their own musical experiences. Thus, most fundamentally, based on the mutual interactions, mentors model for students the artistic process itself—the process of creating sounds in an aesthetic way and of evaluating ideas as musical sounds—rather than show them how to exactly "apply" information and rules from theory books to artistic compositions.

Table 47

Example of Generalization of Musical Concept and Content

Stage	Comment
Elliot's Comment on Clara's Original Posting	Starting off the piece with a second inversion chord is a really weak way to begin as such chords are unstable and not very strong. So I'd suggest you consider flip-flopping the cello and second violin parts, giving the cello the second violin's first two bars (but down an octave) and giving the violin the cello part but up an octave.
	It's a bit early for just an open octave between the parts which I'd suggest you save for a later dramatic moment, as octaves tend to REALLY get our attention and you don't want to overuse such an effect.
Moore's Comment on Jake's 2nd Revision	I feel like there are too many quarternotes and eighthnotes. It makes the piece sound sort of square and predictable. It would be really nice if the trombone could play some notes that are 3 beats long, notes that are tied over the bar lines- especially in bars 8-12 and 18-28.
Denny's Comment on Kelly's Original Posting	My teacher said that when you are writing music, you want to give your performer as little information as possible, so if you want them to play short, simply write quarter notes but place staccato dots on your notes instead. The way you have it, the left hand is holding out the quarter notes and the right hand has to play the eighth notes short...this is tricky for any pianist.

Insight and wisdom from real-life experiences of composers. One of the most precious aspects of mentoring is a mentor's accumulated wisdom, which is formed from their keen reflections on their own music and their lonely struggles to create it. This wisdom surpasses both knowledge and skills. Both students and teachers can experience professional composers'

insights—which they could never obtain from a book—via the Internet. Moreover, these insights are made accessible to each student, whatever their compositional stage. When young composers address their struggles and limitations in developing their pieces, mentors share relevant insights using ideas that they have drawn from many cases, including from composers in general and from their own past students.

Table 48

Insight and Wisdom from Real Life Experiences

Mentor	Comment
Elliot's Comment on Clara's Original Posting	One of the real marks of a good composer is not how many ideas, even good ones, there are in a piece, but what s/he does with a few ideas. Most great pieces of music only contain two or three main ideas, sometimes only one. But the composer works them very hard in a number of ways. Not only does that really show us those ideas in a variety of guises, it also helps those ideas (and by extension the piece) to make sense. Many if not most of my students are just bursting with ideas. Part of your training is to settle on a couple and not to allow yourself to become distracted by those fun ones just outside on the lawn calling to you to come out and play!
Elliot's Comment on Sam's 2nd Revision	There are places where there's a nice mix of activity, such as bars 25-28, but other places which are thinner, which is okay for variety's sake, but you have to make sure the material in those less active areas is interesting enough to hold our attention. This is what Ross [mentor] was talking about when he mentioned how the opening piano part seemed sparse. With all half notes and also with the parallel motion I mentioned there isn't enough happening there. So I'd work on the motion and modify the rhythms a bit to keep our interest and give yourself more to work with.

Heuristic strategies. Based on the individual and online interactions with mentors, young composers learn composition via heuristic experiences; each learning step can be checked and reviewed so that the young composers are able to perceive their thoughts being formed into sounds, via both instant MIDI playback and mentors' timely feedback. Mentors also encourage young composers to make decisions about their music only after comparing mentors' suggestions with their original ideas as well as after actively listening to their created sounds. This encouragement emphasizes the importance of young composers' experiential discoveries, rather than requiring students to directly translate critiques and suggestions into their revisions. In

particular, mentors encourage students to sing their melodies or to play them on real instruments, like the piano, rather than only via MIDI playback.

Example of Heuristic strategies from Miss Gibson's student Kelly. Mentor Martin suggested composition strategies based on his own experience and insights; instead of advising Kelly to depend on theories, he proposed that she use her own feelings to compose—particularly, her level of comfort while singing her melodies. He pointed to the relationships between a piece of music "*feeling natural and feeling right*," on the one hand, and its being "*singable and melodic*" like *"feel very natural -> feel right ->singable -> melodic."* This means *that "feeling very natural*" leads to "*feeling right*," and that both preceded and produced the sense that something is "*singable*" and "*melodic*." Furthermore, in addition to suggesting that Kelly rely on her feelings, Martin also encouraged her to articulate them, as well to articulate her initial methods of composing her melody, whether it involved just clicking the computer mouse or first creating sounds on a piano.

Table 49

Example of Heuristic Strategies

Stage	Comment
Martin's Comment on Kelly's Original Posting	I'm not sure that the second half of your piece is as strong as the first half. I think the first half is more *singable* and *melodic*. As an exercise, try singing through your piece and notice where it *feels very natural* and where it doesn't. I think using your voice to sing what *"feels right"* can be a good way to compose melodies, especially early on. Could you tell me about how you wrote this? Did you point and click the notes into the computer just using the mouse? Did you work it out on the piano first then go input what you worked out? let me know.

Control strategies: The pattern of "praise-critique-suggestion. The three main control strategies in cognitive apprenticeship, which include the monitoring stage, diagnostic stage, and remedial stage (Collins et al., 1989), can help explain the main framework of mentors'

commenting, *the pattern of "praise-critique-suggestion.*" Mentors monitor young composers' progress as they analyze their posted works. The praise with which they generally begin their responses communicates their diagnoses of student work in a reverent way; their subsequent move to critique focuses on problems and challenges. Immediately afterward, however, they also suggest solutions, which trigger young composers' heuristic strategies. The *pattern* also involves a respectful attitude of mentors toward students and their compositions, their skill and knowledge for analyzing what students have composed, and their capability to verbalize what they think and to anticipate big directions in which students can develop their compositions.

Table 50

Example of the Pattern of "Praise-Critique-Suggestion"

Stage	The Pattern	Comment
Elliot's Comment on Jonathan's 2nd Revision	Praise	The second issue is rhythm and tempo. Your melody is fairly flexible and that's great and when your accompaniment incorporates rests into the rhythms that works well,
	Critique	but in places like the trombone line in 12-14 (all eighths) or the upper four parts at 18 (all quarters) it becomes very stiff and does not get your ideas across well,
	Suggestions	so I'd suggest you look at all such places and try to build in a bit more rhythmic flexibility. While we're on rhythm (and tempo), 110 isn't a standard tempo which players will have in their heads, but either 108 or 112 is, so I'd suggest you change it to one of these.

Learning Strategies. Like Jonathan and Harry, through the composing and the mentoring system, students learned to exhibit their own strategies for composing music and communicating with mentors. The elementary student, Jake, also dominantly frames composing-mentoring interactions as well as composing processes through his use of active questioning. In particular, the young composers have their own strategies for initiating compositions. Prior to writing notes on blank sheets of paper or on the empty five-line staffs on their computer screens, they begin with solid ideas about forms, mood, and instrumentation. By experiencing the mentoring process,

however, young composers not only obtain skills and knowledge for composing music, but also acquire the ability to manage the pace and process of composing. Usually, their evolving composing strategies are also represented in their written descriptions of their compositions and composition processes.

Learning strategies and learner autonomy. Since young composers usually read comments and revise in their classrooms with their music teachers, teachers are able to mediate between students and mentors. In my observations and interviews with teachers and students, however, teachers tended not to intervene in their students' composing pace or the musical content of their pieces, unless students actually requested a teacher's mediation or help. Mentors can influence the pace and content of young students' composing and revising. Nevertheless, the indirectness of asynchronous communication reinforces students' autonomy. As a result, in this mentoring process, learners' autonomy and agency are the main influences on their learning strategies; although teachers are capable of shaping those strategies, students decide even whether teachers can engage in this shaping or not.

> Mrs. Campbell: They [students] need to pay attention to what the mentors say but they don't always have to do it. I'm not going to contradict something what a mentor says. If I very much disagree I would say I disagree but I'm not going to say they're wrong (Interview, November 10th, 2009).

Implications of the *learning sequence* of cognitive apprenticeship: Strategies in mentoring.

Appropriately structured learning sequences effectively help students to structure and control their learning strategies. After reviewing Collins et al.'s (1989) cognitive apprenticeship learning sequence of *increasing complexity*, *increasing diversity,* and *global before local skills*, I found that these strategies could successfully explain characteristics, approaches, and components of mentoring. By using the structural forms of the *praise-critique-suggestion*

Pattern, and by predominately adopting suggestions to '*move forward'* or '*zoom in and refine*,' mentors encourage young composers to move toward increasing complexity and toward an awareness of diverse alternatives.

Increase complexity. Based on the genuinely multifaceted nature of music composition and on the level of students' composing progress, mentors offer detailed comments and critiques. Cognitive apprenticeship defines learning as obtaining expert knowledge and skills, and the ultimate expertise in the compositional context is the refined or artistic level of creating music. Young composers who reach any increasing levels of complexity, therefore, are also able to obtain more advanced information and knowledge, because mentors' comments work as an alternative resource for obtaining advanced knowledge in music theory and composition.

> Ally: Musical layering – I always encourage students to address different aspects of their work, such as harmonic, rhythmic and textural developments, to realize a multifaceted composition, rather than a one-dimensional one. The concept of layering (musical or otherwise) educates students in multidimensional thinking (Interview, December 3rd, 2009).

Ally encouraged Kelly's reflective thinking by calling her to pose questions to herself and to interrogate her own decisions; she suggested finding musically appropriate chords by experimenting with sounds from real instruments. Ally's comment on Sam's 2nd revision combining musical ideas, strategies for building to a climax, and effective instrumentation provided for generalized of composing skills.

Table 51

Comment on Increasing Complexity (a)

Stage	Comment
Ally's Comment on Kelly's 1st Revision	You have a good ear and sense of development. Now I encourage you to go a bit deeper and re-evaluate your usage of specific notes. If even in doubt ask yourself what is the chord I am using? You can go to the piano and try out the chord and then attempt to fix the occasional "wrong note" in your piece. I am not sure have you composed the end? It definitely does not sound like it, but in order for me to know how to comment I need to know whether you have written the end or not.
Ally's Comment on Sam's 2nd Revision	To accomplish similar effect at the beginning, you could 1) Make the texture thicken or thin out more gradually, 2) Make the register expand and compress more gradually, 3) Change the accompaniment for each appearance of the tune (which will result in more variations), 4) Make phrases of different lengths. When suggesting the above I assume you really would like to stay with the fragmented motifs. There is nothing wrong with fragmented motifs - I am only saying that they should be structured to lead the piece naturally into the climax and the subsequent conclusion.

By following the *praise-critique-suggestion* format, Elliot's comments on harmonic material show how the learning sequence of cognitive apprenticeship can guide students from comprehensive to local skills. Opening with a compliment on the harmonic baseline and instrumentation, Elliot swiftly pointed to the global concept of the diversity of harmonic material. He then provided detailed suggestions about strategies for composing in parallel octaves, along with detailed reasons for such an approach. Elliot ended his comments by explaining the generalized composition strategy of differences in contrary and parallel motion.

Table 52

Comment on Increasing Complexity (b)

Stage	Comment
Elliot Comment on Sam's 1st Revision	You have really started to develop your material. The piano left hand is beginning to turn into a harmonic bassline with some real interest, your interplay among the instruments is more successful and your rhythmic variety makes the piece keep us on our toes since accents keep changing. Now I'd urge you to move the harmonic material on to the next level. That is, I would do several things to diversify it a bit more. First, I would work to eliminate parallel octaves between the left hand and the uppermost note in the right hand. All parallel octaves do is eliminate a feeling of independence between two parts, which in most cases is undesirable. We want to hear the two hands moving in opposite directions or at least not sounding locked together as yours do in places like bars, 2, 4, and 7-8. For contrast listen to how effective and satisfying bar 1 is. I'd like to suggest you try something. In bars 7 and 8 change the left hand so it's going up A B D E and see how different that sounds. Contrary motion is much more powerful in most cases than parallel motion and I think changing the bass line so it's in contrary motion against the uppermost line would really get you a much more effective sound. This also applies to places like bar 27 where the xylophone and both hands of the piano are in parallel motion.
Elliot's Comment on Sam's 2nd Revision	Second, and speaking of the final bars, I think your basic idea of imitation in bars 45-52 works well, but in 49-52 I think the E-A-B motif is overused, despite the rhythmic variations you employ. If you just changed the pitches sometimes we would get enough variety and you could also move the piece toward the end in a more interesting way.

Increasing diversity: Synergy and collaboration among mentors. In this mentoring context, diversity is enhanced in the composing and revising process in two situations: with one mentor and across mentors. Generally, mentors suggest various options and diverse alternatives as young composers try to shape their music on their own and get ready to go on to a next part. In addition, when mentors believe that young composers can manage multiple mentors' critiques and suggestions and reflect those critiques in their revisions, mentors add their alternative ideas to provide more diverse possibilities to students' compositions. To promote this increasing diversity in the learning sequence, effective collaboration among mentors is critical.

The openness of the Vermont MIDI Project's use of technology plays a key role in this process. In order to create a community for teaching and learning music, one that exceeds

private learning, this Project makes mentoring exchanges open to the entire community—all students and mentors are able to read other's comments. Within this structure, mentors often agree with each other, particularly because they typically select a couple of the most fundamental and significant aspects of a piece to facilitate effective mentoring and revising. Usually, instead of simply repeating similar comments, they agreed with other mentors' comments while summarizing, reinforcing, or emphasizing points. Therefore, various perspectives, which naturally result from collaboration among mentors, nurture the diversity and flexibility involved in cognitive framework. Each mentor reads other mentors' comments and then synthesizes their ideas for commenting while referring to each other (*See 'Collaboration of mentors' in Chapter Six Miss Gibson's Case*).

Mentors usually do not physically meet or communicate online, encountering each other directly only when they come to the Opus event. They *see* each other only by reading each other's comments on student compositions. Thus, I wondered how each mentor controls his or her comments on a composition and how mentors influence each other through their comments. When he first began participating in mentoring, Elliot did not read other mentors' comments at all, because he was not willing to be influenced by them. However, he came to realize that he needed to review other comments so as not to inadvertently repeat them. Each mentor may agree or disagree with others; both concurrences and incongruities have significant messages for students. He is ultimately very positive about, and grateful for, the diverse perspectives of various mentors since he, like the students, also learns from them. A range of perspectives is not only helpful for students, but also helps to refresh other mentors.

> Elliot: Justin [name of mentor] is there, and he talks about changing the harmony, just the way I would talk about changing the harmony. I will say, "Justin has already given you great advice about what needs to happen with your harmony, so instead I am going to concentrate on something else." It really helps me to know what to say to the student if I

> find out what has already been said. And it's even really helpful when we don't agree, because they can see that, as I said to one student, "It's good, because you see that there isn't one right answer, they are just different perspectives on things." It's not like mathematics problem. When they get different things, they can find what agree with and what they don't agree with him.
>
> Also by the same token, if they are getting, if all of us are saying pretty much the same thing, then that means that piece is making a pretty strong impression in one way or another, and if we're all saying that something that needs fixing, and we're all saying the same thing needs fixing, then they get the message (Interview, November 17th, 2009).

Like Elliot, Martin begins by examining the global content and context of a work, taking care to scan other mentor comments so as not to be redundant; he sometimes reinforced other mentor comments, although he did not always feel that it was needed.

> Martin: The first thing I usually do is to scan. I mean there's not a lot of time to read the whole discussion but I'll scan other composers' comments to make sure… If one mentor said something that I was thinking, then I might briefly reaffirm like "I think his/her idea about this is good," because it will give the kid the idea that more than one person has this idea. If he/she says something that I disagree with, I will definitely mention it just because I think different perspectives are really helpful things to hear as a composer (Interview, July 14th, 2009).

Global before local skills: Providing intellectual. Mentoring strategies in the Vermont MIDI project fit the learning sequences of cognitive apprenticeship. Before giving critiques of detailed and specific content, mentors provide comprehensive maps that present global intellectual directions for young composers without limiting their own thinking and planning processes. Usually, at the beginnings of their comments, mentors would present such maps side-by-side with compliments, which convey a positive and respective attitude.

Global perspectives and experts' intuition. When experts possess comprehensive and macro perspectives, they are able to guide learners from global to local skills. In music creation, comprehensive intuition--which refers to the ability to view the global context and flow of a composition--might indeed be exclusive to mentors' domain knowledge.

My own experience as an undergraduate composition major touches on the complexity of

this kind of knowledge. Whenever I was composing, I experienced something strange; although I was creating music, I felt that my creation had its own natural character. Like a living creature, it had its own natural and balanced shape. Like a stream running down a mountain, the melody would go its own way. Thus, I concluded that composition does not consist of artificially making or even producing music, but instead of finding its most balanced nature. After this realization, I came to feel more comfortable with composition and was able to communicate through my pieces. Elliot pointed out this same phenomenon. He explained, "*They have to be in a particular way and particular piece*." He recognized music as a structure of sounds, rhythms, melodic ideas, and harmonic ideas, which are "*coherent, hold together, and mix*" as organic statements.

Therefore, global direction based on sensibility and intuition is one of the main forms of domain knowledge offered by mentors, even as they take care that this knowledge does not limit students' thoughts. Without a comprehensive perspective and in-depth knowledge, commentators can certainly point out or correct local and specific issues, but only experts have a global sense and intuition. Even as they comment on theoretical details, such as the specific content of the harmony and orchestration, mentors are the right people to best overview the big picture, taking into account both the curricular context of teaching composition and musical integrity.

Giving directions for expanding: Examples from global to local. Although Sam addressed areas that he struggled with and those from which he was ready to move forward to the best of his ability, mentors gave larger and broader directions for making progress based on their perspectives as professional composers *(See p.157-159 in Chapter Five Mr. Stanley's Case)*.

Early in the development of Sam's piece, Elliot offered overall directions for future progress that attempted to address the "static feel" of Sam's composition.

Table 53

Example from Global to Local (a)

Stage	The Pattern	Comment
Elliot's Comment on Sam's Original Posting	Praise	This work will pay off as it will be more interesting and will also give you more to work with. At the moment what happens after bar 8 is really limited by the narrow scope of the opening.
	Critique	The piece has a static feel as if it's not going anywhere, despite how inventive you are in your use of rhythms, percussion and range in bars 9-16 and 25-44 in particular.
	Suggestion	Once you have stronger basic material to work with I think you'll find that you will get a better idea of forward motion and development because your A idea is more fully realized.

