

AGENCY, COMMUNITY, LEARNING-RISKS, AND ADULT LEARNERS

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## ABSTRACT

This dissertation in practice consists of three manuscripts; two research articles and a white paper. They were generated as a result of two educational research projects examining adult learning, agency, belonging to communities, and taking learning-risks. The research projects were conducted by examining the lived-experiences of two groups (a) public school teachers and (b) junior and senior undergraduates taking a software development course. The participants' willingness to take learning-risks, what agentic community learning experiences they preferred, and how they reacted when concurrently experiencing agency and belonging to a community were examined.

Implications for practice include a suggestion for gaining a deep understanding of each adult learner's fluency in the course topics and professionalism through teacher-student interaction and continual feedback and assessment. Another implication was the importance of adult learners simultaneously experiencing the seemingly conflicting concepts of agency and belonging to a community. These findings are reflected in the suggestions for change found in the white paper.

Keywords: agency, risk taking, community, adult education

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## **DEDICATION**

This work is dedicated to my loving and much loved wife, children, and grandchildren. You make every sacrifice worthwhile. Also, to Dr. Marty Larkin the world's best mathematics teacher who taught me, as an undergraduate, that learning meant much more than gathering information. It also includes exploration, effort, and fun.

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## CHAPTER 1: INTRODUCTION

Learning in situ underpinned the nature of this Dissertation in Practice (DiP). A DiP has been proposed by the Carnegie Project on the Education Doctorate (CPED) to be “a scholarly endeavor that impacts a complex problem of practice” (personal communication, Maughan, 2014). The format of this dissertation was developed under the aegis of the CPED, an organization tasked with the initiative to “strengthen and reclaim the educational research doctorate and develop a distinct form of doctoral education for professional practice” (Amrein-Beardsley et al., 2012, p. 99). This DiP is the culminating product of a Professional Practices Doctorate (PPD) in Education.

As envisioned by CPED, the PPD is an advanced research degree designed for the development of school practitioners, education professionals, and academic leaders at all levels. Willis, Inman and Valenti (2010) explained, “...the modern Ph.D. [Philosophy Doctorate] programs and the research dissertations are not well suited to preparing professional practitioners even though increasing percentages of Ph.D. students go into professional practice rather than becoming academics” (p. 22). They described the Education Doctorate (Ed.D.) as a degree that “...serves the needs of students who plan careers as professionals rather than academic researchers” (p. 59). This is why Shulman, Golde, Bueschel, and Garabedian (2006) observed that education degrees are often sought by practitioners who are well into their careers, whereas, students of other disciplines usually complete graduate degrees before entering the work force, or return to their educational pursuits after only a short time in their careers.

The PPD provides a way for full-time professionals to pursue their doctorate and perform meaningful job-embedded scholarly research intended to improve or enhance

practice. These education professionals turned researchers, or “scholarly practitioners” (Wetzel & Ewbank, 2013), purposefully perform research for the “advanced preparation of school practitioners and clinical faculty, academic leaders, and professional staff” (Perry, 2012, p. 42). Scholarly practitioners generate knowledge through the praxis of educational research by “address[ing] a problem of professional practice in a particular context” rather than the development of “‘universal’ laws, solutions, or perspectives” (Prewitt, 2009, p. 70).

While embedded within the organization’s culture and language, a scholarly-practitioner is uniquely positioned to address problems in practice that involve sensitive issues. In this DiP, I evaluated agentic learning among a group of university undergraduates and professional K-12 educators.

There is a “family of characteristics” of professional doctorates (Willis et al., 2010). These characteristics include courses sequenced to prepare students—full-time working professionals—for research within their professional practice; relevant field experiences (mentorships or internships); cross-disciplinary research; and portfolios or meaningful dissertations. Along with being collaborative, both the research projects in this dissertation were done in an interdisciplinary fashion in partial fulfillment of Prewitt’s (2009) vision, “Building doctoral training around practices that are interdisciplinary and collaborative is our future” (p. 33).

