BORROWING FROM THE HEALTH PROFESSIONS: EXPLORING THE FEASIBILITY OF USING INTERPROFESSIONAL EDUCATION (IPE) IN THE EDUCATION AND PUBLIC HEALTH SECTORS

by
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Abstract

It is important for educators to understand the social context of children, particularly those living in poverty, so they can best meet the needs of the whole child. Social learning theory and Brofenbrenner's theory of human development support this statement. However, educators cannot be expected to possess all of the knowledge necessary to meet the needs of the whole child. This study explores the use of interprofessional education as a means by which educators could gain an understanding of the whole child and collaborate with other professionals to meet those needs. Interprofessional education has been widely used in Schools of Medicine, Nursing, and Pharmacy to teach increased communication and collaboration skills. Additionally, interprofessional education has been used with Schools of Law and Social Work with positive results. Using a mixed methods approach, graduate students at the Schools of Education and Public Health at Johns Hopkins University participated in an interprofessional workshop to determine its feasibility with those outside the health professions. The results demonstrate the viability of using interprofessional education with graduate students in education and public health. Results also indicate interprofessional education could be used as a method of training for those working with high need students to encourage increased communication and collaboration when providing wraparound services.

Keywords: interprofessional education, whole child, poverty, public health

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Preface

I started this undertaking three years ago as part of the requirement for my Doctorate in Education. I was concerned about the rise in the number of children living in poverty, and the need for teachers to understand them, the whole of them. I wondered if we were training teachers to do that, to meet the needs of the whole child and not just their intellect. I was familiar with traditional undergraduate teacher certification programs having been a career counselor for over fifteen years at public institutions. More recently, working with graduate students in public health, I saw the connections between health and education. This dissertation was an exploration into subjects known only on the periphery of my professional expertise. Two years ago, I knew nothing about interprofessional education, even though it was a term cropping up in the healthcare literature with increasing regularity, and happening at the School next door to mine. Now, from this endeavor, I embrace the concepts of interprofessional education and hope to introduce them to the field of education.

This dissertation would not be possible without the guidance, input, and support of many. First, to my Committee Chair, Advisor, and now, friend, Dr. Chrissy Eith, I extend a depth of gratitude that words can never truly capture. You understood me when others could not. You trusted my instincts, and me, knowing I would eventually get from “here” to “there”. Thank you for guiding the process, knowing when to nudge, and when to hold back, and doing so with humor along the way. Second, thank you to Dr. Cheryl Holcomb-McCoy, Dr. Laura Hanyok, and Dr. Toni Ungaretti, for agreeing to serve on my committee and providing insightful guidance and support throughout the past two years. I’d also like to thank my committee of informal advisors: Dr. Danielle Thomas-

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Table of Contents

List of Tables

Chapter 1: Introduction

Poverty is not a topic that is usually discussed around the school's break room. Teachers are not apt to spend the few minutes they have to themselves, engulfed in conversation about the inequities that poverty brings with it. And yet, in order to effectively teach their students, it can be argued that they should be engaged in such a discussion more often. The term poverty is stigmatized and largely ignored, and with good reason. Mention of the word brings to mind images of homeless individuals, panhandling on the street corners, assumedly for money to purchase their next fix, and who are clearly in visible disarray. Poverty brings to mind those without, those with less, and in a society focused on the "more", why would anyone want to bring up the opposite? Teachers see poverty in their classrooms every day. It is evident in the student who comes to school hungry, in the student who desperately needs a bath, and in the student who doesn't have his or her supplies. Poverty is happening all around the country and it does not discriminate between rural or urban, Black or White, elementary or high school. Poverty just is.

Just like poverty, there has not been much mention in education literature on the training that teachers receive around social justice or social factors. There are volumes that speak to teacher effectiveness, teacher evaluation, and teacher assessment, but not so much on training, on the preventative, and on understanding. The reason for this is perhaps we are a society that looks backwards at our problems. We seek solutions where we should have had foresight, had predictability. Education isn't alone in this shortcoming. For so long, healthcare was a solution-driven entity. Only now, due to skyrocketing costs, is healthcare recognizing the need for prevention. If we keep people

healthy, there is less of a need for expensive treatments. The irony of this is that healthcare is a market-driven economy and there is no money to be made in prevention. Similarly, it can be argued that education needs to be prevention-oriented because without a soundly educated population, our society will fail to progress.

These two concepts, poverty and teacher training, drove the ensuing work. How can we engage teachers so that there is a constant dialogue happening around the most vulnerable of children? How do we adequately prepare teachers to understand the needs of the whole child? Is it through our undergraduate programming? Or is it best reserved for graduate level training, after teachers are certified? Should an understanding of how to meet the needs of the whole child be required in order to become a certified teacher? And, perhaps most important to ask, does it matter? Does society need to be concerned about the impact poverty has on our children's learning and health outcomes? These questions prompted investigation into the prevalence of poverty in today's classrooms and how our teachers are prepared to handle the impact of poverty on children.

To accomplish this, a small sample of undergraduate teacher candidates (called pre-service teachers) and practicing teachers were surveyed to assess their gaps in knowledge around children living in poverty. Using concepts gleaned from the literature relating to the social determinants of education and health, four overarching categories, which impact student learning and health, were identified. These categories included Family Issues/Stress, Physical Health Issues, Mental Health Issues, and Nutrition/Food Insecurity. An example of a concept in each category included: lack of parental involvement, increased frequency of illness, behavioral issues present in the classroom, and lack of quantity and quality of food present in the home. Pre-service teachers were

not as aware of the extent to which poverty was happening in their communities or within the U.S. Teachers expressed an inability to handle all of the challenges they faced in the classroom. However, when asked, the teachers were amenable to learning new skills and acquiring new knowledge to better address the challenges.

Research into how best to convey new skills and knowledge was undertaken. A model commonly used in education called collegial circles was explored along with communities of practice. Either model would have sufficed as a delivery mechanism though the best example came by way of investigation into healthcare. Identified more than thirty years ago, interprofessional education was not widely adopted as a training method until recently. Used among graduate students in the fields of medicine, nursing, allied health, law and social work, interprofessional education serves to build effective teams which are patient-centered. Interprofessional education is prevention-focused in that it looks to educate graduate level pre-licensure students on how to increase collaboration and communication within a team environment to improve patient outcomes. Such a model could potentially help teachers to collaborate within their schools to build effective teams that are student-centered. This is not to say that effective teams do not happen in education. Rather, this method could instill a desire for collaboration before the need ever arises.

Interprofessional education has not been identified in the literature as being used with graduate students in the fields of education and public health. A feasibility study was conducted to determine if this model could work to increase attitudes toward collaborative learning among such a population. Using a mixed methods approach, an interprofessional workshop was delivered to a small sample of Johns Hopkins University

graduate students from the Schools of Education and Public Health. The sample likely had an internal bias in that they volunteered for the workshop and therefore, it was assumed an interest already existed. The quantitative and qualitative results however, showed an increase in positive attitude toward interprofessional education. Anecdotally, the students expressed a need, and a desire, for this training to occur in graduate school or in the workplace (or both!). The workshop demonstrated that the skills acquired through the training could be applicable to any population interested in building a collaborative team. The content of interprofessional education is relevant to any population and is capable of being replicated outside of medicine and allied health fields.

While this study gave a minute glimpse as to the potential of interprofessional education, further scholarship should be pursued. Larger samples, comparison groups, and forced participation may yield differing results. Similarly, this was not initiated in a workplace setting with seasoned professionals. Students intrinsically want to learn and usually are open to trying new ideas and concepts. Seasoned professionals may not want to change the status quo, preferring instead to live with the known. It is for these reasons, and many others, more research around the use of interprofessional education in the education and public health fields is necessary and warranted. This study is but a first step.

Summary of Flow of Argument

Institutional Context:	Johns Hopkins University: School of Education & Bloomberg School of Public Health, Baltimore, MD
Overarching Topic:	Poverty, Teacher Training
Guiding Questions:	• How do we engage teachers in ongoing communication around the whole child? • How do we prepare teachers to understand the needs of the whole child? • Should training be done at the undergraduate or graduate level?
Research Questions:	R1: Were pre-service teachers aware of the current extent and prevalence of poverty in the U.S. and Baltimore City? R2: Did pre-service teachers realize how poverty affects learning? R3: Could pre-service teachers articulate specific ways that poverty was a structural indicator of educational and health outcomes? R4: What were teachers in urban schools seeing as impacts of poverty on their students?
Needs Assessment Results:	• Undergraduate students have limited awareness of the prevalence of poverty • There is a basic understanding of poverty's affect on learning • Family issues/stress most frequently cited impact, followed by mental health issues • Need/interest in collaborative learning to address knowledge gap
Intervention:	• Conducted research on Communities of Practice, Collegial Circles, and Interprofessional Education (IPE) • Ultimately chose IPE for intervention model; most inclusive • IPE currently used with graduate level students in SOM & SON; JHU does not have undergraduate education major • Conducted a feasibility study of IPE with SOE and SPH graduate students to determine interest in collaborative learning
Results:	• Positive attitude toward IPE among students • Students expressed desire and need for training to occur in graduate school and/or workplace • Skills learned may be applicable to any population interested in building a collaborative team • Content of IPE is relevant to any population and replicable outside allied health • Further scholarship in the area is needed

Chapter 2: Interprofessional Education to Inform Educator Practice

Overview of the Problem of Practice

Children sitting in classrooms today are economically different than those of a decade ago. Within our public school system, we have reached a tipping point; more than half (51%) of children attending public school live in poverty (ASCD, 2015). This statistic is important because research shows poverty has a more central impact on children's educational and health outcomes than previously acknowledged (Evans, 2004; Reardon, 2013). If the prevalence of poverty is growing, so then is the prevalence of issues associated with it (Evans, 2004). These issues include higher rates of instability and homelessness, more exposure to trauma and violence, increased substance use, and poor health outcomes, coupled with lower rates of educational attainment (DeLuca & Dayton, 2009; Evans, 2004; Lobstein, Baur, & Uauy, 2004). Collectively, these issues can be categorized under the heading of socio-emotional, physical, and mental health challenges. Research shows that social-emotional, physical, and mental health challenges are interdependent (Evans, 2004; Lobstein et al., 2004) and increasing in frequency among low SES children more so than other socioeconomic groups (Annie E. Casey Foundation, n.d; Bethell, Newacheck, Hawes, & Halfon, 2014). Given the correlation between poverty and increased social-emotional, physical, and mental health challenges, educators should understand and give consideration to the whole child when teaching urban poor. A whole child approach addresses the social, emotional, health, and learning needs of students versus focusing solely on the learning needs (Bradley, Corwyn, McAdoo, & Coll, 2001; Hayes, Spano, Donnelly, Hillman, & Kleinman, 2014; Montgomery, Kiely, & Pappas, 1996). Assuming a whole child approach is especially

important to use with children living in poverty, how might educators receive this training? Are educators aware of the prevalence of poverty in their surrounding community and are they able to recognize the associated factors that come from living in poverty? Why is it important for educators to understand the structural indicators of poverty as it impacts education and health?

Review of the Literature

The Prevalence of Poverty

At the turn of the 21st century, over 285 million people resided in the United States. Of those, more than 225 million lived in urban areas, which the U.S. Census Bureau defines as an area whose population exceeds 200,000 (U.S. Census Bureau, 2000). By the year 2011, there were 72 million children living in the United States with almost half (45%) living in poverty with the greatest concentrations in urban areas (Annie E. Casey Foundation, n.d.). Poverty, as used in this study, is defined using the federal government's criteria for 200% above the poverty threshold: a family of four, who is related, living together in one residence, and making less than $47,248 per year (for 2013) (Annie E. Casey Foundation, n.d.). Given the institutional context for the problem of practice (Johns Hopkins University), investigation into the percent of children living in poverty in urban areas began with East Baltimore, MD.

The researcher chose East Baltimore as it is home to Johns Hopkins University, and is also an area with extensive poverty due to historical urban flight and plight, which continues to plague Baltimore, and contributed to the recent social unrest (Hermann & Cox, 2015). As of 2013, 57% of the city's children lived in poverty (Annie E. Casey Foundation, n.d.). A review of eight additional cities with a similar population density

showed a comparable average percent of children (57%) living in poverty (Annie E. Casey Foundation, n.d.). Larger cities, whose population exceeded one million, averaged only a slightly higher percentage (58%) of children than did Baltimore (Annie E. Casey Foundation, n.d.). Table 1 provides more detailed results for the year 2013.

Table 1

Comparison of Large Cities # and % of Children Residing in Poverty, 2013

City	Total Population	# children	% children
New York City	8.4M	929,000	53%
Los Angeles	3.8M	509,000	60%
Chicago	2.7M	345,000	59%
Houston	2.2M	336,000	62%
Philadelphia	1.5M	218,000	64%
Phoenix	1.5M	242,000	61%
San Antonio	1.4M	198,000	56%
San Diego	1.3M	127,000	43%
Dallas	1.2M	226,000	69%
Denver	649,495	74,000	55%
Washington, DC	646,966	52,000	48%
Boston	645,966	53,000	50%
Nashville	634,464	77,000	57%
Baltimore	**622,104**	**73,000**	**57%**
Oklahoma City	610,613	84,000	56%
Louisville	609,893	65,000	47%
Portland	609,456	42,000	38%
Las Vegas	603,488	78,000	53%

Note: Retrieved from www.biggestuscities.com (March 10, 2015)

And yet, that number may not represent the extent of the problem since the federal definition of poverty has a closed criterion: a limited family size (four), who lives together, and is related (Horizons for Homeless Children, 2014). The definition does not take into account children who live in unrelated families, whose families have more/less than four children, whose families are homeless (no permanent address), who are living in foster homes or in state institutions, or who are unaccompanied minors (Horizons for Homeless Children, 2014). The National Law Center for Homelessness and Poverty (NLCHP) estimated that 1.75 million people were homeless in 2014. Of those, 36% were families with children under 18, and 7% were unaccompanied minors (NLCHP, 2014). Review of the economic landscape for families in the United States was similarly troublesome. The real median household income since 2011 has declined among all racial groups: Blacks (16.8%), Hispanics (10.8%) and non-Hispanic Whites (7%) and was lowest in the South (roughly $47,000) compared to the Northeast ($54,000), West ($52,000) and Midwest ($49,000) (DeNavas-Walt, Proctor, & Smith, 2011).

The demographic data reveals that poverty is on the rise and the socioeconomic gap is widening. Research shows it is likely to increase among all racial groups, though most notably among minority populations (DeNavas-Walt et al., 2011). The statistics on poverty are relevant to public education because all children are a product of their social and physical environment. Human development and social learning theories provide a deeper understanding of the impact of poverty on education and health.

Poverty Contextualized at the System Level: Ecological Systems Theory

Developmental psychologist, Urie Brofenbrenner, proposed a “human ecology” theory, known as an ecological systems theory, to explain how the social environment

influences human development (Brofenbrenner, 1994). The theory posits that our behavior is impacted at various points in our lifespan due to the interactions we have with different environments (Brofenbrenner, 1994). There are five classifications for these environments, which are called systems: the microsystem, the mesosystem, the exosystem, the macrosystem, and the chronosystem (Eamon, 2001). The systems fit in concentric circles and touch upon each other, expanding from the innermost central part, which is the developing person.

The first environment, the microsystem, is comprised of those individuals who have direct influence on one's life. These include parents, family, siblings, friends, classmates, teachers, neighbors, and others with whom an individual interacts daily (Brofenbrenner, 1994). The home and a student's classroom constitute a microsystem. The mesosystem follows and touches upon but remains outside the microsystem (Brofenbrenner, 1994). Focused on the relationships between the microsystems, the mesosystem accounts for the interactions between the home environment and the school environment and vice versa (Brofenbrenner, 1994). An example of this interaction would be neglect occurring in the home that leads a child to display an inability to form positive social relationships in the school environment. After the mesosystem, the exosystem explains the relationship between a social context and the individual whereby the individual plays an inactive role (Brofenbrenner, 1994). An example of the exosystem could be the influence that mass media has on a child. The child doesn't have a role to play other than simply "being" yet mass media, as an external social context, exerts influence upon the child. As expected, culture plays a role in an ecological systems framework and functions as the macrosystem (Brofenbrenner, 1994). Culture is defined

not only as one's racial and ethnic makeup, but also one's socioeconomic status (Brofenbrenner, 1994). Culture can influence an individual's values and ideologies. Finally, the furthest concentric circle from the developing individual is the chronosystem, which "includes the transitions and shifts in one's lifespan" and can be defined as the socio-historical context or major events occurring in one's life (Eamon, 2001). Recent examples of chronosystems would be the Great Recession of 2008/2009 or further back still 9/11.

The value of this developmental model lies in its ability to explain that what an individual acquires as knowledge is impacted and influenced by his/her exposure to and interaction with the physical and social environment (Brofenbrenner, 1994). Therefore, it is of particular importance to consider the context within which a child develops, learns, and engages with those around him, as he travels along the path of knowledge construction.

> "The influences and experiences that result from the interactions between these different systems play a key role in determining the extent to which children and young people either thrive and reach their full potential, or experience difficulties in their development which can have lasting detrimental effects on their well-being and future life chances" (Gill & Jack, Child Poverty Action Group, n.d.)

Brofenbrenner's (1994) framework explicates at the system level, the bearing that poverty has on a child's physical and psychological development. Social learning theory continues this explanation at the individual level and provides justification for a teacher's use of a whole child approach.

Poverty Contextualized at the Individual Level: Social Learning Theory

Given the increase in the number of children living in poverty and the likelihood that these children attend public schools, educators must recognize and understand how

poverty affects learning. Ertmer and Newby (1993) define learning as: "…a complex process that has generated numerous interpretations and theories of how it is effectively accomplished" (p. 51). Ertmer and Newby's (1993) definition acknowledges that learning is not stagnant, continues to evolve as a process, and has more than one facet. Learning does not happen in a vacuum (Bruning, Schraw, & Norby, 2011). Social learning theory therefore, focuses on the relationship drawn between the social stimuli, the environment, and the individual in an effort to understand this process (Bandura, 1986). In other words, social learning theorists seek to understand the context in which individuals come to construct their interactions as part of a social group and the context of the social group is of particular importance to the development of the individual (Ertmer & Newby, 1993). Bandura's theory of triadic reciprocal determinism further explains this (Bandura, 1986). Behavior, personal cognition, and the environment interact bi-directionally on each other (Bandura, 1986). Therefore, thoughts can influence behavior, which can then influence environment, which can in turn influence behavior and thoughts again, in a continual, cyclical pattern. Visually depicted as a triangle, social learning theory validates the connectedness of the environment to individual cognition and behavior (Bandura, 1986).

External Indicators on the Individual: Education

Brofenbrenner's (1994) ecological systems framework and Bandura's (1986) social learning theory validates that a child's environment is crucial to his/her learning experience since all children are a product of their environment. The environment can be viewed as one's opportunity to learn. The oft-referenced Coleman Report (Coleman, 1966) defines the school environment as such: "The school environment of a child consists of many elements, ranging from the desk he sits at to the child who sits next to

him, and including the teacher who stands at the front of his class" (p. 8). Pallas, Natriello, & McDill (1989) expand that definition to include the environment inside and outside the classroom, including not just formal schooling, but also the family and community within which students reside. Taking this more global view, students would thus gain knowledge through the construction of meanings based on events occurring in their home, among their family, and in their community, in addition to the four walls of a school building.

This expanded definition of learning reveals what is needed to create a more equal opportunity to learn. The aforementioned Coleman Report concluded that segregation was the great dividing factor, and if schools were integrated, there would be a more equal opportunity for minority students. In particular, the report found that White children's achievement was not as impacted by the strengths or weaknesses of the instructional system versus the impact these environmental factors had for minority pupils (Coleman, 1966). Coleman's (1966) findings showed that student achievement was "strongly related to the educational backgrounds and aspirations of the other students in the school" (p. 22). This was particularly the case for Black students versus White students. The demographics of the school and economic makeup of peer social groups contributed more to minority students' learning and success. Minority children living in areas with high rates of poverty were bussed to schools with a higher concentration of White children, usually from more affluent backgrounds, with the end goal of equalizing the educational opportunities (Coleman, 1966).