Ally's comment encouraged reflective self-analysis from a macro-perspective. Elliot, by contrast, offered specific strategies to expand Sam's progress in instrumentation, transitions, tempo, and his piece's closing.

Table 54

Example from Global to Local (b)

Stage	Mentor	Comment
Sam's 1st Revision	Ally	In brief, please, attempt to evaluate your work on a large-scale and reconsider your phrases and sections in view of the long-term development of your piece.
2nd Revision	Elliot	Sam, you have definitely made progress. Now if you can integrate the percussion parts with the piano more, create some effective transitions, work on your ending and consider moving the tempo up at B a bit more, your piece will continue to develop.

But as Sam neared the ending of his composition because of the impending Opus selection, mentors' comments tended to move from scaffolding to direct coaching; instead of suggesting that he adopt a global perspective on expanding his music and instead of commenting on generalized ideas, mentors pointed out notational issues, expressive issues such as dynamics and tempos, and offered simple corrections of harmonics and instrumentations.

Implications of the *method* of cognitive apprenticeship: Experts aspects.

Each stage of the mentoring and revision process corresponds with a method of cognitive apprenticeship proposed by Collins et al. (1989). Before they have created music, when they are just confronting a blank sheet of paper, students who have volunteered for the online mentoring project begin by exploring and establishing their musical ideas and goals, which they cannot independently achieve. At their first posting, students' ideas and intentions are represented by both musical notes and written documents. Because the asynchronous learning environment does not support direct communication, students post not only motifs or beginning notes in a MIDI sound file, but also a description of their intended piece and a request for mentors' comments. These descriptions and requests reflect students' self-analysis of problems related to both strategies and knowledge, which must be solved in order for students to complete their target tasks.

Modeling. Since mentors cannot visibly demonstrate the composition processes, they must verbalize their composing strategies through their analyses of students' works; only by using the medium of language can mentors explain how they develop musical ideas within a given situation. While reading mentors' comments, young composers can then observe how experts think about compositions. Furthermore, commenting is a good way of modeling critical reasoning. Using cognitive terms, mentors offer praise, critiques, and suggestions with accompanying detailed reasons based on a respectful attitude for others' art works.

Teaching composition thus begins with the analysis of students' own efforts at composition, which are the results of their learning processes to date. By verbalizing their analyses and diagnoses of students' compositions, mentors represent the process and method through which they identify problems and solutions. In particular, in the very initial stage of

composing that includes just tiny notes, mentors show students how they find clues in short phrases, which can potentially be developed into an entire piece *(See p.107, Jonathan' first posting in Chapter Four Mrs. Campbell's Case).*

Analysis, the origin of mentoring. Mentors comment based on their analysis of student works. Based on their analyses, mentors suggest solutions and alternatives; locate examples that will support their suggestions; connect their experiences to students' works; offer compliments; and--most of all--propose overall directions for compositions. Analysis is a structured and systematic medium for mentoring compositions.

Through mentors' verbalized analysis, students can *observe* how mentors think about their compositions. They consequently accept mentor authority not only because they are professional composers, but also because these professional composers appropriately and reasonably understand, analyze, and explain their music. Through mentor verbalizations, students become able to intellectually apprehend their music and to develop musical thinking, which ultimately makes students able to discuss their music themselves. This example also shows comprehensive thinking of experienced composer with insight and wisdom as forms of scaffolding comments.

Table 55

Example of Modeling

Stage	Comment
Elliot's Comment on Sam's 1st Revision	You establish A as the keynote very well early on. We won't forget that, but it becomes not very interesting fairly soon because you stay so close to home. Be braver and walk around the corner. This is a "small picture" item (pitch choices especially in the piano left hand which determines the harmony), but it also applies to the "bigger picture" item, changing the thematic material as the piece goes along. You work your material for variety well, but we really stay in the same place throughout the piece because the overall chord progression never really changes and we never get away from A as the center of the piece harmonically.
Ally's Comment on Sam's 1st Revision	The material you have chosen for your work does ot seem to adequatly portray your intentions. In my opinion you need to clearly differentiate between what music is "happy" and what music is "sad" for you. Presently I do not witness sufficient differentiation between the "happy" and the "sad", as both states (which I actually do not recognize - where are they?) of mind seem to share a bit too much musical material, such as 4+1 groups of 16th notes and low piano sonority consisting of an octave and a fifth. I recommend that you rework the material which you already have in accordance with Elliot's and Pat's suggestions while considering the following characteristics which you may decide to attribute to the "happy" vs. the "sad" music: 1) faster-slower Which one is faster? I don't necessarily mean which one has more 16th notes, but also which one changes more harmonies per measure? 2) consonant-dissonant Which music is more consonant, the happy or the sad? Once you decide, please, do revise the relevant material 3) high-low Which music is higher and which music is lower? Or may be the happy music goes all over the place while the sad music remains in one place? You need to figure this out 4) thick-thin When will we hear the 3 instruments playing together? Which instrument plays for the happy music and which one for the sad? Is there someone who does not perform "sad" music?
Elliot's Comment on Kelly's 2nd Revision	The other thing I'd ask you to think about changing is the places where there are eighth notes and eighth rests instead of quarter notes, such as bar 6 in the right hand, bar 13 in the right hand, bar 15 (and 29) in both hands and bar 18 in right hand. The eighths in these bars really sound too short to be effective to my ears and in places where one hand has quarters and the other has eighths like bar 6 there's no real reason for it so it won't sound as good and it will be harder to play.

Scaffolding. In asynchronous online interactions, scaffolding has been observed to promote intense discussions (Dennen & Burner, 2007). In mentor-student interactions, mentors' scaffolding comments involve detailed and logical forms of praise, critique, and suggestions rather than simple answers, so that young composers can observe mentors' process of thinking

about the challenges they're facing. The results are indicated in the next posting in the form of students' revised compositions. Young composers usually accept mentors' comments in their revisions, but sometimes, they may stick to their original ideas or discover alternative ideas without accepting mentors' opinions (e.g. Jonathan's Horn Glissandi). In these latter cases, students tend to explain the reasons for their decisions. Fading automatically occurs at the end of the scaffolding stage whether students accept experts' suggestions or not.

Comments that give directions for developing music rather than give ready-made solutions provide a strong scaffolding on which students are encouraged to construct cognitive frames and a comprehensive stance. These supporting comments tend to: (a) encourage students to look at their piece from a larger and longer-term perspective, (b) allow students to think about more abstract and comprehensive concepts for creating music, such as the "clarity of materials," (c) foster comprehensive thinking about how to integrate and balance content and concepts in diverse areas, unlike learning distinct theories for each independent area: for example, mentors suggest relating the mood or feeling of music to its rhythmic patterns, connecting melodic progress to harmonic details, and integrating instruments for more effective (or balanced) sound structures, and (d) most of all, provide the confidence needed for students to move forward.

In their interviews, students expressed frustration at sometimes losing their sense of direction. This point of loss should be the right spot at which to provide scaffolding. But in online mentoring interactions, the core issue in providing scaffolding is how mentors can recognize when students can reorient themselves relying on their own abilities and when they cannot solve their problems without guidance.

First, students often ask mentors for help when they cannot make progress or cannot solve specific issues in composing. When they receive such requests, mentors first and foremost

offer answers and suggestions prior to giving their independent comments and critiques. In this case, mentors have a verbal sign in students' written statements that scaffolding is appropriate.

In most cases, however, mentors themselves diagnose and make decisions about when and where young composers need scaffolding aids; this decision-making depends entirely on mentors' musical and pedagogical qualifications and competence. By comprehensively analyzing students' posted compositions as well as background information, such as grade level and previous music learning experiences, mentors provide critiques and suggestions along with detailed reasons, which are supported by music theory as well as insights from their experiences as professional composers. In this case, mentors rely on non-verbal signs in composed and notated music.

Table 56

Example of Scaffolding from Percussion Specialist

Stage	Comment
Ross' Comment on Sam's First Revision	My next comments are re. percussion. I would check out some snare drum etude books and recording for ideas on how to make the snare drum part more interesting. As it stands, you're treating it like an "off beat" snare drum in a drum set part, which is OK, but there's so much more you can do, such as incorporating more rhythm (percussionist are really good with complex rhythms), flams, ruffs (Google those to see what I'm talking about), and so on. In 41, I would change the tom tom half note to a quarter, otherwise, they might try to roll that, but maybe that's what you want. Essentially, I think you were really thinking of a drumset part in the piece, but perhaps didn't want to write for drumset. You also might try looking at a few symphonic/wind band scores to see how other composers write for percussion to get some ideas. In m. 21, I would think about adding something more to the percussion part, or remove the the snare drum note. In the xylophone part, you could ask the player to roll, which is how you elongate notes, particularly in the last measure.

Fading. Fading is one of the most critical points during mentoring, as well as the most exclusive feature of scaffolding. In mentoring via the Internet, scaffolding is taking place when young composers are reading and processing mentors' comments while revising. In learning composition, because of the specific nature of the subject matter, students do not repeat tasks like

drill and practice assignments. Rather, they revise based on critiques and comments. Therefore, mentors provide suggestions for revising or developing musical ideas rather than provide a step-by-step set of instructions for what to do next. Fading follows naturally as young composers understand comments and revise along with them. Mentors' opening compliments, which recognize how students' revised compositions reflect their previous comments, represent a sign of fading.

Coaching. In the context of the Vermont MIDI Project, mentors' coaching comments have unique characteristics. First, both the progress of students' compositions and extrinsic factors, such as the due date for an assignment or the Opus concert application, determine when coaching takes place. During the beginning and developmental stages of composing, mentors tend to provide more scaffolding, but shift to coaching at the end of the composition-mentoring period in order to wrap up students' pieces. Mentors take students' requests, which generally ask for coaching, as a chance to create scaffolding; although students ask simple questions, mentors' answers usually appeal to much deeper cognitive frameworks and may draw out and clarify problems rather than provide a simple resolution of them. In addition, the collaboration that takes place among mentors may extend scaffolding even into apparent coaching moments. Two or more mentors may answer a student's questions, so that even if individual answers seek to "coach," the gathering of diverse answers from various mentors produces a scaffolding effect that requires young composers to engage in more cognitive performances.

Table 57

Example of Coaching

Stage	Mentor	Comment
Kelly's 3rd Revision	Elliot	I know you only have one more session before the deadline, so I'll try to keep my comments short and simple. I think you could do one more imitation in bar 40, where you could repeat the bar 39 idea in the left hand, but down an octave as you've been doing in 34-38. It would finish off the section well that way.
Allen's 1st Posting	Elliot	Finally, the sections of the piece, while clearly delineated, have no transitions so they give not much sense they belong in the same piece with each other. Oh, and there's not any real reason to start the first few bars with one flat in the key signature and then go to C since the piece is really in C from the start, is there?

Implications of the *method* of cognitive apprenticeship: Learner aspects.

The mentoring process consists of repeated exchanges of revision and comment sets. Young composers, who eagerly await mentors' feedback, begin to revise as soon as they receive comments. They first go through a reflection stage in which they read and try to understand written critiques and suggestions, which are based on verbalized analysis of their compositions. Students then enter the revision stage without delay. Finally, they write replies to mentors at the same time that they post their revisions. Generally, after the first posting, students experience 4-6 rounds of commenting and revision. When students reach the final stage of their composing activities, such as the due date of the Opus or the ending of their final project at school, mentors tend to give more direct and simple instructions for wrapping up instead of encouraging young composers to critically develop their ideas or providing frameworks for meta-cognitive activities.

Articulation. Articulation is a critical component of the mentoring project, because young composers are creating and revising their own music while also verbalizing and communicating. During students' revision processes, articulation is conducted mainly through their revised music rather than through verbalization. Although students' written descriptions,

which are posted along with their compositions, involve key features of articulation, their composed music still implies every element of the content of the ideas and every detail of their learning process. In this composing-mentoring context, notation thus refers to the articulation of learners; via the notated compositions, young composers express the ideas and processes behind what they are doing. Mentors must therefore be able to diagnose how the student-composer articulates via their notated music.

> Clarity of expression – I try to be as articulate, concise and clear as possible while simultaneously providing sufficient background information and examples. I obviously expect the same clarity of expression in return. In general, the students are quite capable of formulating their thoughts on "paper" (screen) and I do not have any issues with understanding what kind of advice they are looking for (Ally, Interview, December 3rd, 2009).

Articulation occurs in a variety of ways: (a) in writing replies to mentors, young composers express their revising process and other concerns in a written format, (b) in creating and revising their compositions, they represent their ideas and plans in the form of music, particularly in the written format of notation, and (c) in sharing and giving presentations about their revision process in class to obtain peer critiques, students learn to verbalize their ideas in relation to those of their mentors and peers.

Table 58

Example of Articulation (Written Format)

Stage	Comment
Jonathan's 3rd Posting	Now, i think i did a okay job of cleaning up my harmonies, but be sure to give me a yell if there is anything terrible that ive missed. A couple of things that im still working on: measures 24-27 which will be more filled out. Measures 12-14, i have no idea, but i might be able to come up with something (help would be greatly appreciated for that section) and of course, the "ending" Im planning on bringing in a contrasting section, hopefully i can find a way to get away from my A minor, id like to stay in the key, but use some different chords (maybe a bit of C major)... possible get it a little slower, and leave the constantly repeating bass line behind for a couple measures...If there is anything that I missed, be sure to tell me, and just point to the paragraph or something.
Sam's First Revision	This is the second version of Transistor Lamp Professor. In this version, I mainly worked on the development of the harmony and melody in the A part. The biggest [p]art that i edited was completely reworking the beginning of the A part. I also did a lot of minor edits to other parts. As of now I know of other parts that I still need to work on, such as the development of the B part, and the transition into the ending. I am also still looking for any ideas on transitions, and how the other parts should be developed.

Reflection. At the moment that young composers encounter mentors' comments, they begin the process of reflection. When they are reading mentors' comments, they are usually making decisions about whether to accept mentors' critiques and suggestions or not. In this decision-making process, they naturally compare their own ideas and strategies to mentors' thoughts (e.g., Jonathan's *Glissandi debate).*

During peer critiques in classes, students share and compare their musical products and processes with other students. These moments use peer relationships to reinforce reflection, allowing young composers to develop meta-cognitive thinking and to establish agency over their own learning. For instance, Mrs. Campbell's students often peer-critiqued: experienced students energetically present their thoughts and ideas about their music as well as mentors' comments. Novice students also actively comment about their feelings and suggestions, even though they could not exactly critique composition strategies. Clara, the beginning student, seemed excited about these peer review sessions:

> Clara: Sometimes when I listen to their music it makes me feel kind of envious. I want to be at that point. And then sometimes I listen to it and it makes me feel good because I am kind of at the same point. Or, today, his [Jonathan's] piece is really good. It's really long and good, but I don't like the sound of horns, so. I think that was the Opus requirement for it to be horns? I think. Yeah! That was funny, I liked that too, that is cool. I like when they criticize my work too (Interview, November 10th, 2009).

When they look at other students' posted compositions and mentors' comments, students also reflectively compare their musical products and processes with those of other students. In these practices of reflection through relationships with others, young composers are able to develop meta-cognitive thinking for their own learning.

Example of articulation and reflection. *Sam and Allen's peer critique: Opportunities for verbalization (Vignette, November13th, 2009).* What can students learn from the mentoring process beyond composition strategies and knowledge of music theory? When I interviewed Allen and Sam together, I specifically asked Allen to peer review Sam's work, *Transistor Lamp Professor Pt. 1*. Their music classes were focused on individual composing activities and conversations with their music teacher rather than on direct instruction or peer critiques, and Allen seemed to draw on this experience to respond to my request, beginning with a shy but serious smile;

> Allen: I would say that he has done a lot, and he has a lot of interesting materials. Especially like how he [Sam] changes his tempo, goes from somewhat slow to exciting, back to slow, back to exciting. Then once the end comes, Ok, really going to slow it down now, we are going to end it (Interview, November 13th, 2009).

Allen commented fluently on his favorite part of Sam's piece; just as mentors compliment, he also used an analogy to more exactly articulating his thoughts.

> Allen: Beginning of the B part is like you are entering into a new area. Where the percussion comes in, it's like, wooh, this is totally different. And you feel this is pretty cool. And I also like how he ends it, because I know in some endings, most people end with a big thing on the cymbal, but with his ending, it is more like something you would imagine in the Indian ritual, I think, like a <drumming sound with fingers>. Nothing too classy or too fancy (Interview, November 13th, 2009).

In this informal situation of peer critique without the music teacher, I found that Allen imitated mentors' ways of thinking and articulating, as Mrs. Campbell's students did in their class discussions. When students peer-reviewed their colleagues' work, they used formats similar to their mentors' comments: they complimented first, addressing good qualities of the piece, and then began critiquing with a polite and respectful attitude. They were also able to provide reasons for their critique that used musical terms in addition to emotional expressions. Therefore, experiencing the mentoring process and interacting with mentors seemed to influence students' ways of critiquing peers' compositions and ways of verbalizing musical concepts and content, as well as shaping students' own compositions themselves.

Exploration: The first encounter with five blank lines. In this mentoring system, exploring and trying to solve "learners' specific individual goals" are the premise and starting point; from this premise, experts' assistance begins. Young composers who have volunteered to participate begin with their own motifs, and mentoring starts only after students' first posting with their descriptions of their pieces. Students tend to pose their own problems from the early stage of composing, despite not being able to solve them alone. Some students are able to solve problems by themselves: in this case, mentors tend to act more as assistants rather than as the main source of directions.

One of the success factors in the three teachers' cases is managing the beginning stage, at which young composers are opening up their original musical ideas. Throughout this study, I discovered that the very beginning stages of composition, which means facing a blank sheet of paper, truly belonged to students: it is a stage of pure independent exploration. Mentors cannot intervene at this stage. Only teachers can provide students with theoretical backgrounds, a motif, or a chance to develop phrases from theory exercises, and even then cannot offer direct support

or interventions.