### **TAD—The Three-Article Format Dissertation**

According to Willis, et al. (2010) “the five-chapter format that is a good fit for many professional practice dissertations is the TAD, or ‘Three Article Dissertation’” (p. 359). This format allows the scholarly-practitioner to write a dissertation in three distinct parts that may be prepared for submission into journals or other industry-professional outlets upon

graduation. This DiP contains three manuscripts for potential publication: (a) an inquiry into an agentic course design that was informed by complexity theory, (b) a secondary qualitative analysis (SQA) which examined adult learners' expectations of agency (Bandura, 2001), and learning as part of a community when experiencing Professional Development (PD) courses, and (c) a white paper intended for stakeholders to consider plausible policy or procedural changes informed by the findings of these inquiries. I, the principle investigator, performed the first inquiry. The second inquiry was a co-authored cross-disciplinary effort between me and another doctoral colleague performing similar research with different populations. The white paper summarizes findings of both inquiries with immediate implications for change for the university where I work.

## **Overview of articles 1 and 2**

### **Article 1 overview**

This article, *Academic Learning Risks, Purposeful Choices, and Temporary Failure In an Undergraduate Agentic Course*, and the accompanying study were generated as part of my examination of learning outcomes from an agentic course where opportunities to make purposeful choices, take academic learning risks, and experience temporary failure was a foundational teaching and learning strategy. The study took place in a Computer Information Technology (CIT) software development course at a private, nonprofit, large university in the western United States. The course design was informed by hermeneutics, a grammatical and psychological interpretive theory “situated in the text within its literary context” (Crotty, 2009, p. 93), and complexity theory, a theory based on holism (Morrison, 2005, p. 315). By including complexity theory as an informative theoretical basis, I chose to accept that not only would the participants experience a change, but that feedback from and interaction with

them would change me, the process of my research, and my professional practice of teaching.

Participants of the study were adult undergraduate learners. I examined their readiness to become professionals in preparation for a successful career in computer technology. The data for this examination were the lived experiences and perceptions of participants, expressed as participant meta-cognitive journal artifacts. Examining the artifacts provided deeper, richer insights into participants self-transformations during the course. By providing insights into how participants felt while experiencing an agentic complexity theory-based CIT course, this study provided me with information that impacted my immediate practice and influenced the work of colleagues within the university where the study was performed. Implications for practice I found include gaining a deep understanding of each student's fluency in the course topic, personal growth, and development of professionalism through teacher-student interaction and continual feedback and assessment.

### **Article 2 overview**

The study that generated this article, *Expectations for Agency by Professional Development Learners*, was an SQA that combined data from Article 1 with data collected as part of an independent professional practice research study conducted by D. Joshua Wilson. SQA is a qualitative research procedure that reuses datasets to “pursue a research interest which is distinct from that of the original work” (Heaton, 1998). It can also “be employed by researchers to re-use their own data” (Heaton, 1998). SQA is different from systematic reviews or meta-analysis of existing qualitative studies. Instead of being an effort to “compile and assess the evidence relating to a common concern or area of practice”

(Popay, Rogers, & Williams, 1998), SQA seeks new understandings from existing data from constituent studies. An SQA appeared to the research team, Wilson and I, to be a valid approach for this work. Using SQA yielded new information when we re-examined our existing data from a new perspective.

Participants for Wilson's study were six K-12 public school teachers in eastern Idaho. Part of the interview conducted for Wilson's study was about the participants' experiences with professional development courses and how they would change their professional development experience if given the opportunity.

### **Theoretical framework of articles 1 and 2**

The research studies that resulted in articles 1 and 2 were performed with an Action Research (AR) methodology. Because of action research's context and problem focus (Stringer, 2007), the research projects for this dissertation were not "theory based" as explained by Willis, et al. (2010, p. 70). They defined a theory-based dissertation as one that would attempt to prove or disprove the applicability or relevance of a particular theory or be conducted strictly within a theory's constructs. "Theory informed" (Willis et al., 2010, p. 71) better describes the research done for this DiP.

Both studies were informed by agency and examined agentic expressions. Bruner (1996) defined agency as "taking more control of your own mental activity" (p. 87). He linked agency to selfhood by claiming that selfhood is derived "from the sense that one can initiate and carry out activities on one's own" (p. 35). Selfhood is derived from expressions of agency.

