

# Is This Research? Productive Tensions in Living the (Collaborative) Autoethnographic Process

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## Abstract

We came to collaborative autoethnography quite by accident. In this methodological paper, we consider our experiences as we embraced a new methodology, taught and researched collaboratively in an interdisciplinary space, and grappled with how we might nestle our work in a journal with no history of publishing autoethnographies—all while becoming awakened to critiques against and arguments for autoethnographic research. Our discussions are presented along with portions of our lengthy e-mail correspondences written during our research process and center on two prominent facets of our research experience: interdisciplinarity and the research process. Entangled in our methodological unpacking, we highlight “Productive Tensions” that emerged from both our collaboration and reviewer feedback that is presented alongside our discussion. Through seeing these tensions as productive, we argue that embracing diverse perspectives can serve to strengthen the depth of engagement, quality, and potential impact of (collaborative) autoethnographic research.

## Keywords

autoethnography, collaborative autoethnography, interdisciplinary, methodology, publishing

It was a Wednesday night and the room hummed in vibrant dialogue. The novice qualitative research students were discussing an article by Carolyn Ellis, an autoethnography, when I (Kelly) asked for their attention. The topic of the introduction to qualitative inquiry class session was focused on ethics and participant relationships. A rich tapestry of perspectives, sometimes conflicting but always colorful, were being woven through our conversations. Somewhere between discussing ethics and researcher transparency, a student matter-of-factly declared, “I just don’t see this as research.”

We came to collaborative autoethnography quite by accident. Assuming the role of co-instructors in a course taught in fall 2012, we began our collaboration by working closely over an 11-month period to develop, refine, and implement a Transdisciplinary Design Studio curriculum. Set in the context of a research grant from the National Science Foundation to investigate synergistic learning, the studio brought together undergraduate and graduate students from art education, engineering, and landscape architecture—a unique co-teaching challenge to say the least. Our conversations, visual journals, and in particular our e-mails to each other documented various experiences and epiphanies—both illuminating and uncomfortable—that pushed our individual and collective conceptions of

education and learning in higher education and beyond. Nicola (Nicki), an environmental engineer and educational researcher, simultaneously reveled in the opportunity to dwell in the arts and despaired at how some of her colleagues in engineering dismissed the discipline as “basket weaving.”<sup>1</sup> Kelly, a visual arts teacher and doctoral student in art education at the time, found herself confronting insecurities about how the arts were perceived and (mis)understood by disciplinary others as well as developing new understandings of the sociotechnical complexities inherent in “engineering problems” (see Sochacka, Guyotte, & Walther, 2016, for more on these topics). As time passed and the combination of excitement and discomfort increasingly became the norm/familiar, we began to consider that our encounters in this interdisciplinary, or “STEAM” (STEM<sup>2</sup> + the Arts) space, might be of interest to a broader

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audience and, to this end, could benefit from being explored in a deeper way. After class one afternoon, we spoke of the possibility of a research methodology that would allow us to consider personal experience in the context of disciplinary and interdisciplinary culture as well as “to converse with the [existing] literature” (Wall, 2008, p. 40). It was then that we found collaborative autoethnography.

Autoethnography is a research approach that combines characteristics of autobiography and ethnography (Ellis, Adams, & Bochner, 2011). Drawing from autobiography, autoethnographers write about past experiences they perceive to have had a transformative effect on their life or thinking (Ellis et al., 2011). What distinguishes autoethnography from autobiography is a purposeful focus on examining how these selected impactful moments “stem from, or are made possible by, being part of a culture and/or by possessing a particular cultural identity” (Ellis et al., 2011, p. 276). Collaborative autoethnographies involve two or more writers and provide a means to explore culturally significant experiences from multiple perspectives. In this methodological paper, we consider our experiences as we came to embrace a new methodology, taught and researched collaboratively in an interdisciplinary space, and grappled with how we might nestle our work in a journal with no history of publishing autoethnographies.

Our journey began by dipping our toes in the autoethnographic water in a paper we wrote for the American Society for Engineering Education (ASEE) Conference in 2013, which explored what we perceived to be some of the possibilities and pitfalls of STEAM education (Sochacka, Guyotte, Walther, & Kellam, 2013). Although this paper was described by reviewers as “very interesting,” “novel,” and “well written and thought out,” we could not help but feel that the rawness of our e-mail exchange, which constituted the majority of the paper, resulted in a text that led to more questions than answers—both conceptually and methodologically. These lingering questions, alongside our increasing discomfort at how STEAM was being discussed in the broader STEM community, led us to a more systematic and sustained collaborative autoethnographic study of our experiences in the design studio, which we began in earnest in March 2014. Our initial inquiry also prompted us to consider the possibilities and pitfalls of our selected methodology, a questioning process that became deeply embedded in our collaborative endeavor. As we will describe in detail below, our now multiyear collaborative autoethnographic journey has been a challenging one and has led us to empathize with the title of Wall’s (2008) autoethnographic article, “Easier Said Than Done.” However, the experience has also pushed us as researchers to develop deep understandings of what this methodology can afford through an interdisciplinary practitioner-research space in which our sustained inquiry brought us to a place of more profound and holistic considerations of STEAM education.

Similar to the vignette of Kelly’s student above, we have come to read and hear the many critiques of autoethnography that include questions of self-indulgency (Coffey, 1999;

Sparkes, 2002), rigor (Holt, 2003), and assertions that autoethnography is simply *not research* (Delamont, 2009; Holt, 2003; Wolcott, 2010). In this paper, we seek to examine, challenge, and provide our perspectives to the critical discourse surrounding autoethnography, collaborative autoethnography, and beyond. While we situate our discussion within our own collaborative autoethnographic study, it is our belief that the threads of this methodological unpacking—the tensions between each other and with our intended readership as we *became* collaborative autoethnographers—are also relevant to the broader qualitative research community.