Before facing the blank sheet of paper, prior to actually writing notes, students usually create brainstorming memos or improvise with convenient instruments. For instance, Mrs. Campbell's students, Jonathan and Harry, tended to play instruments and improvise individually and then move to a computer during class, while Mr. Stanley's students, Allen and Sam, often played instruments in their classes while they were composing. Each teacher's original teaching methods and classroom conditions could influence these individual students' composing practices at the beginning stages; Mrs. Campbell taught in computer labs and a choir room while Mr. Stanley's students composed in a band room, where they were able to easily access various musical instruments.

Even though students' beginning stage might have included only a couple of notes, in which it was hard to find the logical structures of the composer's thoughts, students exclusively owned this musical moment. Whether the quality of their beginnings were strong or not, teachers and mentors were able to comment only after students relinquished this first moment. Students were able to initiate their musical thoughts while playing instruments, jotting ideas down, or sometimes struggling to find appropriate sounds.

Table 59

Examples of Exploration in Students' First Posing

Student-work	Description of Piece	Request for Mentor Feedback
Clara, Minor Melody	My name is Clara and I'm taking MIDI composition for the first time as a senior. I've always loved music and currently partake in the main chorus, select choir and women's ensemble. I decided to join MIDI composition to help better my knowledge in basic theory. In our class we were asked to create a melody in any minor key. This is my first time formally writing a piece of music and have basically been doing it by ear while taking notice to what make sense theoretically.	I would greatly appreciate any constructive criticism towards any aspect of this piece. It could possibly become a piece for Opus in the future in which i would need to expand it. Any suggestions towards where i could expand certain parts, or where i could go with it next would be very useful. Specifically if you think certain parts are too busy, or some parts don't belong, or it simply becomes too repetitive etc.
Clara, Opus20	This piece is intended for the Opus spring concert, its definitely a work in progress and I would really appreciate any comments you can give. I've just begun so its not developed. My problem is that i have many ideas, and do not know how to develop them =/. Thank you very much!	Please help with the development and anything else you notice that needs improvement of any kind!
Allen	It is supposed to be a piano, trumpet, French horn trio. But I am still working on the French horn part, which you will not hear in the piece at the time. There are other things that I still need to work on, but it is still a work in progress. I was inspired to create this piece when I was sitting at the piano and started to play chord sequences. I then created the horn piece on the piano also. This piece gives you a little bit of what emotion can be like and how it can go from sad to happy and back to sad again.	I would like some suggestions for my piano part and even my trumpet solo.
Sam	This is the first time that I have written and submitted for an Opus project. I originally was going to write a Latin style song, but it was too much of a jump for the first time composing a piece. The inspiration for this piece came from the band Primus by using their general form (ABABC) and using a minor key. I also wrote this piece based off of some comments that I read on other pieces about having too much wind instruments by making it a percussion, piano, xylophone piece.	Right now I know of some improvements that can be done to the piece (transitions and more dynamics), but our computer system crashed yesterday making it difficult to edit the piece. I will edit this for next submission.

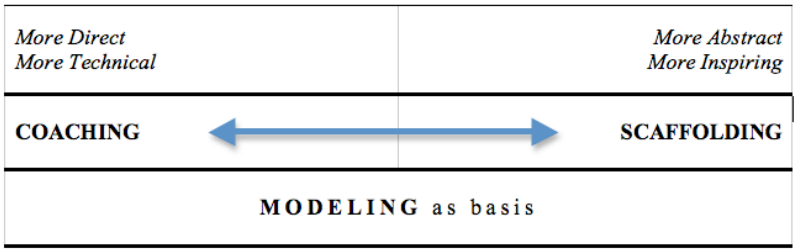


Figure 10. Cognitive apprenticeship methods in mentor aspects.

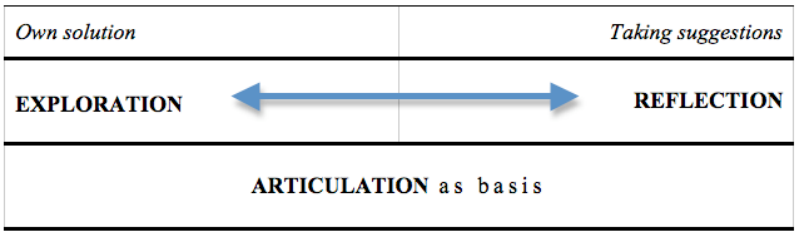


Figure 11. Cognitive apprenticeship methods in student aspects.

Sociological aspects of cognitive apprenticeship in the mentoring community.

For cognitive apprenticeship learning theory, the learning context and social situation are themselves requisite skills and knowledge. Learning as a collective behavior, including knowledge acquisition and construction, is not the result only of individual cognitive behaviors, but also of socio-cultural factors, including interactions with colleagues and experts--for not only mentors but also peers serve as excellent sources of feedback (NRC, 2000).

Through reciprocal interactions with mentors of diverse backgrounds as well as with classmates, students are able to appreciate that each individual has diverse thoughts, and can learn how to reach shared perspectives through that diversity. The process and strategies for achieving ideal results in music creation in particular are definitely subjective rather than standardized. Thus, students of composition should experience opportunities for multi-dimensional thinking, such as brainstorming, reflecting on and analyzing mentors' comments, and exploring their novel ideas within the social interactions of a particular community of

practice.

Situated learning: Attitude and identity of a real composer. Students compose music in the context of interactions with real professional composers. In this context, instead of being learners, they were identified as independent novice composers. At the same time, mentors actively treated students as composers and musical colleagues. Mentors did not only give comments as experts, but also frequently expressed their respect and admiration for students' works, describing their compositions as inspiring and their progress as amazing; they were refreshed, stimulated, and inspired by their young colleagues' musical works. Teachers also respect their students. Thus, teaching practices within a mentoring context tend to facilitate discussion and sharing, rather than the one-way delivery of instructions. The final goal, live performance, also reinforced the situated context of composing.

Consider how it sounds. Elliot explained the theory behind musicians' decisions about sounds, and moreover, connected those decisions to expectations about how sounds would be heard and experienced by audiences. Elliot guided students in how composers consider the actual sounds of music while composing—from the earliest stages of creation.

> I'd also make the final note in bar 2 in the new second violin part a C (actually a middle C quarter and then an octave higher eighth to avoid a 9th leap going into bar 3) to give the chord some harmonic content. It's a bit early for just an open octave between the parts which I'd suggest you save for a later dramatic moment, as octaves tend to REALLY get our attention and you don't want to overuse such an effect (Comment on Clara's *Minor Melody*).

Because the Vermont MIDI Project culminates in students' experience of live music, mentors naturally discuss orchestration and instrumentation in their comments. Both of these elements are unique and critical parts of teaching composition. Although students can access various kinds of orchestration books, the use and application of musical instruments requires more experiential knowledge than novice composers have. In particular, high school students

tend to have limited experiences with real musical instruments, and their experience usually comes from school or church bands or local concerts. Thus, the imitation sounds of computer software and mentors' comments on instrumentation are additional direct sources of knowledge for students.

The mentors' varied musical backgrounds also provided students access to diverse musical experiences that exceed theory books. Moore, one of the mentors, is a cellist as well as a composer-teacher. As a string instrument specialist, he took the lead in commenting on instrumental parts during the mentoring process. His background as both a performer and elementary school teacher enabled him to explain complicated contents of orchestration using a student's language.

Table 60

Examples of Mentors' Comments on Considering Listeners

Stage	Mentor	Comment
Clara's Opus 20	Elliot	As strange as it may sound, as listeners we often make sense of a passage afterward by what it leads to. That's a good way to figure out whether a piece is well constructed or not
Martin	Jonathan	Clarity is the name of the game! And your piece's material is becoming much more clear to the listener.
Allen's 5th Revision	Ally	Please, do input some dynamics, if you can. Their presence indicates that you care about the actual sound of your piece.

Think about listeners and performers. Via the Opus, the Vermont MIDI system pursues authenticity in music composition. That happens not only because the students end their experience with a live performance of their music, but also because mentors remind young composers during the revision process to always think about their audience.

This reminder to consider the audience is perhaps the most authentic attitude of a composer. In fact, even if a student's music would not be performed at the MIDI concert, anyone

who could login to this password-protected web site--including mentors, participant teachers, and students--would be able to access all of the students' uploaded music.

Community of practice: Although I do not agree. Mentors consider students to be young composers and musical colleagues rather than learners, so in this mentoring context, learning composing or participating in the project is equivalent to becoming a member of a community of practice. As a community of practice, rather than an isolated teaching and learning relationship, the mentors, teachers, and students have a tacit agreement to find diverse ways to accomplish their tasks of composing or supporting composition. Students can learn not only experts' skills and knowledge in composing, but also they can also learn critical but flexible thinking based in an attitude of respect.

Mr. Stanley's belief in community. In interviews as well as in his teaching practice, Mr. Stanley consistently stressed authentic experiences of music over practice with it. Thus, he valued the practical quality of this mentoring system; it provides a real-life situation, which is directly related to a real composer via the Internet. He analyzed his students' psychological investment in that situation:

> Mr. Stanley: It's not practice; it's not plastic. It's like a direct link into art…I think the kids love it. I think they are drawn to it because it brings down the role. It's not a hierarchical situation. The kids are direct into real-life experience. I think oftentimes school things are based around this idea that "*You're doing this so when you grow up, you can do this.*" I think the kids feed into that idea. I think it's that they're taken seriously. The kids like "*What you're doing is important and beautiful!*" If you can get kids seriously, and you support something that they feel good about (Interview, July 29th, 2009).

He also identified the inter-personal features of the process as one of its most powerful ways of motivating to students to continue composing stressing recognition and acknowledgement from a community of composers as particularly important. Via the Internet, students are able to meet generous people, who have the most authority of students' most

interests. Moreover, those people encourage their work, appreciate their interactions, and even await their next steps with expectation.

Mr. Stanley analogizes the vital role this mentoring project plays to an 'electrical circuit.' Although he brought crucial ingredients to the classroom, such as his strong passion for students and his ability to teach composition, and although he worked with vigorous students who were ready to 'be musically inspired' and were able to play various instruments, composing in the general music classroom still was likely to encounter various barriers that mentoring could help address.

> Mr. Stanley: You can have electrical circuits, and you can come, you can bring everything together. But unless you make a loop, there is no electricity and the light doesn't work (Interview, November 4th, 2009).

As Mr. Stanley valued the community of composition as an authentic art-learning environment, his students Allen and Sam naturally took an interest in looking for other students' pieces.

> Allen: You can also look at their pieces and be like that is pretty interesting. You can sort of have your own thoughts about it. But I think the most exciting part is that you're sort of throwing your piece out there for people to look at, and whether they like it or not it doesn't really matter…What really matters is if they have good comments about what's good and what can be changed...and what can make it better (Interview, November 4th, 2009).

> Sam: I also wrote this piece based off of some comments that I read on other pieces about having too much wind instruments by making it a percussion, piano, xylophone piece *(Written description about his piece).*

Intrinsic motivation. The context of situated learning and a community of practice require learners to have intrinsic rather than external motivations. When learners are intrinsically motivated, they are able to perform their tasks more actively and effectively (Collins, et al., 1989). In the triadic relationships of the MIDI project, students, teachers, and mentors alike have intrinsic rather than external motivations, such as higher grades or pleasing others. In addition, students in particular set their personal goals by themselves. I will address motivations within the

triadic relations in the next chapter, intertwining this issue with emerging issues of learner agency.

Cooperation and competition. In the context of this mentoring project, composing is viewed as more of an individual creating behavior than as a collaborative activity among students—even though that individual behavior is supported by a social network. On the other hand, Mrs. Campbell's Wolf project, for instance, shows how this music teacher implements an orchestral composition as a *collaborative* project in high school general music classes, as well as how the outsourced expertise of professional composers via this mentoring project (*See Wolf School Dropout: Class collaboration for orchestra piece in Chapter Four Mrs. Campbell's Case)*. This grand collaboration consists of multi-layered interactions among students, the music teachers, and even mentors. In addition to Jonathan and Harry, who actually composed this orchestral piece, other classmates were also able to indirectly experience the process of creating orchestral music, which high school students could not experience in the regular music curriculum.

The Opus: Make Composing Real

The strong connection to live performance is the most visible value of the Vermont MIDI Project. Although about 20 students win the Opus concert, most other participants, who are mainly classmates of the winners, also experience the 'concert package,' which includes all-day rehearsals, seminars, and fellowships. In addition, the project actively promotes local live performance opportunities, such as the Vermont Youth Orchestra competition, The Vermont Contemporary Music Ensemble, and the Lake Champlain Chamber Music Festival. By participating in these events alongside professional musicians, the young composers are able to experience musical integrity in action and the real society of local artists. The music enters their

lives.

> Harry: When we did the string we do a kind of classical music. It's different to see the style. Because when you go to an Opus event, you see the people who have a whole bunch of different styles. They mostly center around a classical. We have our instruments that we are supposed to use already (Interview, November 2nd, 2009).

> Martin (the mentor): There are all these different things that are popping up because of it, and its connection to the music, the live music is what makes it very successful. It's not just a bunch of like computer nerds sending each other emails. It's musicians that are getting together and overcoming some technical boundaries or technical obstacles rather, to share music in a way that isn't otherwise possible in a rural area (Interview, July 14th, 2009).

The Project's focus on live performance expands criteria of evaluation; the quality of students' composition in the Vermont MIDI Project depends in part on their possibilities for performance. Everyone from the Board members to student composers consider the feasibility of the live performance, which takes place within certain inevitable constraints--including the practice time afforded to the professional musicians as well as the limitations of the rehearsal time and place. Thus, this live concert represents a practical learning goal for both students and teachers, and for students in particular is both a strong motivating factor and an unparalleled opportunities. Throughout the mentoring process, both teachers and students learn about everything from the complexity of maintaining musical integrity to the practical concerns of composers; they obtain not only abstract skills and knowledge in composing and teaching composition, but also real experience as full members of an active composers' community.

> Martin: I mean the quality of the piece is obviously a big priority, but also making sure that the piece is a good match for the Opus concert. If there is a piece that there is no way this brass quartet could put together with the limited rehearsal time, even if it is a great piece, you are not doing the kid any favor by playing their piece poorly. So making sure that the piece will perform well for this kind of event is important… Also making sure that no particular piece is too taxing on the performers, because it's not fair for the performers to have to physically endure something that is extremely difficult just for this one piece when it's going to compromise the rest of the concert (Interview, November 25th, 2009).

Motivations for composing.

Like student-participants in this study, Martin, one of the mentors and a past student, described the Opus concert as the strongest factor in his desire to compose regularly. He actually experienced the Opus concert in the 8th grade. His first composition for the concert was a collaboration with his twin brother and another friend, which coincided with the inaugural Opus for the MIDI Project, held in the spring of 2000: "Once the Opus concert started, I had a reason to write a piece every year, or two pieces a year" (Interview, July 16th, 2009). Miss Gibson's student, Chris, was very energetic and positive. This was his second participation in the Composition Club as well as in the Opus competition, and he was very strongly motivated to win it. In his reply to mentors with his final posting for the Opus, he stressed that, "I took a lot of your advice and it really helped me. Because of you, my piece is really good. So cross your fingers and hope to see me at the concert. I'll plan on being there any way if I don't get in" (*Written reply to mentors*). Chris did not win this fall's Opus, but he was still active and cheerful at the concert hall and decided to participate again in spring of 2010, with the expectation that he would win that time.

The all-day event for all: Mood and circumstance of the day.

The members of this composing community of practice, who had communicated for so long via the Internet, met the day of the Opus concert. When I arrived at the Elley-Long Center, everybody present--music teachers, students, friends of the project's board members--was quietly busy; they looked very professional preparing for this complicated and grand event. They were moving chairs, preparing snacks and nametags, and double-checking each planned component of the concert. While they were working, they were also listening to the sounds of musical instruments from rehearsals and musicians' conversations. Everyone focused on what was

happening on the stage. The rehearsals were the real beginning of the Opus.

All family members of the Opus winners and friends, their classroom teachers, and their neighbors came to watch this extraordinary local community event. Between rehearsals and the concert, the Opus children's families could have dinner together if they had previously made reservations. Musically, the concert had already begun during rehearsals in the morning, but it became a festival with this dinner party. The elementary school did not provide bus service, so parents' cars created bumper-to-bumper traffic around the school area. Parents are supposed to pick their children up after school, so I was later able to meet almost all the parents of the young composers in the Composition Club. At this dinner, I met them again. Many parents, not only those of Opus winners Kelly and Jake, attended the Concert.

After the concert, just as at its beginning, many participants, including young composers, their teachers, alumni of the Project, and even technicians from a local broadcasting company, helped to clean the concert hall. The last person to leave, however, was the Coordinator. She checked all electricity and equipment and then finally moved all the materials used in the concert, from office supplies to digital recorders and cameras to nametags, to her car.

Rehearsals: Composers encounter musicians on the stage.

> *The student becomes the center of attention in the performance preparation and all performers look to the student for instruction on how to perform the score. This gives the student a real sense of power over his/her creation. (A mentor's comment from http://www.vtmidi.org)*

The Vermont MIDI Project provides all-day open rehearsals, and not only the Opus winners, but for all students who had applied to the Opus. The public and press were invited to view the amazing experiences of these young composers. Each music teacher guided his or her students as they came to the rehearsal stage with their winner-friends. Elementary teacher Ms. Gibson, acting as a mother hen, had her 9 children sit on the stage together like a group of chicks.

Mrs. Campbell's student Harry came to the stage with Jonathan. Thus, even if students were not selected for this Opus, they could experience every part of a real composer's stage process with their friends who had been.

> Martin: For the first Opus concert there was no rehearsals between the students and performers. I just showed up at the concert, I heard my piece and I went home. And even that was extremely thrilling. All I have ever heard was the MIDI playback, the sound of the computer. My piece live, other than one piece that I played on the piano. But it is the first time hearing someone else play and especially a professional musician. It was a member of the American string quartet playing or the American symphony orchestra playing my piece… I got more into the rehearsal process 'cause after the first one they let the composers talk to the performers, even as a… 13 or 14 years old kid they would walk up to a brass quartet trying to coach them (Interview, July 16th, 2009).