Coleman's work (1966) sparked a debate about the environmental factor deemed most influential to students' learning and subsequent achievement. He believed it rested

in the communities within which children reside. Subsequent educational reform efforts to close the achievement gap between minority and non-minority students focused on housing mobility and school choice (DeLuca & Dayton, 2009). Environments with high rates of racial segregation, poverty, unemployment, and violence are associated with higher rates of high school dropouts, teenage pregnancies, poor health outcomes, and substance use, coupled with lower rates of educational attainment and college attendance (DeLuca & Dayton, 2009). Observational learning, imitation, and modeling provide the rationale for this: individuals learn through observation, which is translated cognitively into imitation and subsequently modeled through behavior (Bandura, 1986). If individuals are repeatedly exposed to negative environments, with people modeling negative behaviors, it is theoretically probable that they will imitate such behaviors and find such environments socially acceptable.

And yet, negative environmental factors are not the only influencers on learning. Sociocultural factors create an unequal playing field as well. Goldhaber (2002) attributed 60% of test score variability to "individual and family background characteristics" (p. 52). Students whose families come from means will have more social opportunities and networks upon which to draw. Through these more extensive social networks, wealthier students have increased access to extracurricular offerings, travel, more varied employment opportunities and entrance into prestigious schools of higher learning (Mehan, 2008). Bourdieu's (1985) theory of cultural capital supports the adage that you can take the kid out of the neighborhood, but you can't take the neighborhood out of the kid. Families in each social class knowingly and unknowingly transmit cultural knowledge to their children in the form of "skills, manners, norms, dress, style of

interaction, and linguistic facility" (Mehan, 2008, p. 54). Parents with more disposable income will invariably spend it on extraneous expenditures for their children. Such expenditures include foreign language lessons, foreign travel, artistic pursuits, museums and cultural attractions. Children from lower socioeconomic statuses will therefore struggle to develop the cultural familiarity associated with the upper-middle class, thereby perpetuating inequality among social classes. Cohen's (1955) work among delinquent boys established the need for a shared cultural identity within the social group. This is confirmed in educational classrooms whereby teacher expectations are largely based on their White, middle class cultural norms. Teachers might therefore fail to understand the socioeconomic environment from which children living in poverty come (Strauss, 2015).

Research on child rearing practices among different social classes further suggests the need for teachers to understand the context within which students come to school (Lareau, 2011). Observational ethnographies tracked particular children from low and middle/upper income groups to ascertain the sociocultural norms found among each group (Lareau, 2011). Parents from lower income backgrounds view the role of parenting as the need to provide food, clothing and shelter for their children, with little to no emphasis on their child's emotional well-being and cognitive awareness (Lareau, 2011). Children from these households have clear boundaries around the roles of adults and children and do not seek to question parents' authority. Conversely, middle income parents saw their responsibilities of good parenting as providing cultural enrichment, called concerted cultivation, in the form of planned, purposeful extracurricular activities

(Lareau, 2011). This cultivation results in active participation in their children's interests and schooling and serves to ensure middle-class upward mobility (Lareau, 2011).

While neither parenting style is considered better, fostering children's social and cognitive skills would positively enhance their overall development (Lareau, 2011). Since young children's early learning occurs first in the home environment before formalized schooling, the potential negative impact on children living in poverty is clear. For example, it was more likely for middle class parents to have three or more books available for their child versus finding none in low-income homes (Bradley et al., 2001). Similarly, middle class families had greater access to musical instruments, experienced a greater number of social outings, and had more exposure to socially enriching places and events. Conversely, mothers of poor children were less likely to read to their children, help them learn numbers, shapes and letters, and often had less safe homes than families of more means (Bradley et al., 2001). Thus we find the opportunity to learn largely, disproportionately, in favor of the upper-middle class.

The Schott Foundation supports this claim in its 2009 report using state reported student performance data which shows forty-nine percent of historically disadvantaged groups, defined as Latino, Black, Native American and low-income, are not receiving an equitable education when compared to their white, middle class peers. The enormity of this socioeconomic achievement gap has direct implications on the social and economic growth of our country. Peter Edelman, the Director of Georgetown's Center on Poverty, Inequality and Public Policy clearly states the best way to lessen this gap, "Public education has an absolutely essential role to play in improving economic outcomes. For that to occur, schools in high-need areas must have adequate resources and offer

wraparound services that help the child and the family" (as cited in Perez, 2013). Unfortunately, more often than not, teachers who instruct poor, minority, and ELL students have the fewest professional qualifications (Mehan, 2008). Similarly, there are twice as many numbers of new teachers in high poverty schools than in lesser poverty schools (Mehan, 2008). And yet this issue is not unique to the 21st century. Almost fifty years ago, the Coleman Report likewise gave evidence towards this problem of over-representation of less-than-qualified teachers' among the poorer communities, particularly prevalent in southern schools (Coleman, 1966).

One could assume then, that it would take a highly gifted teacher to make a significant difference. And research shows teacher quality is the single largest positive impact on student achievement (Goldhaber, 2002). Yet, measurable characteristics of teacher quality such as degree attained, years of experience, and teacher performance on standardized tests, showed only a three percent causal relationship between teacher influence and variations in student learning (Goldhaber, 2002). There are weak findings that relate teachers' certification and pedagogical preparedness to increases in student achievement, however this is shown mostly in the content areas of reading and math (Goldhaber, 2002). Unfortunately, variations in certification requirements across states make this challenging to consistently verify (Goldhaber, 2002).

Berliner's (2001) examination of teacher quality using the concept of expert versus novice offers a clearer definition of what type of quality is needed in schools. Various fields containing experts (for example, chess, ice skating, physics) repeatedly demonstrated similar characteristics despite the differences in skill acquisition and knowledge base (Berliner, 2001). Three such characteristics relevant to teaching and

perhaps most important when working with disadvantaged learners include: (a) expertise is specific, built, and developing; (b) meaningful arrays are recognized more quickly by experts; and (c) flexibility and resourcefulness are used more by experts (Berliner, 2001). Expert teachers in high poverty schools may be better prepared to handle classroom challenges, have more experience in problem solving, and have the flexibility of mindset to alter curriculum accordingly, based on student needs (Berliner, 2001).

Just as the school environment and climate can greatly impact students, the same can be said for the productivity of expert teachers (Berliner, 2001). Policies and procedures, along with school personnel (principals, superintendents and school board members) can impact teachers' attitudes, beliefs, efficacy, and instructional practice (Berliner, 2001). It is not enough to be highly conversant in pedagogy, curriculum, and content matter. A highly effective teacher must also be in the right environment at the right time to make any lasting impacts. The state of Illinois serves as a model of how best to approach teaching and learning in high need schools. The work of a small percentage of Illinois schools demonstrates the power of expert teachers and positive social context. In 2003, McGee examined the achievement gap statewide and presented his findings at an annual meeting for the American Educational Research Association. The achievement gap in the state was vast, glaringly apparent, and yet ignored by most (McGee, 2003). Regardless of grade level and subject area, the data from schools statewide showed less than half the population of low-income students met state standards. This equated to roughly 500,000 children in the state not performing even close to their higher-income peers (McGee, 2003) And yet, there were a few schools that were high need *and* high performing.

McGee (2003) sought to explain this through the identification and exploration into practices by "Golden Spike Schools (high poverty, high performing (HP/HP)" (p. 19). The schools were identified by the number receiving free or reduced lunch, state test results, and recent evidence of improvement in scores for minority, low-income populations. Ultimately, fifty-nine schools were incorporated into the study (McGee, 2003). The resulting qualitative findings support social cognitive, social constructivist, and expert/novice theories surrounding work with high need students. The commonalities among the schools fell into four broad categories: leadership, personnel, curriculum & instruction, and community factors (McGee, 2003). At least half of the schools shared two commonalities: "high quality professional development school wide and attention to the health and safety needs of students" (McGee, 2003, p. 25). Additionally, anecdotal information from school personnel spoke to themes involving teamwork, collaboration, communication, shared knowledge and decision-making, and best practices (McGee, 2003). McGee (2003) demonstrates that what is learned in the classroom matters, but so does the extraneous, external factors. It is not enough to educate the child's intellect; there needs to be a holistic approach to education. Increased effort should be made by school districts to focus on the social, emotional, and physical wellbeing and development of children; in other words, the whole child.

External Indicators on the Individual: Health

Though teachers may be highly qualified, one problem remains: if children do not come to school ready and able to learn, learning will not happen (Basch, 2010). Berliner (2014) presented this concept in a provocative paradigm shift exercise. He presented data from two different states and asked the audience to guess which child would fare better in

school. One would assume the indices Berliner (2014) offered signifying future achievement would include standardized test scores, teacher/school ratings, accountability ratings, and perhaps graduation rates. Instead, Berliner (2014) focused on out of school factors, including but not limited to: parental income and educational attainment, exposure to early childhood programming, poverty rate, health indicators, and food availability. These factors influence academic achievement and contribute to the growing achievement gap between the socioeconomic classes (Berliner, 2009). Berliner (2009) outlines six out of school factors (OSF's) that economically disadvantaged individuals share which individually or collectively, can contribute to poor school success: "1) low birth weight and non genetic prenatal influences, 2) inadequate medical, dental and vision care, 3) food insecurity, 4) environmental pollutants, 5) family relations and family stress, and 6) neighborhood characteristics" (p. 1). These OSF's directly or indirectly influence the physical, sociological, and psychological health of children living in poverty (Berliner, 2009).

Because of this, schools should factor in children's health and wellbeing as part of the educational process. Education and health should be considered intertwined and interdependent. A causal relationship between education and health exists, which suggests that well-educated children will turn into healthy adults and healthy children will result in well-educated adults (Cutler & Lleras-Muney, 2006). Smith (2003) further explained this: "the health and well-being of children are directly linked to their academic performance. In order to learn, students need to be healthy. The relationship between health and education is reciprocal (p 2-3)". This reciprocity is evidenced in the physical, social emotional, and mental health challenges children bring with them to class. The

most pressing physical issues experienced include vision and dental health problems (Basch, 2010), obesity (Lobstein et al., 2004; Sahota, Rudolf, Dixey, Hill, Barth & Cade, 2001), poor nutrition and lack of physical activity (Hayes et al., 2014; Lakshman, Sharp, Ong & Forouhi, 2010), exposure to violence and trauma, teenage pregnancy (Hawkins, Catalano, Kosterman, Abbott & Hill, 1999), and substance use and/or smoking (Hawkins et al., 1999). In addition, pervasive poverty leaves lasting effects on the cognitive development of children (Bradley et al., 2001; Hackman, Farah, & Meaney, 2010; Ostrow, 2013). Changes in brain development are long lasting, cumulative, and continue into adulthood (Ostrow, 2013). Poverty has been shown to contribute to one's difficulty regulating emotions, having less coping skills, and can lead to higher rates of mental illness, high mortality, and higher morbidity in adulthood (Pollack, 2008).

Jensen (2009) offers one reason for impoverished children's inability to regulate emotions. According to Jensen (2009), a child's mental state is genetically predisposed. Children understand six emotions: sadness, joy, disgust, anger, surprise, and fear (Jensen, 2009). Empathetic caregivers must teach children other emotions such as humility, forgiveness, empathy, and cooperation (Jensen, 2009). If these emotions are not taught, children will resort to the predisposed six. This lapse in emotional awareness can be evidenced by behavioral outbursts in the classroom (Carrion & Wong, 2012; Hackman et al., 2010). Jensen (2009) further posits that children living in poverty experience less frequent person-to-person attachments and therefore will have poor peer-to-peer interactions (Jensen, 2009). Such children possess poor socialization skills and experience social isolation, which causes a cascading effect of low self-esteem, self-worth, depression and negative attitudes. Impoverished children's behavior in the

classroom, which adults might view as disrespectful, may in fact be due to an insufficient repertoire of emotional responses (Jensen, 2009). Such responses include: "acting out behaviors, impatience and impulsivity, gaps in politeness and social graces…inappropriate emotional responses and less empathy for others' misfortunes" (Jensen, 2009, p. 19). For teachers not familiar with children from impoverished backgrounds, student responses can be misconstrued as having an "attitude". It is the educator's responsibility to demonstrate, model, and reinforce correct behavioral responses for the classroom (Jensen, 2009).

Educators' Ability to Counteract the Effects of Poverty

Students spend the majority of their day with a teacher therefore, it is important that a teacher acknowledges and understands a student's social construction. While this statement may seem superfluous, there exists a growing disparity between the increasing numbers of low income, ELL, and minority students and the trained teaching workforce (Sleeter, 2001). Low income, ELL and minority students (namely Hispanic) are projected to dominate the student population demographic in the upcoming years (Sleeter, 2001). Conversely, the teaching workforce has held fairly steady with a demographic profile of 85-87% White, 7% Black, and 4% Hispanic (Cross, 2003; Sleeter, 2001). Similarly, those educating pre-service teachers are predominantly White and from middle to middle-upper socioeconomic classes (Cross, 2003). Thus, it can be argued that middle class, White social norms inherently dominate traditional teacher prep programs, resulting in a disconnect between the extant socioeconomic makeup of students and the teachers educating them. New teachers will enter classrooms underprepared for the challenges that manifest in today's schools and classrooms (Cross, 2003). Solely developing pre-service

teachers' skills in curriculum and instruction will not prepare them for what is to come after their training. It is not enough to be able to influence a child's intellect; there needs to be a holistic approach to teacher preparation. Traditional teacher prep programs, graduate level training, and professional development opportunities within school districts must recognize the need to increase their efforts to holistically train educators on the social, emotional, physical health and wellbeing, and development of children in light of the rapidly changing student demographics.

Luckily, there is research from the health promotion literature that supports the success of such efforts. Over two decades of school based health promotion efforts instituted in schools showed increases in the health and wellness among children and adolescents and decreases in unhealthy behaviors (Hayes et al., 2014; Lakshman et al., 2010; Sahota et al., 2001; Samdal, Nutbeam, Wold, & Kannas, 1998; Smith, McCormick, Steckler & McLeroy, 1993; Walter, Gouze, & Lim, 2006). The majority of programs were initiated in the classroom by incorporating set curricula. The earlier the programming was instituted, the more likely sustained positive healthy lifestyles would occur (Lakshman et al., 2010). Hence, implementing programming in elementary schools should be made a priority in order to reach children in their formative years and increase the likelihood of sustained positive health outcomes.

The health promotion literature also indicated that schools are the most logical and easily accessible venue to provide positive health interventions (Lakshman et al., 2010). Specifically, the literature spoke to teachers and school staff being instrumental in the prevention of eating disorders and obesity (Yager & O'Dea, 2007). Though the teachers and staff were crucial to the intervention's success, the study questioned the best

way to train the school community in delivering preventative health (Yager & O'Dea, 2007). When teacher training for a health curriculum intervention was provided in another example, researchers found the training influenced not only teachers' knowledge but also their comfort, intention, and perceptions about the necessity to teach such curricula (Smith et al., 1993). Proper training to teachers showed they can mitigate some of poverty's effects in the areas of nutrition and physical activity and yet, they cannot possess expertise in all areas of need: social, emotional, and health (Haflon, Wise, & Forrest, 2014; Samdal et al., 1998; Smith et al., 1993; Walter et al., 2006).

If educators can be influential in teaching children how to make healthy decisions, educators can also be pivotal in collaborating with those in the health field to make healthy school communities (Association for Supervision of Curriculum Development (ASCD), 2010; Centers for Disease Control and Prevention [CDC], n.d.). This was the logic behind the Association for Supervision and Curriculum Development's (ASCD) recent push to redefine the school health model with an end goal of addressing the needs of the whole child through the creation of Healthy School Communities (HSCs) (Valois, Slade, & Ashford, 2011). Understanding the importance of the reciprocity between education and health, the ASCD spearheaded the Whole Child Approach in 2006. Beginning 2007, ASCD promoted the *Whole Child Approach to Education*, centering on five tenets: all children are "healthy, safe, engaged, supported, and challenged" (ASCD, n.d.). In collaboration with the Centers for Disease Control and Prevention (CDC), a pilot program was initiated to create HSCs and increase school-community partnerships for the betterment of children (ASCD, n.d.; CDC, n.d.). Due to documented success with the pilot programs, ASCD was the driving force behind recent legislation. House Resolution

(H.Res) #658 "Whole Child Resolution" was submitted to the Committee on Education & the Workforce (U.S. House of Representatives, July 2014). In it was a request for the federal government to identify opportunities among the federal agencies to coordinate education, health, and social service sectors serving youth in the U.S. Unfortunately, the legislation stalled in the Committee on Education & the Workforce six months later in December 2014 (ASCD, n.d.).

Although the legislation stalled, ASCD's research demonstrated that when health and well-being are fully integrated within education and the school culture, HSCs have the exact effects education reformers seek: "higher academic achievement, increased staff satisfaction and decreased staff turnover, greater efficiency, positive school climate, and development of a school-community culture that promotes and enhances student growth" (Valois et al., 2011, p.11). Past efforts at coordinating school health resulted in attempted programmatic efforts, which were viewed as health initiatives, and required too much time, resources, and labor to implement and sustain (Valois et al., 2011). The CDC's health-centered, coordinated school health approach, which experienced some success in 46 states, did not have the far-reaching and all encompassing whole school impact it sought to have (Valois et al., 2011). Given the symbiotic nature of education, health and social-emotional outcomes, a coordinated effort needs to be taken for student performance to holistically improve (Kolbe, 2002).

Statement of the Problem and Research Questions

Due to the changing social environment of children over the past ten years, health care systems, schools, juvenile justice facilities, and child protective services are over-taxed in their ability to adequately serve a rapidly growing population in need of services

(Halfon et al., 2014). With shrinking budgets amid increasing need, educators and service providers are confronted with identifying innovative ways to collaboratively address the impact of poverty on children's education and health; one person cannot possess all the knowledge needed to affect change (Halfon et al., 2014). Collaboration to address the issues cannot begin without understanding the apparent need. To accomplish this, a needs assessment was planned to assess the level of knowledge undergraduate students in traditional teacher certification programs at universities in Baltimore have around the issue of poverty. In addition, practicing teachers at a local urban school located in close proximity to Johns Hopkins University were involved in a follow up assessment to gather specific examples of the impact of poverty they see in the classroom/school. The following research questions guided the execution of the needs assessments.

R1: Were pre-service teachers aware of the current extent and prevalence of poverty in the U.S. and Baltimore City?

R2: Did pre-service teachers realize how poverty affects learning?

R3: Could pre-service teachers articulate specific ways that poverty was a structural indicator of educational and health outcomes?

R4: What were teachers in urban schools seeing as impacts of poverty on their students?

Chapter 3: Understanding Pre-Service Preparedness and Practicing Teachers' Professional Development Needs In Order to Teach to the Whole Child

Purpose of Study

Statistics on the changing demographics of the student population deemed it important to ascertain what pre-service teachers knew about poverty. The first step in accomplishing this was to gauge the level of knowledge and awareness of poverty that pre-service teachers had prior to completing traditional undergraduate education programs. Were pre-service teachers aware of the extent to which poverty impacted their community? Did they understand how poverty affected their students' learning? The identified audience for the first needs assessment was undergraduate students, enrolled in traditional teacher education programs at a Baltimore City university, and presently placed in student teaching placements in Baltimore City. The first needs assessment sought to answer the following research questions: (R1) Were pre-service teachers aware of the current extent and prevalence of poverty in the U.S. and Baltimore City? (R2) Did pre-service teachers realize how poverty affects learning? (R3) Could pre-service teachers articulate specific ways that poverty was a structural indicator of educational and health outcomes?

Method

Sample & participant selection. Any student in a teacher education program at a university in Baltimore could have been a potential participant. However, knowing the majority (85%) of the current national teacher workforce is White, female, and from middle to middle-upper class socioeconomic backgrounds (Sleeter, 2001), two groups of participants were sought. The first group would resemble the national workforce

demographics, predominantly White, female and from the middle class. For comparison, a second group with different demographic attributes was sought. Notre Dame of Maryland University (NDM) and Loyola University were identified as sources with the most similar characteristics to workforce trends as per University demographics obtained via their websites. Both private universities attract a higher SES student, are highly selective, have highly regarded undergraduate education programs, and have a mission of service grounded in religious ideology, making their student populations altruistic and social justice oriented (Notre Dame of Maryland University, n.d.; Loyola University, n.d.). NDM is unique in that it is the only all female university in Maryland (Notre Dame of Maryland University, n.d.). Both Universities are located in affluent areas of Baltimore. It was hypothesized that location might matter. Students living in more affluent areas may not see poverty regularly and be as intimately acquainted with it as compared to students living in more impoverished areas. Therefore, the comparison group was sought from Coppin State University, a public, historically Black institution, located in a highly impoverished area of West Baltimore (Coppin State University, n.d.). The target criteria for sample inclusion were the same: enrollment in a traditional undergraduate teacher education program, located in Baltimore City, with student teacher placement in a Baltimore City public school. The variability was in the racial and economic makeup of the sample. Faculties teaching the student teacher course at the three institutions were contacted regarding the needs assessment study. All three institutions responded and were interested in assisting with it. Notre Dame and Coppin State ultimately were used in the study. Loyola's IRB approval process timeline was not in sync with the researcher's timeline needs.