In presenting our discussion, we strive to make our process transparent, providing insight into the “the trials and tribulations,” which Forber-Pratt (2015, p. 12) lamented are often absent from the methodological literature. To this end, our discussions are presented along with portions of our lengthy e-mail correspondences written during our research process and center on two prominent facets of our research experience: interdisciplinarity and the research process. We begin by exploring our process of living interdisciplinarity by presenting our writing as reaching out to others and how we were mindful of contributing to conversations taking place in broader public and academic discourses. Next, we interrogate what it meant to live the research process. Here, we position writing as both experiential and a form of inquiry and then discuss what it meant to be in and be with our autoethnographic process. Throughout the article, we interweave our lived experiences with the critiques of autoethnography we have found most compelling, largely grounded in Delamont’s (2007, 2009) arguments against autoethnography but also with consideration of the tensions between evocative (Ellis, 1999; Ellis & Bochner, 2006) and analytic (Anderson, 2006) approaches. Additionally, as we observed with some interest in the context of our own collaborative process, we highlight a second layer of our research inquiry that we designate as “Productive Tensions.” These tensions bring forth our respective and often differing theoretical perspectives as well as considerations from the latter stages of our autoethnographic writing process when we received feedback from six readers of our article (four reviewers, the editor, and the associate editor of the target journal). In many of the cases that follow, we present the Productive Tensions alongside the actual comments we considered in our revision.<sup>3</sup> By framing both collaborative and reviewer tensions as productive (rather than inhibitive<sup>4</sup>) to the research and publication process, we argue that embracing diverse perspectives (Seale, 1999) can serve to strengthen the depth of engagement, quality, and potential impact of (collaborative) autoethnographic research.

## Living Interdisciplinarity

Sent: Wednesday, June 18, 2014, 5:02 p.m.

Hi Kelly,

I just wanted to write a quick e-mail to let you know that I have added a few things to our paper, some of which I think

we will need to discuss over the phone as the notes are not very explanatory. Most of these comments have come out of me trying to gauge the engineering education community here at ASEE. For example, I went to a session today where some colleagues presented a collaborative autoethnography on spirituality in engineering (see attached paper). I had quite a few conversations with one of the authors and this has helped me understand better how we might go about getting our paper published (in an engineering education journal).<sup>5</sup>

Kind regards,  
Nicki

We stumbled into autoethnography with what we both intuitively felt was an interesting and relevant story to tell but with little awareness of what the process of “telling” that story would entail. While our early explorations with “autoethnographic techniques” (Sochacka et al., 2013) should have been a warning that, at least from a methodological perspective, we were “not in Kansas anymore,” it was not until we began to lose some faith during the longer-than-expected wait after we initially submitted our article that we slowly began to realize the enormity of the task we had undertaken. Not only had we decided to write an autoethnography, a type of research that one of Ellis’ own students once described as “violat[ing] . . . everything . . . about social science research” (Ellis, 1999, p. 673), we had also chosen to do it collaboratively, across two seemingly disparate disciplines, and publish in a well-respected journal (of arguably the more traditional discipline)—a journal that, at that time, had no history of publishing either auto- or collaborative autoethnographies (see Productive Tension 1). With this ambitious goal in mind, Nicki’s e-mail captures one of many steps we took, in parallel to our shared writing process, to ensure that our work would resonate with our intended readership. In addition to using a novel methodological approach, the STEAM educational focus of our inquiry was relatively new. In fact, despite a vibrant discourse in the mass media (e.g., Hollander, 2013; Krigman, 2014; MacKenzie, 2014), at the time we were not aware of any discussions of STEAM in either engineering education or practice journals. For this reason, we wanted to be both careful and purposeful in how we presented our respective disciplinary and emerging transdisciplinary understandings of STEAM to the engineering education community.

**Productive Tension 1.** How do we bring (collaborative) autoethnography into a field that has not recognized this approach in their preeminent research journal?

Editor: Because I am not aware of a previous autoethnography in (the journal), I want this article to be exemplary. Please strengthen the description of your methodology, collaborative autoethnography. In response to Reviewer 1 and the associate editor, explain how your methodology differs from mere journaling.

Associate Editor: The points about autoethnography and concerns about providing enough detail of this process in general, how you engaged in this process, and why it is a worthy endeavor in engineering education all need to be carefully addressed. For example, as stated by one of the reviewers, how is it different than “journaling.” I am absolutely convinced that it is, but it needs to be stronger in the paper. The concern is that if this is the first of its kind in (this journal), then the example needs to be a strong one; a sentiment I am sure you agree with.

Reviewer 1: Overall, the reader needs way more help to understand how [autoethnography] can be a systematic method of inquiry that differs from, say, “just” journaling.

While disciplinary differences were a constant feature of our collaborative inquiry, it was not until the “longer-than-expected wait” that we became aware of the extent and depth of our *methodological* differences. One of these, in particular, emerged during a telephone conversation in which Nicki commented that, “if [the journal] doesn’t publish our work, for me this process hasn’t been worthwhile.” For Nicki, this comment stemmed not from an extrinsic desire or requirement to publish in the target journal but rather from a deep-seated belief that the purpose of *doing* engineering education research is to *change* engineering education practice. Kelly, a qualitative professor and researcher, was somewhat taken aback by the severity of this statement and how it contrasted with her own emerging postmodern sensibilities—for her the process was paramount. When we finally heard from the editor, it was through dialoguing about this tension that we were able to meaningfully address the reviewers’ comments through changes that considered our different perspectives as qualitative researchers. In the following sections, we explore and unpack the ways in which we navigated the internal and external, interdisciplinary and methodological tensions inherent in the tasks of collaboratively writing to reach our audience and contributing to discussions of STEAM education.

## Writing to Reach

One fervent criticism of autoethnographic research is summarized by Delamont (2009) who asserted, “Autoethnography is, whatever else it may or may not be, about things that matter a great deal to the autoethnographer” (p. 57). In the context of our interdisciplinary collaboration and developing friendship, a great number of things emerged that personally mattered a great deal to us including, of course, but by no means limited to our views on the integration of the arts into STEM education. However, for the very reasons outlined by Delamont in her critique of autoethnography, we saw no reason to share with our prospective readers “the minutiae of [our] everyday [lives]” (p. 57)—for example, the pressures Kelly experienced as a new mother nearing the end of her doctoral journey, and Nicki’s decision to follow a nontraditional academic career path (see Productive Tension 2). Instead, we carefully chose aspects of our shared experiences and individual perspectives that we envisaged might serve as a window to broader cultural questions. Like Jackson and Mazzei stated, we wanted “to shift [our] analysis away from

the narration itself, and away from narrating ‘I’s that question not only what [we] know but also how [we] know something (about [our]selves, about experience)’ (2008, p. 308). In other words, the writing process nudged us toward not just the *what* but the *how*—how we came to understanding of Self/Other. Therefore, though we were intensely aware of the fact that we *were* doing autoethnographic research, we were purposeful with the *auto*-experiences we decided to include, explore, and interrogate. As practitioner-researchers, we viewed our writing as a powerful means of *reaching out* to and *connecting with* our readers (Bochner & Ellis, 1996) and, in particular from Nicki’s perspective, as a way for the engineering education community to critically, systemically, and personally engage in the politically and economically situated, interdisciplinary, and liminal space of STEAM education (see Productive Tension 3).

**Productive Tension 2.** Presence and absence: What do we include and what do we leave out? How much of ourselves should we expose?