As part of this essential step of bringing their compositions to the live stage, young students interact with professional musicians in ways that make them aware of the real sounds of music: the sounds of real instruments, of musicians breathing while performing, and of conversations. Most of all, they become aware of being the owner of the music that the musicians play. In various debates about school music, maintaining musical integrity is one of the most critical but fundamental issues. Nevertheless, musical integrity is not limited to recordings or books about famous musicians. By spending a day with musicians, students who have experienced the music creating process as composers can encounter musical integrity in real applications. Martin shared his past experience of this process as an Opus winner.

> Martin: Especially I was less experienced with string instruments generally. I mean I played in band in middle school but I never played in an orchestra, I never really heard an orchestra or string quartette or any real string instruments. So, my impression of what a violin even sounded like was pretty limited. So to me it just felt like, I obviously recognize the melody and I recognize the chord progression and stuff, but it was just like a whole new piece, because the live, the timbre element, is so different from a MIDI file to a live performance. Just a whole note sounds totally different. It is not even necessarily the stylistic articulation. It's just the pure timbre of it is so different that it wasn't anything I could have imagined (Interview, July 16th, 2009).

For young composers, throughout their live performance experience, composition is not an isolated struggle of gifted artists that traditional master composers such as Mozart and Beethoven engaged in, but instead a set of ongoing interactions with diverse people in a community of composers, including professional composers and other young colleague composers who they have not been able to meet in their daily lives: it is the constructed consequence of sharing and meeting. These continuous encounters enable young students to manage various barriers that appear at each stage of the process of creating music, to be encouraged, to feel confident, and even to experience the aesthetic value of music. Information technology and computer science enabled such relationships and virtual communities beyond the limits of time, space, and even expense.

Among the high school students, Sam and Jonathan seemed most like professional composers; they listened calmly to their music being played, communicated their requests and directions to musicians, and answered performers' questions about their musical intentions. Jake, the elementary school child, also behaved as a professional. Miss Gibson allowed me to sit on the stage with her and Jake, so I was able to experience how music teachers felt as they shared the stage with their students. Jake looked very serious and focused; he offered detailed directions about everything from individual notes to dynamics, demonstrating a clear command of the content of his music. Jake had a particular problem to solve during rehearsal: as mentors had repeatedly predicted and worried about during the mentoring process, the trombone players became tired out by the long series of sixteenth notes in his piece. Although each of the music teachers, Mrs. Campbell, Mr. Stanley, and Miss Gibson, accompanied their students to the stage, the teachers did not interrupt the interactions between their young composers and the performers, even when they faced problems like this one: from the classroom to the stage, the three music

teachers in this study consistently showed their respect for students' ownership of their music. Jonathan, who had experienced the Opus once before, understood that the musicians faced a hard schedule of all-day rehearsal and a concert immediately after. Thus, he had considered the musicians' energy while he was writing his piece.

> Jonathan: Getting to perform live is great. And we get to see the musician and talk with them about the pieces they will be playing. It's a lot of fun getting to talk with the mentors again. It's great. It's fun to do that and have other mentors comment on it, and then fix it and then put it back on and, wow, this is a lot better. That's cool, gratifying definitely (Interview, November 6th, 2009).

In addition to my study participants' compositions—Jonathan's, Sam's, Jake's, and Kelly's—I was able to observe other students' rehearsals. Across all these pieces--including those of independent study composers, who were planning to major in music composition—I found common features of a good composition, which mentors had also referred to in their interviews; these qualities were similar to those I observed in my undergraduate experiences as a composer. Whether a piece was complicated with many notes or not, musicians were able to perform good pieces skillfully. Such pieces made it possible for the performers to create a conversation among the parts. Finally, good pieces-- logical, structured, well-balanced pieces--took less rehearsal time with fewer questions need to clarify vague notations.

At the end of rehearsal, I observed an interesting phenomena; during the rehearsals of complicated music written by high school students, three elementary school children sat under the stage, closer than the seats, and watched the rehearsals somberly while their friends played outside.

Elementary composers talk about composing: The Seminar.

The conversation above is not a professional composer's talk, but an elementary and middle school discussion about how to begin a musical piece. On the day of the Opus, mentors

led an elementary and middle school conversation while high school students attended another seminar in instrumentation, particularly in using the bass clarinet. Including the student composers selected for the Opus concert, about 20 children participated in this open conversation with their teachers.

One of the mentors, Elliot, began this session by asking a question: when you decide you want to create a piece of music, how do you start? Surprisingly, each student had his or her own strategies for launching their pieces. Teachers usually did not appear in these strategies. Although I had taught composition and theory to students at various levels, I had never thought that elementary students were able to generate their own strategies for creating music. But from the very first moment of composition, when they faced just a blank sheet of paper, these young children were already able to manage their ideas.

In my beginning attempts to compose in high school, I started out with a motif given by my teacher in order to prepare for the entrance exam to college. I remember my frustration when, as a college student, I finally needed to compose using my own motif. In comparison, I realized that the strategies and attitudes gained from facing the blank sheet of paper reflect students-composers' intrinsic motivations for creating their own music. No one assigned tasks or pushed these students to take composition courses. Both my focal students, and other young composers in the MIDI Project began with their own musical ideas and insights, and mentors and teachers supported students to build up musical works from there.

Good composition, successful composers.

Opus selection. Through the process and criteria for judging Opus selections, mentors revealed what they considered key features of good compositions. During each semester, usually in the first week of February and October, students uploaded their first postings, whatever their

length or quality. From this time on, students were allowed to compose and revise with the help of feedback from mentors, teachers, and even other students. After 7-8 weeks of a repeated request-respond-reflect process, mentors selected the Opus winners. Then, after a couple of weeks devoted to score preparation and another couple devoted to practicing for the performance, the young composers met their audience at the stage. Thus, in each semester, the Opus has an approximately 11-week cycle from the first posting to the Concert.

Mentors were able to vote about 3-4 days after the final posting date. Each mentor had his or her own processes and strategies for selecting pieces. Usually, they created notes about each composition's strengths and weaknesses, as well as how appropriate and effective they were for the concert. Martin mentioned that one challenge of the voting process was the difference between familiar and unfamiliar compositions, given that he could not comment on all the students' postings.

From my early research in 2007, I discovered a specific phenomenon: students who showed quick progress in composition usually had instrumental training in their backgrounds, especially in piano. In particular, some of the most outstanding students, including the Opus winners, usually had received piano lessons for at least a while. Personally, when I have studied and taught music theory, I have believed that the system, structure, and explanations of many music theory books seemed to be designed based on piano keyboards. Because I had majored in piano from elementary to high school, I was able to easily understand them. However, I remember that many other students who were string and wind majors had to think in terms of the piano keyboard rather than their own instruments.

> Martin: You can assume they know what major triads are, and you can talk about the modes and tonic and dominant and you can't really assume any of that in elementary school. Certain kids understand that, especially those with a piano background. And you can usually tell, based on the composing, what they are comfortable with (Interview,

November 25th, 2009).

Although one exact component was not apparent to the students, Martin identified one central qualification of a good composition: its overall shape and balance. Instead of evaluating complicated composition techniques or advanced levels of harmony, the overall balance was his most critical criterion. To ensure a balanced overall shape, teachers needed to check that students made timely progress and interacted appropriately with mentors.

> Martin: So something that feels like a whole piece, something that has a nice overall shape. Just like any other good piece, it feels like it has a strong beginning, middle, and end. And it really is like a presentation of a piece of music, not just a student's work in progress... making sure that the piece itself has an overall nice balance of shape, instrumentation, length, and climax. Making sure it doesn't feel like it ends too abruptly (Interview, November 25th, 2009).

If you can play any musical instrument, you may have noticed that you sometimes feel comfortable playing pieces despite their apparent complexity, and find others awkward even though they look simple. Sometimes, composers who are also performers tend to compose music that is comfortable for performers who must work with the structures and idiosyncrasies of their musical instruments. This phenomenon definitely occurred at the Opus rehearsal: some pieces had dense notes with complicated rhythms, but musicians still played them skillfully and even happily.

The Excellent: Why are they excellent? Students tend to continue participating in this mentoring project after their first experience. Five of my focal participants—Jonathan, Harry, Allen, and Jake—had participated for multiple semesters, and the first-time participants, Sam and Clara, both planned to post again next semester. Those who had participated before had often done so for relatively long periods: Jonathan had participated five times, Harry four times, and Allen three. What made these students continue composing? Martin pointed out the influence of repeated participation on the Opus selection. Thus, I was able to begin exploring the

reasons for students' repeated participation through those results.

Miss Gibson addressed the characteristics of excellent composers based on her experiences in the Composition Club. Although some of her students were only elementary school children, they already exhibited some of them: they were capable of meta-cognitive thinking, of *audiation* ability with real sounds, and of communicating with mentors via written methods. Interestingly, Miss Gibson considered technical abilities, like notation skills and theoretical knowledge, to come later.

> Miss Gibson: The best composers that I've had and have gone on and done Opus are the children who really make the connection of going back, and hearing what they're listening for, and knowing exactly the kind of sound they want, and then finding the way to ask the mentors. **"**How do I get that sound?" or asking me "how do I do this?"… "I want the trombone to do this how do I make it do this?" They'll sing the part for me. "I cannot find even looking all over the staff I cannot find the note that I want, can you help me? This is what it sounds like…" Those are the best composers the ones that are really hearing it even though their notation skills aren't up to that they're trying to find a way to figure it out (Interview, October 28th, 2009).

Verbalization and communication about the music students created helped to determine whether or not their composition activities reflected their thoughts and intentions. Emphasizing the independence and patience of young students, Miss Gibson also noted the importance of students' characteristics to the production of good compositions.

> Miss Gibson: They're more patient, they're tenacious…We're also individuals…just take wherever they are whatever they decide… That's where we start from… Some of the students are not patient…like Mary, she gets a certain sound and she wants to stay there, she doesn't want to go back, has a hard time with the critique and reflection part (Interview, October 28th, 2009).

As I explored my participant-students' rehearsals and performances, I was able to comprehensively listen to all Opus compositions. This thorough experience reminded me of the mentors' notions about the Opus selection. During interviews with composer-mentors, they often mentioned the traits of first-place pieces.

> Elliot: We were only able to pick from the elementary pieces two that we thought were 1st place pieces, and two that were 2nd place pieces. All of us chose the same two 1st place pieces. It was quite easy because those were the ones that were the most developed, they were the best pieces, it was very clear. In high school, I would say the top four or five pieces were pretty clear to just about all of us. (Interview, November 17th, 2009).

> Martin: And there are certain objective qualities that the top 3 pieces, whether I mentored them or not, are usually pretty obvious. (Interview, November 25th, 2009).

At the Concert, I began to agree with mentors about the clear quality of the first-place compositions. This clarity also reminded me of Sam's composition process. In his first composition and theory class, Sam processed every stage of composition very smoothly. Every detail of his piece looked reasonable and fluent overall. Balance among each instrument was also appropriate, and the performers seemed to have discussed that before they played. Most of all, the teacher, Mr. Stanley, also noted that Sam found composition easy. In addition to Sam's piece, I was able to recognize the so-called first-place piece, as defined by the mentors' consensus. But what is the nature and features of the talent that produced these pieces?

And then what made the excellent compositions different from the second group? Martin emphasized that it was simply "obvious." In particular, he pointed out the sense that ideas and sounds came before computer software. Ironically, however, such a sense became evidence of the superiority of compositions that *used* computer software.

> Martin: When you hear that piece, it's obvious. This kid has written a real piece of music here. Everything is well thought out. And it's obvious that the music is coming before the software at that point. That is probably a good way to pin point it. That the music is really leading the piece, and the software isn't at all. There is no arbitrary copying and pasting. There is no really repetitious parts that is that note. Sibelius software is strictly a tool, a notational tool, not a compositional tool. And that is often the big difference in the top tier and the next tier down (Interview, November 25th, 2009).

The concert.

Formal classical concerts are usually thought to be inaccessible to younger children, but the Opus was different, for these children were the owners of the music being performed. And

those elementary school composers' younger sisters and brothers were just as serious as they were; no one was nodding off or chatting in the hall. At this 90-minute concert featuring 18 compositions, everyone had a strong sense of ownership as either a composer, performer, teacher, colleague, or supportive family member.

At the end of the concert, the Coordinator gave Opus certificates to all students, which recognized the semester-long efforts of all the young composers and their teachers. From the first posting to the due date, this piece of paper contains so much: the young composers' sweat, struggles, thrills, accomplishments, and frustration. The Coordinator first gave a yellow envelope to each teacher, who then gave the certificate to his or her students. This method reinforces fellowships and order among teachers and student-composers.

In addition to having the reward of listening to their composed music in a live performance, the young composers in this Project experienced the whole body of creating music. They experienced the entire process through which music is transferred from the inside of composers' minds, via the musicians' instruments on the stage, and finally delivered to the audience in their seats.

Chapter Ten

What Conditions of the Vermont MIDI Project Enable the Triads to Continue Learning, Teaching, and Mentoring Composition?

This study expands existing research on computer-based music composition learning by adopting a comprehensive perspective, and by approaching technology as a factor that influences human interactions rather than as purely a teaching and learning tool. In addition, this study complements the currently underdeveloped but potentially rich field of inquiry of teaching and learning interactions among teachers, students, and mentors, including social dimensions of those interactions.

This chapter explores several insights gained from my study of the composition teaching and learning developed through the Vermont MIDI project. First, the apparent technological limitations of online mentoring created unique pedagogical benefits for all the participants, including students, teachers, and mentors. For example, verbalization was more than a practical necessity of asynchronous communication--a result of the fact that mentors simply had to verbalize in writing in order to comment on students' compositions. It also served as a powerful pedagogical tool for teachers and mentors and as a stimulus to reflection on the part of the student composers. Second, developing learner agency was a key motivating factor not only for students, but also for teachers and mentors. Third, while mentoring in this project is an example of cognitive apprenticeship as seen in Chapter 9, certain aspects of mentoring in the project are unique to music composition. Fourth, there are reciprocally supportive relationships among members of the focal triads in this study. The mutual support the participants provide each other helps sustain their motivation to continue participating in mentoring. I explore each of these insights in some detail in this chapter. Together they provide answers to the initial research questions and point to promising practices in composition pedagogy.

Asynchronous Online Mentoring and Verbalization

Contemporary classrooms are encountering numerous innovative trends related to technological changes and these trends have an impact on the paradigm of music teaching and learning. In the music education profession, researchers tend to pursue a macro-perspective, examining music instruction that is technology-*infused* rather than technology-*based* (Ruthmann, 2006; Webster, 2003). Yet technology must be explored not as an isolated factor, but as an organic element integrated with other elements of learning: elements such as learner and teacher identities, the curriculum, available materials and equipment, and the learning environment as defined by the system perspective. The nature of learning composition using computers and information technology is intertwined with all of these factors.

At the center of music education research, most of all, students and their music should remain the priority, and the mutual relationships among the above factors must be understood insofar as they define teaching and learning interactions (MacLeod, 2004; Reese, 2004; Reese & Davis, 1998; Savage, 2004; Wiggins, 1999). Thus, the most significant influence of technology on the music classroom is that students are now thinking of sound in more creative ways and are interactively using computers and information technology (Beckstead, 2001; Hickey, 2002; Reese, 2001).

In particular, music-making with computers and the Internet results in the advent of a new kind of musical literacy and aesthetic (Hickey, 2002). Unlike traditional music learning in the school environment, classrooms using computers and information technology offer everything from equipment to outsourced expertise: tools for music making, recording, mixing, instant playback, and even mentoring support from professional composers. These systematic changes produce changes in musical integrity, the process of music making, and even the

cognitive functions of learners.

In this study, I found that technology played a critical role in influencing learning and teaching paradigms beyond its use as a tool Technology certainly helps people to learn, to teach, and to communicate across the limits of time and space; it reduces the physical and material costs of education; and it establishes a community of composers in cyberspace. Nevertheless, its most substantial impact is on strategies of composing, characteristics of pedagogical interactions, and ways of thinking encouraging verbalization.

Technology makes mentors and students verbalize.

> *Written responses are tangible evidence of students' ability to critique. They may also reach the student that is less likely to contribute verbally (Mrs. Campbell, retrieved from http://vtmidi.org/reflect_critique.html).*

Composition is the outcome of complicated activities that occur when the inner and outer parts of learners combine in musical action, cognitive behaviors, and complex emotional and social events. Thus, unlike musical activities like singing and playing musical instruments, composition cannot be taught merely by demonstrating skills or delivering knowledge, or even by imparting specific procedures or methods. In composition, teachers and mentors also cannot make students repeat and practice the same passages over and over, as they do in preparation for performance.

In the triadic interactions in this study, the main teaching and learning activities revolved around discourses of learning and knowledge of music composition. Mentors influence student musical activities mainly via written documents: according to the cognitive apprenticeship model, students can observe experts' ways of thinking about their compositions via these comments. The overall composition process includes creating a verbal description of a piece and making specific mentoring requests, engaging in conversation with teachers, and communicating with

mentors regarding comments and revisions.

Teachers can follow the composing process of their students and the interactions between students and mentors; via written documents, music teachers are able to discern what their students think and how they feel while composing. They can also use mentor comments to reinforce their own teaching by turning it into instructional and discussion material. In addition, they can observe how mentors respond to each individual moment of a student's compositional process. In parallel with their composing procedures as teachers, mentor comments might be used most effectively by teachers as opportunities for learning how experts teach composition.

How verbalization occurs. Verbalization is a natural consequence of asynchronous communication. I began my analysis of verbalizations of composition strategies and musical concepts with the following questions: a) how do teachers and mentors recognize the ways in which their students think, reflect, and feel? and b) how do students learn while they are reading mentor comments on their compositions or writing replies to mentors?