Bandura (1989) provided a basis for agency. He explained that nothing is more important to agency than a person's belief that they can "exercise control over events that

affect their lives” (p. 1175.) Bandura’s basis for agency merges with Bruner’s (1996) through the similarity of their description. Both declared that individuals are affected by external and internal events and attitudes.

### **Overview of the white paper**

The white paper *Meeting BYU-Idaho’s Becoming Outcomes in the Classroom*, explains the results found in Article 1 and its applicability to my immediate stakeholder, Brigham Young University-Idaho (BYU-Idaho). BYU-Idaho’s long declared desire for a focus on the scholarship of teaching and learning (Clark, 2011) and its ongoing declaration of student learning outcomes regarding *becoming* (Brigham Young University-Idaho, 2013) raise an interesting question. Is there sufficient faculty knowledge and experience to enable the faculty to include, and measure BYU-Idaho’s declared student learning outcomes in the classroom? The chapter 4 white paper was designed to assist administration in understanding the impact on course design of the agency basis of the university’s student learning outcomes.

The paper suggests (a) measuring the university’s learning outcomes at the course level, and (b) creating a peer mentoring program to aid instructors and instructional designers in adopting the learning outcomes in the classroom.

## **CHAPTER 2: ACADEMIC LEARNING RISKS, PURPOSEFUL CHOICES, AND TEMPORARY FAILURE IN AN UNDERGRADUATE AGENTIC COURSE**

### **Abstract**

Successful university faculty create risk-safe environments where students experience agency, learn from temporary failures (Bain, 2004, p. 100), and become prepared for success. This article provides a deeper, richer understanding of the learning-risks students took within an agency and complexity-theory-based course. The understanding of learning-risks and use of agency was achieved by examining the lived-experiences of students at a private, nonprofit, large university in the western United States. Complexity theory informed the research design. The design included an emergent enframing embracing the research, researcher, participants, and learning community generated by the participants. Implications for practice include gaining a deep understanding of each student's fluency in the course topic and growth in professionalism through teacher-student interaction and continual feedback and assessment.

Keywords: complexity theory, agency, risk taking, learning community, continuous assessment

### **Definitions**

Agency: "taking more control of your own mental activity" (Bruner, 1996, p. 87).

Agentic: encouraging agency, choice, and responsibility rather than passivity.

Agentic Expressions: manifestations of agency by groups or individuals.

Complexity Theory: a theory of understanding based on the holism of systems (Morrison, 2005, p. 315).

Hermeneutics: a grammatical and psychological interpretive theory "situated in the text



within its literary context” (Crotty, 2009, p. 93).

Risk taking: “an action or activity in which someone takes risks to achieve a benefit” (n.d.).

Meta-Cognitive: of or having to do with “awareness or analysis of one's own learning or thinking processes” (n.d.).

Computer Information Technology (CIT): A degree and department at BYU-Idaho that can be thought of as applied Computer Science.

Becoming: an on-going ontological process that “involves both difference and continuity” (Carlisle, 2005).

Becoming Professional: an on-going ontological process that includes “the integration of knowing, acting, and being in the form of professional ways of being that unfold over time” (Dall’Alba, 2009, p. 34).

Enframing: “to treat the subject of the research, the researcher, and the process of the research simultaneously” (Ricca, 2008, p. 116). This definition supports the concepts of emic, etic, and bracketing, but encapsulates them all and is in common use in the complexity theory community.

Recursion: “the determination of a succession of elements (as numbers or functions) by operation on one or more preceding elements according to a rule or formula involving a finite number of steps” (“Recursion”, 2002, p. 1535).

## **Academic Learning Risks, Purposeful Choices, and Temporary Failure in an Undergraduate Agentic Course**

**Lee S. Barney**

I have been a faculty member at a large, private, not-for-profit teaching university for almost ten years. I am the curriculum coordinator, course designer, and the instructor for a software development course (Computer Information Technology (CIT) 360)—a required course for all CIT Majors and Minors. I am free to design, implement, and modify the course at my discretion. This situation has afforded me the opportunity to directly apply action research in the process of conducting this inquiry.