**Productive Tension 3.** How do we thoughtfully engage with our readers through evocative autoethnographic narratives on the deeper aspects of STEAM education?

Reviewer 2: (The paper) emphasizes social connectedness of engineering, something engineering educators often struggle with and need to spend more time thinking deeply about. The degree to which engineering has been stolen by the business community (we do it to make stuff so we can sell it and make money and get paid well) has been giving me a lot of sleepless nights lately. This paper has an eloquent and beautiful response.

To “reach” our audience, we used conversational and descriptive language that we felt would invite our readers to travel alongside us in our attempts to unpack and interrogate our experiences (Ellis, 1999). Ellis’ approach to autoethnography, evocative autoethnography, inspired us as we sought to bring ourselves, our vulnerabilities, and our readers into our writing. At the same time, we endeavored to balance this focus on resonance with what Anderson (2006) described as “theoretical illumination” (p. 388). In our case, this entailed a critical examination of the underlying goals and practices associated with conceptualizing and doing STEAM education. Through bumping up against each other, our students, colleagues, the public discourse, and academic literature from both our disciplines, we sought to reveal to our readers the inherent tensions and contradictions embedded in STEAM collaborations. We now understand this convergence as a type of diffractive movement where we began to “[mark our] difference from within and as part of an entangled state” (Barad, 2007, p. 89). Our purpose in doing this was not to overcome or solve these challenges, or to produce a grand theory of STEAM education but, rather, to draw the reader into a space richly decorated with what Geertz (1974) termed “experience-near” and “experience-distant” (p. 28) concepts, so that they, too, might find themselves compelled to

consider the possibilities and pitfalls of STEAM-inspired learning.

As our article progressed through the review process, it became clear that we would need to provide a detailed account of our methodological process and a firm grounding in the theoretical literature in order for our work to be accepted by the engineering education community. With the awareness that we were challenging the traditions of research methodology in this journal, Kelly sometimes found herself internally struggling against her perceptions of a rigid and systematic quality to their methodological discussions while also striving to release herself to do what was necessary to bring their voices to the engineering community (see Productive Tension 4). In order to strike a balance between our (in particular, Kelly’s) evocative tendencies and the certain analytic expectations of qualitative research in an engineering education research context, Nicki suggested turning to Walther, Sochacka, and Kellam’s (2013) framework for qualitative research quality. This framework, which includes a process model and typology of six validation/reliability constructs (see also Walther, Pawley, & Sochacka, 2015), helped to focus our attention on (i) the social reality we were attempting to illuminate and our emergent theoretical representations of that reality (*theoretical validation*), (ii) the processes through which we sought to interweave data (e.g., previously written accounts of the transformative experiences we described) and “real-time” in-process exchanges to collaboratively explore that reality (*procedural validation*), (iii) the use of appropriate language, that is, to “call things by the right names” (Kirk & Miller, 1986, p. 23), in order to (co)construct meaning in our writing through dialogue both with each other and our intended audience (*communicative validation*), and finally (iv) a sustained commitment to what Kirk and Miller (1986) describe as the generation of “knowledge that is of interest on its own merits to those other than the friends and admirers of its creator” (p. 13; *pragmatic validation*). It was through working with this framework that we were able to more clearly see how writing and voice might be purposefully used in such a way as exploit the “overlaps” and overcome the “cleavages between the analytic and evocative traditions in autoethnography” (Williams & Jauhari bin Zaini, 2016, p. 3).

**Productive Tension 4.** How do we balance our personal theoretical stances with the expectations of the journal/readership? How does this disparity actually make *visible* or *possible* our desires to operate differently?

Editor: . . . Describe the steps that you took to promote quality and improve trustworthiness.

Reviewer 3: I also respect the emphasis on embracing discomfort—this is a philosophy that I think is extremely important for teachers to embrace and to pass on to students, especially if we are going to conscientiously engage in pedagogies that include inquiry, problem framing, ethical awareness, and interdisciplinary collaboration.

As the title of this section suggests, we have come to articulate this approach to autoethnography as “writing to reach.” While, on the surface, writing to reach might be interpreted as similar to evocative autoethnography, which seeks to “evoke an emotional resonance” with the reader (Moriarty, 2014, p. 47), here we extend this notion to include a consideration of the expectations of a specific target audience and, at times, the need to reach out to each other. As we describe above, through writing to reach our engineering education readership, we sought to both meet and challenge their (and at times, our) expectations of research with the goal of striking a careful balance between familiarity and discomfort. Without this attentiveness, we worried that we would lose *them*—our first concern was the editor, then the reviewers, then the journal readers (see Productive Tension 5). From a methodological perspective, however, writing to reach has enriched our understanding of how both evocative and analytic approaches and, more broadly, how *our* different theoretical perspectives might be thoughtfully considered in the qualitative inquiry process. Acknowledging these different perspectives required an openness and vulnerability toward each other, because in order to stay true to our process, it became necessary for us to not shy away from complex or controversial topics. Rather, we found the need in our collaborative research to foreground a type of relational ethics. To be mindful of how differences could easily develop into inhibitive rather than productive tensions in our process. Quite simply, reaching out to each other brought us to more deeply consider tensions that surfaced throughout the process and develop even more nuanced understandings of self, other, and process. With these things in mind, writing to reach encompassed a movement toward our audience as well as within our research (i.e., reaching each other).

**Productive Tension 5.** Whose voices are we privileging/do we privilege throughout our research process?

### *Contributing to the Conversation*

In order to faithfully contribute to the broader STEAM conversation, we felt it was important to situate our writing in the context of our experiences co-teaching the studio. Anderson (2006) indicated one of the five essential criteria for analytic autoethnography as being a “full member in the research . . . setting” (p. 375) or what he calls a complete member researcher. Along these lines, our membership in the research setting might be viewed in terms of our respective disciplinary cultures as well as the classroom/course that served as the site of our inquiry. Both of these membership spaces were important, existing in tandem, as it was our respective backgrounds that afforded us the opportunity to teach the interdisciplinary design studio, while it was the studio itself that brought forth a heightened state of consciousness of what it meant to *be* in our disciplinary cultures and how we were *becoming* researcher-practitioners in the culture of STEAM education. Ellis, Adams, and Bochner (2011) explained, “When researchers do autoethnography, they retrospectively and selectively write about epiphanies that stem from, or are made possible by, being

part of a culture and/or by possessing a particular cultural identity” (p. 276). In our experiences, a convergence of perspectives (Ngunjiri, Hernandez, & Chang, 2010) cultivated epiphanies when our unique knowledge and disciplinary identities collided and shifted. We noticed this in writing our collaborative autoethnographic study, and we continue to be aware of such cultural belongings as we write this methodological paper.