The result was a convenience sample of available upper level students, registered in a traditional teacher certification program at one of two institutions in Baltimore, and attending class on the pre-determined, survey administration day. A total of twelve students, in two groups (one at each institution), participated in the needs assessment survey. Five students (three male, two female) represented Coppin State University (Coppin State) and seven students (all female) represented Notre Dame of Maryland University (NDM). Student demographic questions included in the survey were: home state (Maryland resident or out of state resident), age range, length of residency in Baltimore, ethnicity, location of student teaching and plans to work in Baltimore post-graduation. The sample yielded a group that ranged in age from 20-24 years old. Students from Coppin State identified as African-American and students from NDM identified as non-Hispanic White. Eleven of the twelve respondents were from the state of Maryland; one was originally from Trinidad & Tobago but lived in Maryland for the past four years. School site placements ranged from private, Catholic-based K-8 locations to urban elementary schools in Baltimore City and one in Prince George's county (see Table 2). While student placements in Baltimore City were preferred, the placement site in Prince George's county mirrored Baltimore City school/student demographics and was included in the results. All students from Coppin State indicated they would consider working in Baltimore City after graduation. Conversely, the NDM students indicated they were not interested in working in Baltimore City after graduation. When probed as to why NDM students were not interested, personal safety was the primary reason offered. Conversely, Coppin State students indicated the only reasons they would not work in Baltimore was lack of technology in the classrooms and possible transportation issues to/from schools.

Table 2

Breakdown of Student Teacher Placements

Name of School	# student placements	County
Greenbelt Elementary	1	Prince George's
Gwynns Falls Elementary	3	Baltimore City
St. Thomas Aquinas	1	Baltimore City
The School of the Cathedral…	4	Baltimore City
ConneXions	1	Baltimore City
Medfield Heights Elementary	2	Baltimore City

Instrumentation. The researcher designed a pen and paper based, 17-question survey, titled *Awareness of Poverty & Associated Factors Survey* (APAF), using variables gleaned from review of the literature (see Appendix A). The survey was designed to assess students' knowledge about three variables: (a) the prevalence of poverty in Baltimore City and in the U.S.; (b) the socioeconomic/sociocultural impact of poverty; and (c) the relationship between poverty, one's health, and learning. The first five questions asked students' to identify the poverty levels in Baltimore City and the U.S., poverty's rate of change, the number of children living in poverty, and the status of families' income. Eight statements followed these initial five questions, which inquired about the relationship between poverty, education, and health, one's opportunity to learn, socioeconomic factors that impacted learning, and sociocultural factors that impacted learning. The remaining questions elicited students' opinions about the specific ways that poverty affected one's learning and one's health. A supplemental question referenced a specific sociocultural impact of poverty, solely for the researcher's personal interest. This

question was derived from the research around the number of books in impoverished children's homes and their familiarity with constructs associated with the middle-class. The participants were asked to respond to the following questions:

1. What do you think the poverty rate (%) is today for the U.S? For Baltimore City?
2. Do you think that rate has changed in the last 5 years? For the U.S? For Baltimore City?
3. Indicate how much you think the rate has changed for the U.S.? For Baltimore City?
4. How many children do you think are NOW living in poverty in the U.S.? In Baltimore City?
5. Do you think families are making more income than they did five years ago in the U.S.? In Baltimore City?
6. Do you think there is a correlation between health and learning?
7. Do you think there is a correlation between health and the level of one's education?
8. Do you think all children, no matter their socio-economic status, receive an equal opportunity to learn?
9. Can one's family background influence a child's test scores?
10. Would you agree that families pass cultural norms down to their children?
11. Do you think different socio-economic groups have different parenting styles?
12. When preparing lessons, do you consider the context that students bring into the classroom?

13. As a teacher, is it important to take into consideration out-of-school factors that impact a child's environment when planning lessons?
14. What are specific ways that poverty can affect learning?
15. What are specific ways that poverty can affect one's health?
16. In your short time as a student teacher, have you encountered a student who did not understand the meaning of a word you assumed all children would know? Answer yes/no and provide any/all words.
17. What are some of the long-term effects of living in extreme and/or constant poverty?

Data collection and analysis. Data collection was arranged through the course instructor at each institution. The researcher administered the survey over an hour-long time period during students' seminar class associated with their student teaching course on two successive Fridays in the spring of 2014 (April 25th and May 2nd, respectively). Based on course availability, the survey was administered to Coppin State (April 25th), followed by NDM the next week (May 2nd). At each site, the course instructor introduced the researcher. The researcher explained the nature of her research and the study, and distributed an informed consent letter to each student (see Appendix B). Each student was allowed the full class time (one hour) to answer the questions at his/her own pace. Students handed their survey to the researcher once he/she finished. After all students completed the survey, the researcher asked if anyone had questions. The Coppin State group asked no additional questions. The students at NDM expressed interest in the researcher's topic and inquired how the idea was developed. Informal conversation ensued whereby the researcher explained her background, interests, and research

questions. Afterward, the informed consent letters and surveys were gathered together and the researcher exited the schools.

The surveys were stored in a locked filing cabinet in the researcher's office, located in the Bloomberg School of Public Health, after each administration. The researcher performed quantitative and qualitative data analysis on the surveys approximately two days after the last administration (May 2nd). An analysis was first performed on the total sample, followed by select analysis based on institutional group. The frequency with which answers were chosen was inputted into a Microsoft Excel spreadsheet. Average percentages were then calculated based on the sample sizes twelve, seven, and/or five. Qualitative analysis was performed for the open-ended questions. Written responses were listed by individual question in Microsoft Excel and emerging themes were noted. The themes were qualitatively coded as guided by the literature and a frequency score was assigned.

Results of the Needs Assessment

The results of the needs assessment indicated that only half of the total number of participants could identify the current poverty rate for the U.S. One respondent placed the rate just below the correct rate (16-20%), and the remaining 42% chose a much lower rate. When asked about Baltimore City's rate, the majority of respondents (66%) chose rates lower than the actual. The remaining third (33%) chose the correct rate. For the U.S., more than half (66%) of the respondents thought the poverty rate increased in the last five years while the remaining third (33%) thought the rate decreased. More than three-quarters of the respondents (83%) indicated the poverty rate increased for Baltimore City. Sixteen percent thought there was no change for Baltimore City.

Responses as to the exact number of children living in poverty for the U.S. and Baltimore City were dispersed. When presented with eight possible ranges, five of the ranges were chosen at least once for the U.S. and Baltimore City. The ranges with the highest selection frequencies were 600K-1M and 1-5M (33% each, respectively) for the U.S., and 50-100K (66%) for Baltimore City. Responses to the exact number of children living in poverty demonstrated there is low awareness and great diversity in opinions.

There was little discernible difference between the groups (NMD and Coppin State) for the questions on the rate of poverty, the actual rate change, and the number of children living in poverty. The only difference between the groups was in reference to the rate changing and the status of families' incomes. More NMD students than Coppin State students thought the poverty rate was rising for the U.S. (85% NMD, 40% Coppin State respectively). However, as the rate pertains to Baltimore City, both groups were in agreement that the rate was rising (85% NMD, 80% Coppin State). Slightly more than half (57%) NMD students thought U.S. families were making less income now than five years ago. Conversely, 60% of Coppin State students thought U.S. families were making more income now than five years ago. However, the majority of both groups (71% NMD, 80% Coppin) were in agreement that families in Baltimore were making less income now. Table 3 displays this data.

Table 3

Differences between NMD and Coppin State answers

Question 2:	Do you think the rate has changed in the last 5 years? (U.S.)	Do you think the rate has changed in the last 5 years? (Baltimore City)
NMD	85%, yes, up	85%, yes, up
Coppin State	60% yes, down	80% yes, up
Question 5:	Are families making more income than 5 years ago? (U.S.)	Are families making more income than 5 years ago? (Baltimore City)
NMD	57%, no, less	71% no, less
Coppin State	60% yes, more	80% no, less

The majority of respondents (92%) agreed with constructs pulled from the literature, which included the correlation between health and learning, the correlation between health and one's level of education, the influence of one's family background on learning, the existence of different parenting styles based on socioeconomic status, the transference of cultural norms from parents to children, and the need for out of school factors and a student's contextual environment to factor into a teacher's lesson planning. The total sample yielded an 83% agreement rate that all students received an equal opportunity to learn. The answers to this final question similarly indicate low awareness of poverty's prevalence and inherent naiveté as to its associated impact.

The questions about the specific ways that poverty affected one's learning and education, as well as the question asking about long-term effects, elicited a range of short-answers that were qualitatively coded into overarching themes when possible. By far, the most frequent theme for the specific ways poverty affects learning was

"children's lack of food/hunger", which had a frequency score of nine. Additional frequent themes were "less access to resources" and "lack of parental involvement/parent in the home" which each had a frequency score of five. "Illness" followed in frequency with a score of four. The following themes each had a frequency score of three: "unstable home environment/housing", "more stress/stressors", and "lack of reliable/adequate transportation". The remaining theme "missing school/absences" had a frequency score of two and "lack of background information" had a frequency score of one. When asked to identify specific ways poverty affected one's health, the answers were grouped into two overarching themes of social-emotional and physical health concerns. Individually, answers included: "more emotional & physical stress", "malnutrition", "developmental delays", "missing school", "lack of access to healthcare", "lack of access to dental", "increased rates of chronic illness such as obesity and asthma", and "undiagnosed medical concerns". Similarly, when asked for specific long-term effects of living in extreme and/or constant poverty, answers were grouped into sociological or physical health effects. Individual answers included: "increased rates of teen pregnancy", "drop out", "drug/alcohol use", "STDs"; "violence", "crime", "illegal and gang activity"; "lower test scores"; and "more overall stress".

The final question asked for specific words that were presented in lessons, to which the students did not know the meaning. Sixteen individual words were listed. Six words are examples frequently used in social studies curriculum and include "confederation", "colony", "representative", "senate", "post-industrial", and "judicial". The remaining ten words were adjectives or verbs; examples included "submerged",

"comfy", "synopsis", and "elaborate". The knowledge retrieved from the final question was for the researcher's personal interest and did not inform the intervention.

The collective responses to the open-ended questions demonstrated pre-service students' broad understanding of poverty and its impact on health and learning. Students could identify specific social and physical indicators of poverty. Interestingly, the responses were ones that would be widely known or assumed through attention to news media and/or through related sociology coursework in school. The responses did not reflect depth of understanding such that an experienced teacher could provide based on years of witnessing poverty's effects in the classroom. Further investigation into the depth of understanding spurred an additional inquiry with practicing teachers.

Additional Inquiry: Professional Development Needs & Out of School Factors

Since the researcher did not have experience as an educator in the K-12 urban setting, it was important to also gather data about teachers working in a Baltimore City school that had a high concentration of children living in poverty. Henderson Hopkins Community School (HHCS) in East Baltimore was the location chosen for the completion of the second needs assessment due to its high rate of poverty (92%), ties to Johns Hopkins' Schools of Education and Public Health (institutional context), and supportive administration. HHCS serves children in grades K-8 from communities in and around East Baltimore. Teachers working at HHCS were the target audience to answer research question 4: (R4) What were teachers in urban schools seeing as impacts of poverty on their students?

Method

The researcher met with the Principal in September 2014 and asked for teacher volunteers with no specific selection criteria. During a professional development day in October 2014, the Principal asked for teacher volunteers to complete the survey. Those teachers who were interested completed the survey during a one-week period in mid-October 2014.

Sample and participants. Twenty-two of the 27 teachers completed the survey anonymously. Demographic data was collected on the number of years teaching, their certification method, certification state, and prior experience teaching in an urban school. Slightly more than one half (54%) of the convenience sample was comprised of expert teachers (defined as more than seven years teaching). The remainder of the sample included just less than 20% who were defined as experienced (four to seven years teaching) and almost one third (27%) who were defined as novice teachers (0-3 years experience. Certification methods were almost equally divided between traditional undergraduate program (40%) and an alternative certification route (36%) such as Teach for America (TFA) or Urban Teacher Center (UTC). An additional 13% were certified via a graduate degree program (Master of Arts in Teaching, MAT) with the remaining nine percent certified through an "other" method, which was not further explained. The state of Maryland certified 81% of the teachers, followed by Pennsylvania (n=1), North Carolina (n=1) and Michigan (n=1). Prior to their current employment, more than half (67%) had taught in an urban school and slightly over one third (33%) had no experience teaching in an urban school. This demographic feature is not in alignment with the

research, largely due to the School's concentrated effort to recruit highly qualified, experienced teachers as part of their mission.

Instrumentation. A researcher designed ten-question survey was made available to the random group of teachers within the specific school setting over a week's time. The survey was designed using an individual Survey Monkey account. In addition to the aforementioned demographic questions, teachers were asked to respond to the following questions:

1. What is/are the most pressing factors impacting your students? Choose all that apply.
2. Of the four categories, choose the most important factor.
3. Rank order the categories from most important to least important as a professional development topic.
4. What skills or competencies outside pedagogy would you like to learn?
5. Choose your preferred method of professional development delivery from a list.
6. What is the most pressing concern in your classroom?

Data collection and analysis. The literature and the initial needs assessment data guided the organization of the research variables into four overarching out of school factor (OSF's) categories: (a) Family Issues/Stress; (b) Physical Health Issues; (c) Mental Health Issues, and (d) Nutrition/Food Insecurity. Items included in the four categories were: (a) *Family Issues/Stressors*: single parent home, non-traditional family unit, absent parent, divorce, intimate partner violence, housing instability, mobility, foster care, homelessness; (b) *Physical Health Issues*: medical, dental, vision, chronic illness; (c)

Mental Health Issues: depression, anxiety, ODD, ADHD, LD, not fitting in; and (d) *Nutrition/Food Insecurity*: hunger, quality and quantity of food, obesity.

The data was recorded in SurveyMonkey for each respondent. The researcher accessed SurveyMonkey via her individual account and reviewed the corresponding data generated in SurveyMonkey. Each respondent answered all of the questions. There was no missing data.

Results

Tables 4, 5, and 6 show the responses for the questions seeking to answer what are the most pressing out of school factors that affect their students, what is the single most important factor, and which professional development topics are most important to the teachers. Table 4 shows that family issues/stress was the most frequently chosen out of school factor (87.5%), followed by mental health issues (54%), nutrition (25%), and then physical health (16%). When asked to identify the single most pressing out of school factor (Table 5), family issues/stress (67%) was still the most frequently chosen, followed only by mental health issues (36%). When asked to identify the professional development topics in which they would be the most interested, family issues and mental health were the top choices.

Table 4

Most Pressing Out of School Factors

Response Choice	Frequency of Response / # of Responses
Family Issues/Stress: eg. single parent home, non traditional family unit, absent parent, divorce, intimate partner violence, housing instability, foster care, homelessness	87.5% (21)
Mental Health issues: eg. depression, anxiety, ODD, ADHD, not fitting in, LD	54.2% (13)

Nutrition/Food Insecurity: eg. hunger, quality and quantity of food, obesity	25.0% (6)
Physical Health Issues: eg. medical, dental, vision, chronic illness	16.7% (4)
Other	4.2% (1)

Table 5

Single Out of School Factor MOST Impacting Students

Response Choice	Frequency of Response / # of Responses
Family Issues/Stress: ie: single parent home, non traditional family unit, absent parent, divorce, intimate partner violence, housing instability, foster care, homelessness	63.6% (14)
Mental Health issues: ie: depression, anxiety, ODD, ADHD, not fitting in, LD	36.4% (8)
Physical Health Issues: ie: medical, dental, vision, chronic illness	0.0%
Nutrition/Food Insecurity: ie: hunger, quality and quantity of food, obesity	0.0%

Table 6

Professional Development Topics, Rank Order by Interest

Rank	1	2	3	4	5	Score
Family Issues/Stress	69.6% (15)	26.1% (6)	0.0% (0)	0.0% (0)	4.4% (1)	4.6
Mental Health Issues	26.1% (6)	39.1% (8)	26.1% (6)	8.7% (2)	0.0% (0)	3.8
Physical Health Issues	4.4% (1)	34.8% (8)	47.8% (10)	13.0% (3)	0.0% (0)	3.3
Nutrition/Food	0.0%	0.0%	21.7%	69.6%	8.7%	

Insecurity	(0)	(0)	(5)	(15)	(2)	2.1
Other?	0.0% (0)	0.0% (0)	4.4% (1)	8.7% (2)	87.0% (19)	1.2

Teachers identified eleven skills or competencies, outside pedagogy, in which they felt underprepared. Each of the following was listed once: mental health issues, classroom management, how to deal with hard parents, and having difficult conversations with colleagues. Conflict mediation/counseling strategies were listed as a skill two times. The responses indicated teachers' preferred method of delivery: an interactive workshop was most frequently chosen (n=12), followed by a hands-on activity (n=8), panel of experts (n=1) and presentation (n=1).

The final question asked teachers to list the issues they believed were most pressing in their individual classroom. Eighteen individual answers were listed and then grouped into two categories based on similar themes, "*Social/Emotional Issues*" and "*Pedagogy/Practice*". Social/Emotional issues were listed most frequently (n=15), followed by Pedagogy/Practice related (n=3). Examples in the social/emotional category included: "peer relations", "lack of caring about education", "behavior management", "negative comments toward other students", "defiance and kids not caring", "lack of support from home", "disrespect for authority", "conflict resolution- quick to fight", and "social skills". Examples in the pedagogy/practice category included: "standards mastery (reading skills, math concepts)", "creating creative and engaging lessons", and "inability to generate writing topics, handwriting, and writing mechanics".

Discussion

The results from the APAF survey with pre-service teachers, albeit a small sample size, demonstrated that they have a very general awareness of poverty. Respondents could articulate some issues associated with poverty that impacted children's learning and health. Only one half of the total group correctly identified the current rate for the U.S., and roughly one third of the total group could accurately indicate the current rate for Baltimore. Interestingly, the pre-service teachers attributed the rise in poverty to an increase in the number of *adults* living in poverty, and believed the number of children living in poverty was decreasing. Though the pre-service students acknowledged a correlation between poverty and learning, they were not aware of the extent to which poverty was occurring in their city or within the country as a whole. Not knowing the specific rate for the U.S. was not an entirely surprising result. What was a bit surprising was the fact that the twelve Maryland residents, attending universities in Baltimore City for the past four years, did not know how far-reaching poverty was within their communities. And, there was no difference in the level of awareness of the students based on institution location, as was hypothesized.

The companion survey with the Baltimore City teachers provided insight as to the specific issues teachers face in the school and classroom, and further supported the literature. Interacting daily with a 92% FARMS eligible population, the teachers cited family stressors, mental health issues, and nutrition/food insecurity as the top three persistent out of school factors impacting their students. However, when asked to choose the MOST concerning factor, family stressors was by far the most frequently chosen, followed only by mental health. No respondent cited physical health and nutrition as the

most persistent factor. Family stressors were also the most frequently cited category for professional development yet, within individual classrooms, social/emotional issues were the most cited. The most preferred method of delivery for this to happen would be via an interactive workshop, followed by a preference for participating in a hands-on activity.

Given the results of the surveys, pre-service teachers and practicing teachers recognize there is more to student learning than just providing content knowledge. Teachers recognize there are competencies, skills, and knowledge outside pedagogical ability, which are necessary to facilitate an optimal learning environment for poor and low-income students. In particular, the most important skills to have are the ability to recognize and handle the impact of family stress on a child. Overall, it appeared that the teachers were open to learning more about this area of children's lives. Granted, the sample obtained was small, not representative, and purely of convenience. However, if teachers acknowledged there is a knowledge gap, there could be a benefit to providing additional training for those who work with high need children. The pre-service and practicing teachers never indicated through their responses that there were members in the school to whom they could turn for support. None of the respondents in either survey identified other professional sources of information that could help teach them about methods to deal with students' social/emotional issues. Professional sources in this case would include those individuals already working in their school such as school nurses, guidance counselors, school social workers or school psychologists. It is possible the respondents didn't mention others as a source of knowledge because the researcher didn't ask the question, or it wasn't an obvious choice to the teachers. Is that because teachers are expected to hold all of the knowledge? Is it because K-12, as an institutional system,

does not encourage interprofessional collaboration? Is it possible to break down the siloes present in K-12 to achieve a more collaborative service model? These are important questions to explore, as the results indicate teachers see a need for support, identification of available resources, and training.