During previous semesters, I was co-teaching a subsequent software development course (CIT 460). While teaching this course, my colleague and I—both former industry professionals (he, a former IBM engineer who wrote software to automate the design of computer chips, and, I, a former engineer of simulation software for the semi-conductor industry)—realized that in order to prepare our students for what our employers would have expected from us, we had to provide students opportunities to choose, act, and temporarily fail before they entered the Information Technology profession. As part of the transformation of the CIT 360 course, I began to gradually shift its design and objectives to be based on these four principles: agency, risk taking, temporary failure, and becoming professional.

Bruner (1996) described agency as “taking more control of your own mental activity” (p. 87). He also described selfhood as being derived “from the sense that one can initiate and carry out activities on one’s own” (p. 35). Bruner’s second statement reflects Bandura’s exploration of self-efficacy and agency (Bandura, 1989). He explained that

nothing is more important for a person's agency than a belief that they can "exercise control over events that affect their lives" (Bandura, 1989, p. 1175). When combined together, Bandura and Bruner's descriptions of agency are the basis for a more robust version of agency.

While shifting the CIT 360 course's design and objectives to be based on agency, the outcomes and associated assessments were also modified to include evaluations of self-reflection, meta-cognition, and creativity. Student expressions of both, the non-technical professionalism outcomes, and technical information were assessed directly as can be seen in the Rubric (Appendix B).

In recent commencement addresses, industry leaders affirm this shift of outcomes. College graduates are being peppered with encouragement to express attributes that are non-technical such as risk taking and expressing agency in their careers. Because non-technical knowledge underpins the successful application of technical knowledge (Maughan, 2006), this topic weighs heavy on the success of software development graduates. This can be seen in the following examples:

- Steve Wozniak, co-founder of Apple computer, encouraged graduates at University of California Berkeley's class of 2013, to "stick to your principles and take risks," and "the next step [after graduation] is taking that risk and doing that which inspires you the most--your dreams" (Yoder, 2013).
- Alex Kipman, a Microsoft executive, urged graduates to "...not let fear hold you back. Fear of failure, fear of ridicule, fear of not knowing. ...you have to take risks" (Rochester Institute of Technology, 2013).
- Taking risks was the prominent topic of Tom McFly at the Luzerne County

Community College's commencement ceremony in May 2013 . McFly encouraged students to "take risks in their future" (Hoffman, 2013).

- Ann Meyers Drysdale, Vice President of the Phoenix Suns basketball team, urged the University of California-Los Angeles (UCLA) Class of 2013 to "[find] your passion...take risks that others are too scared to take and to have faith that it will take off" (Kendall, 2013).
- Jeff Bezos, Founder and CEO of Amazon, explained, "I took the less safe path to follow my passion, and I'm proud of that choice....In the end we are our choices" (News at Princeton Staff, 2010).

### **Statement of the Problem**

There must be a reason why industry leaders felt motivated to include the topics *risk taking*, and *choices* in their commencement speeches. If making choices and taking academic learning risks are prominent themes communicated from industry leaders to undergraduate students, it is plausible to say that students have been underprepared in these attributes as they enter their professional careers. To enable students to prepare themselves in these areas, I designed the CIT 360 course to provide undergraduate students with opportunities to take academic learning risks by providing an environment where independent choices were encouraged within a community of learners. The course was designed using an agentic (Bandura, 2001; Bruner, 1996) learning foundation and embraced both Ricca's (2012) complexity theory critique of commonplace education methods and Morrison's (2005) complexity theory implications for societies. Morrison (2005) affirmed:

In complexity theory, society can be thought of as a dynamical, open, complex adaptive system wherein agency and structure combine and

wherein a system has to be addressed holistically rather than as the sum of its parts (p. 315).

Complexity theory's holistic perspective underlies Ricca's (2012) critique of commonplace teaching methods.