In the context of the design studio, in which we located our retrospective autoethnographic exploration, we observed our students grapple with (mis)conceptions about the other—art education students realizing their engineering peers brought creative and holistic systems thinking perspectives to their projects, while the engineering students developed profound understandings that art was more than just pretty pictures. Alongside the students, we found ourselves searching to make sense of our own disciplinary backgrounds and those of our counterparts. It was, in fact, our collaborative teaching experiences that made visible many assumptions and understandings of our disciplinary cultures, as we traversed both inter- and intradisciplinary spaces throughout the semester. For instance, Nicki found herself reflecting on her embarrassment when she found herself unable to effectively articulate to an engineering student that artists might contribute more to their collaborative assignments than aesthetics. She also acknowledged the perceived hierarchies that often place engineering above the arts. Kelly, on the other hand, unpacked her own limited perceptions of the sociotechnical complexities that are inherent to many problems faced by engineers and was embarrassed that she had not done a better job communicating to Nicki and the students how the arts *are* more than aesthetics. The more we engaged in the interdisciplinary space, we witnessed the dialogue shift away from the superficial toward understanding the nuances and layers of disciplinary culture—of each other. This shift was instrumental to our belief that we had something to offer to the existing conversations on STEAM education. Further, it was pivotal to our research collaboration, as it brought us to be more open and vulnerable in our dialogic writing. Rather than shy away from conflict and embarrassment, we allowed ourselves to enter vulnerable spaces, so that we could contribute to the conversation as our most “flawed” selves. In this way, interdisciplinarity was vital to both our emergent understandings and growth within and beyond our disciplines—as practitioner-researchers and autoethnographers.

Similar to this notion of being in the research setting, Delamont (2009, p. 60) discussed the role of academics who, she described, should commit to doing research *in* the world rather than “sitting in offices inside the university contemplating ourselves and our bodies” (see Productive Tension 6). It was through our desire to join the conversation that we began to think critically and reflexively (Anderson, 2006) about ourselves as practitioner-researchers, and through this, we problematized our own understandings of STEAM education. It was not enough for us to simply *share* our experiences, rather we used collaborative autoethnography to inquire individually and as disciplinary others—pushing each other to “dig deeper”<sup>6</sup> into our epiphanies and consider encounters with our students and entanglements in/with our disciplines. We felt and still feel

compelled to consider how our bodies encounter other bodies<sup>7</sup> and we contend this can happen in the world *and* in our offices—after all, our offices are part of our worlds. Inspired by the words of Denzin (2006), we strove to be “self-reflexive but not self-obsessed” (p. 421) and we also attended to Anderson’s (2006) argument that “(analytic) ethnographers must avoid self-absorbed digression” (p. 385). Through the process of a simultaneously sequential yet iterative writing approach, we unpacked why we were unsettled by the STEAM discourse and the cultural (or disciplinary) structures that were promoting these perceptions. It was through spiraling inward, outward, and between that we were able to understand the embodied insights that being in the research space afforded us.

**Productive Tension 6.** How do we challenge Delamont’s (2009) binary and other expectations about where research should take place? Where does research take place?

Along these lines, being *in* the research setting was critical to our goal of contributing to the broader discourses surrounding STEAM education. Although Delamont (2009) critiqued autoethnography for focusing on “social scientists who are not usually interesting or worth researching” (pp. 59–60), we felt that our practitioner experiences and inquiries in a complex and emerging educational space offered something interesting (and novel) to the conversations we encountered. As we listened to the voices of STEAM, we began to realize the incompleteness of what was being said and felt provoked to join the conversation. The conversation felt lopsided, one-sided even, and focused on the arts as bringing creativity to STEM fields, *thus* innovation, *thus* economic development. Through our experiences, we saw much more than a panacea for creativity and felt the arts were being unfairly used as an accessory to the STEM garment rather than as a worthwhile and equal component. Perhaps we were remiss in thinking that our experiences *were* interesting and worth researching (see Productive Tension 7); however, at the very least, we were speaking to different questions and raising different concerns than our counterparts. And don’t *all* researchers bring value judgments to what we find to be interesting and worth researching? If we play it safe by not opening ourselves to be the subjects of our inquiries, we might see other conversations as one sided rather than the beautiful, if not beautifully discordant, polyphony (Bakhtin, 1984) of voices of multiplicity and difference that comprise our postmodern world.

**Productive Tension 7.** How do we know what is interesting and worth researching in autoethnographic research?

Reviewer 2: The middle of the road marks on generalizability are because so few engineering educators will probably do anything STEAM-like in the near future.

Reviewer 3: This article is an important critique and contemplative unpacking of disciplinary epistemologies that I believe is timely and necessary for STEAM projects to proceed in meaningful, conscientious, and intentional ways.

Reviewer 4: I am not certain how many undergraduate engineering programs are joining the STEAM-bandwagon, but interest in ‘teaching creativity’ is very high. Thus, I believe that many educators will be interested in this examination of the experimental design studio.

## Living the Research Process

Sent: Monday, August 25, 2014, 4:30 p.m.

Hi Nicki,

I really enjoyed chatting with you today and catching up! I am feeling much better about the paper moving forward and did some revisions to my two findings sections, particularly the identity one. I think I lost sight a bit of the “so what?” of this section and tried to step back and think about why these student examples were important to me in terms of my art education (cultural) identity. I stopped short of drawing extensive conclusions because the ideas are still marinating; however, I think that is okay. I will say that you may have to make some minor additions/changes to your section after seeing how I revised mine, although I don’t think it will be anything that you should stress over. Do let me know your thoughts and if I should consider anything else.

Warmly,  
Kelly

Sent: Tuesday, August 26, 2014, 10:16 a.m.

Hi Kelly,

I really enjoyed our chat, too, and feel that we should make a point of checking in more regularly on the phone. I think it’s fine for your ideas to still be marinating. I am also still trying to get my head around this idea of the “object” of the research being our experiences and interactions and making claims from analysis of this/these objects. I will read your additions closely today and think about what they mean for my sections as well as the overall “so whats?” of the paper.