Constraints and implications of the studies. The needs assessment failed to garner a large sample of undergraduate students namely due to time constraints. The researcher was committed to a small window of opportunity in order to gather data. However, even with a small sample size, the first needs assessment demonstrated having an awareness of poverty might not be confined to any specific racial group. Students attending Coppin State were as aware and unaware about the prevalence of poverty in their country and city as their more privileged counterparts attending NDM. A larger, more diverse, sample size might produce a different effect. Similarly, while almost all of the teachers at Henderson Hopkins responded to the survey, having more than one school participate in the survey could validate the data collected. In addition, a typical City school could offer a more realistic situation.

Additional research questions were spawned as a result of the needs assessment and should be included with any follow up assessments. Post-survey research questions included: (a) how one's knowledge of poverty was acquired; (b) frequency with which collaboration occurs between professionals in schools; (c) use and availability of wraparound services in the school; (d) ability and frequency of communication between professionals in schools; and (e) instances in the classroom where collaboration was warranted. The needs assessment and additional inquiry could benefit from repeated attempts with additional undergraduates and urban schoolteachers to elicit more data.

Chapter 4: Interprofessional Education Within Schools

Informing the Intervention: Collegial Circles, Communities of Practice

From the needs assessments, it was determined that teachers believe there is a knowledge gap inherent in their training. It is assumed that some of the knowledge can be achieved through years of experience working directly with the target population (children in poverty). However, for those children living in poverty who have teachers unfamiliar with their institutional context, time is not a luxury they can afford. Nor can education afford to turn its head from the growing problem.

In order to inform the intervention, research was conducted to determine a suitable delivery method for this knowledge. Two frequently used methods in education (communities of practice and collegial circles) were reviewed first. Communities of practice and collegial circles showed similarities among their definitions. Communities of practice (COP) define themselves as: "…groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly" (Wenger, 2011). Wenger (2011) identifies three characteristics that are necessary in order to have a COP: (a) shared interest, (b) built relationships from which to learn from each other, and (c) service as practitioners who share resources. Included in Wenger's (2011) research on COP's is that it is grounded in social learning theory which was realized through the study of apprenticeships. This concept is not limited to novice/expert relationships however, as COP's are identifiable from their ability to be dynamic and act as "living curriculum" (Wenger, 2011, p. 4). Communities of practice are found most often in business, government, education, professional associations, and civic organizations (Wenger, 2011).

Akin with community of practice's definition, collegial circles focus on having "small communities of learners among teachers and others who come together intentionally for the purpose of supporting each other in the process of learning" (Collay, Dunlap, Enloe, & Gagnon, 1998, p. 1). These communities can be comprised of teachers, parents, students, community members and other professionals who seek to utilize this method for their own professional development (Collay et al., 1998). Important to collegial circles is the sense of ownership of one's learning and willingness to support one another in his/her learning process (Collay et al., 1998). What is different from a community of practice is the devotion of those in a collegial circle to the "serious and deep thought about ourselves as both learners and teachers" (Collay et al., 1998, p. 1).

The research provided definitions and theory however it was vital to understand how the models worked in practice. Would these models be the most effective methods to create a coordinated effort that could address the education, health, and social-emotional needs of students? To assess this, a focus group was conducted with four individuals working in the fields of education, medicine, and family law (see Appendix C for bios). The individuals, all female and professional acquaintances of the researcher, were chosen based on accomplishments in their respective professions, advanced professional education, relevant experience building collaborative teams in the areas of interest, and their familiarity with public school systems in New York State, North Carolina, and California. New York and California were public school systems of particular interest given their geographic extremes (East Coast vs. West Coast), population diversity, urban and rural districts, education reform successes (and failures), and historical state budget

deficits. In addition, each state contained at least one large urban area with a child poverty rate close to Baltimore's.

The researcher collectively as a small group interviewed the professional women in the winter of 2014. The conversation centered on their personal (in their role as parent) and professional experiences within the field of education. Two questions were posed to the whole group: (IQ1) What comes to mind when you hear the term "whole child"? and (IQ2) How might you define a community of practice? Their answers validated the research. The question on the meaning of the whole child elicited responses from the group such as "all the pieces that create that little sponge in front of you" and "strengths are masked, you have to look through the deficits to see the strengths and use them to help the child succeed". "The whole child means the mental, physical, social and emotional state of a child…every part of a child plays a role in all they do. Take education then…if the physical or emotional or social is out of whack, it will impact their learning. Seems kind of simplistic doesn't it?"

The range of answers for the definition of a community of practice varied based on professional background. The teacher, who was most familiar with the term, defined a community of practice as "the teacher being supported by a variety of resources to help the child be successful and includes the nurse, youth services coordinator, guidance counselor, and school psychologist. Each one brings a perspective to help understand the child". Conversely, the doctor defined a community of practice as including "social workers, DSS (Department of Social Services), school resource officers, ELL (English Language Learners), SPED (Special Education), OT/PT (Occupational & Physical Therapy), speech, health, mental health, counselors, medical, parents, teachers, parent

educators, and community liaisons." The school librarian/Reading Specialist, based in California, presented a sobering reality and questioned the goal of a community of practice; "what is the goal of a COP? I mean schools need more resources in terms of professional support. In CA – there are no full time nurses, guidance counselors, gym teachers, PE program, no art program, and only a part time music teacher...experts should include: ELL, SPED, Mental Health, Physical Health, Education, parent representation, social worker or someone who knows the area and community (community liaison)." The lawyer was the only one to include parents and doctors in her definition of a community of practice.

A final question (IQ3), "How did you create a collegial circle or community of practice to support the whole child?" was posed to two professionals (the teacher and the doctor), given their in-depth experience developing a collaborative group in the fields of interest. The teacher explained how she designed an informal group of volunteers by inviting several of her teaching colleagues to gather before the school year to evaluate the previous year's school climate and parent surveys. The group discussed their FARMS population and identified possible challenges individual students might face in the upcoming year. The result of these informal conversations became a formal group within the school whose charge from the school administration was to develop the social/moral character of the school. Already focused on improving the academic character, the school partnered with the Institute for Excellence and Ethics (IEE) to guide the teachers into concentrating more on the social/moral character. The IEE presented the concept of collegial circles to the school and ten years later, the school has achieved recognition as a National School of Character and maintains a collegial circle of teachers devoted to this.

Similarly aiming to treat the whole child when handling cases of abuse and/or trauma, the doctor recognized the importance of professionals working together to benefit the child versus promoting the needs of individual offices. She initiated a partnership among local and state law enforcement, legal, social work, health, and the state's Department of Social Services with an aim to reduce the re-traumatization of young victims of neglect and abuse. The model she created decreases the emotional trauma a child experiences, increases communication among the respective offices, seamlessly moves cases through the system, and increased the number of convictions. By increasing communication between the professionals, the respective offices understood the value of their collaboration, how it could improve outcomes, and better recognized the role each individual played as part of a whole.

The insight gained from these conversations further shaped the intervention model. Simultaneous to this focus group, a review of literature on collaborative frameworks within other professional training programs was conducted. Twenty years ago, professionals in law and psychology saw the need for collaborative training to increase communication and collaboration (Drotar, 1993; Hafemeister, Ogloff, & Small, 1990). More recently, researchers in the fields of pharmacy, mental health and addictions advocated for and/or initiated dual training for professionals for the same reasons (Holtzman & Sifontis, 2014; Rani & Byrne, 2012). Students also are driving change; recent original research by Holtzman & Sifontis (2014) indicated a positive interest among current PharmD students in a new joint offering with public health (PharmD/MPH). The student respondents noted "increased job opportunities," "increased ability to serve patients and the community," and "increased marketability for future

jobs" as advantages to such interdisciplinary training (Holtzman & Sifontis, 2014, abstract). Law, medicine, pharmacy, and mental health fields recognized the improved patient/client outcomes that happen as a result of the increased communication and collaboration that comes with interdisciplinary training.

It was the conversation with the doctor that prompted further investigation into training within the fields of medicine and allied health. Research within these fields indicated that interdisciplinary training was deemed important. In 1972, the Institute of Medicine convened a group of 120 professionals from across the health professions to discuss interdisciplinary education. The recommendations from the conference were separated into three categories: administrative, teaching, and national (IOM, 1972). Within the administrative category, the conference attendees concluded: (a) academic health centers should engage in "interdisciplinary education and patient care" and schools not associated with academic health centers were encouraged to form collaborative teamwork-focused education, and (b) methods must be created to tie interdisciplinary education to practice (IOM, 1972). Recommendations within the teaching category included: (a) investigation of the reasons for lack of collaboration among professions, and (b) a need to create new role models among healthcare professionals, with clinical and ambulatory care being the most likely starting point (IOM, 1972). Finally, on a national level, the conference proceedings called for: (a) government support for the interdisciplinary education endeavor, (b) development of a clearinghouse of programs focused on interdisciplinary education, and (c) continued research (IOM, 1972).

Ensuing years showed growth of interest in interdisciplinary education however evidence as to how that type of education led to better care could not be produced

(National Center for Interprofessional Practice and Education, n.d.). Further development of interdisciplinary education waxed and waned over the next forty years until the 21st century. Once again, the Institute of Medicine reinvigorated the topic through two landmark reports (IOM, 1999). First, in 1999, the Institute of Medicine conducted an investigation that explored the costs of patient safety and quality of care (IOM, 1999). Report findings showed medical errors resulted in more deaths in any given year than motor vehicle accidents, breast cancer, or AIDS (IOM, 1999). The report advocated for changes in the system that would reduce medical error and improve patient quality and safety (IOM, 1999). A year later, the Institute of Medicine issued "*Crossing the Quality Chasm*" report, which sparked a flurry of activity about the need to develop a new delivery system of care, particularly for the lowest socioeconomic status patients (IOM, 2001). All patients, regardless of their financial standing, are deserving of reliable, high quality care however, the practice of this isn't consistently enforced (IOM, 2001). The report used the analogy that the divide in care is not just a gap but even larger, a chasm, and innovative strategies are needed to build the bridge (IOM, 2001). The current delivery system is taxed by the changing needs of Americans, which include longer lifespans and more complex and chronic illnesses, coupled with rapid advancements in medicine and technology and concerns over patient safety (IOM, 2001).

The IOM 2001 report detailed six points for improvement over the upcoming decade and challenged all associated healthcare, federal, state, and local stakeholders to abide by the aims. Healthcare should be: safe, effective, patient-centered, timely, efficient and equitable (IOM, 2001). In response to these six points, the ensuing decade brought a new lexicon to healthcare: patient centered care (Rickert, 2012). With the more

concentrated focus on improving quality and patient experience, attention turned to the clinicians and their educational preparation. As far back as the 1930's, medical educators spoke to the lack of competencies learned by the clinician (Dezee, Artino, Elnicki, Hemmer, & Durning, 2012). Medical curriculum focused on delivering timed, content-specific knowledge, using normed evaluation methods (Dezee et al., 2012). Large lecture halls with rigorous examinations were not producing doctors with the communication skills necessary to provide the required patient centered care. In addition, a shift in educational theory in the 1970's-80's moved from assessment of knowledge to a need for performance-based demonstration in a team-oriented environment (Dezee et al., 2012). The late 1970's thus spurred national conferences within the United States and Canada, with each country focused on defining and giving purpose to interprofessional education (Schmitt, Gilbert, Brandt & Weinstein, 2013). The end of the following decade saw the United Kingdom's creation of a Centre for the Advancement of Interprofessional Education and a subsequent universally accepted definition of IPE, modified slightly to accommodate the World Health Organization (WHO) Framework (Barr, 2002; Schmitt et al., 2013). The most widely used definition of IPE became "occasions when two or more professions learn *with, from and about* each other to enable effective collaboration and improve health outcomes" (World Health Organization, 2010).

It was not until two decades later, in 2009, that the United States strengthened its resolve to promote IPE through the creation of the Interprofessional Education Collaborative (Schmitt et al., 2013). This Collaborative comprised six of the national educational associations for colleges and universities representing the fields of nursing, medicine, dentistry, pharmacy, public health, and osteopathic medicine (see Appendix D)

(Schmitt et al., 2013). The following year, a panel of experts convened and produced draft language for U.S. health and allied health competencies (Schmitt et al., 2013). These competencies center around four domains: (a) values/ethics for interprofessional practice; (b) roles & responsibilities; (c) interprofessional communication; and (d) teams/teamwork, allowing for flexibility among individual professions (Interprofessional Education Collaborative Expert Panel (IPECEP), 2011). The competencies are centered on principles including patient-centered care, community/population orientation, outcomes driven, and relationship focused (IPECEP, 2011). The overarching goal of IPE is to prepare health professionals to "deliberatively" work together to deliver safer, better patient-centered and community/population oriented care (IPECEP, 2011, p. 3). The key components inherent to IPE delivery are: side-by-side, simultaneous, group learning delivered via interactive methodology and includes opportunities for reflection and problem-based learning that stimulates interprofessional collaboration (Schmitt et al., 2013). The fusing concept of this is defined as interprofessionality, which is the "process by which professionals reflect on and develop ways of practicing that provides an integrated and cohesive answer to the needs of the client/family/population" (D'Amour & Oandasan, 2005, p.10).

Inquiry into medical universities utilizing IPE revealed that Johns Hopkins University and medical system were piloting interprofessional education to improve the health care of complex older adults. Called the Daniels Initiative after the University's President, the goal of IPE was to move away from siloes to create more synergy via its mission of: "Promot[ing] a sustained and integrated interprofessional education model that informs the education, practice, and research of healthcare professionals to improve

quality of care for patients, families, and communities" (Johns Hopkins University-School of Nursing, n.d). Through newly designed curriculum, pre-licensure nursing and graduate medical students are trained to "develop skills needed to enhance interprofessional teamwork, communication, decision-making, conflict resolution, and collaboration in providing care" (Johns Hopkins University-School of Nursing, n.d.). Conversations with the Co-Directors of IPE at Johns Hopkins explained IPE's emphasis on building communication and collaboration skills among disparate professionals (personal communication, Dr. Elizabeth Tanner & Dr. Laura Hanyok, December, 2014). IPE at Johns Hopkins is presently being implemented with graduate level students in nursing and medicine, as recommended by their respective professional education associations. Resources from the Interprofessional Education Collaborative (IPEC) and the National Center for Interprofessional Practice and Education (housed within the University of Minnesota) helped guide Johns Hopkins' IPE experiential activities (personal communication, Drs. Elizabeth Tanner & Laura Hanyok, December, 2014).

Further research into universities in the immediate vicinity of Johns Hopkins revealed that the model could be used with graduate students outside the fields of nursing and medicine. The University of Maryland, Baltimore (UMB) incorporated the concepts of IPE within its professional coursework and practical training settings for law and social work students, in addition to its nursing and medicine students (personal communication, Dr. Jane Kirschling, December, 2015). Outreach from UMB's Center for Interprofessional Education and the Office of Interprofessional Student Learning & Service Initiatives (OISLSI) encourages students to learn more about the "emerging collaborative movement in healthcare, law, and social work" via annual IPE days

(University of Maryland, Baltimore, Center for Interprofessional Education, n.d.) or through service-oriented opportunities focused on "interdisciplinary engagement" (University of Maryland, Baltimore, OISLSI). Akin to UMB, Loyola University's Clinical Centers (LCC) seek to engage professional graduate students from the areas of speech and language, audiology, literacy, pastoral counseling, and psychology in interprofessional education (Loyola Clinical Centers, n.d.). LCC's mission is to provide a full range of comprehensive services to their clients through the use of graduate level trainees (Loyola Clinical Centers, n.d.). The trainees are deliberately exposed to IPE in an effort to achieve LCC's mission of comprehensive care (personal communication, K. Fignor, January, 2016). Presently, LCC seeks to create more focused IPE educational programming to lessen the natural disconnects that occur between professions (personal communication, K. Fignor, January, 2016). If trainees understand the value and scope of practice for professions outside their own, more appropriate referrals between service providers might naturally occur (personal communication, K. Fignor, January, 2016).

Proposed Solution and the Elements Needed to Implement IPE

Given the observable value that arises from interdisciplinary teamwork, it is suggested that professionals within a school environment learn to work synergistically to improve the education and health outcomes of impoverished children. Political and logistical constraints within the Baltimore City public school system and the researcher's academic timeline prohibited the implementation of an IPE intervention with practicing teachers in an urban school. Therefore, informed by the literature, the needs assessments, and sites presently engaged in IPE work, an intervention was proposed which focused on graduate students at Johns Hopkins' Schools of Education and Public Health. The

Schools were realistic choices due to the correlation between poverty, health, and learning outcomes. The level of student was supported by the IPE literature and aligned with similar efforts around IPE being used in area Schools of Medicine, Nursing, Law and Social Work. Because Johns Hopkins, representing the institutional context, already implemented IPE in its nursing and medical curriculums, the proposed intervention sought to expose IPE to graduate students from the complimentary fields of education and public health. The intervention sought to assess students' attitudes toward IPE and determine IPE's potential value in their future professional practice.

The existing IPE model used within the Schools of Medicine and Nursing at Johns Hopkins informed the design of the proposed solution. The definition of IPE focused the design: "occasions when two or more professions learn *with, from and about* each other to enable effective collaboration and improve health outcomes" (World Health Organization, 2010). The operative words in the definition are "*with, from*, and *about*" which drives the components necessary to achieve IPE. IPE components are side-by-side, simultaneous, group learning delivered via interactive methodology and includes opportunities for reflection and problem-based learning that stimulates interprofessional collaboration (Schmitt et al., 2013). These components are implemented within four overarching competency domains: (a) values/ethics for interprofessional practice; (b) roles & responsibilities; (c) interprofessional communication; and (d) teams/teamwork (Interprofessional Education Collaborative Expert Panel (IPECEP), 2011).

For this particular study, adherence to IPE is guided by use of the definition, the components, and two of the four competencies (interprofessional communication and teams/teamwork). An interactive workshop was planned that allowed graduate students to

learn *with, from* and *about* each other, using simultaneous, reflective, and problem-based learning, centered around interprofessional communication and teamwork (collaboration) competencies. Table 7 provides the visual example that was created to ensure adherence to IPE.

Table 7

Grid Representing IPE Adherence

	Opening Session	Intros.	Ice-breaker	Prof. Identity	IP Comm.	IP Prob. Solving
Side-by-side	X	X	X	X	X	X
Simultaneous	X	X	X	X	X	X
Group Learning	X	X	X	X		X
Interactive Methodology		X	X	X	X	X
Reflection			X	X		X
Problem Based Learning						X
Interprofessional Communication			X	X	X	X
Teamwork			X			X
Roles-Responsibilities				X	X	X

Since the proposed intervention was a novel idea to ascertain future potential as a training method with populations outside medicine and nursing professions, the evaluation approaches used were goal-free, largely qualitative, summative, and problem-oriented (Newcomer, Hatry, & Wholey, 2010). Since there were non-existent evaluation

criteria in the form of standards, guidelines, laws, and mission statements for this program, the researcher created the evaluation methods, which were presumed goal-free (Newcomer et al., 2010). The approach taken was summative versus formative since the intervention sought to identify if the outcomes were related to the activities. Since this was the first time the program was delivered to a specific population outside medicine, health, law, or social work, use of a formative evaluation did not seem relevant at this point. Should this intervention prove feasible, a formative evaluation should be performed to see how the program could be improved. The evaluation measures primarily focused on qualitative data gained from researcher participation and observations. The outcomes were intended to inform future training options within the greater institutional context (Johns Hopkins) and assumed there exist challenges in communication and collaboration among professionals in the K-12 settings. Two research questions were designed to assess the effectiveness of the study: (RQ1) What additional professional preparation can be gained by engaging graduate students in the fields of education and public health in IPE? (RQ2) What were the experiences of the participants?

Chapter 5: Evaluation of an IPE Workshop

Method

A review of studies on the effects of IPE on professional practice and health outcomes support the evaluation literature regarding study design (Reeves, Zwarenstein, Goldman, Barr, Freeth, Hammick & Koppel, 2009). Randomized control studies, rigorous design methods, larger sample sizes, and control groups can improve the evidence base of IPE (Reeves et al., 2009). Evaluation literature similarly suggests use of random control trials as the most auspicious method of study design to mediate internal and external validity (Henry, 2010). However, the reality in research is that participation and resources (ie: time and money) are limited (Newcomer et al., 2010). In order to evaluate the applicability of IPE for educational practitioners, a quasi-experimental design was chosen because the overall study lacks a control and a comparison group (Shadish, Cook, & Campbell, 2002). Of the four possible designs (one group post-test only, one group pretest-posttest design, removed treatment design, and repeated treatment design), the one group pre-and-post test was the most applicable. A removed-treatment and a repeated-treatment design were eliminated as possibilities as they would fail to provide further strength to the chosen design (Shadish et al., 2002). Though this design might be considered weak by evaluation literature, the addition of a pretest improves the design over a one-group posttest only (Shadish et al., 2002). The short duration of time between the pre-and-posttests diminishes most threats to internal validity and thereby strengthens causal inference (Shadish et al., 2002). The length of the intervention was five consecutive hours on a pre-determined date, which should lessen threats caused by history, maturation, attrition, and instrumentation (Shadish et al., 2002).