Within the mentoring context, music teaching and learning is a cognitive behavior based on communication: intellectual behavior is intrinsic to music composition, and distance-learning environments reinforce that behavior through verbalization of the learning content and process. For example, the commenting and replying that occurs between mentors and students, particularly during the critique and revision process, enables students to think further about their ideas while, at the same time, reflecting on their mentors' responses. Mentors and teachers in this study frequently used cognitive terms to articulate the process of composing and teaching composition--such as '*discover,' 'reflect,' 'sense,' 'understand,' 'identify,' 'know,' 'critique'* and '*think'*, rather than using musical artistic terms. More specifically, they use cognitive verbs to describe students' activities only to identify materials and content upon which students are

acting; they thus frame the process and components of teaching and learning composition as a cognitive one.

Creating is itself an expressive behavior, of course. Everything students reflect on, and explore in their minds, should be presented outward in the form of the notated music that they create. Via notated music, mentors are able to have cognitively deep interactions with young composers. We see the importance of these interactions in the vignette of Matthew, Mr. Stanley's student, presented in Chapter 5; although he was able to improvise excellent music with form, flow, and melodies, he could not communicate with mentors about his music over the Internet.

Verbalization of the composing, learning, and teaching process consequently results in a hierarchical structure of observation. Mentors use students' composed pieces as their primary window onto students' ideas and abilities, along with students' written replies about what they do, how they feel, and what requests they have for their mentors. Teachers are then able to read both notated student compositions *and* written mentor comments, and from that combination understand the cognitive exchanges taking place between the mentors and students. Teachers implement comments as new teaching materials, utilize comments to reinforce their own teaching, and turn to comments as fodder for discussion during classes: ultimately, the verbalized learning and teaching process results in collaborations between teachers and mentors. Altogether, these layers of observation create a remarkable archive of cognitive engagement. Thus, I was able to conduct comprehensive research into students' learning procedures and interactions not only as they occurred in classrooms with teachers, but also as they unfolded online with mentors, through all of this communication in written form.

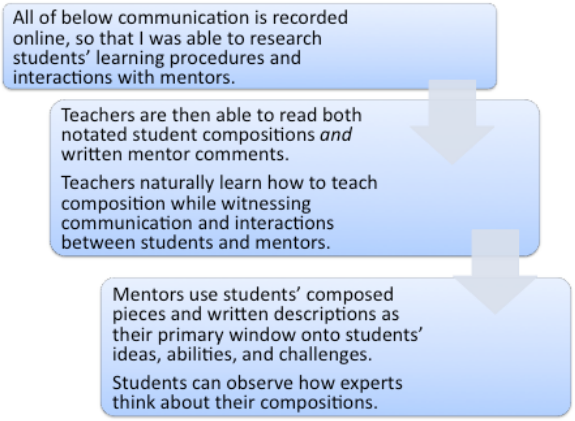


Figure 12. Hierarchical structure of interactions.

What the written description and comments mean.

Verbalization refers mainly to students' posted compositions, which include a written description and the matching mentor's comments. High school teachers occasionally give explanations or critiques of student compositions in person during their classes. However, these types of verbalization are spoken; they tend to cover theoretical issues rather than comprehensive compositional strategies; and they employ coaching rather than scaffolding responses.

In their first posting, students are asked to create a "Description of Piece" and "Request for Mentor Feedback" *(See Appendix D).* Although these documents are short, the students' own descriptions of their pieces and the requests they wish to make of mentors are enough to foster students' agency and ownership over their music, as well as over the mentoring relationships. Instead of submitting compositions and waiting for mentors to make decisions, students actively participate in shaping the mentoring interactions from the very beginning. This format encourages students to recognize the mentoring process as a mutual relationship over which they enjoy active ownership rather than to adopt a submissive attitude.

From the perspective of the cognitive apprenticeship learning paradigm, students' written replies to mentors indicate four major things: (a) features of their interactions with mentors, (b)

verbalizations of what they learned, needed, and struggled with [*ARTICULATION*], (c) their reflections over their own ideas and composing strategies, which are based on mentors' critiques and suggestions [*REFLECTION*], and (d) (rarely, and only for some students) what they are going to do for their next steps [*EXPLORATION*].

Through their written comments, mentors (a) analyze and diagnose students' compositions, (b) represent the process through which they think or solve problems, and (c) offer their composing strategies as alternatives [*MODELING*]. They also (d) encourage students to look at their pieces from a broader perspective, (e) allow students to think about more abstract and comprehensive concepts for creating music, and (f) foster comprehensive thinking about how to integrate and balance content [*SCAFFOLDING*].

Technology enables a community of composers.

Beyond providing learning materials and physical convenience, as well as serving as supplementary tools, computers and information technology can create an online-based community imbued with cultural and educational significance: within the technological learning environment, members of the composers' and supporters' community can construct, negotiate, institutionalize, and finally comprehend their realities.

Verbalization also stems from communication that is based on cognitive reflection. Beyond simply creating music as an isolated activity, students developed and built their initial musical ideas while staying in contact with their mentors and teachers and exchanging peer reviews. These kinds of communication were mainly verbal and were fundamentally related to the cognitive activities that occurred in each learner.

Unlike the traditional stereotype of the composing process as an isolated and solitary act of creative inspiration, communication-based composition activities focus on the relationships

and interactions between mentors and student-composers, mentors and teachers, as well as between students themselves. In technology-enabled learning environments, distance communication-based activity has accordingly become a useful feature for promoting student-centered communication, collaboration, and inquiry-based learning. Mentoring and collaboration in music composition is thus a versatile resource that supports the broad musical and pedagogical needs of teachers.

An innovative aspect of this mentoring project that comports with the above trend is that computer technology immerses itself in the culture of young students: creating music with computers, posting work online, replying to the online comments of others, and looking at other people's compositions are all part of a digital generation's culture, rather than a traditional learning and teaching environment. Teachers do not need to arrange communication between mentors and their students, and they certainly do not need to teach them how to use computers and information technology, for young students are quite familiar with the technology already and with communicating with others via the Internet. This innovative use of digital communication culture thus creates a structure into which the mentoring roject inserts traditional features of teaching composition, including primarily professional composers' comments: the students who are members of a digital generation happily accept the result.

Technology makes students plan.

Composition becomes a more intellectual process when students think over their musical ideas, their overall plans, and any related details before they notate music with computers. As they present plans, content, and questions about their compositions, as well as requests for comments, students are able to organize and articulate what they are creating and pursuing. Thus, mentoring, which should be delivered through a verbalized medium, naturally fosters the

cognitive aspects of the composing process.

Yet like other cultural subjects in a digital era, as music becomes fundamentally connected to technology, particularly on the Internet and in multimedia outside of the classroom, technology unfortunately sometimes takes precedence over music itself. As students have aesthetic experiences with computers, we should consider the potential shortcomings that can adversely affect the artistry and integrity of the resulting music. This consideration is bound to change as researchers and educators learn to approach technology not only in light of its effectiveness and influence, but as a learning environment and a natural ecology.

In addition, in spite of all the aforementioned advantages that technology provides, the mentors, teachers, and even some students still warned about the drawbacks of composing with computers, particularly in instant MIDI playback. They noted that MIDI playback might make students (a) abandon critical thinking, as they engage in unlimited repetitions that familiarize them intently with certain sounds effects, (b) randomly click notes without reflecting on their ideas and the components of their music, (c) become accustomed to the poor quality of MIDI sound as if it were tantamount to real musical instruments, and (d) stall in their development of inner-hearing abilities.

To prevent these pitfalls, mentors and teachers suggested encouraging young composers to think about their ideas and plans before writing with computer and mouse: mentors also encouraged students to articulate their thoughts and processes during revising via written methods, while teachers facilitated sharing and peer-critiquing in the classroom. By reflecting on and articulating their musical ideas and processes, young composers are able to actively use technology as an effective tool rather than become over-dependent on it.

This mentoring project encourages students to provide a “Description of Piece” and

"Request for Mentor Feedback" from the very initial stages of composing, and teachers support students in planning and expressing their initial ideas. Actual composition activities therefore usually began with a student's thoughts rather than with what was recorded on a computer. By conducting interviews with students, I discovered that the first stage of composition had already begun before the screen was even confronted. Prior to sitting at the computer station and opening *Sibelius*, most high school students had ideas and feelings and had begun to plan their compositions based on them. They had their own strategies of initiating music composition prior to the actual moment of writing, as well as having picked their favored or convenient instruments for articulating their abstract ideas into musical sounds. Some students put these ideas on paper in the form of jotting or scribbling.

Learner Agency: Convergence of Mutual Motivations, Goals and Interactions within Triads

The teachers and mentors in this study fundamentally recognized student ownership over both the procedures and products of their musical compositions. While teaching composition and theory sessions, teachers treat their students as young composers rather than as students. Mentors also consider the students to be young colleagues and treat them with collegial respect rather than simply as pupils. Consequently, the grand premise of mentoring is that mentors respect what students have already composed, or what they had already planned to compose. Admiration for students' ownership of their music is not only the starting point for mentors, but also a motivation for teachers who are willing to support students in finding their own musical voice in order to enjoy music in their own daily lives.

This dynamic points to the importance of the comparative motivations of teachers, mentors, and students in the mentoring project. I found that all students and teachers in this study were intrinsically motivated; even mentors value the more intrinsic rewards, such as the

refreshing inspiration they receive from young composers, over extrinsic rewards such as money. Moreover, interactions among the members of the triads mutually support each participant's motivations: (a) mentor-student relations contribute to teacher motivations, such as learner agency and professional growth, (b) teacher-mentor collaborations provide systematic teaching practices that support student motivations for composing from beginning to end, (c) students refresh mentors and give them new insights, and (d) student achievements also satisfy teacher interests in guiding young people to find their own musical voices.

Student motivation: Balance of intrinsic motivation and utility.

Motivation is generally considered to be an agency that causes, gives directions to, and maintains behaviors. Thus, to understand learning activity—which is one of the most archetypical of intended behaviors, I begin by identifying student motivations in this study. In a learning situation, motivation is defined as a sense of agency that causes a learner to actively choose a task and keep striving to complete the task despite encountering challenging circumstances (Bandura, 1997; Schunk, 1990). Of course, all teachers, mentors, and students are directly interested in either composition or the mentoring project, including the Opus event. Nevertheless, interest itself can be considered a factor that influences motivation rather than a *type* of motivation *per se* (Schunk et al., 2007).

All students in this study volunteered to take the MIDI Composition Course. Some of those students were open to majoring in music in the future, while others were simply interested in a present opportunity to create music. Thus, students actively processed each stage of their compositions as owners of their music, rather than as dependent followers of their teacher's guidance. With regard to mentor critiques, students also critically decided whether to accept suggestions or decline them. Thus, we would expect motivations of students to be strong.

All of the students, whether they were elementary children or high school seniors, had their own motivations for composing their own music and were excited about communicating with professional composers. In addition to some attainment and utility values, which are related to their desires to major in music or to win the Opus competition, most students were intrinsically motivated rather than motivated by external values or benefits. Although returning students mentioned the Opus concert as one of the project's most exciting elements, more fundamental motivations focused on a live performance experience rather than actually winning the competition. Interestingly, all four high school students stated that cognitive factors generally provided them stronger satisfaction than extrinsic factors, such as grades and mentor or teacher praise, did. For example, although Harry and Jonathan were motivated in part by utility values—they intended to major in music in college—their motivations for this plan itself were intrinsic and originated in their musical family backgrounds, and their motivations for participating in this mentoring project involved related intrinsic values. Of course, the mentoring project-related activities did directly support their future goal. In particular, their Orchestra Project *The Wolf Gang* is a good example of an activity that will support their future careers (*See Wolf School Dropout: Class collaboration for orchestra piece in Chapter Four Mrs. Campbell's Case*).

Teacher beliefs about teaching composition.

The teachers in the Project directly facilitate students' efforts to communicate with mentors and to think actively about their pieces as well as their composing processes and strategies. This pedagogical role ultimately fosters student agency, encouraging students to act as owners over their composing strategies, compositions, and finally their broadest ideas about music. Teachers thus effectively support students in recognizing themselves as having a musical identity, while at the same time reflecting on each process and factor of a particular musical

work.

All three teachers shared this same basic goal, although they expressed that goal in different ways based on their philosophies and practices in teaching music: they mentioned, for example, student autonomy, student musical independence, helping students to find their own voices, and seeing the student as a musical person. These expressions reveal teachers' motivations to cultivate student agency by considering and working around each learner's pedagogical and musical capabilities.

Based on their faith in the value of students' own voices, teachers respect students' music, including both the process of creating it as well as the final output. Indeed, through interviews and observations, I was able to see that teachers were careful not to come between students and their music; they considered that music to be a part of students' own daily lives. Teachers were rewarded by seeing students complete their journey of becoming aware of their musical voices and expressing these voices by creating music.

Identity as young composers: Musical colleagues.

My interviews with mentors revealed a picture of composition and teaching composition that corresponds with the results of Barrett's (2006) study: instead of delivering knowledge or training skills, mentors draw out students' inner voices by supporting the composition process, acknowledging students as composers, providing self-confidence, and offering guidelines on how to revise musical ideas and structures. As revealed in mentor-student relationships, mentors acknowledge students as composers through not only their attitudes but also their specific ways of giving comments. Previous research also emphasizes the significance of reinforcing students' composer identity (Barrett, 2003; Upitis, 1989).

In the context of the mentoring system, learning composition refers to the process of

being a composer who is musically independent rather than just an excellent learner, and particularly, being a member of a community of composers. Generally, mentor critiques and suggestions encourage young composers to move forward or to shift course by applying certain advanced theories, such as theories of harmony and orchestration, to their revision procedures. Throughout these revision processes, a prolonged and mutual relationship fosters increasingly more active and intimate interactions between young composers and mentors, who communicate via written documents. As they engage in multi-layered communications about musical and cognitive behaviors, students come to identify themselves as composers as well as young musical colleagues of their mentors; they thus feel the joy of creating their own music, of communicating with professionals, and of becoming a member of a professional musical community.

Nevertheless, the following questions still remain: (a) what is the relationship between giving and finding directions and learner autonomy? And (b) how do teachers give directions?

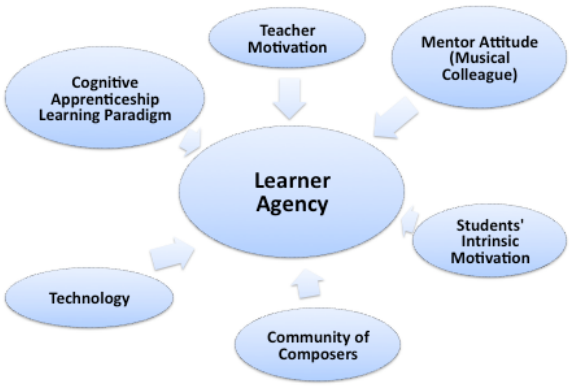


Figure 13. Factors reinforcing learner agency.

Unique Aspects of Mentoring

In this section, I will address emergent issues in mentoring, which directly enable young composers to keep composing. These issues involve original features of the Project intertwined with the paradigm of cognitive apprenticeship.

The first encounter in cyber space.

As the counterpoint to students' blank sheet of paper, the beginning stage of mentoring is daunting--not only for students but also for mentors, who believe that their first comments have a great influence on their trustworthiness and on the overall direction of students' pieces.

Indeed, one of the most critical and dramatic steps in the mentoring process is the moment of receiving a mentor's first comments: that is because after students (and their teachers) get past the stage of facing a blank sheet of paper, mentors are charged with transitioning students into the critical next stage by verifying the worth of student compositions and creating the initial driving force for future progress.

Out of recognition for this sensitive moment, mentors tend to comment with considerable caution in their first posting so as not to excessively influence the future direction of a student's work. Beginning with the second comment, mentors basically maintain a similar format, but the proportion of celebration and praise tends to change; gradually, mentors begin to critique more directly.

> Elliot: I try to be very careful. Especially, with the student that I had no contact with before, try to be very very careful to gain student's trust. Because, who am I? The other end of the computer terminal. Here I am talking about this person's piece. Why should the student believe anything I have to say? How is it established that I am trustworthy. That I'm not going to say something that's going to hurt students. I know how personal composition is! (Interview, July 14th, 2007).

Sometimes, mentors see in a first posting only several fragmented notes, which students believe represent ideas or motifs. On the other hand, mentors occasionally encounter a piece that is already too developed for them to offer broad, overall directions. In particular, elementary children tend to begin with more random notes than older students. Nevertheless, mentors' responses always begin by expressing how musically meaningful pieces are, and how distinct they are from theory exercises.

Whether in the first or subsequent comments, mentors also take care to note the accomplishments of compositions, rather than only to suggest corrections. Students usually cannot recognize what they have done well in addition to what weaknesses their compositions might bear. Thus, they need mentor reinforcement as well as critique.

Even as mentors move into specific comments and critiques, they are focused on fostering student autonomy and independence, with regard to both musical content and the pace of composing. In the initial stage of feedback, the boundaries that mentors set might influence the degree to which students reflect on and create music. Thus, students' ways of thinking are influenced not only by mentors' detailed comments and critiques, but more particularly by the future directions that mentors suggest.

Finally, in their first round of comments, mentors work to do all of these things as they directly address student requests. Mentors offer their comments after reading written documents (including student descriptions of their pieces and requests for mentoring), listening to student MIDI files, and analyzing scores. If students included questions in these documents, mentors would make sure to answer them. If students have exact and detailed plans, mentors also respect the students' directions rather than emphasizing their own.

Formally, mentors tend to follow a typical structure that includes: (a) appreciation for the posted composition, (b) confirmation/identification of the compositions' strong points, unique features, and values along with a discussion of what they like, (c) overall directive suggestions based on description and analysis, and (d) encouragement for and anticipation of the next posting.

Move forward vs. zoom in and refine.

In the mentoring context, the core components of mentor comments guide students to

'*move forward'* and *'zoom in and refine*.' Generally, students are listening to their music via MIDI playback while they are composing, and they are able to make progress easily by clicking a computer mouse. In addition, after each composing class, young composers immediately post their compositions without any additional contemplation. Thus, mentors' comments are likely to encourage students to 'zoom in and refine' more than to move forward.

In keeping with our understanding of student developmental stages and with practical issues in the public school classroom environment, mentors begin this guiding process by analyzing students' posted compositions. Mentors first present intellectual maps with comprehensive directions, which help focus future compositional work. They then help young composers to make progress within these maps using various methods that are matched to each student's musical and pedagogical circumstances.