Kind regards,  
Nicki

Our writing process began by following what Ngunjiri, Hernandez, and Chang (2010) referred to as a sequential model through which one of us would write about an experience and then forward our writing to the other. The first time we read about this approach, we had little idea about what it might look like in actual practice and, as our work progressed, we found that our writing evolved into a multi-layered and concurrently sequential *and* iterative approach. The iterative part of our process might be likened to Preissle and deMarrais’ (2015) notion of recursivity, or a “working back and forth” (p. 190), they discussed as integral to the process of being a reflexive researcher. Through this sequential-iterative approach to writing about our experiences coteaching the design studio, we interrogated

our epiphanies and identities as embedded in our disciplinary backgrounds (Ellis et al., 2011). In the e-mails above, we illustrate how the iterative and dialogic nature of our collaborative autoethnographic process emerged as we endeavored to make sense of both our experiences and our methodology. Ellis et al. (2011) described autoethnography as both product and process, which is a tension that has pervaded our movements from our initial engagements to where we currently find ourselves—in this very moment of writing. Through our collaboration, we reached a point where the “marinating” we discussed above was more than part of our process—it was an aspect that we wanted to make transparent to our readers in our research product. We desired an opening up of our experiences, a certain level of ambiguity, rather than the clear-cut and generalizable conclusions that are the norm in articles found in the target journal. That said, we tried not to stray *too far* from addressing the larger question of “so what?” that we knew the journal readers would expect in the research product. In this way, living the collaborative autoethnographic process encompassed an attentiveness to representing process within the finished product—all while fully embracing our place in an autoethnographic space. As we describe below, our consideration of these tensions became essential to living the process, allowing us to use writing as a mode of inquiry and also embrace it as an embodied methodological movement.

### Writing as Experience/Writing as Inquiry

In 1934, Dewey wrote about art *as* experience through which the process of engaging with/in the arts nurtures spaces where meaningful and aesthetic experiences might occur. In a similar way, Richardson (2000) and Richardson and St. Pierre (2005) presented a perspective of writing *as* a method of inquiry (and method of data collection and analysis). Through both of these conceptions, the notion of process is valued, as it emphasizes the artist/researcher as situated in a constant state of becoming—possibilities of what might be guide our movements, yet the ephemeral and shifting nature of the possible cultivates endless possible paths that might be forged. Grounded in poststructuralism, writing as inquiry disrupts the “single” text and, instead, embraces the multiplicity, ambiguity, and even contradictory qualities of our meaning-making processes (Richardson & St. Pierre, 2005). As we engaged in our collaborative autoethnography, our writing experiences were entangled with ongoing inquiries and epiphanies. We became conscious of the multiple experiential layers embedded in our collaboration and sought to allow the process of autoethnography to be visible through our writing, in other words, to allow the marinating to emerge in our product. One way in which we endeavored to do this was to bring a sense of our becoming into the text, or as Jackson and Mazzei (2008) explained, “positioning an ‘I’ that is becoming through the telling” (p. 309). For example, in one response to Kelly’s

writing, Nicki expressed that, “I feel like it is only now, as we work towards a near-finished draft of this article, that I am beginning to understand the significance of being wide-awake and embarking on a critical and collaborative search” (Sochacka et al., 2016, p. 8).

The tension between process and product was one of the most salient challenges we faced on our methodological journey. As discussed above, we were conscious of the expectations held by our target journal as to what research, and research writing, ought to look like. However, we were not content to resign ourselves to a prescribed path and we often found ourselves wondering what *we* wanted our writing to become. This tension emerged as a lively thread in our conversations, as we felt increasingly comfortable in our emergent and shifting understandings of our experiences in STEAM education, yet uncomfortable presenting our work, our inquiries, as “finished.” When it finally came time to *finish* our writing, we experienced this stage of the process different ways. For Nicki, the finishing took place in the discussion and conclusion section, where she sought to synthesize what we had learned from our collaborative exploration and ground these “lessons-learned” alongside relevant literature. Nicki perceived this synthesis as necessary given her own conceptions of research and insight into expectations of the engineering education readership. After much discussion, Kelly agreed to a degree of synthesis while also seeking to preserve the inherent unfinished and performative nature of some of our ongoing inquiries. In the end, we agreed to leave some questions open and reiterate our own discomforts even as we “concluded” the paper. Once again, our different perspectives collided in ways that, we argue, ultimately strengthened the quality of our final product for our respective readers.

In discussing creative analytical processes/practices (or CAP ethnographies), Richardson and St. Pierre (2005) indicated a privileging of *both* the writing process and product (not one over the other), as they are intertwined, inseparable from one another—the process *becomes* product. Richardson (2000) also described CAP ethnography as blending the scientific and the literary. In this way, CAP ethnography might be viewed as analogous to a combination of evocative (literary) and analytic (scientific) approaches to autoethnography, where vulnerability, emotion, struggle, and creativity are valued qualities in the scientific research process. In seeking to achieve this balance, there were times when we each found ourselves questioning whether we should hold back the emotionality of the process in order to gain acceptance by what we perceived as our scientifically-oriented readership. Looking back, one might say that we approached these emotionally evocative areas of our article on a case-by-case basis. In some instances, our earlier accounts became naturally tempered as we delved deeper into our evolving understandings and grounded them in relevant literature. In other instances, we adopted a “pick your battles” approach and removed some of what we saw as justified but perhaps unnecessary critiques of our respective fields (see Productive Tension 8).

**Productive Tension 8.** How does one strike a balance between this blending of the “scientific” and “literary” for an audience that traditionally values the scientific?

Associate Editor: I see great value in this work and appreciate the courage and risk to publish this to the engineering education community .... The only concern I have independent of reviewers is ... “... in engineering, meaning is most often attributed to the use of objective, (numerical measures—a meaning that cannot be quantified is not important) ...” I am uncomfortable with this statement because it over characterizes engineering. I agree that engineering is more attuned to what are agreed upon as “objective” measures but not to this degree. Engineering is also considered to be complex design within social, environmental, and economic constraints. Many engineering decisions are made in the absence of objective measures but based on intuition and experience. Please consider rephrasing this and possible adding some discussion that maybe Arts and Engineering are not diametrically opposed on this continuum.

Reviewer 3: The authors write in a very engaging style and do a great job in threading together perspectives from art and engineering .... This aspect of the article will make this an enlightening and motivating read for educators and students from a number of disciplines, and it would be wonderful for (the journal) to benefit from this cross-disciplinary attention ....

... The following comments are just an attempt to identify places for making this article more convincing to conservative engineers (which may not be necessary). One addition to the article that might be helpful is a little more explanation of the methods that authors used and the traditions that autoethnographic methods draw from. The sequential mode of writing and response, for example, could be traced back to dialectics as a “rigorous” and time-honored mode of discovery. Also (the journal) readers may expect more precise statements of the time periods, participants, settings, and so on, that were involved in the study.

In autoethnographic writing, Ellis et al. (2011) noted the importance of merging both “aesthetic and evocative thick descriptions of personal and interpersonal experience” (p. 277). Similarly, Ellis et al. (2011) and Richardson (2000) argued that just as we cannot remove process from product, we cannot remove ourselves from our research. It was this mindfulness toward (re)presenting our embodied selves in the research space alongside a desire to immerse our readers into the actions and interactions in the design studio, which cultivated a wide awakesness (Greene, 1995) to our aesthetic/experiential/multivoiced process.