Sample, Recruitment, and Site Identification

Sample. Graduate students from Johns Hopkins Schools of Education and Public Health were recruited for the small-scale workshop. Although the needs assessment interviewed undergraduate level students, graduate level students were chosen because the University does not have undergraduate level coursework in the field of education. Graduate level education also aligns with current IPE work done within the University's two other Schools. Criteria for inclusion in the sample was registration as a student in one of the two study schools (SPH or SOE), interest in working with low-income children, and availability to attend an IPE workshop at a future date in November. November was chosen to allow for an extensive recruitment period and to accommodate the academic calendars of the two Schools.

Recruitment. Recruitment spanned the four months before the November workshop (July-October 2015). Recruitment efforts centered on the researcher's professional relationships with the heads of specific academic programs within the School of Public Health (SPH) and School of Education (SOE), specific faculty within the School of Education (SOE), and email blasts to whole school populations (SPH & SOE). The study's recruitment concentrated on sampling students in the school-wide Master of Public Health (SPH) program, students in programs (MSPH & MHS) within the departments of Population, Family, and Reproductive Health, and Mental Health within the School of Public Health (SPH), as well as students in the Master of Arts in Teaching (MAT) and the Masters of Science in School Counselor & Clinical Mental Health Counseling (MS) from the School of Education (SOE). These academic programs were chosen as their content and professional areas represented aspects of the knowledge

gap identified in the needs assessment, namely an understanding of socio-emotional, human development, and family dynamics. It was hypothesized that individuals from these academic areas might be the most interested in the study.

Contact was made first with the Director of the Master of Public Health (MPH) program in July to capitalize on the full time MPH students' arrival. The Director sent out a personalized recruiting email to the 236 full-time MPH students the second week of July; this email was repeated again in mid September to the same group. During the months of July-September, personalized emails requesting study participants were sent to the Director of SOURCE (student volunteer organization for students in the Schools of Public Health, Medicine, and Nursing), the Director of the Master of Health Science (MHS) in Mental Health (SPH), and the Assistant Director of the Center for Adolescent Health located in the Department of Population, Family, and Reproductive Health (SPH). The program directors sent emails to their corresponding student listservs. In addition, the Director of SOURCE included information about the study in their monthly email news blast during August, September, and October.

Beginning in late August, the Director of the Baltimore Fellows (SOE) and the Coordinator of the School Counseling Fellows Program (SOE) were contacted. This timeframe aligned with the arrival of SOE students back to campus and enrollment in the corresponding programs. The researcher made presentations at the SOE to the Fellows in both programs and requested study participants. Individual faculty at the School of Education was contacted beginning in early September. The faculty sent emails to students registered in their classes. A paragraph regarding the study, the same as was used for SPH, was included in the Tuesday weekly announcements to all SOE graduate

students (month of October). The recruitment language describing the study was the same no matter the School. Appendix E provides the recruitment email content.

Recruitment efforts yielded eighteen students who expressed interest in the study; seven ultimately participated in it. The seven participants were female and ranged in age from mid 20's to mid 50's. The eleven non-participating students indicated time and/or date as a barrier to participation. Twelve students responded from SPH versus six students from SOE. Students at SPH were faster to respond with interest; all of the students at SPH responded by early-September. Conversely, SOE students did not respond until late October. Though recruiting efforts at the Schools started within two weeks of each other, the difference in yield could be attributed to an earlier MPH student arrival time (early July (MPH-only) versus late August for non-MPH & SOE students) and larger possible sample. At the School level, the total student population was within 200 students of each other: 2,200 SPH and 2,000 SOE, respectively (further investigation into the balance between Master's and Doctoral-level populations at each school was not deemed necessary). At the program level, the MPH cohort typically has 250-275 full time students enter each academic year. The average cohort size for MSPH and MHS degrees at SPH is usually 20-40 students each academic year. The average class size for degrees at SOE was not obtainable. It is also possible, though less likely, that the researcher's reputation, longevity (six years), and professional position within the School of Public Health influenced the faculty's encouragement of their students, resulting in more interest from SPH students. Table 8 explains the composition of the sample by school, department, degree type, and ultimate participation in the workshop.

Table 8

Composite of Recruitment Sample

School	Degree	Department	Participated in Workshop
School of Public Health	MPH	N/A	No
School of Public Health	MPH	N/A	No
School of Public Health	MPH	N/A	No
School of Public Health	MPH	N/A	No
School of Public Health	MPH	N/A	No
School of Public Health	MPH/MSN	N/A	No
School of Public Health	MPH	N/A	No
School of Public Health	MPH	PopFam	No
School of Education	MS	Clinical MH Counseling	No
School of Education	MSEd	N/A	No
School of Education	MSEd	N/A	No
School of Public Health	MPH	Global Health	Yes
School of Public Health	MPH	HBS	Yes
School of Public Health	MSPH	HBS	Yes
School of Public Health	MPH	N/A	Yes
School of Education	MAT	Teacher Certification	Yes
School of Education	MS	School Counseling	Yes
School of Education	MEHP	Health Professions	Yes

Note: HBS stands for the Department of Health, Behavior & Society. Popfam is truncated for the Department of Population, Family, and Reproductive Health.

Site Identification. Johns Hopkins University, and specifically the Schools of Public Health and Education, serve as the institutional context for the study. Designated "America's first research University", Johns Hopkins has a long and distinguished history as an institution of higher learning. Throughout its nine academic divisions, over "21,000 full-time and part-time students" are enrolled at campuses within the Mid-Atlantic area

and at strategic sites worldwide (Johns Hopkins University, n.d). Included in the nine academic divisions are the Schools of Medicine, Nursing, Education, the Carey Business School, and the Bloomberg School of Public Health, all of which focus solely on providing graduate level education.

The study focused solely on the Schools of Public Health and Education. *U.S. News & World Report* has continually ranked the Bloomberg School of Public Health (JHSPH) the #1 School of Public Health for more than twenty years (*U.S. News & World Report*, n.d.). The oldest and largest School of Public Health, JHSPH is home to ten academic departments, each offering graduate degrees, in addition to a school-wide Master of Public Health (MPH) degree (Johns Hopkins Bloomberg School of Public Health (JHSPH), n.d.). Under the School's mission "Protecting health, saving lives-millions at a time", world-renowned faculty educate more than 2,000 international and domestic students (JHSPH, n.d.). The Bloomberg School of Public Health, the Schools of Medicine and Nursing, and the Johns Hopkins Hospital system, share a campus in East Baltimore, Maryland. Plagued with high crime and unemployment rates, vacant and substandard housing, and poor health outcomes, the area called East Baltimore is still synonymous with poverty. However, over the past ten years, the area has been the focus of extensive urban renewal efforts. At the heart of the community was the creation of a new $53 million charter school and a new $10 million early childhood center, both of which opened in 2012 (Henderson Hopkins fact sheet, n.d.). Though Johns Hopkins Hospital and the three Schools provide some economic stability to the area, East Baltimore still faces challenging social disorganization issues.

Located in a historic area of Baltimore called Mount Vernon, which lies at the southern tip of the undergraduate campus, the School of Education was founded just after the turn of the 20th century with an emphasis on teacher preparation (Johns Hopkins School of Education, n.d.). In 1999, the School became known as the School of Professional Studies in Business and Education (Johns Hopkins School of Education, n.d.). Less than a decade later, the two schools became their own entities and the School of Education was simultaneously the oldest and newest institution within the University (Johns Hopkins School of Education, n.d.). Just as with the School of Public Health, *U.S. News & World Report* (n.d.) has ranked the School of Education a #1 School for the past two years. Located in a building that housed a former Catholic high school for women, the School of Education includes degrees in curriculum and instruction, counseling, clinical mental health, and school administration, in addition to several innovative certificates.

When it came time to locate a room for the session, either of the Schools of Public Health and Education were viable options. Ultimately, a room was sought in the School of Education building, as this was more centrally located in Baltimore than the School of Public Health, had more convenient (and free) parking, and was available on the chosen date. To ensure collaborative, participatory engagement, a large, open space with moveable tables and chairs, was obtained. The room is one frequently used for medium sized gatherings, presentations, and speaker series by the School and was very suitable for the workshop.

Instrumentation-Quantitative

The most commonly used tools in IPE literature to measure attitude are the Readiness for Interprofessional Learning Scale (RIPLS) (Parsell, Stewart, & Bligh, 1998) and the Interdisciplinary Education Perception Scale (IEPS) (Leucht, Madsen, Taugher, & Petterson, 1990). There is little discernible difference in scores between the instruments, which may be attributable to different constructs (Lie, Fung, Trial, & Lohenry, 2013). The RIPLS is a 19-item, 5 point Likert scale designed to measure an individual's own attitude toward collaborative work (Lie et al., 2013). The IEPS is a 12-item, 6 point Likert scale used to measure "perceived attitudes about team collaboration for a student's profession" (Lie et al., 2013, p. 1). Since advanced standing students have more exposure to team learning, it is recommended that the IEPS be used at the junior/senior level (undergraduate) or above (Lie et al., 2013). Since the study population was graduate level students, it could be assumed using Lie et al.'s (2013) logic, that the study population had more exposure to team learning and therefore, higher attitudes toward team collaboration would be indicated by the IEPS. Due to the population's more advanced academic standing, both the RIPLS and the IEPS were administered to the participants.

Within this intervention, the instruments were administered twice (pre-and-post intervention) by the researcher and used to assess participant engagement with and readiness for collaborative learning. The RIPLS and IEPS have not been used prior with the study's populations. The researcher modified the instruments' language to suit the populations studied. Terms such as "health profession, medicine, and allied health" were substituted with "education and public health". There have been mixed reviews as to the

validity and reliability of the instruments over the past ten years (Lie et al., 2013; Mahler, Rochon, Karstens, Szecsenyi, & Hermann 2014; McFadyen, MacLaren, & Webster, 2007; McFayden, Webster, & MacLaren, 2006; Oates & Davidson, 2015). If these instruments are to be used with the study populations in the future, the instruments should be validated with the test populations (see Appendices F, G, and H for original instruments and modified version).

In addition to the RIPLS and IEPS, a researcher-designed workshop evaluation survey was also used. Seven questions were asked; three were forced choice (yes/no); three were open-ended questions, and the final question asked participants to circle all applicable answers (see Appendix I for the workshop evaluation survey). The final question's choices were partially derived from the literature on dual training, as well as the researcher's personal experience counseling students.

Data Collection-Qualitative

To supplement the quantitative data, qualitative data collection was also conducted. Since the intervention's population was a novel idea and there was no previous quantitative data to offer as comparison, it was determined a qualitative data collection could provide anecdotal history, opinions, and attitudes toward the concept of interprofessional education by those inside and outside the organizational context. This data collection occurred after the intervention was administered. Interviews were arranged with sixteen professionals working in K-12 settings, which included: two Baltimore City charter schools (KIPP Academies); an organization affiliated with Johns Hopkins Medicine and situated within the KIPP Academies (The Rales Center); a community school program housed in a non-profit organization (Elev8 and Humanim);

faculty within the School of Public Health and Education, and the Deans from the Schools of Public Health, Nursing, and Education at local universities.

These individuals were chosen to provide the researcher with the necessary understanding of the K-12 landscape in East & West Baltimore (two areas experiencing high, concentrated poverty), the urban school environment for teachers, the challenges associated with implementation of the CDC's revised school health model (integrated school health focused on the Whole Child Approach), and perceived interest by administrators in collaborative training for their professionals. The interviews with key stakeholders were conducted through the months of October 2015 to January 2016 and ranged in length from 30-90 minutes. The conversations consisted of several open-ended questions to ascertain attitudes, opinions, and perceptions toward collaborative learning between those in public health, health, and education. Extensive note taking occurred at each interview and the interviews were later qualitatively coded based on emerging themes.

The information gleaned from the interviews informed the author about challenges inherent in the work environment (ie: bureaucracy, time, lack of resources), key issues facing children in schools (ie: physical health, mental health, and socio-emotional), key issues facing teachers (ie: lack of time to plan, lack of opportunity to collaborate interprofessionally within their schools, communication challenges with parents and colleagues), and the history of collaborative learning within the School of Public Health, Carey Business School, and Schools of Medicine and Nursing. The interviews contributed to the formation of the study's findings and discussion, as well as generated ideas that could inform future studies.

Procedure

The National Center for Interprofessional Practice and Education (NCIPE), the Interprofessional Education Collaborative (IPEC), Johns Hopkins Schools of Medicine & Nursing IPE curriculum, and the supporting literature on IPE informed the design of four specific workshop activities. IPE research does not specify the type of activities, the duration of the workshops, or the number of facilitators. Given the sample size, one facilitator would have sufficed. However, the researcher thought it important to have representation from the fields of public health and K-12 education. Within the health fields, IPE facilitators usually are professionals working in their respective fields and/or are faculty at Schools of Nursing or Medicine (National Center for Interprofessional Practice & Education, n.d; personal communication, L. Hanyok, 2015; personal communication, J. Kirschling, 2015). Therefore, three facilitators conducted the workshop. The researcher was chosen as the lead facilitator based on her professional background as a group facilitator and experience teaching at the graduate level. Two additional facilitators were chosen as subject matter experts in K-12 education, and public health/medicine, respectively. The length of time needed to complete each activity was estimated based on the researcher's experience teaching and the workshop was planned for a five-hour (9:00-2:00) span of time on a Saturday in November at the School of Education.

The final number of participants was finalized two days before the workshop was to take place to allow for the greatest sample to participate. The date chosen was an arbitrary date that was within the researcher's timetable for study completion. The researcher and the two facilitators arrived thirty minutes prior to the start of the workshop

and prepared the space. Tables and chairs were arranged in a U-shape. Donuts and water were set up on a separate table adjacent to the participant area. The informed consent letter, the IEPS, and the RIPLS pretests were placed at seven points around the U-shaped table. Due to the odd number of participants, it was decided the two facilitators would fill in, depending on a need for a medical or educator perspective to make even pairings as necessitated by the sessions.

Opening Session. The researcher and facilitators greeted participants between 9:00-9:10 am, pleasantries were exchanged, and participants were asked to complete the informed consent, the IEPS, and the RIPLS before the start of the workshop. Upon entering the room, participants chose a seat and set about completing the paperwork. Attendees were quiet and did not engage with each other except to say hello. The participants completed the informed consent, the IEPS, and the RIPLS within the first fifteen minutes of the workshop. The researcher collected all items and stored the tests in an envelope marked pretests at a table located behind her at the front of the room. The researcher and facilitators welcomed the group, provided brief introductions about their professional backgrounds, and then the researcher introduced the topic of her research and goals for the intervention. Two overarching objectives for the workshop were introduced: (a) expose students to others outside their respective field, and (b) introduce IPE as a potential way to increase communication and collaboration between and among professions to meet the needs of the whole child. A presentation about IPE followed, which included the definition of IPE, where it originated, the professions using IPE, the key components, and the competencies.

The opening session continued with the rationale for the workshop. The researcher explained the changed social context of childhood, the rise in poverty, and ensuing issues, the interdependency of health and education, and poverty's effect on academic achievement. Information followed about how training for those in the field of education has not changed in the last 100 years, yet those in the healthcare fields realize the need to develop more collaborative practice to meet the needs of the lowest socioeconomic groups. The presentation ended with an introduction to the new CDC school health model, which focuses on the Whole Child and seeks to ensure all children are "healthy, safe, engaged, supported, and challenged" (CDC, n.d.). A local example, the Rales Center at the KIPP Academies in Baltimore, was given to demonstrate the implementation of the new school health model. The opening session lasted approximately 60 minutes in entirety (pretest and presentation).

Introductions. Following the opening lecture component, the workshop continued with participant introductions. Participants introduced themselves, providing their name, degree, school, and at least one thing they hoped to gain from the workshop. The researcher asked what each participant wanted to learn to ascertain participants' motivation for involvement in the workshop.

Icebreaker-"The Marshmallow Challenge". The researcher and facilitators gave the participants a ten-minute break following the introductions in order to distribute supplies for the Marshmallow Challenge, or icebreaker, activity. This activity is a recommended icebreaker in IPE, as well as business settings, as a means of building community and camaraderie. Supplies included: a box of spaghetti, one marshmallow, string, and masking tape cut to one yard. Three teams of three were created; the two

facilitators, who had not previously completed the marshmallow challenge, assisted as a third person for two of the teams. Instructions for the activity were given to the participants and a timer was set for eighteen (18) minutes as per the challenge instructions. The researcher recorded observations while the teams worked. Immediately after completion of the activity, the seven-minute TedTalk about the Marshmallow Challenge and the role it plays in teamwork was shown to participants (see: http://marshmallowchallenge.com/Welcome.html). At the conclusion of the TedTalk, the researcher facilitated a group reflection on the activity. Guiding questions included: What did they observe as they completed the exercise? What did they learn about themselves? Each other? Did they enjoy the exercise? Was there any sense of frustration? If so, why? Could such an activity help create a collaborative environment in a school?

Professional identity-"Assumptions". After the icebreaker activity, the researcher distributed blank index cards and asked the participants to individually write two or three assumptions they had about students at the other School or degrees in the other School. Guiding questions included: What do you know about SOE/SPH students as individuals? What are their backgrounds prior to coming to graduate school? What types of professions are SOE/SPH likely to pursue? The answers were written anonymously and were placed in a bin as participants finished. Once they were finished, the researcher separated participants into interprofessional pairs (with the Education facilitator included to make even pairs) and instructed the group on the next activity.

Interprofessional communication-"Discovery". Over the course of twenty minutes, each pair took turns sharing her professional and self-identity. Participants were encouraged to spread throughout the room and into adjacent spaces to have more private

conversations. The researcher and medical facilitator walked around the room and into adjacent spaces and noted participants' body language. Afterwards, the participants re-grouped and each pair introduced her partner to the larger group.

Interprofessional problem solving-"The case study". The final exercise centered on a case study, designed as problem based learning. The case study was a real life scenario that occurred in the education facilitator's school (see Appendix J). The scenario was read to the whole group, two interprofessional teams were created, and a printed copy of the case study was given to each team. The teams were allotted thirty minutes to discuss the situation, identify short-term needs, and propose a longer-term plan. The teams chose separate areas in the large room in which to discuss. The researcher kept track of the time and called the teams together after the allotted time passed. The teams presented their case study findings to each other. The whole group was asked to reflect on the scenario and offer their individual thoughts. The researcher and facilitators took notes and recorded specific comments. Once all of the participants had an opportunity to speak and no further comments were offered, the researcher asked the group to return to their original seats. The RIPLS posttest was distributed, along with a post-workshop evaluation form, and participants were asked to complete both items. The researcher collected the tests and evaluations as each participant finished. The workshop was officially concluded and the researcher thanked everyone for her active engagement. Three participants lingered and sparked informal conversations with the researcher and facilitators for an additional sixty minutes about issues presenting in medicine and education today.

Data analysis

Quantitative and qualitative data was obtained from the RIPLS pre and posttests as well as the workshop evaluation. The pre and post RIPLS scores were entered into an Excel spreadsheet one day after the intervention. Written comments entered on the RIPLS were listed in a Word document. A follow up RIPLS was sent electronically to the participants one month from the study date with a reminder email sent two weeks later. Of the seven participants, four returned the follow up RIPLS. Those scores were recorded in the Excel spreadsheet in late December. The data was used to describe the experience knowing that the small sample size would not yield valid statistical significance. If statistical power is preferred for future studies, increasing the sample size may lessen type I and type II errors (Lipsey, 1998). Review of methods to increase power identified potential changes to design for future study. If any effect is detected for this outcome, and feasibility is possible, it might be advantageous to test homogenous participant groups (ie: all students from School of Education and all students from School of Public Health) as well as create matched comparison groups (Shadish et al., 2002). For the purpose of this specific outcome measure, effect size was deemed irrelevant at this time. Therefore, pre and posttest RIPLS scores were analyzed for a positive change in score, indicating a change in attitude. The workshop evaluations were reviewed and the mean or frequency was similarly calculated.