In this process, students learn that zooming in is as much an essential of learning composition as moving forward. Composing consists of intentionally moving toward an objective spot, producing notes that fill the space between the starting point and the end, and containing the flow of time in the form of sounds. Thus, both mentors and students are naturally concerned with continuation and moving forward. Mentors talk about strategies and tips for making progress just as students are concerned with where they can go and how they can make get there.

When encouraging students to move forward autonomously, mentors explicitly say that it is time to move on, offering their reasons for that timing and using both compliments and encouragement. Nevertheless, guiding students to 'move forward' is often related to students feeling "stuck" with looser directions. Of course, as professional composers, mentors recognize such tough situations, and as a consequence, they try to create and provide situational and

customized help for each student who experiences that feeling.

Unsurprisingly, then, the high school students in this study, including Jonathan, Harry, Clara, Sam, and Allen, stated that they were most excited about having the opportunity to communicate with mentors and specifically to receive directions within this communication. They tended to feel confident and satisfied when they had a sense of direction, when they recognized where they were and what they were doing in relation to a larger goal.

Praise from heart, praise with reasons: Genuinely effective mentoring strategies.

Through this study, I discovered the multi-faceted features and functions of compliments as a respectful form of critique and suggestion in the mentoring process.

Music teachers are willing to be responsible for helping their students to overcome their fears and challenges related to composing music and to make composing activities a meaningful part of the music curriculum. Touching on more emotional aspects of composition directly supports student attention, because people cannot concentrate on their tasks without a congruence of emotions, goals, and thoughts (Strand & Newberry, 2007). From this perspective, mentors' sympathetic comments deal with the emotional aspects of learner confidence; Ally viewed that emotional confidence as part of the mentoring process.

> Seeing students assert themselves, gain confidence and grow both personally and artistically by claiming the privilege of making and studying music comprises my deepest satisfaction (Interview, December 3rd, 2009).

Moreover, the nature of the praise itself originates in the professional and artistic perspective of its giver; because mentors draw on their skills and knowledge as experts in assessing compositions, their compliments acquire the aura of a valued other's admiring approval.

Students can ask for mentor assistance at any stage of composition. Thus, whatever is

given to mentors--whether it is short, long, complicated, or even a collection of several notes that may seem meaningless to everyone but the composer--mentors are able to find the potential for a beautiful musical work. Mentors are not looking only at the notes, but instead through them are grasping and considering the young composer's expectations, tensions, curiosity, struggles, and pleasure. Instead of evaluating or judging the musical ability of the young students, mentors endeavor to find the most beautiful directions in which the young composers' music can grow. Thus, the opening comments always tend to contain praise; on this mentoring web site, there is no "better" or "worse" composition, every work is aesthetically and pedagogically meaningful, and every student can experience the joy of creating his/her own music along with vibrant interactions with mentors who are professional composers. The process of communication with mentors thus provides young students with the precious opportunity to experience the life of an artist.

Opening praise. Mentors begin their comments with compliments and praise based on theoretical and musical reasons, which contain overall directions for developing students' pieces. From these comments, students can learn how to analyze their short beginnings and the degree to which those beginnings, however meager, may include valuable ideas. Indeed, most of all, mentors try to convince students that their compositions are valuable and that they are capable of following them through to their conclusions. Elliot commented on Sam's first posting as follows:

> You have some interesting ideas, including your use of echo and call and response, different registers and increasing density to build tension. These are all very positive signs, especially in a first piece *(October 08, 2009).*

Mentors generally adapt their praise for particular groups of students. For elementary school students, mentors integrate an appropriate level of theoretical explanation with a detailed musical description into their compliments. After welcoming a newcomer to the Project, mentors

usually offer reassurance based on a comprehensive review of their compositions. Phrases like "already show" and "what you have done" make students feel comfortable and confident and enable them to move ahead. Based on a very detailed and specific analysis, mentors also create a sense of intimacy between them and the new students who might feel awkward with the online mentoring context.

Compliments with theoretical support. As one of the fundamental forms of feedback in these teaching and learning interactions, praise acquires its pedagogical and interpersonal power via its theoretical basis: mentors offer praise only for pedagogical and musical reasons. Praise in general expresses affirmative engagement and the value of student performances rather than simply judging "correctness" or "appropriateness" (Schunk et al., 2007). However, these ends do not amount to a pedagogical strategy. In mentor-student interactions, mentor compliments always convey the musical and pedagogical reasons for praise based on comprehensive and detailed analysis of student compositions. In other words, within the container of praise, mentors represent how they think about student compositions. Consequently, praise plays a role as an effective method of modeling as well as an effective way to support, motivate, and encourage student improvement. Ultimately, praise is the main approach to, and coordination of, mentoring, and not just a positive reaction.

Praise specifically fosters students' musical knowledge and methods of musical reasoning. Mentors' comments offer in-depth insight into composing music from a creator's stance. Instead of encouraging only the enjoyment of music, whether through playing or composing, mentors' praise-based comments present specific theoretical factors that support the power of music to affect other people's minds. Whether mentors intend it or not, young composers definitely absorb with all their hearts and minds the knowledge, skills, and even the

way of thinking that is contained in the form of mentor praise. Thus, intellectual reasons that are related to the given teaching and learning context are strongly able to support the learning process as a set of cognitive behaviors.

Moreover, praise provides students with an opportunity to learn a respectful attitude for other's musical works in a community of composers. Admiring and encouraging words of praise are infused into every part of the mentors' comments. Mentors are not only providing compliments as teachers or experts, but as genuine admirers of the young composers' fresh ideas and the energetic process through which they develop their music. Mentors share their hearts with young composers in order to guide them and help them experience the amazing world of original composers. Praise conveys the attitude and spirit of this world.

Mentors discussed the way their comments influence students' minds, stressing in particular the significance of logical praise. Reason-based compliments resulted in a respectful on-line environment. Besides the intellectual and ethical effects of mentoring, mentors also emphasized developing a sympathetic relationship with young composers; mentors fully recognized the differences between 'influencing' student minds and 'controlling' their music.

Mutual Relationships

Unlike isolated activities requiring skills or knowledge, the composition process in this mentoring project is a holistic system that requires managing, recognizing, and understanding a body of music within the context of a community of composers. Most importantly, learners-as-composers experience trusting relationships with their mentors, whose musical, cognitive, and emotional support helps them discover their talents as well as experience the process of creating their own music.

Mentors are mostly professional composers who understand the school music context; the

out-sourcing system in which they participate thus maintains the musical integrity of professional artists, while information and computer technologies overcome limitations of time and space. Through their mentoring experiences and composition class, students were consequently able to learn how to think through music, how to communicate with others via music, and most of all, how to recognize themselves within music.

The mentoring system, therefore, is a valuable setting for exploring the conditions that enable students and teachers to continue studying and teaching composition, what roles and identities teachers adopt in the mentoring process and in student compositional processes, as well as how interactions among teachers, students, mentors, and the learning environment function under the influence of computers and information technology.

Triadic interactions of teaching and learning composition over the Internet.

Unlike traditional teacher-student relationships and mentor-mentee interactions, the triadic interactions in this study were mutual. Teachers and mentors were rewarded just as students were rewarded; they also learned, became refreshed, and attained useful information from the young composers they worked with.

In particular, as mentors critique student compositions, teachers learn how to teach composition; they observe how mentors deal with each stage of student composition and implement the resulting knowledge and skills into their own teaching practices. Besides providing intrinsically rewarding opportunities to nurture creativity, witnessing the mentoring process also offers teachers broader alternatives and possibilities for teaching composition.

Mentors, who are situated as professional composers between classroom teachers and their students, are able to optimize their roles to provide strategies and tips for young composers while fully implementing the characteristics of adjunct identity in the classroom setting. At the

same time, teachers are able to effectively implement mentoring at each stage of composition. In the extremely individual stages of writing, each student directly communicates with mentors; during these communications, students can reflect on their processes of thinking and revising. They can also share and conduct peer critiques in their classes.

Teacher-student relationships.

Mediating between students and mentors. Mentoring is a precious opportunity for teachers and students alike, who experience themselves as members of a community of artists both as composers and as teachers of composers. Yet while asynchronous online communication overcomes restrictions of time and space to achieve these effects, mentor-student interactions over the Internet remain more limited and indirect than teacher-student interactions, which occur in classrooms. Mentoring thus consists of a complementary set of relationships and interactions that provides teachers in particular with flexibility and original ideas to integrate into their teaching practices, even as it also counts on teachers as key organizers of and supporters within the process.

Teachers are primarily able to deal with critical points in the student composing process. By physically witnessing the beginning stage of the blank sheet of paper and the situation of feeling "stuck," all three focal teachers developed their own unique skills and strategies for guiding students to initiate their pieces and overcome challenges in composing. Teachers are also able to find the ideal time at which to give emotional reactions in-person. In the classroom, the location of the students' most intimate relationships, sticking points can offer teachers an opportunity to help students move out of their comfort zones. Mentors also recognized such changes in students' emotional states caused by their compositional progress. However, because of the asynchronous nature of mentoring, only teachers were able to react instantly to such

changes.

In addition to the encouragement based on musical content that mentors offer, teachers are able to use expressions of belief that instill a powerful sense confidence in students. Teachers can directly influence their students emotionally, and this is the distinctive feature of the teacher-student connection in the classroom.

Teachers thus occupy a delicate position in the relationship between mentors and students: they take the lead in managing the learning situation as a whole, while respecting the musical and pedagogical authority of mentors—that is, the content mentors offer to students. Specific teaching practices define the way teachers managed these roles. In other words, each teacher actively implemented the mentoring system alongside his or her own teaching practices and practical functions.

The teacher's mediating role influences student thinking and, moreover, the performance of student compositions, because it gives students an opportunity to reflect on mentor comments from different perspectives that are usually more experienced and knowledgeable than their own.

What teachers learn between students and mentors. The differences between composing and teaching composition are a persistent issue in this study. Although every pre-service music teacher might be able to compose, teaching composition is still challenging, because composing is itself a challenge. According to Berkley's (2001) survey of the difficulties in teaching composition, music teachers who are willing to teach composition should possess specific qualifications: (a) they should have expertise as a composer, (b) they should understand both their own and their students' learning processes, and (c) they should be able to manage a complex, multistage learning process within a complex and demanding curriculum (Berkley, 2001).

Nevertheless, this mentoring project suggests alternative views regarding teacher qualifications for teaching composition. The project still strongly recommends that teachers be able to compose, but teachers are encouraged to focus on the emotional and intellectual *experience* that must accompany students' efforts to compose, while the technical process of creating music falls within students' interactions with mentors. Teachers are also encouraged throughout the process to consider the sides of both learners and mentors, so that they can effectively mediate between their students and mentors in the classrooms.

Mentor-student relationships: The mutual interactions.

Teaching and learning music composition are part of the so-called public school context, and music teachers in this context cannot be experts in everything from creating to performing, especially given the number of students with whom they work. In this practical situation, the mentoring system provides formal and structured opportunities for students to receive highly individualized feedback from professional composers. The teacher controls and maintains the curricular context for these individual relationships between student and mentor, which allows the learning and teaching of composition in a classroom setting.

Mentors are particularly able to verbalize musical content and concepts relevant to teaching composition. Moreover, their comments reinforce student knowledge by putting theory into practice. The asynchronous nature of on-line communications also provides mentors and students a buffer for negotiating different opinions and thoughts in this process. Although young composers are glad and excited to hear from mentors, they might experience conflict and compromise with or among mentors.

A fundamental premise of mentoring is that the communication between mentor and student concerns sound above all. Prior to focusing on teaching or delivering music-making

knowledge and skills, a mentor responds to students' particular musical works. Ultimately, this respectful way of communicating with students mixes the learning of music with the establishment of relationships with expert composers who support and value students' creative activities. The practical and visible results of this mentoring are both to support student confidence and maintain musical integrity. In both musical and personal respects, mentors encourage students to understand the music theory and creative strategies that lie behind their respectful comments. Thus, interactions with mentors nurture students' inner cognitive actions as well as cultivate in students the attitude of a mature artist; mentors encourage students to think, reflect, and articulate within a community of composers while creating and revising their own compositions.

In the context of this community, mentors approach students as young composers; they treat them like musical colleagues rather than as just students, and they rely on directing and correcting in order to teach them composition. Consequently, mentors are able to help students in various situations to create music and often use their comments to express compassion for struggles that arise in the composing process.

During their interactions with young composers, mentors also obtain ideas and inspiration from student compositions, and from their own process of drafting critiques and comments, they are able to further develop their own critical and comprehensive thinking skills--which are vital for composers. Verbalization--that is, expressing thoughts on student composition through written language--helps mentors to continue cultivating their own meta-cognitive and critical thinking skills.

Respect and acknowledgement as a composer finally results in a reciprocal relationship between mentors and students. Throughout this study, I found that the relationships between

mentors and students are definitely mutual rather than one-way. I was initially skeptical of how often vocal and instrumental teachers learned from, or were inspired by, their students' performances or learning procedures, outside of rare cases of musical genius. Fascinatingly, almost all mentors were inspired when they listened to their students' compositions. For these professional composers, therefore, the experience of mentoring young musical colleagues is a privilege.

Ultimately, online mentor-student relationships within classroom situations give teachers a certain flexibility in teaching composition. The independence of these relationships, which shape the individual and cognitive aspects of learners, allow teachers to manage various groups of students who are at different stages of learning. Teachers manage the entire student body while students individually develop their compositions using mentor comments. For instance, Mrs. Campbell led two different levels of student groups, and Mr. Stanley was able to teach two extremely different students, Allen and Sam, at the same time; Miss Gibson was able to allow her 11 students to engage in independent activities all at once--an unusual situation at the elementary school level--because each of them fundamentally interacted with mentors. In particular, students of Mrs. Campbell, who strongly encouraged and facilitated discussions in her classes, experienced unexpected synergy when students at different stages shared mentor-fostered knowledge with and peer-critiqued each other.

Teacher-mentor collaboration.

Both teachers and mentors are aware of the significance of their ability to influence young student minds and souls. They fully recognize that composing is one of the only opportunities that students have to dwell in, reflect on, and express their souls, and they approach the process with all the enthusiasm and solemnity appropriate to that opportunity, as it is

mediated by music.

Mentoring allows teachers to teach composition even if they cannot compose themselves, although most teachers can compose the various types of music typical of their teaching situation. In practice, strategies for teaching composition must account for a broad range of content. Because composition is not isolated from other musical subjects, all of the musical experiences a student has had are related to creating and writing music—everything from knowledge of music theory to previous instrumental and vocal performances influence the teaching and learning of composition. Thus, by participating in a mentoring system, teachers manage what they can teach of the composing process while delegating what they cannot.

Mentors and teachers together are able to support some parts of the compositional process, such as the use of proper notation and the development of a theoretical framework, but they cannot replace the mind of the young composer: teachers and mentors cannot rethink a student's original musical ideas or discover sounds inside of his or her mind.

Ultimately, reciprocal relationships within these triads mutually support each participant's roles, goals, and motivations. Independent mentor-student interactions enable teachers to teach composition, which requires individual lessons for each student. Moreover, teachers are able to achieve their ultimate musical and pedagogical goal of students' musical independence through the authentic experience of creating music. Additionally, teachers also learn how to teach composition by witnessing the mentoring process their students go through. Teacher-mentor collaborations provide systematic support that allows students to compose at any level and any stage. Finally, students provide artistic inspiration for mentors and give them new insights, while student progress and achievement satisfy both teachers and mentors and reward them by guiding them to find their own musical voices.

Toward Composition Pedagogy

This research on teaching and learning composition within triadic interactions allows us to explore *composition pedagogy* as a solution for activating composition instruction within the school music context. Berkeley (2004) has approached composing pedagogy as problem-solving; Savage (2003) explored compositional pedagogy in a classroom setting; and Strand (2006) proposed the significance of training teachers in composition pedagogy. Nevertheless, both research on and implementation of composition pedagogy are less developed than other instrumental pedagogies; as Berkeley (2004) notes, "writers in the fields of cognitive development in composing and curriculum studies in music education have tended to avoid defining and analyzing composing pedagogy" (p.239).

Directions for composition instruction.

Composition has been considered separately from other areas in music instructions, such as singing and playing instruments, and this isolation may have resulted in the sense that composition is hard to teach and learn in classrooms. This mystique may also have been influenced by Western musical tradition, which has encouraged a view of composition as a complicated mental activity undertaken in isolated situations by gifted professional composers. Finally, as an artistic work, the compositional output is often regarded as more meaningful than the compositional process, including its emotions, collaborations, and interests. This mystique has finally brought about an imbalance between what music teachers and students are able to create and what they listen to or play. Mentor Ross offered a similar interpretation:

> I also think it's the tradition that creating and performing somehow were separated at some point, maybe during the Romantic era. More in the Romantic era than any other era, where in fact I can say that definitively… Where I think in other times, at least in European history and other cultures, African cultures, Asian cultures where I think it was more part of the holistic experience of being human that you would learn how to improvise or create (Interview, November 13th, 2009)

Nevertheless, in this study, students and teachers recognized the unique benefits of creating music precisely through the process of music creation; that process involves teachers' experience, mentors' knowledge and insight, and students' musical and cognitive achievements. The composition and revision processes provide students with opportunities to take one object beyond classroom learning, with the support of teachers and authorized professionals who encourage student autonomy and learner agency. In addition, the object aimed at is not an instant or addictive material like computer games; this object requires the creative thinking and critical reflections of students, as well as a sensibility refined by aesthetic experiences. After controlled struggles with these demands, students are finally able to experience real achievement. Berkeley (2004) similarly notes that "Composing is described as knowledge-rich, complex, multiple and creative problem solving, requiring the development of skills of hypothesis and verification in students (p.239)." In this study, Mentor Martin notes:

> I think it [composition] gives you the most in-depth understanding of any music that you... I enjoyed because it felt like it gave me the most understanding of what I was doing. Composing turns on the creative part of it and allows you to be more in control I think… But you are just more in control in a way that gives you a lot of freedom (Interview, November 25th, 2009).