### *Being In/Being With*

Another compelling aspect of our writing/research process consisted of our embodied methodological movements. As we have discussed, our collaborative autoethnographic journey was extended over several years, arguably beginning when we started meeting regularly to plan the curriculum of the design course in January 2012 and picking up momentum while we were teaching the course in fall 2012. Much of our sustained reflexive inquiry took place during 2013–2014, as we

attempted to make sense of and interrogate the STEAM experience in writing the aforementioned collaborative autoethnographic articles, extending into the first half of 2015 as we revised our writing. In this way, our intensity of engagement in the research process waxed and waned. There were times when one or both of us pushed our chairs back from the computer for a week or even two, just as there were times when we lived, breathed, and subsisted on our research. In this spirit, we see the physical closeness of our bodies with our research and writing as a “being in” (similar to the being in our offices/the world we discussed above), while the physical distance denoted as “being with.” In retrospect, the tension (and entanglement) of being in/being with afforded us many insights and, quite possibly, kept us moving toward an end when an end seemed beyond our reach.

We viewed our process of being in/being with as reflective of our sequential-iterative writing movements, where we might take time during each other’s “turn” to work on other sections of the paper or simply let our words and epiphanies steep—infusing and flavoring our emerging understandings of lived experience. Thus, our seemingly linear sequential movement evolved into a more rhizomatic (Deleuze & Guattari, 1987) and iterative one, replete with multiple openings and potential lines of flight. Mitra (2010) called this steeping the “postscripted nature of (auto)ethnographic research, wherein one continually revises and reframes one’s argument, based on moments of clarity from reading reviewer-comments in the library or (in much less formal circumstances) taking a shower” (p. 4). It might also follow St. Pierre’s (1997) notion of the “physicality of theorizing” (p. 184). Through our process, we found that the iterative permitted us to continuously engage in/with our emergent dialogues and sit with our inquiries for sustained periods of time, allowing us deeper and sometimes more complex understandings of our individual and collective experiences. For instance, we continued to wrestle with the notion of engineering student identity through our final revision, spinning a web between our memories, data, and experiences to the literature. Even when we were not writing, our work shadowed us persistently, should we choose to engage. The notion of being with denotes that we weren’t physically engaging in writing; however, we were not distant from our research—incessantly connected with our thoughts and grappling with our embodied understandings of our research experiences. But it was often this physical separation that proved beneficial. The marinating that Kelly referred to in her e-mail above and the almost hermeneutic movement from the parts to the whole (text and context) as we considered the “so whats?” of the paper comprised instances where being with (rather than *in*) actually immersed us deeper in our STEAM experience inquiries. We found both movements to be essential to the process.

Finally, entangled within the previous section on writing as inquiry, we grappled with knowing when to stop—*when is our collaborative autoethnographic study complete?* (see Productive Tension 9). Of course, we cannot claim this struggle as resolutely autoethnographic or even ethnographic, as many qualitative researchers often become aware of numerous



pathways left unpursued when their studies draw to a close. What becomes challenging is the *auto*-aspect of the methodology. Our inquiries and epiphanies are not confined to the years 2012–2015, or to the limitations of space allotted by the journal, or even the constraints of written language. Despite any physical separation, we are relentlessly in. Even as we write this article, we continue to make sense of our STEAM study, our methodology, our methods, and ourselves. And we are beginning to understand what Jackson and Mazzei (2008) meant when they described the “becoming I,” as “fragmented and incomplete” replete with “differences, contradictions, and folds” (p. 309). In this way, we feel our voices continue to echo beyond the imposed boundaries of our research (e.g., bounded publications, the studio’s conclusion, and the end of Kelly’s doctoral program) and are beginning to see boundaries as increasingly permeable through our ongoing dialogue/our ongoing becomings. It is worth noting that even our current perspectives differ (sometimes greatly) from those reflexive and theoretical lenses we donned even a few months ago. However, this is the nature of writing as experience/writing *as* inquiry. This is the nature of qualitative inquiry. The process does not function outside of us, the process is inseparable from us—it is part of our experiences, our being in/being with.

**Productive Tension 9.** How do we know when we are done? How do we demonstrate to our readers a concurrent focus on product/ process, a “both/and” (Deleuze & Guattari, 1987)?

Reviewer 1: What is the objective that drives the rewriting process? In what way is it systematic? And if this article represents both process and product, as you claim, how did you know when you were “done”? (It is comforting to read that Nicki is still trying to “wrap her head around this” but also frustrating. The point of the article seems to be that the arts and artists can make significant contributions to engineering, but if the author can’t even explain how ... !)

## Is This Research? A Coda

Sent: Monday, November 17, 2014, 3:53 p.m.

Hi Kelly,

I think your section looks great. I wouldn’t shorten it anymore. I also really like the new ending and have accepted your changes. I have worked a bit more on the discussion. Did you want to take a look and accept changes as you see fit? Otherwise, I think we’re done! (this feels very strange;))

Kind regards,  
Nicki

Sent: Monday, November 17, 2014, 9:28 p.m.

Hi Nicki,

We’re done? I’m in disbelief;)

Seriously, THANK YOU for pushing us with this paper! I will go through right now and accept changes. Just let me know if

there is anything else you need from me for the submission process. Fingers are crossed!

Warmly,  
Kelly

Sent: Tuesday, November 18, 2014, 12:02 p.m.

And you are very welcome for the pushing!!!! Thank you for not giving up on me!!! I know I can get very frustrating with detail at times. Sometimes I wonder if we could have gotten to this place any quicker. Perhaps we could have planned better? But then I really feel that we ‘lived’ the process aspect of CAE. Writing and rewriting and deleting and putting back in, all of that was our process ... Ahh ... I’m happy that it’s coming to an end though and we can focus on something else!!