Qualitative data was acquired through the RIPLS comments section, field notes, conversations with participants, observations made by the researcher, and discussion with the facilitators. The accuracy of the data collection was reinforced by: (a) the researcher's proficiency as a trained counselor with eighteen years experience gathering qualitative

data via individual and group sessions, case notes, and non-verbal behavior assessments, (b) the medical facilitator's expertise as a pediatrician specializing in child abuse/neglect and emergency medicine with fifteen years experience charting, documenting interviews, serving as a subject matter expert in court cases, and providing expert testimony, and (c) the education facilitator's training as an Applied Behavior Analyst providing qualitative assessments for autistic students, involvement in IEP meetings, and K-12 educator with fifteen years experience writing lesson plans. During each activity, the researcher and facilitators documented comments and non-verbal behaviors they witnessed. Post workshop, the researcher and facilitators debriefed for three hours about the individual activities and the workshop as a whole. Each facilitator individually documented key observations and noted important comments. Each facilitator and the researcher reviewed the individual documents for inter-rater reliability. Afterwards, the collective qualitative data was discussed to reach a mutual understanding about the themes that emerged and establish content validity.

Chapter 6: Findings and Conclusions

Quantitative Findings

The RIPLS is designed to measure individual students' attitude toward collaborative work. Fourteen of the questions are to be scored with the highest possible score, a (5) on the Likert scale, indicating the highest level of agreement (or most positive attitude) toward interprofessional education. Five of the questions are to be reverse scored, whereby a score of (1) would indicate strongest positive attitude toward IPE. The total possible score range is 39-95, with 39 indicating the least positive attitude toward IPE and a 95 indicating the highest positive attitude toward IPE. Table 9 depicts the pre/posttest, the follow up posttest, and the standard deviation of RIPLS scores for the sample.

Table 9

Descriptive Statistics for the Sample (RIPLS)

	N	M	SD
Pretest	7	83.7	6.3
Posttest	7	89.2	4.1
Follow up posttest	4	79.7	6.3

Note. The range of possible scores is 39-95.

Table 10 further elicits the individual scores. The pretest mean was 83.7 and the posttest mean rose to 89.3, which showed an average gain of 5.6 points. Pretest, three participant scores fell below the pretest mean and four participants' scores ranged above the mean. Posttest, four participants scored below the mean, though two of the participants were only .3 of a point below the mean. The remaining three participants scored 3-5 points above the mean.

Table 10

Descriptive Statistics for the Individual (RIPLS)

Participant #	Pre-Test (M=83.7)	Post-Test (M=89.2)	Gain (M=5.5)	Follow Up Posttest (M=79.7)
1	77	84	7	75
2	89	89	0	-
3	75	84	9	74
4	89	93	4	-
5	80	94	14	87
6	90	92	2	-
7	86	89	3	83

Note. The range of possible scores is 39-95.

While the RIPLS data was obtained from a small sample (n=7) and cannot be considered representative, a positive increase in attitude occurred nonetheless after the workshop intervention. The gain for participants' pre/posttest scores ranged between 0 and 14. The follow up RIPLS sent to the participants one month post-workshop indicated a one-time event was not enough to create lasting change. Of the four participants who returned the survey, only one participant remained higher than her pretest score (80), but lower than her posttest score (94). The remaining three participants scored lower than their pre and posttest. Again, taking into account the small sample size, the follow up results may indicate there is no reliability in the (a) the instrument, (b) the effect of the workshop, or (c) both the instrument and the workshop. Recent research by Oates & Davidson (2015, abstract) supports this as they found the "psychometric integrity of these instruments is limited".

The IEPS was also administered pre and post workshop. The instrument is designed to measure a different construct than the RIPLS, which are "perceived attitudes about team collaboration for a student's profession" (Lie et al., 2013, p. 1). The possible score range is 18-106. The higher the score, the more positive the perceived attitude is about professional collaboration. The IEPS showed a slight downward trend in attitude among participants. The pretest mean was 80.8 and the posttest mean was 80.3, indicating a .5 of a point decrease in attitude. The individual participant scores varied greatly with a recorded range of 57-95 for the pretest and a 65-91 range for the posttest. Table 11 shows the recorded scores by participant.

Table 11

Descriptive Statistics for the Individual (IEPS)

Participant #	Pretest (M=80.8)	Posttest (M=80.3)	Gain
1	79	76	-3
2	91	91	0
3	89	89	0
4	57	65	8
5	73	75	2
6	95	81	-14
7	82	85	3

Note. The range of possible scores is 18-106. Pretest SD=12.9; Posttest SD=9.0.

The results from the IEPS indicate the IEPS may not be a suitable instrument to use with the study population. The IEPS has historically been used with students representing well-defined professions such as nursing, pharmacy, medicine, law, and

social work. Based on the scores above, the IEPS may not be ideal to use with lesser-defined professions where a broad range of careers is possible based on the educational background. For example, a participant from the School of Education could be completing the instrument from the perspective of a soon-to-be teacher, principal, guidance counselor, school social worker, school psychologist, or someone outside the K-12 realm. A graduate with a MSEd in Educational Studies could represent numerous possible professions. Likewise, a MPH participant may be a practicing physician or a former Peace Corps volunteer who seeks to use the degree more holistically. The findings from this instrument are therefore not in alignment with findings from use of it with students in medicine, pharmacy, and nursing.

Qualitative Findings

The observations chronicled during the workshop support the RIPLS findings of a positive change in attitude and would refute the IEPS findings of little to no change in interest in professional collaboration. Observations from each IPE activity are detailed and reflect the progression from working side-by-side at the beginning with little evidence of interprofessional communication, to finishing the workshop in a more collaborative mindset. In addition, qualitative findings in the form of comments written on the posttest RIPLS are noted after the observations.

Icebreaker-"Marshmallow Challenge" observations. The participants were collegial with one another while they worked as evidenced by polite conversation during the activity. Team A consisted of the lawyer (MPH), the school counselor (MS Counseling) and the health educator (MPH-HBS). Team B consisted of the family practitioner (MPH-GH), the teacher intern (MAT), and one of the facilitators (Education).

Team C consisted of the other doctor (MEHP), the health communicator (MSPH-HBS), and the remaining facilitator (Medicine). There were observable differences between the teams. Team A took a very methodical approach to the exercise. The lawyer took the lead but was very inclusive and discussed all aspects with her team. The team discussed an approach before jumping to try it. Team A carefully made plans and then executed them while working collaboratively on erecting a set structure (a pyramid). Conversely, Team B's family practitioner took the lead and was not as inclusive as was Team A. She jumped right into building, even though the teacher intern voiced some concerns and opinions as to the best way to begin the activity. The doctor heard the concerns but didn't take them into consideration. The facilitator became the mediator for Team B. There was difficulty building the structure and a lot of time was spent trying to build yet faced setbacks such as broken materials (spaghetti). Similar to Team B, the doctor in Team C took the lead but sought group cohesion. They discussed what they were going to do and why as they built the structure together. They faced similar setbacks as Team B (broken spaghetti) yet they continued to steadfastly move forward with building. They were willing to try any and all ideas that were presented and worked rather collaboratively.

In the end, the highest structure created was Team A's which was a pyramid shape. Team B's structure fell once the marshmallow was put on top and Team C had the second highest structure. Team C's was not as thoughtfully laid out as Team A's and wasted a lot of their supplies, but in the end, it held up. Reflections from the participants included acknowledgement that personality is important, "Personalities have a role to play in teamwork/group work". The participants noted that each person came into the exercise with an individualistic mindset: "It was interesting seeing how each of us thought about

the process and exercise" and "I didn't think about how I would go about this, I just started trying things". There was some variation in the leadership styles of the medical and education professionals: "The doctors took charge and jumped right in; the teachers observed then acted". In the end however, all of the participants agreed that it was a successful icebreaker: "This was a good way to get us working together and learn more about each other" and that there was potential value in using such an exercise in actual school environments: "I could see this helping counselors and teachers work together in schools". At the conclusion of this exercise, the participants seemed to engage more with each other and seemed interested in learning more about individuals who were different than them. This was determined based on their engagement with each other during the short break that was provided.

Professional identity-"Assumptions" observations. Participants were asked to write two to three assumptions each person had about others in the opposite School. Students from the School of Public Health (SPH) thought the School of Education (SOE) students were upbeat, resourceful, compassionate, and understanding individuals. They saw the majority of students were "female" and "tended to have liberal and/or left leaning political viewpoints". SOE coursework focused around teaching children, and more specifically, teaching specific subject areas. SPH students acknowledged that SOE students started off "altruistically and were service-oriented", yet SOE students frequently felt "stressed" and "underappreciated" and would likely get "burnt out" once "real life hits". The majority of SOE students either have a teaching background or were looking to obtain a teaching certification: "Don't really know much about students in the School of Ed, would assume they have a teaching background" and "Students are from

education/teaching field or going into the teaching field". However, "students might not all want to be teachers. Some might want to impact education on the policy or administrative level". Most importantly, SPH students noted the value that the education profession has: "Teachers play an extremely vital role in the lives of children in terms of academic & social well being and success". And yet, "Educators have many competing demands from various avenues (academic, social, behavioral, economic circumstances of families, etc)".

Just as SPH students noted specific personality traits about SOE students, so did SOE students about SPH: "SPH students sometimes have type A personalities. They are very organized, motivated, hard working" and "Public health professionals are highly intelligent, driven, accomplished individuals with less concern for fun & being social". SOE students felt SPH students had a "save the world complex" because "Public health students all think they will change the world", "Public Health people are interested in health disparities", and "SPH is all about global health". Similarly, the prestige factor of the school was noted: "Students in public health, especially at Hopkins, view themselves very highly because of the prestige of the institution". SPH students were seen as having "backgrounds in the medical field, administering or assisting with providing health services" and were more diverse than students at the SOE: "Public Health has more international scholars and people of international backgrounds"; "Students in SPH have very impressive backgrounds typically with some research and/or international experience". At least one SOE student did not realize that the School of Public Health was not the same as the School of Medicine; "Med students have no lives" and "Public health is an "easy" major that pre-med students choose for med school". There was an

understanding by SOE students as to the types of professions that SPH students sought: "SPH students are likely to pursue careers in policy, the health professions, non-profit organizations, or in community resource agencies/clinics". However, there was agreement among SOE students that SPH students might not excel in the field of education: "Public Health people are not effective educators", "Just because you have an advanced degree, doesn't mean you can teach", and "SPH trainees don't have a good one-on-one approach". Unlike how SPH saw SOE, the SOE students saw that public health was much more holistic in design: "Public Health people like a holistic approach to solving problems" and "Public health encompasses so many other disciplines- it's overwhelming". Granted, this may or may not be a good thing since, in the eyes of SOE students, "SPH is more theoretical and not practical".

From the exercise, it was clear to the researcher that there were more assumptions than facts known about students at each respective school. The participants readily acknowledged that this was the first time they had "met anyone from the School of Public Health or Education". "I've never been in the same room with a student like you" and "we've never had a class together or attended a lecture at the same time". All agreed that there were no obvious methods for the two Schools to engage with each other, yet, there was expressed interest on behalf of the participants at least, in doing so.

Interprofessional communication-"Discovery" observations. A short discussion of the differences and similarities between the Assumption and Discovery exercises was supposed to occur. The researcher opened the session by asking what each participant found as an assumption and a discovery about her partner. The conversation veered away from the specifics of the exercise and focused more on the intersection of

school health and education in general, and the lack of health training for teachers specifically. One participant started the conversation by commenting that a teacher had highly allergic children in her class and yet did not know how to administer an epi pen. Similarly, it was noted that teachers are not required to be CPR trained but isn't that important given the rise in health conditions? Participants commented, "there are more mental health issues appearing in schools, many of which are trauma related, and yet there is no communication with primary care doctors or mental health workers". Participants from each School recognized that teachers are getting little training outside pedagogy, which the participants viewed as a barrier. Other barriers to a child's achievement that were noticed included institutional, economic, and health barriers.

This larger group conversation was productive and insightful and the researcher allowed it to continue as the group was actively engaged in the topic. Reflection on the issues at hand occurred among the group as more anecdotal stories about instances whereby teachers should know more than just pedagogy was shared. All of the participants agreed that in their opinion, it was to the teachers' detriment not to be dually trained in areas such as mental health and/or health in general. Because the conversation was allowed to continue as such, participants did not hear the specific assumptions their peers listed.

Interprofessional problem solving-"The case study" observations. Team A consisted of the Lawyer, Teacher intern, Medical doctor, and School Counselor. After reading the case study, Team A decided to first address the immediate needs such as food and clothing, and then progress to the educational components. They recommended involvement of the school social worker as custody issues may arise, necessitating

outside agencies. In addition, due to the substance use, rehabilitation services might be needed for the family. It was suggested that an extended school day be created for the child that included tutoring and a meal. The mutually agreed upon, overarching goal was to ensure a safe environment for the child while at the school. Discussions included the need for a case manager to facilitate some basic needs which included: custody issues, health care, free & reduced meals, and an after school program. One solution was to form a team of adults within the school who were aware of the situation and could step in immediately for crisis management. It was suggested that the principal include the teacher and relay that the teacher's primary goal was to make school as welcoming as possible because it was the child's escape and safety net. The teacher could also monitor behavior throughout the week and report out when necessary. The team discussed how overwhelming this could be for a school, a teacher, and the child. "Where do you start with so many issues?" Using Maslow's Hierarchy of Needs, the team decided that basic needs should be addressed first, then tackle all of the moving pieces. One of the Public Health students suggested establishing an "incident command" or emergency team at the school in the future, "just as we do in emergency preparedness". It could include the School Psychologist, Teacher(s), Youth Advocate, and the School Nurse (at the very least) and be called an Incident Management Team. The team would serve as the front line point people should any situation arise with a student in the school.

Team B was comprised of the Health Educator, Medical Doctor, and Health Writer. After reviewing the case study together, Team B started first with the teacher as the point of contact. She would work with the school and outside agencies to identify foster care for the child. Trauma counseling, a visit to a pediatrician, and then regular

check-ins by the teacher, social worker, and school counselor, would follow this. The stakeholders who needed to be at the table included the teacher, school social worker, school counselor, school psychologist, a pediatrician, and community organizations. Establishing partnerships within the community for other at-risk youth, which addressed basic needs first (food, clothing), would be part of a longer-term plan. In addition, addiction programs for parents and group counseling for kids affected by drug use should be established in the community. Finally, it was suggested that a School-to-Home Liaison position be established. This person could work collaboratively with the School Social Worker to conduct home visits or arrange parent meetings.

Several of the participants admitted that they didn't / wouldn't know how to deal with the situation individually, but felt much more comfortable if they worked as a team. Collaboration would be helpful because individuals didn't have expertise in all areas. They saw the value in having an incident management team as is used in public health. The conversation also turned to themselves as individuals; they felt comfortable discussing this with those outside their field and felt the process was collegial. Discussion was had about how early in an educator's career should IPE be introduced; "we don't do a good job in self care, being reflective as to our role". It was deemed important that each profession needs to understand what his/her role is and what he/she brings to the table on the individual level.

Workshop Evaluation. From the evaluation findings, 85% would take another IPE workshop. While only three-quarters (71%) would be interested in earning a dual degree in the fields of education and public health (ie: MPH/MSEd), all (100%) were interested in taking classes from the field of education or public health (whichever field

they were not presently in). When asked about their favorite part of the day, answers focused on the team building and experiences; “discussing assumptions about other professions”, “discussing my professional identity, interviewing a SPH student about her professional identity, and then thinking about the similarities and differences”, “team building exercises and learning about other professional experiences”, and “the teamwork and hands on activities”. The participants realized that there was synergies between the fields: “talking with a PH student about her work and realizing how much it overlaps with mine” and “learning about the facilitators and the students in the workshop was insightful”. The least favorite part of the day focused on the tedious activities, “filling out the surveys”, and the “lecture in the beginning”. Otherwise, “nothing” was the common response as to their least favorite part. There was one mention made to not breaking down the assumptions in the larger group discussion. When participants were probed as to what more they would like to learn from a future IPE session, the responses were enlightening and focused predominantly on the intersection of health and education as it pertained to schools: “how to teach health information”, “best practices for incorporating public health knowledge in the classroom”, “how to educate educators on public health and the safety of their classrooms”, “health literacy”, “how to integrate public health in the classroom more”, “how to work in interdisciplinary teams”, and “more about the services (mental, health, medical, biological, etc) available to my students”. There were a few answers that sought to learn more about methodology in general, “how to teach others”, “effective teaching methods”, “how to train effectively”, “how to work in interdisciplinary teams”, and “how to be interactive in a teaching environment”. There was some reference to healthcare or healthcare environment: “how to reach out to people

w/ low health literacy and be a better educator to patients". Finally, when participants were asked their rationale for completing a dual degree, "professional development" and "belief that both fields are important" was the most recurrent choice (5 participants chose it). This was followed by "needed for my profession" and/or "could increase one's job opportunities" (3 participants chose this answer). The least chosen answers were supplemental training and just having an interest in both fields (2 participants).

Conclusions

There were four major findings that appeared as a result of the intervention: (a) there was interest in IPE as determined by the response to recruitment efforts (N=18); (b) the participants remained engaged throughout the intervention and after; (c) the feedback from the participants suggested there was perceived value to having interprofessional communication among their respective fields; and (d) questions remain about the appropriateness of instrumentation used to evaluate IP with education professionals. The findings answered the two research questions previously posed: (RQ1) What additional professional preparation can be gained by engaging graduate students in the fields of education and public health in IPE? (RQ2) What were the experiences of the participants?

Interest: Professional Preparation & IPE. The results of the workshop suggest IPE is a valid approach to use with public health and education professionals, particularly if the goal is to develop a common language that addresses the whole child and the overall health and welfare of children. A random group of graduate students in education and public health was brought together, previously unknown to each other, and resulted in the realization of a shared common interest and a lack of opportunities for professional

collaboration when working with children in poverty. The seven participants frequently made mention that they recognized their similar interest in the same subject matter (social justice, poverty, education/health outcomes, children's health, to name a few), and yet, as graduate students and professionals, there was no opportunity for them to collaborate. Several PH participants had the same comment: "I never met an education student before. There is no reason for me to go to their campus/School, and yet, I find out now that we share the same interests".

The participants were keen to make mention often of the "benefits of collaboration and communication" among professionals in their respective fields. This was evident as the group became more comfortable with each other they began to engage in the overarching topic of education and public health. Even more interesting was that they spoke passionately about the need for teachers and schools to be knowledgeable about public health, and not about the need for more professional development around pedagogy. In fact, the terms "pedagogy", "curriculum", "instruction", "testing", and "assessment" never entered the conversations. It was feared that the decision to host the workshop at the School of Education would unconsciously bias the group more towards the topic of "education" than "public health" and yet the exact opposite occurred. There was more conversation about the need and desire to have more public health awareness in the field of education than the reverse (ie: a need to learn how to teach for health professionals). Though there was one more public health student than total number of education students, it was actually the MAT (education) and the MS Counseling (education) students who initiated the conversations around public health. Based on their practical training/internship locations within Baltimore City, they saw an immediate need

for and relevance of such knowledge in their educational pursuits. The MS Counseling student (SOE) made specific reference to this as a written comment on the RIPLS:

> "I think that because school counselors are unique in their duty to address students' academic, career, and personal/social needs and goals, it is IMPERATIVE that school counselors collaborate with other professionals in and outside the school building-teachers, administrators, speech pathologists, social workers, psychologists, parents, community members, and other stakeholders."

Likewise, the Health Educator (public health) spoke often of the need for teachers to be more "health aware" and "health trained" given the rise in social, mental, and physical issues afflicting children today. The family physician supported this opinion through her comments during the final case study: "The doctor needs to be kept in the loop".

Engagement & Value. The observations highlight the fact that the participants remained engaged in the activities throughout the duration of the workshop (five hours). On one of the follow up posttests (RIPLS) administered in December, a participant commented on the value of the experience: "[the workshop] was a very useful, positive experience" and that she was "…so glad [she] decided to participate." The participants noted the value of IPE to their learning experience, "this seems like a needed component…it would be nice to see this implemented across various parts of the curriculum." In addition, after the completion of the workshop, three of the participants remained for an additional hour to continue talking with the facilitators and researcher about the topic of interprofessional education. The participants would likely have stayed longer if the room wasn't needed. Throughout the five hours, there was a high level of energy in the room and constant conversation. The workshop evaluations all noted that the favorite part of the day was the engagement with colleagues to "learn more about their respective fields." This finding was also supported by their least favorite part of the

day: “the lecture”. It was clear that an interactive, hands-on, engaging format was well received and of interest for future training. Given the components inherent to IPE, this type of training would be a welcomed experience by participants.