Education viewed as a complex system provides three critiques of the commonplace methods of teaching. First, the complex notion of growth critiques the usual planning and implementation of lessons. Second, the mutual influence of complex systems stands in opposition to the commonplace delivery of content. And third, the nonlinear connectedness of complex systems points to an interweaving of novice, expert and discipline that is often missing in teaching (Ricca, 2012, p.39).

Being informed by complexity theory, the CIT 360 course implemented a design that attempted to overcome these critiques. It was designed to be flexible rather than use pre-planned lessons (critique 1), content delivery was shifted away from commonplace methods (critique 2), and the students, the discipline, and I interacted continually (critique 3). This course and classroom structure also embraced agency, temporary failure, and taking learning-risks as foundational principles.

There is limited information in the literature of the perceptions of undergraduate students in classes such as this, especially when the students' experiences of the process of becoming professionals are included. Awareness of one becoming professional is born of self-reflection (Dall'Alba, 2009; Nottingham, 1998). Nottingham, discussing an educational environment, claimed professionals must, through self-reflection, "have a meaningful understanding of themselves to maximize their individual effectiveness" (p. 72). Self-

reflection, as a meta-cognitive exercise for personal and professional development, was used in this study to provide archival data to assess the growth and changes students perceived happening within themselves during this course. This data helped address the nature and value of self-reflection for the students in courses based on agency and complexity theory. Without better understanding student transformations during agentic courses and the results of self-reflection, undergraduate course designers may continue designing courses without considering alternative practices for improved student preparation for technical careers.

### **Research Question**

In what ways do undergraduates take academic risks, and, as a result, experience personal transformations through self-reflection when given space to do so within an agentic and complexity theory-based software development course?

#### **Sub-questions:**

How do students express their readiness to enter industry after participating in a course designed to give space for agentic expression and learning risks? How do theories of agency and complexity aid the inclusion of non-technical student growth in technical course design? What are the implications of temporary failure, for learners, instructors, and course designers, in a course influenced by agentic learning and complexity theory?

### **Purpose**

This study evaluated the design of an agency and complexity theory-based software development course intended to encourage students to take academic risks and experience temporary failure in order to improve my professional practice as a higher education instructor. In addition, this study provides descriptions of students' lived-experiences as they navigated a course based upon agency, risk taking, and temporary failure. This information

is informative for designers of technical courses as they seek possibilities for including non-technical growth in their courses.

Also, because self-reflection is a key component to becoming professional (Dall'Alba, 2009), a corollary purpose of this study was to describe the lived experiences and perceptions of the undergraduate students who participated in a CIT course as they examined their personal growth potential by participating in meta-cognitive journaling.

### **Significance of the Study**

Descriptions of student lived-experiences in the atypical course examined in this study may assist designers of other courses as they gain an understanding of those same experiences and more fully enable the use of agency and taking learning-risks in course design. Embracing these principles as components of good course design may lead to students who are better prepared for the rapidly changing work environment where they will need to take learning-risks and “learn as [they] go along” (Vaill, 1996, p. 10).

Good teachers want to ensure their students are well prepared to leave school and be successful as they acclimate into mainstream society (Sleeter & Grant, 1994). Industry experts and others (Yoder, 2013; Rochester Institute of Technology, 2013; Hoffman, 2013; Kendall, 2013; News at Princeton Staff, 2010) feel they must encourage graduates to express agency and take risks. By evaluating a course that promotes agency, provides opportunities to take learning risks, and allows students to experience temporary failures and be self-reflective, this study may provide direction for university faculty who want their students to leave school well prepared for a successful career and community life.

In this study, I examined the participant's meta-cognitive expressions as they experience this unique course design. Examining participant-generated journal artifacts

provided deeper insights into the perceptions and experiences of the participants. These insights may help future course designers gain further understanding about how to help students recognize their readiness, or lack thereof, for industry.

Complexity theory (Mason, 2008; Davis & Sumara, 2006; Mitchell, 2009; Johnson, 2007; Kamps, 1991) is not typically used to inform qualitative research design. Since complexity theory is based on holism (Morrison, 2005, p. 315) rather than reductionism (Kamps, 1991, pp. 157-195), it can be used as a perceptual lens when examining complex societies such as educational environments (Davis & Sumara, 2006).