These trends have also raised the possibility of approaching music learning through intellectual processes that are generally involved in learning, such as creative thinking, critical thinking, problem solving, and reflective thinking (Younker, 2002; Hickey, 2001, 2002; Webster, 1992). The music education profession has taken up this possibility, illuminating intellectual dimensions of music learning and their influences on human development.

In arts education more broadly, including music, educators have taken an active and growing interest in nurturing creativity. From a practical perspective, creativity and creative thinking and activities have been considered one of the most fundamental but challenging

components of an arts education. Thus, research that reveals the specific characteristics, substance, identity, and principles of creativity has been conducted, but it has not been actively applied to teaching practices. Based on psychological and philosophical formulations, as well as empirical results, Webster (1992) extended the concept of musical thinking into general mental abilities, such as divergent and convergent thinking, individual tendencies, and thinking processes and stages during creative behavior. By so doing, he created a generalized model of creative thinking in music (Webster, 1990). Hickey (2002) focused on creativity with an eye toward its measurement and evaluation, specifically in the music composition process.

The National Standards for Arts Education (MENC, 1994) has also supported the creative dimension of musical experience, particularly in its Standards 3 (improvising) and 4 (composing). Within public education in the United States, however, music instruction has stressed the performance rather than the making or appreciation of music. (MacLeod, 2004; Ruthmann, 2006).

Conceptualizing components of composition pedagogy.

The characteristics and features that enable the Vermont MIDI mentoring system's successful continuation allow us to conceptualize core components of composition pedagogy.

Preparing students for composing. All three focal teachers initiate student composing using their own strategies, such as teaching music theory, improvising during composition class, or providing structured teaching based on learning theory. Mrs. Campbell usually did not compose, but she actively taught composition in her MIDI composition class. As a mediator between students and mentors, she intensively taught music theory as a way to support students' overall compositional processes while at the same time fully respecting the mentors' direct comments on her students' individual compositions. Mr. Stanley was able to teach composition

and also provided students with a firm basis in music theory and harmony. Nevertheless, so as not to conflict with mentor comments, he usually did not interrupt students' composing processes with words; instead, he improvised himself, or with the help of students, as a way of making suggestions. In his class, therefore, students were inspired by the synergy between mentor comments and musical sounds. The Composition Club represented the last stage of learning theory. Thus, it was also the consequence of successful teaching in the general music classes. In this Club, Miss Gibson controlled the larger system in which mentoring could reinforce an advanced level of teaching and learning, even though she did not herself directly teach composition in this afterschool activity.

As these teachers' strategies suggest, composition is not radically independent of or separate from other musical activities, but instead is an extension of music theory and also sometimes an association with improvisation, for specific types of mutual or collaborative activities might require "certain already developed individual cognitive capacity[ies]" (Resnick, 1991). Thus, teachers' vital role is to teach music theory *prior* to teaching composition. While students are composing, teachers then connect students' created works back to music theory that has already been covered. Within this approach, instead of engaging in unlimited or unmediated expression, students use limitations and regulations based on harmony, structures, and forms of Western music tradition when facing a blank sheet of paper. Ultimately, teachers should provide contextual musical activities before, during, and after composing that are appropriate to each student's experience and capabilities as well as appropriate within their own broader teaching practices.

Learner agency/autonomy. Learner agency and student musical ownership are the starting points of successful composition as well as of teachers' and mentors' beliefs about the

rationales for teaching composition. As addressed above, students' agency is context-independent. Although learner agency might originate in students' motivations, the learning environment and teachers' attitude also promote students' autonomy as composers: the identity as a composer might be given from teachers and mentors and should be nurtured, not separated from music in students' lives.

Situated learning environment. In this mentoring context, students are considered to be young composers and learning composition is a process of becoming a member in a composer community. Based on their firm identity as novice composers, students not only maintain interactions with expert professional composers in classes via the Internet at the end of each semester, but they also participate (whether they win or not) in a community festival, the Opus event, which is an all-day event for everyone rather than a stand-alone concert.

Considering previous music learning. In this study, all students had attended various music classes or had been taking private lessons prior to their participation in the Vermont MIDI Project. Their present music class directly supports them in composing and also enables their participation in the mentoring project. As this situation suggests, learners can be most successful when teachers integrate composition into already-successful music programs rather than attempting to teach composition separately or to deliver it as a completely new set of knowledge and skills. Teaching composition should therefore ideally consist of reminding students of what they already know, re-organizing knowledge and skills they already have, and drawing out musical material that is already internal to them. This means that students and teachers can compose to the degree that they have already learned about music, and that musical skills and knowledge already obtained should directly influence the process of learning and teaching composition.

> Composing is usually considered the final stage of music learning in some learning theories. Thus, teaching and learning composition entails more complicated processes of students' overall knowledge and skills in music, which they have already experienced in their lives (Upitis, 1992, p.144).

Verbalization. To teach composition, teachers cannot show or exemplify the processes and methods of composing; they can deliver skills and knowledge related to those processes and methods, which consists mainly of intellectual procedures. Consequently, they need to articulate this knowledge in some way. In this study, mentors are able to verbalize musical concepts, content, and composing strategies via a written medium. This verbalization of abstract concepts and individualized learning content is difficult; it takes a great deal of mentor time, effort, and elaboration.

Comprehensive approaches to teacher preparation. Socio-cultural changes in pedagogical practice influence music teaching. While traditional ways of teaching incorporated face-to-face learning with an artist-teacher, a modern music teacher needs to cover a broad range of eras and fields of music, taking into consideration the musical and pedagogical reactions of each individual student. Moreover, music educators have encountered rapid technological changes that directly affect their interactions with students who live at the center of these changes. Teachers' effectiveness and competence depend on adapting to changes in their teaching roles by turning to new pedagogical tools and methods. Finally, society requires that music teachers be able to consider when, where, and how to apply technology to their instruction, by considering musical, technological, and pedagogical issues (Neiman, Zeichner, & Hobbel, 2002).

Particular strategies and methods in teaching composition. Mentor and teacher strategies can manage critical points for young composers, such as encountering blank sheets of paper and feeling "stuck" in a situation while composing--e.g., experiencing "writer's block."

Based on the systematic structure of *The Pattern* of *praise-suggestion-critique*, mentors encourage students to move forward.

Future Research

Research on student-related aspects of music composition tends to focus on musical features, particularly features of the composition process. Authors of previous studies have discovered patterns, principles, or factors that are influential in students' compositional processes, such as a linear process of exploration, development, and repetition; horizontal and vertical strategies, in which students compose and arrange parts of music either separately or together; three components of composition--formation, preservation, and revision; and a developmental model of the compositional process.

Moreover, in the area of teaching and learning composition with technology, researchers also have focused more on the composition process of students and less on teaching methods, teacher preparation, strategies, as well as teacher and learner interactions.

Teaching methods and teacher preparation for composition study. The challenge of teaching composition has been rooted in more fundamental issues than teaching itself, because composing is challenging for teachers. In a digital environment, teaching music composition requires teachers to have the expertise of a composer and to manage a complicated teaching process using computer technology. Consequently, research on teacher preparation for teaching composition with technology is a complex field where pressing musical, pedagogical, and educational technology concerns meet: how to teach composition to teachers; how to train teachers to teach composition; and how to prepare teachers to use technology while considering the teacher-student interaction.

In this study, I discovered that teachers also naturally learn through the mentoring process

while witnessing their students and mentors communicating; this might be a rare opportunity for learning how to teach composition. This is an extraordinary experience, which does not occur in daily life or other musical activities, or even in other art experiences. Thus, the learning process of teaching composition within the mentoring process might suggest a novel paradigm for teacher education in teaching composition. In particular, expanded from Mrs. Campbell's case, I will securitize differences in "composing" versus "teaching composition."

Study of affective domains in creating music. Despite the various research approaches, scant research has explored *human matters*—such as the nature of interactions, types of communications, cognitive operations, and affective domains—that shape efforts to learn and teach composition using computers and information technology.

My pilot research also reveals that emergent issues such as confidence and respect are consistently found to be significant causes of encouraging or discouraging composition, as well as one's identity as a composer. These emotional factors also influence the cognitive process of learning and teaching, such as the revision process. Therefore, in future research, I need to focus on understanding how students think, feel, and comprehend the composition process while expanding in the area of literature review.

Need for in-depth exploration regarding application of cognitive psychology. I found Collins et al.'s (1989) cognitive apprenticeship paradigm highly relevant in supporting the learning theory of this mentoring system, not only in learning strategies but also in the whole environment of learning composition. Thus, as one of the next potential stages of this study, I need to conduct an in depth and detailed investigation based on the *method* of cognitive apprenticeship such as *modeling, scaffolding, coaching, exploration, articulation*, and *reflection*. Combined with the findings of this research in the structural tendency of mentor comments,

which refer to a "*move forward*" and "*zoom in and refine*," intertwined with "*the patterns* of *praise-critique-suggestion*," this exploration is expected to suggest more specific features of composition pedagogy.

REFERENCES

Austin, J., & Vispoel, W. (1992). Motivation after failure in school music performance classes: The facilitative effects of strategy attributions. *Bulletin of the Council for Research in Music Education, 111,* 1-23.

Austin, J., & Vispoel, W. (1998). How American adolescents interpret success and failure in classroom music: Relationships among attributional beliefs, self-concept, and achievement. *Psychology of Music, 26,* 26-45.

Bamberger, J. (1991). *The mind behind the musical ear*. Cambridge, MA: Harvard University Press.

Bandura, A. (1997). *Self-efficacy: The exercise of control*. NY: W. H. Freeman.

Barrett, M. (2003). Freedom and constraint: Constructing musical worlds through the dialogue of composition. In M. Hickey (Ed.), *Why and how to teach music composition: A new horizon for music education* (pp. 3-27). Reston, VA: Music Educators National Conference.

Barrett, M. (2006). Creative collaboration: An 'eminence' study of teaching and learning in music composition. *Psychology of Music, 34*(2), 195-218.

Barrett, M., & Gromko, J. (2007). Provoking the muse: A case study of teaching and learning in music composition. *Psychology of Music, 35*(2), 213-229.

Beckstead, D. (2001). Will technology transform music education? *Music Educators Journal, 87(*6), 44-50.

Berkley, R. (2001). Why is teaching composing so challenging? A survey of classroom observation and teachers' opinions. *British Journal of Music Education, 18*(2), 119-138.

Berkley, R. (2004). Teaching composing as creative problem solving: Conceptualizing composing pedagogy. *British Journal of Music Education, 21*(3), 239-263.

Berz, W., & Bowman, J. (1994). *Applications of research in music technology*. Reston, VA: Music Educators National Conference.

Berz, W., & Bowman, J. (1995). An historical perspective on research cycles in music computer-based technology. *Bulletin of the Council for Research in Music Education, 126*, 15-28.

Bransford, D., Brown, L., & Cocking, R. (2001). *How people learn: Brain, mind, experience, and school* (expanded ed.). Washington, D.C.: National Academy Press.

Brooks, J., & Brooke, M. (1993). *In search of understanzding: The case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum Development.

Burnard, P. (2004). A dissonant duet: discussions of music making and music teaching. *Music Education Research, 6*(3), 281-298.

Csikszentmihalyi, M. (1990). *Flow: The psychology of optimal experience*. NY: Harper and Row.

Collins, A. (1991). Cognitive apprenticeship and instructional technology. In L. Idol & B. Jones (Eds.) *Educational values and cognitive instruction: Implications for reform* (pp. 121-138). Hillsdale, NJ: Erlbaum.

Collins, A., Brown, J., & Newman, S. (1989). Cognitive apprenticeship: Teaching the crafts of reading, writing, and mathematics. In L. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 453-494). Hillsdale, NJ: Lawrence Erlbaum Associates.

Collins, A., Brown, J., & Holum, A. (1991). Cognitive apprenticeship: Making thinking visible. Reprinted with permission from the Winter 1991 issue of *the American Educator*, the quarterly journal of the American Federation of Teachers. Retreived on April 13th, 2011, from http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.124.8616&rep=rep1&type=pdf

Colwell, R., & Richardson, C. (Eds.). (2002). *The new handbook of research on music teaching and learning: A project of the music educators national conference*. NY: Oxford University Press.

Cosenza, G., & MacLeod, S. (1998). *Vermont MIDI Distance Learning Network: A model for technology in classroom music.* Paper presented at the *Technological Directions in Music Learning* (Fifth, San Antonio, TX, January 29 - 31, 1998). Retreived from http://music.utsa.edu/tdml/

Custodero, L. (1998). Observing flow in young children's music learning. *General Music Today, 12*(1), 1-27.

Custodero, L. (2005). Observable indicators of flow experience: A developmental perspective on musical engagement in young children from infancy to school age. *Music Education Research, 7*, 185-209.

Dennen, V. & Burner, K. (2007). The cognitive apprenticeship model in educational practice. In M. Spector, D. Merrill, J. Merrienboer, & M. Driscoll (Eds.), *Handbook of research on educational communications and technology* (2nd ed.). (pp. 425-439). Routledge.

Eccles, J. & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology, 53*, 109-132.

Egan, T. M. (2005). The impact of learning goal orientation similarity on formal mentoring relationship outcomes. *Advances in Developing Human Resources, 7*(4), 489-504.

Emmons, S. E. (1998) *Analysis of musical creativity in middle school students through composition using computer-assisted instruction: A multiple case study. Ph.D. dissertation*, The University of Rochester, Eastman School of Music, United States -- New York. Retrieved from Dissertations & Theses: Full Text database. (Publication No. AAT 9825697).

Folkestad, G., Lindström, B., & Hargreaves, D. (1997). Young people's music in the digital age: a study of computer based creative music making. *Research Studies in Music Education, 9*(1), 1-12.

Gallimore, R. & Tharp, R. (1990). Teaching mind in society: Teaching, schooling, and literate discourse. In L. C. Moll (Ed.), *Vygotsky and Education: Instructional Implications and Applications of Sociohistorical Psychology* (pp. 175–205). Cambridge, U.K.: Cambridge University Press.

Hewitt, A. (2002). A comparative analysis of process and product with specialist and generalist pre-service teachers involved in a group composition activity. *Music Education Research, 4*(1), 25-36.

Hickey, M. (2001). More or less creative? A comparison of the composition processes & products of "highly-creative" and "less-creative" children composers. Paper presented as part of a "Symposium for Music Creativity" at the *International Research in Music Education Conference* (University of Exeter, United Kingdom, April 3-7, 2001).

Hickey, M. (2002). Efficiency and transformation: The impact of technology on music education. *Illinois Music Educator, Spring*, 82-84.

Hickey, M., & Reese, S. (2000). The development of a rating scale for judging constructive feedback for student composition. *The Journal of Technology in Music Learning,* 1.

Higgins, W. (1992). Technology. In R. Colwell (Ed.), *Handbook of research on music teaching and learning : A project of the Music Educators National Conference* (pp. 480-497). NY: Schirmer Books.

Hogan, K. & Pressley, M. (1997). *Scaffolding student learning: Instructional approaches & issues.* Cambridge, MA: Brookline Books.

Jaffurs, S. (2004)The impact of informal music learning practices in the classroom, or how I learned how to teach from a Garage Band. *International Journal of Music Education, 22*(189-200).

Jenkins, H. (2006a). *Confronting the challenges of participatory culture: Media education for the 21st century*. Retrieved from http://www.henryjenkins.org/2006/10/confronting_the_challenges_of.html

Jenkins, H. (2006b). *Convergence Culture: Where old and new media collide*. NY: New York University Press.

Kang, G. (2003). *Conceptual and empirical evidence for a model of applied music instruction based on cognitive apprenticeship*. Ph.D. dissertation, Northwestern University, United States -- Illinois. Retrieved from Dissertations & Theses @ CIC Institutions database. (Publication No. AAT 3118558).

Kaschub, M & Smith, J. (2009). *Minds on music: Composition for creative and critical thinking*. Music Educators National Conference. NY: Schirmer Books.

Kennedy, M. (2002). Listening to the music: Compositional processes of high school composers. *Journal of Research in Music Education, 50,* 94-110.

Kennedy, M. (2004). Opening the doors to creativity: A pre-service teacher experiment. *Research Studies in Music Education*, 32-41.

Kim, J. & Choy, D. (2005). Pre-service teachers' efficacy in teaching music. Jinyoung Kim and Doris Choy. *Academic Exchange Quarterly, 9*(4) p134-138.

Kratus, J. (1985). *Rhythm, melody, motive, and phrase characteristics of original songs by children aged five to thirteen*, Ph.D. dissertation, Northwestern University, United States -- Illinois. Retrieved from Dissertations & Theses @ CIC Institutions database. (Publication No. AAT 8600883).

Kratus, J. (1989). A time analysis of the compositional processes used by children ages 7 to 11. *Journal of Research in Music Education, 37*(1), 5-20.

Kratus, J. & Wilcox, E.(1994). How do children compose? Teaching Music 2(3), 38. Retrieved from EBSCOhost.

Kvale, S. & Brinkmann, S. (2009). *InterViews: Learning the craft of qualitative research interviewing*. Thousand Oaks, CA: Sage Publications.

Lave, J. (1991). Situating learning in community of practice. In L. Resnick, J. Levine, & S. Teasley (Eds.), *Perspectives on socially shared cognition (pp. 63-82)*. Washington, D.C., American Psychological Association.

Ladanyi, K. (1995). *Processes of musical composition facilitated by digital music equipment*. Unpublished doctoral dissertation. University of Illinois at Urbana-Champaign.

Levi, R. (1991). Investigating the creativity process: The role of regular musical composition experiences for the elementary child. *Journal of Creative Behavior, 25*(2), 123-136.

Lima, L. (2004) Personality and motivational characteristics of the successful mentor. Ph.D. dissertation, University of South Florida, United States -- Florida. Retrieved from Dissertations & Theses: Full Text database. (Publication No. AAT 3132445)

Lincoln, Y.& Guba, E. (1985) *Naturalistici Inquiry.* Newbury Park, CA: Sage Publications.

MacLeod, S. (2004). *Teacher perception of curriculum and instructional change when teaching music composition with the integration of technology and the Vermont MIDI Project*. Unpublished doctoral dissertation, The University of Vermont, Burlington.