Instrumentation & Evaluation. The quantitative results from the RIPLS and IEPS collectively demonstrated there was variability among the participants as to their individual and professional attitudes toward IPE. Though a positive result occurred, it should not be viewed as a trend, due to the small sample size. In order to determine the reliability of the quantitative findings, a larger sample size, forced participation, and a comparison group would be recommended. Qualitatively, the findings were in line with those found among students in the fields of medicine, nursing, and pharmacy. Fidelity of implementation was confirmed through the use of the IPE Adherence Grid (see Table 7).

Limitations

Four limitations were identified with this study: (a) instrumentation; (b) sample size; (c) participation; and (d) population type.

Instrumentation. The quantitative instruments (RIPLS and IEPS) that were utilized for the study may not be the best mechanism in which to measure the effect of IPE with this population. Studies coming out of medicine and nursing used the same instruments with a different sample population (nursing, medicine, allied health). To date, the RIPLS has been validated for eight health profession educational programs and has been shown to have reasonable internal consistency and test-retest reliability (Lie et al., 2013). However, the RIPLS has not been validated for use with education or public health professionals. In addition, language on the RIPLS was altered for the purpose of this study to reflect terminology commonly used with education and public health versus

medicine/health. The same construct (attitude) was measured, however, the change in terminology should be evaluated. It can also be argued that, without the addition of qualitative methods, a change in attitude may not have been measurable using just quantitative data from the RIPLS and IEPS. The small sample size may have been the cause. However, there may also be a better measure to capture information for this specific study population.

Sample size. The small number of participants limited this study as the findings could not be generalizable to the larger population, nor could trends be drawn from the data. It was recognized however, that the smaller number of participants was preferred because of the intensive engagement that occurred as a result. With a larger number of participants (N>25) the engagement might not be as focused or as productive. If a large sample were procured, smaller groupings (N<24) would be recommended. In addition, it is preferred that an even number of participants is obtained to ensure equal small groups and an even number of pairs for the icebreaker, discovery, and case study activities. The ideal sample size to produce intense engagement but provide more generalizable data might be 16-22 participants. A larger group than this, however, would produce more of a measurable effect. Therefore, the goal of the workshop (engagement versus effect) should inform the sample size.

The participation in this study was voluntary and occurred in an academic setting. As mentioned previously, an inherent bias may have happened as the sample included those more open to learning new skills. The participants self selected themselves for the workshop. The results may differ if forced participation transpired, as the participants may not be as receptive to change and/or learning new skills. It is anticipated that a level

of resistance or pushback from forced participation could happen. Similarly, location may have positively influenced the study. The students were accustomed to being in an academic setting, learning new skills. Forced participation in a non-academic work environment may generate different results. Choosing employees within the Baltimore City school district or other urban districts could elicit further information around the efficacy of IPE with populations outside health/healthcare.

Population. Choosing those outside academia raises the question of the type of populations for future study. While this study chose a population outside those historically researched within IPE literature, it was still limited in the heterogeneity of the group (all students, all from Johns Hopkins, all located in Baltimore). IPE research has thus far focused on undergraduate or graduate level students in academic settings. Future research should investigate how practicing teachers, counselors, or public health workers would receive the same type of training to determine if similar or different results occur. More specifically, the duration of professional experience as well as generational status (Millenial, Gen-X, Baby Boomers) should be measured to see if there is a relationship to attitude. Finally, future research may want to measure mixed institutional groups (public vs. private, different states, different geographic areas, students versus practicing professionals) in order to compare results. This study demonstrated that one's academic area of study might not negatively impact one's attitude toward IPE, because a positive change in attitude happened. What have not been studied to date in the IPE literature are differences in age of participants (entry-level versus more senior), multiple settings at one time (ie: research university and a hospital and a clinic and a community setting), environment (ie: company culture and mission of organization embrace/does not embrace

collaboration), and mixed, heterogeneous groups of learners with less-defined future occupations (ie: Master of Science in Educational Studies and Master of Public Health). Though an effect was detected for this group, it might also be important to understand the impact on each homogenous group versus the heterogeneous sample used. The intervention should be conducted at a future date using matched, homogeneous comparison groups with random assignment as well as mixed, heterogeneous groups with random assignment, and happen over a longer period of time.

Discussion

The participant's position that there is an "imperative need for [counselors] to collaborate with other professionals" reflects the potential importance of this study to the field of education. With the increasing socioeconomic achievement gap and rise in the number of children living in poverty, the prevalence of issues associated with low SES will inevitably grow. In a time of expansive demographic shifts within the U.S., it would behoove colleges and universities to turn a critical eye toward how we prepare our educators for the challenges they will face in the classroom and in the school.

The critique should begin with the theories that we use, or rather do not use, in preparing the education workforce. Brofenbrenner's Ecological Systems theory (1994) demonstrates the value that comes with the contextualization of a child inside the many environmental systems by which he/she learns. The ecological approach marries well with Bandura's Social Learning Theory (1986), which looks at the manner in which we construct new meanings and the influence of the environment on behavior. Inclusion of an ecological model of human development into educators' training would demonstrate how, and why, schools should teach to the whole child. If institutions trained educators

using a whole child approach, teachers would be more aware of, and attuned to, the challenges that face today's child. Embracing the whole child is even more pertinent to those who work in schools, which are located in neighborhoods with extreme poverty. It is not enough to have a "general" understanding and awareness of poverty, as was demonstrated by the needs assessment. Educators need to embrace everything that comes with being poor, and absorb the information in such a way that it is at the forefront of their teaching. Ideally, we need to train those in education not to assume that the inherent cultural norms by which new knowledge was gained is going to be the same for poor children. The teaching workforce cannot afford to assume that the child sitting before them in class is indeed ready to learn. Though there may not be overt signs of problems, the problems nonetheless can, and do, exist.

Practical applications. Developing educators' awareness of poverty and its associated factors should be made a priority for the field of education, but it does not have to be "on top" or "in lieu" of something else. Teachers should not be expected to know everything. It would be impossible to condense all of the necessary knowledge to educate the whole child into a typical academic program. Rather, instilling an understanding of the social determinants of education and health could complement existing teacher training programs. Educators can be taught to recognize and understand the issues associated with poverty that will affect a child's health and learning and subsequently, allow them to feel comfortable asking other professionals for help.

Within Johns Hopkins School of Public Health, the mechanism by which dual or complementary training occurs is well established. More than twenty years ago, the School of Public Health created an educational opportunity for graduate level medical

students and residents to supplement their medical training. The establishment of a Master of Public Health (MPH) was offered to students in the School of Medicine; the knowledge of public health enhances the clinical curriculum, particularly when serving the communities in and around East Baltimore. Shortly thereafter, dual degree options were created between the School of Public Health and Georgetown Law (MPH/JD), University of Maryland's School of Social Work (MPH/MSW), as well as Hopkins' School of Nursing (MPH/MSN), Krieger School of Arts and Sciences (MPH/MA), and, most recently, the Carey Business School (MPH/MBA). The creation of these specific dual degrees was initiated by faculty connections between and among the Schools whereby the value of the particular interdisciplinary training was recognized.

Within the last five years, the School of Education similarly saw the value in professional collaboration through the creation of the Master of Education for Health Professions (MEHP). This stemmed from a need by clinical staff from the Schools of Nursing and Medicine (medicine, nursing, anesthesia, to name a few) to understand adult learning theory and educational practice to thereby improve their pedagogical skills. Drawing on faculty expertise from the Schools of Education, Medicine, Nursing, and Public Health, the program seeks to provide established clinical staff with the skills necessary to effectively teach. The degree program is the first step in showcasing the value of the field of education to the greater Johns Hopkins University population.

Due to the positive reception the MEHP degree has received and the expressed interest by the participants of this study in collaborating between the two areas, investigation into ways Education students could learn more about public health was studied. The ultimate goal would be to establish a dual MPH/MSEd option for students at

both schools. However, without research on the effectiveness of, and interest in such training, the likelihood of its establishment is many years down the road. In the short-term, a low cost, straightforward, potential opportunity was identified. The School of Education has a Master of Science in Educational Studies, unique to Johns Hopkins, which allows students to "create a program of study that reflects their area(s) of specialization and personal career goals (Johns Hopkins School of Education, n.d.)". Designed for "teachers, administrators, and other educational professionals who already possess certification in their field or who do not require certification", the program allows for specialization in two particular areas of study (Johns Hopkins School of Education, n.d.). For example, students interested in urban education and health could choose the Urban Education certificate offered through the School of Education, and then create a specialization area from coursework offered through the School of Public Health. Right now, Education students are unaware of the option to take classes at the School of Public Health, as there is no formal structure in place recognizing those classes as a potential concentration area.

To rectify this, the researcher met with the Dean and Associate Dean of the School of Public Health. With their approval, the researcher began initial work to write educational objectives for SPH designated courses, which would provide Education students with an awareness of the social determinants of health and how this awareness relates to learning and human development. The SPH courses were grouped into 2 public health concentration areas: Public Health & the Young Child and Public Health & Adolescents. Once complete, the researcher and the Associate Dean will convene a meeting with the faculty of the identified courses to discuss and determine next steps.

Dependent on the results, future efforts to establish concentrations in Public Health for Education students will be explored and hopefully, established.

This practical application, which addresses the need for educators to have an awareness of the social determinants of health's impact on learning, was one result that occurred based on this study. The second practical application resulted from the IPE workshop itself. Just as healthcare professionals created interprofessional teams to address the complexity of care for low-income patients, so too can the field of education. With the recent push by the CDC and ASCD to create "healthy school communities" and the advent of telemedicine and school-based primary care centers, professionals will look to higher education to respond accordingly and provide education and training opportunities for those in the associated fields. More than forty years ago, the Institute of Medicine demonstrated the need for interdisciplinary training to ensure delivery of fair, safe, and patient-centered care. Though it took more than thirty years for academic institutions to respond with a coordinated interprofessional approach, it is finally being implemented in the fields of medicine, nursing, and pharmacy.

Recently, healthcare providers established that centralizing primary care within the school environment provides more efficient, effective, and patient-centered care for children, particularly those with chronic conditions such as asthma and obesity, and lessens the burden for poor, working families. Children can receive timely, child-centric care at their schools, which reduces the stress for parents who would have to leave work early to take their child to the doctor. For low-income families, there exists a very real internal struggle between caring for a sick child and facing unemployment due to unscheduled time off.

While this model is logical in design and appears to be a cost-effective solution to the challenges brought forth by poverty, it has created professional siloes within the field of health and education. This was evident by site visits made to the Rales Center within the KIPP Academies in West Baltimore. The establishment of the Rales Center for the Integration of Health and Education and the READY model (Rales Educational and Health Advancement of Youth) was well received by KIPP however the challenge presenting itself is how to fully integrate and engage the staff of the entire school community. An interview with the Wellness Coordinator revealed that there needs to be a coordinated, thoughtful approach to professional development such that the education staff supports the health staff and vice versa.

Though the results of this study cannot be viewed as valid or reliable yet, one method to extend this research is to attempt an IPE experience with practicing professionals in a school-based setting. Discussion is underway with the KIPP Academies to provide IPE to its teaching and professional education and health staff. The goal of the experience is to: (a) create an opportunity and environment where professionals can learn with, from, and about each other; (b) provide an interactive method which teaches professionals how to communicate with one another; (c) lay the groundwork which demonstrates the value of interprofessional collaboration; and (d) offer professionals an opportunity to practice interprofessional problem solving around an identified problem of practice for the Academies. If a future formal research study will be conducted from this experience, an alternate research study design has been considered. Using random assignment, two comparison groups will be created and the IPE experience administered. The RIPLS will be given as the pre-and-posttests. Additional qualitative interviews will

follow at regular intervals post-workshop to determine efficacy of training. Ideally, the study will be conducted over one academic year, with the workshop evaluation to occur the following academic year, and the results disseminated to the school the next academic year. The school community will be encouraged to plan, initiate, and implement at least one feasible study finding.

In conclusion, this investigation into teachers' awareness of the role poverty plays on a child's education led to a feasible intervention that has potential long-term practicality. At the beginning of this doctoral program, Interprofessional Education was not known to the researcher, though it lived and breathed one School away. Communication with the Co-Directors of IPE for the Schools of Nursing and Medicine led to an exploratory investigation into IPE's use with a population outside of allied health and medicine in order to answer questions posed by the needs assessments. The result was an enthusiastic interest by Public Health and Education students, and perhaps expressed the most by the Education students. The research did not stop with the intervention but continued to determine if a practical application could be found. Through extensive personal interviews with those in the community, two applications were realized, and the use of IPE was found at other institutions in Baltimore, namely University of Maryland, Baltimore and Loyola University Clinical Centers. While it is unknown at this time if there will be support for the additional research, investigation into the use of IPE within the education and public health sector will continue.

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Appendix A

Questionnaire: Awareness of Factors

For each question in the table below, give your response for the United States as a whole, then for Baltimore City in particular. Answer based on your opinion.

	United States	Baltimore City

1) What do you think the poverty rate (%) is today? Choose one range from below:

(0-5%)	(6-10%)	(7-15%)	(16-20%)	(20%+)

2) Do you think that rate has changed in the last 5 years?

(yes, rate up)	(no change)	(yes, rate down)

3) Indicate how much you think the rate has changed:

(+1-5%)	(+6-10%)	(+11-15%)	(+>15%)
(-1-5%)	(-6-10%)	(-11-15%)	(- > 15%)

4) How many children do you think are NOW living in poverty?

(<50,000)	(50,000-100,000)	(100,000-300,000)
(300,000-600,000)	(600,000-1M)	(1-5M)
(6-10M)	(>10M)	

5) Do you think families are making more income than they did five years ago?

Yes, more	No change	No, less

For the questions 6-13, respond YES or NO.

6) Do you think there is a correlation between health and learning?

7) Do you think there is a correlation between health and the level of one's education?

Appendix A continued

8) Do you think all children, no matter their socio-economic status, receive an equal opportunity to learn?

9) Can one's family background influence a child's test scores?

10) Would you agree that families pass cultural norms down to their children?

11) Do you think different socio-economic groups have different parenting styles?

12) When preparing lessons, do you consider the context that students bring into the classroom?

13) As a teacher, is it important to take into consideration out of school factors that impact a child's environment when planning lessons?

For the next questions, indicate your responses below or use the back of the paper. You do not need to answer in sentences. Try to convey your thoughts and opinions.

14) What are specific ways that poverty can affect learning?

15) What are specific ways that poverty can affect one's health?

16) In your short time as Methods students or student teachers, have you encountered a student who did not understand the meaning of a word you assumed all children would know? Answer yes or no and provide any/all words.

17) What are some of the long-term effects of living in extreme and/or constant poverty?

Appendix B

Participant Informed Consent

JOHNS HOPKINS UNIVERSITY: SCHOOL OF EDUCATION
Homewood Institutional Review Board (HIRB)

Title: What is the level of awareness and understanding that pre-service and in-service education students have regarding the extent to which poverty affects the learning of elementary-aged children attending a Baltimore City Public School?

Principal Christine King, MSEd
Investigator: Doctoral Student, Johns Hopkins University

Date:

PURPOSE of NEEDS ASSESSMENT:
The purpose of this survey and focused questions is to ascertain the level at which pre-service and in-service student teachers understand the complexity of poverty, the impact poverty has on children's learning, and how prevalent poverty is in their community. Based on responses, it will determine if specific professional development and/or targeted training is needed.

I anticipate completing a survey with three groups of student teachers from three colleges/universities located in/around Baltimore who have student taught in a Baltimore City Public School. I approximate at least five student teachers per university for a total of 30.

PROCEDURE:
Depending on the college/university's requirements, at least one meeting with the student teachers will be held. This meeting might be a portion of their required student teaching seminar or a separate group meeting arranged by the sponsoring faculty. The PI will conduct each session, with or without the presence of the Education faculty sponsor, depending on the host institution's requirements. A survey and questionnaire will be disseminated to each participant and collected at each institution. It is anticipated this will take 1.0-1.5 hrs. to complete.

RISKS/DISCOMFORT:
There are no perceived risks to students anticipated.

BENEFITS: Potential benefits are an increased understanding of the knowledge, skills and abilities needed by early career teachers working in high need, urban schools and the potential opportunities to address those needs that can be created.

Appendix B continued

Participant Informed Consent

VOLUNTARY PARTICIPATION & RIGHT TO WITHDRAW:
Student participation is entirely voluntary. He/she can choose to participate or not with the completion of the survey and questionnaire and may stop completion at any time.

CONFIDENTIALITY:
To the extent possible, any identifying information linking a particular student to the needs assessment will be kept confidential to the extent possible by law. The information gathered will not include the student's name but may include other identifying information in the form of opinions.

The information gathered will be reviewed by people responsible for making sure that research is done properly, including members of Johns Hopkins Homewood Institutional Review Board and officials from government agencies such as the Office for Human Research Protections. Otherwise, information will be shared only with faculty associated with the coursework required of the PI.

The PI will maintain any audio or video recordings. No identifiable information will be included in any reports of the research published or provided to Johns Hopkins School of Education.

Surveys will be collected in paper format and kept in a locked office. Electronic information will be password protected on the PI's computer. Any audio recordings will be destroyed.

COMPENSATION: There will be no compensation for participation.

QUESTIONS OR CONCERNS: Can be directed to Christine King, Johns Hopkins University (443) 924-0941 or Cking47@jhu.edu

SIGNATURE: By signing this consent form, you understand the information contained therein and agree to participate at will in this study. By signing this consent form, you have not waived any legal rights you would otherwise have as a participant in a research study.

Printed Name Date

Signature Date:

Witnessed by: Date

Appendix C

Professional Bios of Focus Group

The Teacher, (MAT, BA, ABA certified). An elementary teacher with fifteen years experience in private and public schools in New York City and Rochester, NY, she has a background in applied behavior analysis, having worked 1:1 with autistic children. Her current school is located in a wealthy suburban community, immediately outside a mid-sized urban area, which receives students from the city therefore diversifying her student population to be 30% FARMS eligible. The Teacher was the founding member of a social-emotional learning committee (SELC) in her school and was recently nominated and honored as the Blue Angels Key Influencer of Young People, a national award. In addition to being a teacher, she is the mother of two elementary-aged children (Grades 2 & 5) in a public school outside her district.

The Doctor, (**MD/MPH**). The Doctor is presently the director of an infectious disease and child abuse clinic in Fayetteville, North Carolina. The medical professional also travels to various states to provide expert testimony in child abuse cases. Prior to her role in North Carolina, she served as the co-director of a community of practice (COP) in Rochester, New York. There, she initiated a partnership among local and state law enforcement, legal, social work, health, and the state's Department of Social Services with an aim to reduce the re-traumatization of young victims of neglect and abuse. Due to the success of this partnership, she was invited to create the same model at the infectious disease clinic in North Carolina. The Doctor is mother to two children in a middle and elementary public school (Grades 1 & 6) in North Carolina. She volunteers on a regular basis within her son's school whose instruction is delivered bilingually, though she is not bi-lingual herself. The school population is 50% FARMS eligible.

The Lawyer, (JD, BA). The lawyer currently serves as a youth advocacy lawyer for a county in western New York. Prior to this role, she worked with delinquent youth as a counselor, then as a legal aid, until becoming a lawyer. The full extent of her professional career has sought to build collaborations between social service agencies and the legal system, focusing on marginalized youth. She is the parent of four children in middle and elementary public schools (Grades PreK, 3, 6) in western New York whose population is 20% FARMS eligible.

The Librarian-Reading Specialist, (MLS, BA). This professional is a librarian within the community college system in California, teaches at the same school as a Reading Specialist for underprepared college students, taught Middle Eastern dance to students in NYC, and is a mother to three young children (Grades K, 1, 2) in elementary school in southern California with a 60% FARMS population.

Appendix D

Founding Members of the Interprofessional Education Collaborative

American Association of Colleges of Nursing
American Association of Colleges of Osteopathic Medicine
American Association of Colleges of Pharmacy
ADEA: The Voice of Dental Education
American Association of Medical Colleges
Association of Schools & Programs of Public Health

Appendix E

Sample Recruitment Materials

(Emailed text and included in weekly SOE announcements, SOURCE announcements)

Workshop in Interprofessional Education (IPE) offered to SOE/SPH Master's students

Are you planning to work with children birth to age 21? Are you interested in learning additional skills in communication, collaboration and building effective interdisciplinary teams?