Ethnographic research is hard. It is physically tiring, intellectually taxing, demands a high level of engagement, and at every stage crises can arise. Precisely for those reasons it is worth persevering, capitalising on all the insights that can be drawn from reflexive writing about ethnography. Retreat into autoethnography is an abrogation of the honourable trade of the scholar. (Delamont, 2009, p. 61)

The words of Kelly’s student have reverberated long since they were spoken that Wednesday night and we are left considering, *Is this research?* Initially, we found ourselves provoked and wanting to reconcile this question at the conclusion of our paper; however, we now find ourselves asking: *Does it matter?* (see Final Productive Tension). Our final productive tension focuses on the *value* of this and all the tensions we presented throughout this article. The critical discussions that we brought forth as grounded in Delamont (2009) as well as the tensions between analytic (Anderson, 2006) and evocative (Ellis & Bochner, 2006) autoethnography proved to be stimulating to our own discourses and processes. Over time, we began to see these tensions from the literature, the reviewer feedback, and our own experiential tensions as creating spaces we might move in/out/around rather than bifurcated directions we pursued in an either/or fashion. For instance, we found that we were able to bring aspects of both analytic and evocative autoethnography into our process, blending and softening these methodological tensions. In perceiving the tensions in this way, they became productive in their complexity and ambiguity. Tensions are everpresent in our research, and as we found, they led us to a deeper and more poignant experience in our collaborative autoethnography. They led us to inquire. To not take for granted. To embrace discomfort. They led us to share our experiences with others. Rather than reconcile the tension of *Is this research?* we find ourselves appreciative of its generative presence throughout the process, and as we move forward.

In resisting conclusions, we are presenting our methodological journey as incomplete; therefore, our intentional ambiguity reflects an ongoing reflection and inquiry into the autoethnographic process. Our process is still pulsing and expanding,

marinating even. We see this article as, in essence, telling our story of *becoming* collaborative autoethnographers through living this process. Extending from Delamont's (2009) quote above, *our* retreat into autoethnography was *hard, physically tiring, intellectually taxing*, and we were incessantly aware of *potential crises* that lurked behind every epiphany we unpacked. These struggles are evident as Nicki pondered in her e-mail above if we might "have gotten to this place any quicker" and more recently, amid revisions to our first round of reviews, she concluded an e-mail with an uncharacteristic exclamation of, "I am exhausted!" It was the fortuitous unfoldings of being asked to teach the design studio together, the studio as also comprising a research space, our similar desires to explore our curriculum and pedagogies, our shared interests in qualitative research—all of these factors (and more) brought us to collaborative autoethnography. It was an organic process. To this extent we have found ourselves wondering if this will be our first and last collaborative autoethnography. *Can we possibly (re)create such collective inquiry spaces that were so rich, multilayered, and multivoiced?* The response to this question is ambiguous as well. However, we are finding peace in our, albeit exhausting, process. It was meaningful and exquisitely dialogic and it taught us about ourselves, each other, our respective disciplines, STEAM education, autoethnography, and all the spaces in-between. Admittedly, we perhaps feel at peace because we hold optimism that our work will, ultimately, be published—and, thus, our tensions are currently perceived as productive. This may change. In the end, we hope our lived-yet-still-unfolding experiences, conversations, and, for now, *productive* tensions resonate with other inquirers and incite more vibrant dialogue surrounding (collaborative) autoethnography.

**Final Productive Tension.** Interestingly, Forber-Pratt's (2015) article indicates an exemption by her institution's Institutional Review Board (IRB) for not meeting the "definition of human subjects research" (p. 9). The tension that resides in our question is entangled with constraints and affordances that may vary across studies, institutions, institutional structures, and so on. We continue to wonder: *How are we constrained by conceptions of research? What are we afforded by such conceptions? How do our understandings of research shift? What prompts such shifts? Why were/are we so unsettled by the very question posed by Kelly's student?*

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### Notes

1. This references a situation discussed in our study in which an engineering professor observed students in our course who were outdoors participating in an environmental ephemeral art lesson focused on Andy Goldsworthy and described the activity as "basket weaving."
2. STEM is an acronym for Science, Technology, Engineering, and Mathematics education.
3. The reviewer comments we present appear verbatim and have not been altered from their original form unless noted. At times, these comments serve to complement the productive tensions, while at other times, they may contradict them. It is our intention to represent these comments respectfully and without additional explanation with the hopes the reader will construct their own meaning and draw their own conclusions based on the content.
4. This is not to claim that interdisciplinary collaborative research tensions cannot be inhibitive during the writing/publication process. For example, Koro-Ljungberg, Douglas, Carlson, and Theriault (2015) recently wrote about the political powers inherent to the peer-review process, as they documented their experiences in attempting to publish an interdisciplinary work. In this article, we are presenting these particular tensions as productive to our autoethnographic process, while acknowledging the potential contradiction to other researcher experiences.
5. See also Holt (2003) and Wall (2008) for discussions surrounding their respective challenges in finding a journal that would be accepting of their autoethnographic work.
6. The notion of "digging deeper" was related to an important epiphany Nicki unpacked in the collaborative autoethnography. She recounted Kelly asking the students to "dig deeper" into their thought processes during a critique and began to realize the depth to which artists must engage with their topics and materials.
7. "Bodies" as conceived by Barad (2003) are both human and nonhuman.

### References

- Anderson, L. (2006). Analytic autoethnography. *Journal of Contemporary Ethnography*, 35, 373–395. doi:<http://dx.doi.org/10.1177/0891241605280449>
- Bakhtin, M. (1984). *Problems of Dostoevsky's poetics*. Minneapolis: University of Minnesota Press.
- Barad, K. (2003). Posthumanist performativity: Toward an understanding of how matter comes to matter. *Signs: Journal of Women in Culture and Science*, 28, 801–831.
- Barad, K. (2007). *Meeting the universe halfway*. Durham, NC: Duke University Press.
- Bochner, A. P., & Ellis, C. (1996). Talking over ethnography. In C. Ellis & A. P. Bochner (Eds.), *Composing ethnography: Alternative forms of qualitative writing* (pp. 13–45). Walnut Creek, CA: AltaMira.
- Coffey, P. (1999). *The ethnographic self*. London, England: Sage.