During a phone conversation with B. Ricca (personal communication, May 13, 2013) he indicated that a good theoretical basis had been laid for complexity-theory-based educational research but that few case or other applicable types of studies had been done. This study was executed to explore research possibilities in the qualitative complexity-theory-based educational research space.

### **Limitations**

Not all CIT majors, the majority of the participant population pool, are planning on becoming software engineers. Historically, only a minority of the students taking the course in any given semester plan on software development as a career. However, the course used in this study was a required course for all CIT majors. Because of this, the level of interest students may have for this course was beyond my control.

The university within which this research was conducted is a large, private, non-profit teaching university in the western United States. It has attempted to build a culture of agency, responsibility, and student action by encouraging course designers to implement those concepts in their courses. The participants in my study may have experienced various



amounts, or interpretations of agency in courses they had previously taken. Their experiences and opinions about agency as they entered the CIT 360 course was beyond my control.

The study itself was qualitative. It included the collection of participant stories. Due to the complexity of human life, the heutagogical underpinnings of qualitative research, and the biases of the researcher, this study contains my interpretations of the participants' stories. The stories themselves are the participant's interpretations of their experiences. Lived-experiences and participants' expressions of them can differ.

My work in industry was an experience within a highly dynamic, agentic environment. That experience led me to design and teach the course in such a way as to mimic that experience as closely as possible. My comfort within environments that are dynamic and agentic may have led me to frame of this research in a way that would be different if I had some other life experience.

The non-commonplace (Ricca, 2012) course design can cause anxiety in some students at the beginning of the course. This required me, as the teacher, to encourage and calm the students. The deep student-teacher interaction that developed as a result of attempting to accomplish this task and the strong teacher-student learning relationships developed may have caused participants to express a more positive sentiment in their interviews and other pieces of research data than would be expected if a more distant relationship, a more "alienated understanding" (Gadamer, 2008, p. 26), between the students and myself had been possible.

Most of the study participants were junior or senior CIT students, though there was a scattering of CIT minors. Twenty-one students volunteered to participate in the final study

while 54 had participated in the study design recursions for a total of 75 participants. Most of the final study participants were United States citizens of Caucasian descent. Two were sub-Saharan Africans, one was Malagasy, and one participant was Asian American. The median age of the participants was 25 and 71% were married.