MacDonald, R., Miell, D., & Mitchell, L. (2002). An investigation of children's musical collaborations: The effect of friendship and age. *The Society for Research in Psychology of Music and Music Education, 3,* 148-163.

McPherson, G., & McCormick, J. (2000). The contribution of motivational factors to instrumental performance in a music examination. *Research Studies in Music Education, 15*, 31-39.

McPherson, G., & McCormick, J. (2006). Self-efficacy and music performance. *Psychology of Music, 34*, 325-339.

MENC. (1994). *National Standards in Music Education.* Retrieved from http://www.menc.org/publication/books/standards.htm

Miell, D., & MacDonald, R. (2000). Children's creative collaborations: The importance of friendship when working together on a musical composition. *Social Development, 9*(3), 348-369.

Miles, M. & Huberman, A. (1984). *Qualitative data analysis*. Thousand Oaks, CA: Sage Publications.

Mota, G. (1999). Young children's motivation in the context of classroom music: An exploratory study about the role of music content and teaching style. *Bulletin for the Council of Research in Music Education, 141*, 119-123.

Neiman, G., Zeichner, K., & Hobbel, N. (2002). Changing concepts of teacher education. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning: A project of the music educators national conference* (pp. 818-839). NY: The Oxford University Press.

Nilsson, B., & Folkestad, G. (2005). Children's practice of computer-based composition. *Music Education Research, 7*(1), 21-37.

National Research Council (2000). *How people learn: Brain, mind, experience, and school*. Washington, D.C.: Nationa Academy Press.

Odam, G. (2000). Teaching composing in secondary schools: the creative dream. *British Journal of Music Education, 17*(2), 109-127.

O'Neill, S., & McPherson, G. (2002). Motivation. In R. Parncutt & G. E. McPherson (Eds.), *The science and psychology of music performance: Creative strategies for teaching and learning* (pp. 31-46). NY: Oxford University Press.

O'Neill, S. (1999). Flow theory and the development of musical performance skills. *Bulletin of the Council for Research in Music Education, 141*, 129-134.

Palincsar, A. & Brown, A. (1984). Reciprocal Teaching of Comprehension-fostering and Monitoring Activities. *Cognition and Instruction, 1*, 117-175.

Patton, M. (2002). *Qualitative research and evaluation methods.* (3rd ed). Thousand Oaks, CA: Sage Publications.

Rees, F. J. (2002). Distance learning and collaboration in music education. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning* (pp. 257-273). New York: Oxford University Press.

Reese, S. (1998). Music learning in your school computer lab. *Music Educators Journal, 85*(3), 31-36.

Reese, S. (2001). Integration of on-line composition mentoring into music teacher education. *Contributions to Music Education, 28*(1), 9-26.

Reese, S. (2004). Perspectives for planning for technology integration. *TRIAD February/March*, 31-36.

Reese, S., & Davis, A. (1998). The systems approach to music technology. *Music Educators Journal, 85* (1), 24-28.

Reese, S., & Hickey, M. (1999). Internet-based music composition and music teacher education. *Journal of Music Teacher Education, 9*(1), 25.

Resnick, L. (1991). Shared cognition: Thinking as social practice. In L. Resnick, J. Revine, & S. teasley (Eds.), *Perspectives on socially shared cognition* (pp. 1-20). Washington, D.C.: American Psychological Association.

Ruthmann, A. (2006). *Negotiating learning and teaching in a music technology lab: Curricular, pedagogical, and ecological issues.* Unpublished doctoral dissertation, Oakland University, Rochester.

Savage, J. (2003). Informal approaches to the development of young people's composition skills. *Music Education Research, 5*(1), 81-85.

Savage, J. (2004). *Re-imagining music education for the 21st century: Innovative approaches to teaching, learning, and research with ICT*. Unpublished doctoral dissertation. University of East Anglia, Norwich, UK.

Savage, J., & Challis, M. (2001). Dunwich revisited: Collaborative composition and performance with new technologies. *British Journal of Music Education, 18*(2), 139-149.

Scardamalia, M., and Bereiter, C. (1985). Fostering the development of self-regulation in children's knowledge processing. In S.F. Chipman, J. Segal, and R. Glaser (Eds.), *Thinking and Learning Skills: Research and Open Questions.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Schmidt, C. (2005). Relations among motivation, performance achievement, and music experience variables in secondary instrumental music students. *Journal of Research in Music Education, 53*, 134-14.

Schoenfeld, A. (1983). *Problem solving in the mathematics curriculum: A report, recommendations and an annotated bibliography*. The Mathematical Association of America, MAA Notes, No. 1.

Schoenfeld, A. (1985). *Mathematical problem solving*. NY: Academic Press.

Schunk, D. (1990). Goal setting and self-efficacy during self-regulated learning. *Educational Psychology, 25*, 71–86.

Schunk, D., Pintrich, P., & Meece, J. (2007). *Motivation in education: Theory, research, and applications.* (3rd ed.). Upper Saddle River, NJ: Prentice Hall.

Schwandt, T. (2001). Three epistemological stances for qualitative inquiry: Interpretivism, hermeneutics and social constructivism. In Denzin, N. & Lincoln, Y. (Eds.). *The handbook of qualitative research*. NY: Sage.

Schwandt, T. (2007). *The sage dictionary of qualitative inquiry.* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Seddon, F. (2006). Collaborative computer-mediated music composition in cyberspace. *British Journal of Music Education, 23*(3), 273-283.

Smith, K. (2008). *An exploration of musical play and scaffolding in early childhood*. Ph.D. dissertation, University of Alberta (Canada), Canada. Retrieved April 13, 2011, from Dissertations & Theses: Full Text.(Publication No. AAT NR45602).

Smith, M. (2003). Making mentoring work. In Conway, M. (Ed.), *Great beginnings for music teachers: Mentoring and supporting new teachers (pp. 105-124)*. Reston, VA: Music Educators National Conference.

Stauffer, S. (2001). Composing with computers: Meg makes music. *Bulletin of the Council for Research in Music Education, 15*, 1-19.

Stake, R. (1995). *The art of case study research*. Thousand Oaks, CA: Sage Publications.

Strand, K. (2003). *Nurturing young composers: Exploring the relationship between learning and transfer in 9- to 12-year-old students*. Unpublished doctoral dissertation, Northwestern University, Evanston, IL.

Strand, K. (2006). Classroom survey of Indiana music teachers on using composition in the classroom. *Journal of Research in Music Education, 54*(2), 154-167.

Strand, K., & Newberry, E. (2007). Teachers share practical advice on classroom composing. *General Music Today, 20*(2), 14-19.

Subotnick, M. (1995). *Making Music* [computer software]. London: Voyager.

Swanwick, K., & Tillman, J. (1986). The sequence of musical development: A study of children's composition. *British Journal of Music Education, 3*, 305-339.

Upitis, R. (1989). The craft of composition: Helping children create music with computer tools. *Psychomusicology, 8*(2), 85-96.

Upitis, R. (1992). *Can I play you my song? The compositions and invented notations of children.* Portsmouth, NH: Heinemann Educational Books, Inc.

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.

Webster, P. (1990). Creative thinking in music. *Music Educators Journal, 76*(9), 21.

Webster, P. (1992). Research on creative thinking in music: The assessment literature. In R. Colwell (Ed.), *Handbook of research on music teaching and learning : A project of the Music Educators National Conference* (pp. 266-280). NY: Schirmer Books.

Webster, P. (2002). Computer-based technology and music teaching and learning. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning: A project of the music educators national conference* (pp. 416-439). NY: The Oxford University Press.

Webster, P. (2003) "What do you mean, make my music different?" Encouraging revision and extensions in children's music composition,' in M. Hickey (Ed.), *Why and how to teach music composition: a new horizon for music education*, pp. 55–65. Reston, VA: The National Association for Music Education.

Wiggins, J. H. (1990). *Composition in the classroom: A tool for teaching*. Reston, VA: Music Educators National Conference.

Wiggins, J. (1994). Children's strategies for solving compositional problems with peers, *Journal of Research in Music Education, 42*(3), 232-252.

Wiggins, J. (1999). Teacher control and creativity. *Music Educators Journal, 86*(7), 30-35, 44.

Wiggins, J. (2001). *Teaching for musical understanding*. NY: McGraw-Hill.

Wolcott, H. (1995). *The art of fieldwork*. CA, Walnut Creek: Altamira Press.

Yin, K. (2009). *Case study research.* (4th ed). Thousand Oaks, CA: Sage Publications.

Younker, B. (1997). *Thought processes and strategies of eight, eleven, and four-teen year-old students while engaged in music composition.* Unpublished doctoral dissertation, Northwestern University, Evanston, IL.

Younker, B. (2000) Thought processes and strategies of student s engage d in music composition, *Research Studies in Music Education, 14*, 24–39.

Younker, B. (2002). Critical thinking. In R. Colwell & C. Richardson (Eds.), *The new handbook of research on music teaching and learning: A project of the music educators national conference* (pp. 162-170). NY: The Oxford University Press.

Younker, B. (2003). The nature of feedback in a community of composing. In M. Hickey (Ed.), *Why and how to teach music composition: A new horizon for music education* (pp. 233–242). Reston, VA: Music Educators National Conference.

APPENDIX A: IRB APPROVAL

UNIVERSITY OF ILLINOIS
AT URBANA-CHAMPAIGN

Bureau of Educational Research
College of Education
38 Education Building
1310 South Sixth St.
Champaign, IL 61820

May 27, 2009

Hae-Kyung Shin
Curriculum and Instruction Department
311 Education Building
MC-708

Dear Hae-Kyung,

On behalf of the College of Education Human Subject Committee, I have reviewed and approved your research project entitled "What conditions of the Vermont MIDI Project enable the students to keep continuing composition." I find that this project meets the exemption criteria for federal regulation 46.101(b)1, for research involving normal educational topics in educational settings where the identity of the participants is protected.

No changes may be made to your procedures without prior Committee review and approval. You are also required to promptly notify the Committee of any problems that arise during the course of the research.

Good luck with your research.

Anne

Anne S. Robertson
College of Education Human Subjects Review Committee

Cc: Dr. Eve Harwood

APPENDIX B: TEMPLATES FOR DATA ORGANIZATION

Contact Summary Form #

Contact type:	**In-Person / On-Line**	Site/Location:	
Participant:		Contact date:	
Event:		Today's date:	

What do you expect?

*Provide a brief **DESCRIPTION** of*
Event-

People-

Qualities of the experience-

What did you take away from the experience?
*Did anything (content, interaction style, etc.) **SURPRISE** you in this contact?*

*Which **RQ** did the contact bear on most centrally?*

*Please suggest **CODES** that you could use for this field-observation.*

Vignette

What new (or) remaining target questions do you have in considering the next contact with this site?

Figure B1. Contact summary form.

Document Summary Form #

Name/ Description:		Site/ Location:	
Participant:		Created date:	
Associated Event/Contact:		Today's date:	

Significance of Doc.: Did anything (content, interaction, etc.) ***SURPRISE*** you in this document?

Student's Composition and Replies	**Mentors' Comments**

What did you take away from this document?

Analysis		
Maps/Directions		
Move Forward: Stuck!		
Prolonged Communication		
Pattern: [Analysis]-[Praise][Critique][Suggestion]		
Specific Musical Features		
Advanced Theory		
Composition Strategy		
Generalization		
Agency	Identity/ Ownership	
	Musical colleague	
Collaboration/Synergy		
Tech-Compo		
Tech -Communication		

Cognitive Apprenticeship	Reflection	Articulation	Exploration	Modeling	Coaching	Scaffolding

From this, what emerging strategies do you have for analyzing other contact or document?

Figure B2. Document summary form.

Observation Templates

Participant:		Site/Location:	
Class Type:		Contact date:	

TIME	Participant	TOPIC	Behavior	

Figure B3. Observation template.

APPENDIX C: KELLY'S WRITTEN REPLIES TO MENTORS OF EACH STAGE

Table C1

Kelly's Written Replies to Mentors

Stage	Content
Description of Piece	Hi, My name is Kelly Sheeser. I am in the fifth grade. I have been playing piano for 4 years, so I decided to try doing a little writing for Opus 19. I started by putting a few things together and then adding things from there.
Request for Mentor Feedback	Any feedback would be great, but right now I am tring to make another few measures at the end that involve the left hand, unless you think I should leave it like this. If you have any better suggestions, please tell me. I know that I have some sour parts and I also nees suggestions about those. Thank you so much! Sincerely, Kelly Sheeser
Reply of the 1st revision	Domonique - Thank you so much for the feedback. It helped a bunch and I tried to fit the note lengths so they matched. Please let me know what you think about that and if you have any more suggestions about my revision, please tell me. Also, thank you for sharing your composition teacher's advice and I have a feeling it will be very helpful in the future with the composing I do. Thanks again, Kelly
Reply of the 2nd revision	Dear Composers, Thank you for all for the feedback. I tried most of it, but my piece still needs some sour part repairs and an ending that actually sounds like one. So, no, Alexandra, that is not my ending. I also need to find some sort of left hand part for the few new lines at the end. Also, I'm on the edge about the length of my piece. What do you think? I tried changing the notes that repeated immediately, and it mostly sounds good, but when I changed the left hand alone parts, I ended up with some clashing notes that I need help fixing, especially in bars 5, 14, and 29. Bar 31 needs some help too. Thanks, again, Kelly
Reply of the 3rd revision	Dear Erik and Alexandra, Thank you for the feedback.-This is what I have done to improve my piece although I feel like it will never sound perfect. I changed and added some of the left hand parts and I added dynamics. If you have any last minute suggestions about the dynamics or anything else that would be great. Thanks, again. Sincerely, Kelly
Reply of the 4th revision	Dear Composers, I just want to say thank you for everything, all the suggestions and revision ideas, the many things that needed to be fixed, that passed me right by and also, thanks for your constant answers to my questions. I tried most of it, and my piece really improved over the weeks. If we had had more time, I would have been more adventurous, and lengthened my piece, but good things come in small packages, right? At first, I was hesitant to do the class because afterschool is not really my thing, but I have found myself looking forward to Wednesdays, to receiving all the comments, and also forever thinking about how to make my piece into a finished product. When we started, I was unaware of how short the class would be, and I was taken by surprise when my mother mentioned the last two classes. Anyway, it's been fun making this piece, and I thank you for lending your time and knowledge to us to help us compose our pieces! Good-bye for now, Kelly Sheeser

APPENDIX D: STUDENTS' DESCRIPTION AND REQUEST FOR MENTOR FEEDBACK

Table D1

Students' "Description of Piece" and "Request for Mentor Feedback"

Student work	Description of piece	Request for mentor feedback
Josh, Opus 19	I honestly wish I could tell you.	This is a very very brief idea of what might come. I'm involved with a major project for the VSO right now, so that is my main focus. I simply threw together a little melody that showed some promise... So, at the moment, there is not really any mentor feed back necessary for the time being, unless you feel like you would like to critique my little pathetic sentence (which of course would be very welcome) and if you have any filler ideas, that also would be very nice...Thanks, Josh
Kaleigh, Minor Melody	My name is Kaleigh and I'm taking midi composition for the first time as a senior. I've always loved music and currently partake in the main chorus, select choir and women's ensemble. I decided to join midi composition to help better my knowledge in basic theory. In our class we were asked to create a melody in any minor key. This is my first time formally writing a piece of music and have basically been doing it by ear while taking notice to what make sense theoretically.	I would greatly appreciate any constructive criticism towards any aspect of this piece. It could possibly become a piece for opus in the future in which i would need to expand it. Any suggestions towards where I could expand certain parts, or where I could go with it next would be very useful. Specifically if you think certain parts are too busy, or some parts don't belong, or it simply becomes too repetitive etc.
Kaleigh, Opus20	This piece is intended for the opus spring concert, its definitely a work in progress and I would really appreciate any comments you can give. I've just begun so its not developed. My problem is that I have many ideas, and do not know how to develop them =/. Thank you very much!	Please help with the development and anything else you notice that needs improvement of any kind!
Hannah	Hello everyone, This is a very rough beginning of my opus piece, I realize that there is not much material here and not much to comment on but I am under a deadline for another piece that I am composing for the VSO so just started working on this today. I will continue working and will post more soon. Hannah Chambers	As I said I know there is not much material here to comment on but any comments will help me. Thank you again, Hannah Chambers

(Continued)

Table D1 (Continued)

Student	Description of piece	Request for mentor feedback
Shawn	This is the first time that I have written and submitted for an Opus project. I originally was going to write a Latin style song, But it was too much of a jump for the first time composing a piece. The inspiration for this piece came from the band primus by using their general form (ababc) and using a minor key. I also wrote this piece based off of some comments that i read on other pieces about having too much wind instruments by making it a percussion, piano, xylophone piece.	Right now I know of some improvements that can be done to the piece (transitions and more dynamics), but our computer system crashed yesterday making it difficult to edit the piece. I will edit this for next submission.
Allen	It is supposed to be a piano, trumpet, French horn trio. But I am still working on the French horn part, which you will not hear in the piece at the time. There are other things that i still need to work on, but it is still a work in progress. I was inspired to create this piece when i was sitting at the piano and started to play chord sequences. I then created the horn piece on the piano also. This piece gives you a little bit of what emotion can be like and how it can go from sad to happy and back to sad again.	I would like some suggestions for my piano part and even my trumpet solo.
Jake	This piece starts with scales and the trombone doing its own thing. Then it changes and all the parts go faster or slower and then changes back.	Do I have enough phrases? Do you think I should have the half rest in between the changes? Do you think I should try and slow down some parts? I know I have some clashes and will work on them later. Thanks for all your help, Jake
Kate	Hi, my name is Kate Sheeser. I am in the fifth grade. I have been playing piano for 4 years, so i decided to try doing a little writing for opus 19. I started by putting a few things together and then adding things from there.	Any feedback would be great, but right now I am trying to make another few measures at the end that involve the left hand, unless you think I should leave it like this. If you have any better suggestions, please tell me. I know that I have some sour parts and I also need suggestions about those. Thank you so much! Sincerely, Kate Sheeser