- Delamont, S. (2007). Arguments against auto-ethnography. *Qualitative Researcher*, 4. Retrieved from [http://www.cardiff.ac.uk/socsi/qualiti/QualitativeResearcher/QR\\_Issue4\\_Feb07.pdf](http://www.cardiff.ac.uk/socsi/qualiti/QualitativeResearcher/QR_Issue4_Feb07.pdf)
- Delamont, S. (2009). The only honest thing: Autoethnography, reflexivity and small crises in fieldwork. *Ethnography and Education*, 4, 51–63. doi:<http://dx.doi.org/10.1080/17457820802703507>
- Deleuze, G., & Guattari, F. (1987). *A thousand plateaus: Capitalism and schizophrenia*. Minneapolis: University of Minnesota Press.
- Denzin, N. (2006). Analytic autoethnography, or deja vu all over again. *Journal of Contemporary Ethnography*, 35, 419–428. doi:<http://dx.doi.org/10.1177/0891241606286985>
- Dewey, J. (1934). *Art as experience*. New York, NY: Pedigree Books.
- Ellis, C. (1999). Heartful autoethnography. *Qualitative Health Research*, 9, 669–683. doi:<http://dx.doi.org/10.1177/104973299129122153>
- Ellis, C., Adams, T. E., & Bochner, A. P. (2011). Autoethnography: An overview. *Historical Social Research-Historische Sozialforschung*, 36, 273–290. doi:<http://nbn-resolving.de/urn:nbn:de:0114-fqs1101108>
- Ellis, C., & Bochner, A. P. (2006). Analyzing analytic autoethnography: An autopsy. *Journal of Contemporary Ethnography*, 35, 429–449. doi:[10.1177/0891241606286979](http://dx.doi.org/10.1177/0891241606286979)
- Forber-Pratt, A. J. (2015). “You’re going to do what?” Challenges of autoethnography in the academy. *Qualitative Inquiry*, 21, 821–835. doi:[10.1177/1077800415574908](http://dx.doi.org/10.1177/1077800415574908)
- Geertz, C. (1974). ‘From the native’s point of view’: On the nature of anthropological understanding. *Bulletin of the American Academy of Arts and Sciences*, 28, 26–45.
- Greene, M. (1995). *Releasing the imagination: Essays on education, the arts, and social change*. San Francisco, CA: Jossey-Bass.
- Hollander, S. (2013, December 2). STEAM blends science and the arts in public education. *The Wall Street Journal*. Retrieved from <http://online.wsj.com/news/articles/SB10001424052702304747004579224003721262792>
- Holt, N. L. (2003). Representation, legitimation, and autoethnography: An autoethnographic writing story. *International Journal of Qualitative Methods*, 2, 18–28. Retrieved from [http://www.ualberta.ca/~iiqm/backissues/2\\_1final/html/holt.html](http://www.ualberta.ca/~iiqm/backissues/2_1final/html/holt.html)
- Jackson, A. Y., & Mazzei, L. A. (2008). Experience and “I” in autoethnography: A deconstruction. *International Review of Qualitative Research*, 1, 299–318. Retrieved from <http://www.jstor.org/stable/10.1525/irqr.2008.1.3.299>
- Kirk, J., & Miller, M. L. (1986). *Reliability and validity in qualitative research*. Beverly Hills, CA: Sage.
- Koro-Ljungberg, M., Douglas, E. P., Carlson, D., & Therriault, D. J. (2015). An unfinished dialogue about problematizing knowledge production in the peer review process. In N. K. Denzin & M. D. Giardina (Eds.), *Qualitative inquiry and the politics of research* (pp. 27–50). Walnut Creek, CA: Left Coast Press.
- Krigman, E. (2014, February 13). Gaining STEAM: Teaching science through art. *US News*. Retrieved from <http://www.usnews.com/news/stem-solutions/articles/2014/02/13/gaining-steam-teaching-science-though-art>
- MacKenzie, R. (2014, April 20). New program uses arts to teach science. *The Washington Times*. Retrieved from <http://www.washingtontimes.com/news/2014/apr/20/new-program-uses-art-to-teach-science/?page=all>
- Mitra, R. (2010). Doing ethnography, being an ethnographer: The autoethnographic research process and I. *Journal of Research Practice*, 6, Article M4. Retrieved June 16, 2015, from <http://jrp.icaap.org/index.php/jrp/article/view/184/182/>
- Moriarty, J. (2014). *Analytical autoethnodrama: Autobiographed and researched experiences with academic writing*. Boston, MA: Sense. Retrieved from SpringerLinkebooks.com
- Ngunjiri, F. W., Hernandez, K. C., & Chang, H. (2010). Living autoethnography: Connecting life and research. *Journal of Research Practice*, 6, 1–17. doi:<http://jrp.icaap.org/index.php/jrp/article/view/241/186>
- Preissle, J., & deMarrais, K. (2015). Teaching reflexivity in qualitative research. In N. Denzin & M. Giardina (Eds.), *Qualitative inquiry and the politics of research* (pp. 189–196). Walnut Creek, CA: Left Coast Press.
- Richardson, L. (2000). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (2nd ed., pp. 923–948). Thousand Oaks, CA: Sage.
- Richardson, L., & St. Pierre, E. A. (2005). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (3rd ed., pp. 959–978). Thousand Oaks, CA: Sage.
- Seale, C. (1999). Quality in qualitative research. *Qualitative Inquiry*, 5, 465–478. doi:[10.1177/107780049900500402](http://dx.doi.org/10.1177/107780049900500402)
- Sochacka, N. W., Guyotte, K. W., & Walther, J. (2016). Learning together: A collaborative autoethnographic exploration of STEAM-inspired learning. *Journal of Engineering Education*, 15(1), 15–42. doi: 10.1002/jee.20112
- Sochacka, N. W., Guyotte, K. W., Walther, J., & Kellam, N. N. (2013). *Faculty reflections on a STEAM-inspired interdisciplinary studio course*. Paper presented at the ASEE Annual Conference, Atlanta, GA. Retrieved from <https://peer.asee.org/19611>
- Sparkes, A. C. (2002). Autoethnography: Self-indulgence or something more? In A. P. Bochner & C. Ellis (Eds.), *Ethnographically speaking: Autoethnography, literature, and aesthetics* (pp. 209–232). Walnut Creek, CA: AltaMira Press.
- St. Pierre, E. A. (1997). Methodology in the fold and the irruption of transgressive data. *International Journal of Qualitative Studies in Education*, 10, 175–189. doi:[10.1080/095183997237278](http://dx.doi.org/10.1080/095183997237278)
- Wall, S. (2008). Easier said than done: Writing an autoethnography. *International Journal of Qualitative Methods*, 7, 38–53.
- Walther, J., Pawley, A. L., & Sochacka, N. W. (2015, June). *Exploring ethical validation as a key consideration in interpretive research quality*. Paper presented at the American Society for Engineering Education Annual Conference and Exposition, Seattle, WA.
- Walther, J., Sochacka, N. W., & Kellam, N. N. (2013). Quality in interpretive engineering education research: Reflections on an example study. *Journal of Engineering Education*, 102, 626–659. doi:[10.1002/jee.20029](http://dx.doi.org/10.1002/jee.20029)
- Williams, J. P., & Jauhari bin Zaini, M. K. (2016). Rude boy subculture, critical pedagogy, and the collaborative construction of an analytic and evocative autoethnography. *Journal of Contemporary Ethnography*, 45, 34–59. doi:[10.1177/0891241614549835](http://dx.doi.org/10.1177/0891241614549835)
- Wolcott, H. (2010). *Ethnography lessons: A primer*. Walnut Creek, CA: Left Coast Press.