Christine King, an Ed.D student and staff member at the School of Public Health, is conducting a **FREE** workshop as part of her doctoral research. She is recruiting students from SOE & SPH to learn IPE together. The time commitment is a *one-day workshop on Saturday, Nov 7th from 9-3pm at the School of Education*.

Participation in the workshop will:

- Help determine if there is interest in Inter-Professional Education (IPE) training by graduate students in the School of Public Health (SPH) and School of Education (SOE). IPE is presently used with graduate students in the Schools of Nursing (SON) and Medicine (SOM).
- Teach the core components of IPE (communication, collaboration, professional identity, and teamwork) in a hands-on, interactive format.
- Provide an opportunity to learn with, from, and about graduate students from the Schools of Education & Public Health interested in working with the same population.
- Demonstrate one method to create interdisciplinary teams in educational or community settings.

A small group up to 15 students is needed from the two Schools. Christine will facilitate the workshop, along with a K-12 educator from NYS and a MD/MPH Child Abuse doctor.

Please contact Christine if interested (Christine.king@jhu.edu). Thank you in advance for your support and help!!

Appendix F

Original RIPLS

Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire

The purpose of this questionnaire is to examine the attitude of health and social care students and professionals towards interprofessional learning.

Your name: (develop your own 'personal code' by using the following formula):

First 3 letters from your first name: ☐ ☐ ☐ **Last 3 letters** from your last name: ☐ ☐ ☐

Year of birth: 19 ☐☐ **Your discipline**: _____ **Gender**: ☐M ☐F

Have you completed the RIPLS questionnaire before? ☐ Yes ☐ No

If you answered yes to the previous question please indicate how long ago you last completed the questionnaire:

☐ 1 – 3 months ☐ 3 – 6 months ☐ 6 – 12 months

☐ 1 – 2 years ☐ 2-3 years ☐ 3+ years

Have you had previous experience of interprofessional teaching? ☐ Yes ☐ No

If you answered yes to the previous question please give a very brief statement of what this IPE teaching was and any impact it may have had.

_____
_____
_____

Please complete the following questionnaire.

and for professionals
after qualification would improve
working relationships after
qualification / collaborative practice.

Appendix F continued

Service & the Health & Socialcare Interprofessional Network (HSIN), Victoria – August 2009.

Appendix G

Revised RIPLS

Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire~PHED
The purpose of this questionnaire is to examine the attitude of education and public health students and professionals towards inter-professional learning.

First 3 letters from your first name: □ □ □
Last 3 letters from your last name: □ □ □
Year of birth: 19 □□
Your discipline: _____
Gender: □M □ F

Have you completed the RIPLS questionnaire before? □ Yes □ No
If you answered yes to the previous question please indicate how long ago you last completed the questionnaire:
□ 1 – 3 months □ 3 – 6 months □ 6 – 12 months
□ 1 – 2 years □ 2-3 years □ 3+ years
Have you had previous experience of inter-professional teaching? □ Yes □ No

---

If you answered yes to the previous question please give a very brief statement of what this IPE teaching was and any impact it may have had.

_____
_____
_____

	Strongly Agree 5	**Agree 4**	**Undecided 3**	**Disagree 2**	**Strongly Disagree 1**
1. Learning with other students/ professionals will make me a more effective member of an education and/or public health team.					
2. Children/ students would ultimately benefit if education and public health students/ professionals worked together.					

Appendix G continued

Revised RIPLS

3. Shared learning with other education and public health students will increase my ability to understand educational, social, and health problems.					
4. Communications skills should be learned with other education and public health students/ professionals.					
5. Team-working skills are vital for all education and public health students/ professionals to learn.					
6. Shared learning will help me to understand my own professional limitations.					
7. Learning between education and public health students before degree completion would improve working relationships after degree completion.					
8. Shared learning will help me think positively about other education and health/public health professionals.					
9. For small-group learning to work, students need to respect and trust each other.					
10. I don't want to waste time learning with other education and public health students.					

Appendix G continued

Revised RIPLS

11. It is not necessary for graduate level education and public health students to learn together.					
12. Problem solving can only be learnt effectively with students from my own school.					
13. Shared learning with other education and public health professionals will help me to communicate better with students, clients, and other professionals.					
14. I would welcome the opportunity to work on small group projects with other education and public health students.					
15. I would welcome the opportunity to share some generic lectures, tutorials or workshops with other education and public health students.					
16. Shared learning and practice will help me clarify the nature of students' or clients' problems.					
17. Shared learning before and after degree completion will help me become a better team worker.					

Appendix G continued

Revised RIPLS

18. I am not sure what my professional role will be/is					
19. I have to acquire much more knowledge and skills than other students/professionals in my own school.					

If you have any other comments on interprofessional education, please enter them in the lines below.

Appendix H

Interdisciplinary Education Perception Scale

INTERDISCIPLINARY EDUCATION PERCEPTION SCALE

PRE / POST

You will be asked to complete this at the beginning and end of your placement. Thanks for your assistance.

Mother's date of birth (To allow us to match the pre and post responses): _____

Using the scale below, (Strongly Disagree--1 to Strongly Agree--6) please rate your perception of your profession and other disciplines.

DESCRIPTOR	Strongly Disagree 1	Moderately Disagree 2	Somewhat Disagree 3	Somewhat Agree 4	Moderately Agree 5	Strongly Agree 6
1. Individuals in my profession are well-trained.	1	2	3	4	5	6
2. Individuals in my profession are able to work closely with individuals in other professions.	1	2	3	4	5	6
3. Individuals in my profession demonstrate a great deal of autonomy.	1	2	3	4	5	6
4. Individuals in other professions respect the work done by my profession.	1	2	3	4	5	6
5. Individuals in my profession are very positive about their goals and objectives.	1	2	3	4	5	6
6. Individuals in my profession need to cooperate with other professions.	1	2	3	4	5	6
7. Individuals in my profession are very positive about their contributions and accomplishments.	1	2	3	4	5	6
8. Individuals in my profession must depend upon the work of people in other professions.	1	2	3	4	5	6
9. Individuals in other professions think highly of my profession.	1	2	3	4	5	6
10. Individuals in my profession trust each other's professional judgment.	1	2	3	4	5	6
11. Individuals in my profession have a higher status than individuals in other professions.	1	2	3	4	5	6
12. Individuals in my profession make every effort to understand the capabilities and contributions of other professions.	1	2	3	4	5	6
13. Individuals in my profession are extremely competent.	1	2	3	4	5	6
14. Individuals in my profession are willing to share information and resources with other professionals.	1	2	3	4	5	6
15. Individuals in my profession have good relations with people in other professions.	1	2	3	4	5	6
16. Individuals in my profession think highly of other related professions.	1	2	3	4	5	6
17. Individuals in my profession work well with each other.	1	2	3	4	5	6
18. Individuals in other professions often seek the advice of people in my profession.	1	2	3	4	5	6

Student IEPS - Luecht et al, (1990, Journal of Allied Health, 181-191) with permission.

Appendix I

Workshop Evaluation Survey

November 7, 2015

---

1) Would you take another workshop to learn more about working inter-professionally? _____ YES _____ NO

2) What was your favorite part of the day?

3) What was your least favorite part of the day?

4) Would you be interested in earning a dual degree in the fields of education and public health? (ie: MPH/Med) _____ YES _____ NO

5) Would you be interested in taking classes from the field of education and/or public health? _____ YES _____ NO

6) If you answered YES to #5, what would you hope to learn?

7) Why would you look to complete a dual degree in education/public health? Circle all that apply.

Professional Development Needed for my profession	Increase Job Oppty	Interested in both fields
	Supplemental Training to compliment existing degree	Believe both fields are important

---

Thank you for participating!!! Please direct any other questions to Christine King at Christine.king@jhu.edu.

Appendix J

Case Study for IPE Workshop
November 7, 2015

You learn that an elementary aged child recently became homeless due to his parents' negligence. Admitted addicts, the parents fell asleep while using and subsequently set the mobile home in which they lived on fire.

Luckily, the family escaped unharmed. However, they lost all belongings in the fire. The mother is sent to jail for 6 months. The father is sent to jail for 10 days. The child stayed with relatives for that time and is then released back to the custody of the father. They remain homeless.

The child had been academically challenged up to this point. Reading and math test scores were in the lowest quartile. He frequently came to school looking tired, hungry, and unkempt.

Using your professional background and knowledge, work collaboratively to address this situation. Use the questions below to aid you thinking.

- Who needs to come to the table? Who are the stakeholders? What services should be provided? Using a Whole Child Approach, identify the next steps that need to be taken in order to help this child. Draw up a plan that could be implemented in a school for situations such as this. What might a short-term plan look like? What might a longer-term plan look like?

Bio

Ms. King is a trained Career Counselor who has worked within higher education for the past 17 years. The focus of her professional experience has been to counsel, guide, and advise undergraduate and graduate students in meeting their academic, personal, and professional goals. For the past six years, she has managed two graduate programs (Health Policy and Health Economics) for the Department of Health Policy and Management at the Bloomberg School of Public Health. Prior to her arrival in Maryland, she worked in higher education in New Hampshire, Massachusetts, and New York City. In New Hampshire, she served as the lead career advisor in a blended academic and career advising office and was selected by the USNH Chancellor to be the first point of contact for the institution within the business community. She worked on statewide initiatives designed to attract and retain an educated, young workforce in New Hampshire, as well as provided counseling to a school population of 5,400. Within Massachusetts, she created and successfully implemented career counseling and a student mentor program for first generation, low income, and students with disabilities over a four year period. While in New York City, she started the first evening career services clinic at Hunter College where she worked primarily with an ethnically diverse population of adult working students. In addition, she interned in vocational rehabilitation at Rusk Institute, part of NYU Medical Center, to gain experience working with individuals with disabilities, and was an adjunct faculty member at LaGuardia Community College.

Curriculum Vitae

CHRISTINE KING

careercking@gmail.com

Dedicated, creative and innovative administrator with over fifteen years experience in higher education and private sector settings creating programs and policies that support learning and development. Expertise working collaboratively with faculty, upper level administration, state officials, community members, industry, and students. Background in strategic planning, program assessment, staff development, budget management and integration of new media into the educational process. Well-rounded background in academic advisement, career development, research and teaching. Familiar with the needs of diverse groups including adult learners, veterans and career changers; individuals with disabilities, first generation, and/or low income status; individuals in transition; and multicultural student populations.

EDUCATION EXPERIENCE

Johns Hopkins Bloomberg School of Public Health, Baltimore, MD (January 2010-present)
Department of Health Policy & Management
Academic Program Manager

Accomplishments:

- Focused personalized recruiting efforts, which resulted in increased enrollment for Fall 2013, generating additional revenue for Department.
- Identified a need for an applied economics course for MSPH and MHS students to better prepare students for advanced Health Economics course; collaborated with instructor and department faculty to create a joint offering for MSPH, MHS and MPP students beginning fall 2013.
- Invited by MPP program manager to teach career development segments of MPP graduate seminar.
- Independently saw need and initiated review of existing program competencies and curriculum and subsequently drafted learning outcomes and evaluation methods for MSPH program in preparation for accreditation self-study.

Highlights:

- Administer and manage the MSPH/HP professional two-year program for 60+ enrolled graduate students. Invited to oversee administration and co-direct the MHS/HE academic one-year program for the inaugural year (2011-2012). Continue to provide programmatic and student support for subsequent MHS cohorts.
- Primary point of contact regarding programs, interacting with faculty, senior staff, current and prospective students, employers and alumni.
- Frequently serve as primary decision-maker on program policies and procedures. Communicate regularly with Department's Director of Academic Programs.
- Counsel students in the areas of career development and academic planning. Teach graduate level seminar (MSPH) focused on career development and planning on a weekly basis for three academic terms. Identify and recruit employers for speaking engagements, networking events and field placement sites. Conduct site visits with students and their preceptors in second year field placements.
- Initial reviewer of 100+ applications, serve as admissions committee leader (3 faculty plus Director) and subsequent final decision-maker who determines suitability for admissions to programs. Participate in School-wide recruiting events.
- Initiated contact with professional advisors to the undergraduate Public Health Studies major within prestigious private university. Offer program guidance and advising to advisors and undergraduate students regarding accelerated admissions program between undergraduate and graduate institutions.
- Collaborate and provide programmatic support to an additional graduate program located offsite (MPP).
- Maintain contact with and update information for alumni and field placement sponsors.
- Attend monthly faculty meetings, meet monthly with Department Chair, and interact with faculty and senior staff regularly.

Keene State College-USNH, Keene, NH (2003-2009)
Associate Director-Career; Academic & Career Advising Office
Business Liaison for the University System of New Hampshire

Accomplishments:

- Determined needs of students and office via self-designed survey; compiled results (n=796) and advocated for changes in delivery system.
- Built a widely recognized career development program within an established Academic & Career Advising office, subsequently initiating two position changes and advancement from Advisor to Associate Director in six years.
- Within a year of employment, recommended by the USNH office and acknowledged as the University System's first point of contact for employers statewide who might be interested in conducting business operations and/or establishing community relations with the College.
- Researched feasibility of establishing a BSN program at College and increased relationships with local community college's AAS RN degree to develop a transfer program. BSN program initiated a year after my departure.
- Collaborated with Dean of Sciences to write and submit proposal for the annual meeting of the Council on Public Liberal Arts Colleges (COPLAC) with proposal acceptance and subsequent presentation to audience of Academic Presidents, Senior Vice Presidents and Directors.
- Active involvement in and advised on the statewide initiative entitled 55% Initiative, as well as the Governor's Taskforce for a Young Workforce designed to increase the retention of a young, talented, and educated workforce within New Hampshire.

Highlights:

- Primary point of contact to counsel and advise a total undergraduate and graduate enrollment of 5,400 plus lifelong alumni, continuing education, prospective students, and community members via individual appointments which focused on career/life changes, skill, interests, and values development/identification, transitioning to the workforce (resume and cover letter writing, interviewing, internships, and employment search strategies) and graduate school advisement.
- Supported four full-time and one part-time Academic Advisors with academic advisement, probation/suspension support, transfer student advising and freshmen orientation in conjunction with primary responsibilities.
- Initiated, designed and taught a two-credit semester long seminar course, incorporating the use of an academic e-learning system (Blackboard), focused on career preparation, career development, transition issues, and job research skills. Taught course each semester over five-year period. Initiated, designed, implemented and administered interactive on-line career resource tools (using Blackboard) for faculty and student use.
- Collaborated with faculty to deliver approximately 35-40 customized presentations annually. Designated as a liaison between faculty and business community.
- Implemented, planned, and oversaw logistics for five industry specific networking events each year.
- Contributed to ACA self-assessment reviews and served as a vocal contributor to NEASC accreditation self-review.
- Wrote grants as needed for funding of career events with four grants awarded.

Fitchburg State College, Fitchburg, MA (1999-2003)
Expanding Horizons Program-TRIO Student Support Services
Coordinator of Career And Mentor Programs

Accomplishments:

- Given outline of program objectives and position description for a newly awarded Federal Department of Education SSS-TRIO grant and successfully built a career and mentor program which is still being used post-employment (1999-present).
- Met with 60% of the 200 program participants (first generation, low income and/or students with disabilities) on a weekly basis.
- Worked without Academic Advisor for a period of 18 months and assumed more of a leadership role and greater caseload of students.

Highlights:

- Researched, developed and conducted an annual peer mentoring training program. Oversaw all aspects of the mentor program's operations including scheduling social/cultural events, budget, and training.
- Designed and taught three career exploration segments to first year students which complimented Academic Advisor's study skills segments. Followed with a second semester course promoting career development activities including informational interviews/job shadowing, volunteerism, and self-assessment via the Myers-Briggs Type Indicator, the Self-Directed Search, the LASSI, and Maslow's hierarchy of needs.
- Identified need, created and taught an annual Junior/Senior Seminar focusing on job seeking skills, transition issues, and employment preparation issues unique to given population. Collaborated with Career Services and Disability Services as appropriate.

LaGuardia Community College, Long Island City, NY (June-August 1999, temporary assignment)
Adjunct Academic Advisor-Cooperative Education Division

Accomplishments: Successfully placed 30 culturally diverse students in individually chosen full or part-time summer internships within an abbreviated timeframe without the use of established networking contacts. Self-initiated contact with four companies which resulted in four new internship sites.

Rusk Institute, NYC Medical Center, New York, NY (January-May 1999)
Vocational Rehabilitation Intern

Accomplishments: First non-Master in Vocational Rehabilitation student accepted as an intern in a state-funded program in a facility associated with large research hospital. Contacted potential work experience and job placement sites to arrange for client placement. Interfaced between client and work-site to ensure satisfactory job performance. Maintained small caseload of unemployed and underemployed individuals with disabilities.

CUNY, Hunter College, New York, NY (September-December 1998)
Career Counseling Intern

Accomplishment: Requested and awarded ability to establish and conduct evening drop-in center hours, focusing particularly on working adult, ethnically diverse students.

EDUCATION

Candidate for Doctorate of Education (anticipated May 2016)
Johns Hopkins University, School of Education, Baltimore, MD (2013-2016)

Master of Science in Education: School Guidance and Counseling
Hunter College (CUNY), New York, NY (1999)

Bachelor of Arts in English
State University of New York at Geneseo (SUNY), Geneseo, NY (1995)

Special Student
Johns Hopkins University, Baltimore, MD (2010-present)
"Foundations for Innovation- Adult Learning Theory" Johns Hopkins School of Education (Spring 2012)
"Public Health Practice" Summer Institute, Johns Hopkins School of Public Health (June 2010)

PROFESSIONAL DEVELOPMENT

"Understanding Generational Differences in Higher Education", JHSPH Diversity Commission (February 2013)
"Career Services Learning Outcomes Assessment Training", NACE, Lafayette College, Easton, PA (January 2013)
"Strategic Planning for Career Services", NACE, Lafayette College, Easton, PA (January 2013)
"Experiments in Innovative Teaching Workshop", Johns Hopkins School of Public Health (January 2012)
"Careers in International Development", Foreign Policy Association, Washington, DC (October 2011)
"Working around the World", Foreign Policy Association, Washington, DC (October 2011)

INVITED PRESENTATIONS *selected:*

Invited speaker, undergraduate winter session course for Public Health Studies majors, Johns Hopkins University (2011-2013)
"The Value of a Liberal Arts Education in a Global Economy", Council on Public Liberal Arts Colleges (COPLAC), Keene, NH (2009)
Invited Commencement Speaker, Alternative Diploma Program, Keene, NH (2009)
"*Interns & Internships: Who Wants One, Who Needs One and How Do You Get One*?" GMSHRM & Chamber of Commerce (2009)
"*Strategic Planning: Building Relationships between Businesses and USNH Institutions*" USNH Board of Trustees (2006)

COLLABORATION

Keene State College (customized presentations to/for)
USNH Board of Trustees, USNH Chancellor, College Relations, NHCUC, Alumni & Parent Relations, Alumni Board of Directors, Upward Bound & Aspire-SSS programs, Disability Services, Admissions, Continuing Education, Financial Aid, Support Staff Association (Founder's Day), ACA staff development; Academic Departments (most frequent contact with): Education,
Health Science, Safety Studies, Environmental Science, Geography, Graphic Design, Sociology, post-bac Dietetic Internship.

Fitchburg State College
Career Services, Academic Advising, EOP program, Counseling, Disability Services, Student Affairs, Admissions

COMMITTEE WORK

Johns Hopkins
Council on Urban Education- Teacher Effectiveness Sub Committee (2014-present)
Assistant to Chair, Search Committee-Director for Institute for Policy Studies (2011-2012)
Academic Sub Committee-Institute for Policy Studies- MPP implementation (2011-present)
Practice Committee-Johns Hopkins, (2010-2013); Social Committee (2010-present)

Keene State
NEASC accreditation Standard Six Sub Committee (2008-2009)
Child Development Center -Family Advisory Committee (2007-2009); Nature Playground Committee (2007-2009)

Community
Classroom Parent, Broadneck Elementary, Arnold, MD (2011-present)
Board of Directors, Lily Garden Learning Center, Westmoreland, NH (2007-2008)

LEADERSHIP & AFFILIATIONS

CUE (2014-present); Academy Health (2010-present); NCDA (1999-present); NACE (2003-present); NEOA (1999-2003); GMSHRM (2005-2009) President, NHCUC-Career Advisors Committee (2007-2008), Member (2003-2009)

SKILLS

Advanced in MS Office, Blackboard, Sharepoint, Internet research, Datatel, WebAdvisor, CoursePlus, ISIS, Enterprise System, and social networking.