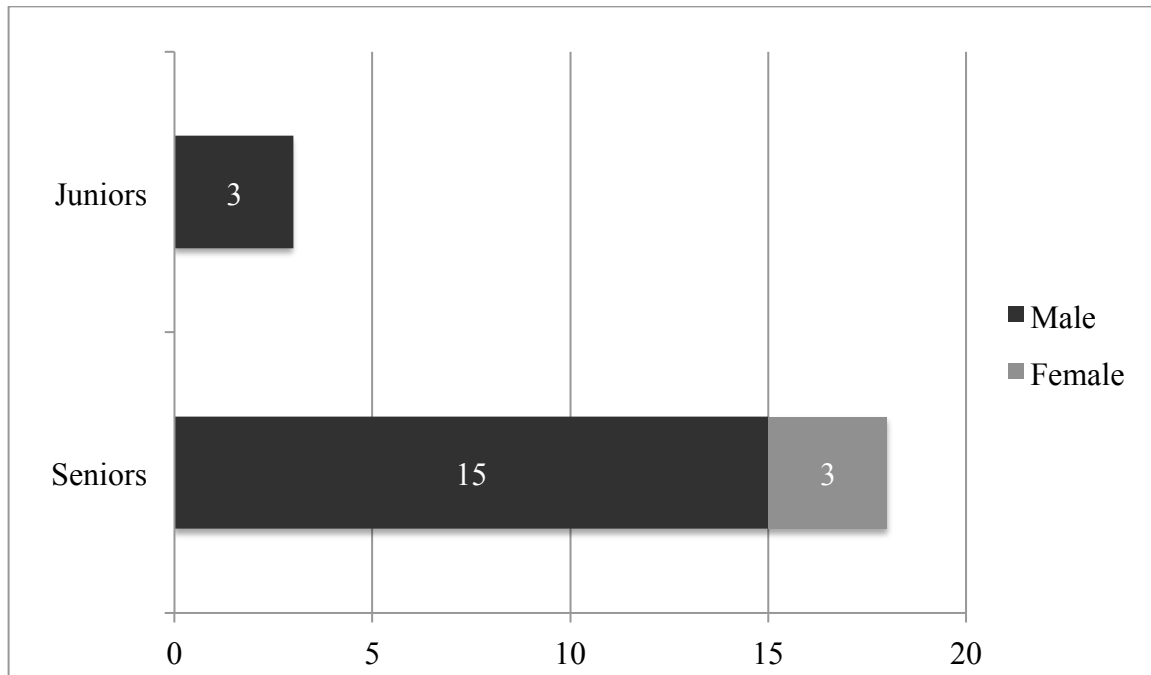


Figure 1. The gender and class standing of the undergraduate participants.

### **Delimitations**

Since I have limited influence with the designers and instructors of other types of courses, both in and out of CIT, this study had to be conducted in a course over which I had design control. Because of this, I could not do a longitudinal study following the students to other courses where similar experiences could be evaluated but where the course type, for example an English class, and the instructor varied. This limited me to collecting data from a single semester-based course.

While computer software development requires a high degree of technical rigor, the focus of this study was self-perceived/self-reported growth in knowledge that was more tacit than technical (i.e., relationships with peers, the instructor, and the technical information to be learned.) This does not imply that there is no anecdotal evidence of rigorous technical learning taking place.

### **Theoretical/Conceptual Framework**

When students, such as the participants in this study, accept and take learning-risks, they can develop a greater sense of agency. Lupton and Tullock (2002) connected risk taking and agency in this way: “Voluntary risk taking can lead to a greater sense of control, resulting in a feeling of accomplishment and agency” (p. 123). Including this voluntary risk taking as part of a course design may be possible if risk taking is allowed by the history and culture of the university of which the course is a part.

As noted above, the learning model (Brigham Young University-Idaho, 2013) of the university where I work supports the concept of agency. Another component of this learning model charges students to share responsibility for each other’s learning. By including responsibility to other students, the model is intended to allow students to express their agency in ways that assists not just themselves but others. The combination of commitment to others in social interactions and personal responsibility leads to what Ballet, Dubois, and Mahieu (2007) refer to as “a strong version of agency” (p. 198). This strong version of agency finds further expression in the BYU-Idaho learning model principle of both teachers and students accepting “responsibility for learning and teaching” (Brigham Young University-Idaho, 2007, p. 1).

Supporting this emphasis in *strong agency* at the course level introduced a need to

establish a culture that supported this kind of agency in the classroom. Three years of experimentation in my course indicated that students would experience culture shock when they found themselves in an agentic course. The commonplace pedagogical culture of public and higher education appeared to differ significantly from the agentic culture in which the students found themselves. To help them acclimate to the more agentic environment, the entire first week of the course was devoted to expectation management.

By managing the students' expectations of the learning experience via entire class and individual discussions, students seemed to feel less lost regarding teacher and student roles. These discussions ranged widely depending on the questions and concerns raised by individual students. Some of the topics discussed included (a) the shift of responsibility for learning from the teacher to the learner, (b) how some student educational coping strategies may not work in the new environment, and (c) reinforcing the idea that the students were expected to express agency through making meaningful choices regarding when, what, and how they would learn.

Initially, many students would think they were going to be experiencing a fully agentic course where they could do anything they wanted and would have to learn on their own without any support or external assessment. A discussion regarding this misconception would often include talking about the importance of the 13 technologies, ideas, and skills listed as topic points in the resources portion of the syllabus. Information regarding the need for fluency in those 13 items if they intended to be professionals in the software development space became a major discussion point. This interaction appeared to help the students orient themselves to the course. It also seemed to help them understand they were encouraged and supported in exploring outside the topic list.

The students were also repeatedly referred to the rubrics for the course (Appendix B). As the instructor I use these to measure each student individually for both technical fluency and professional behaviors such as creativity, self-reflection, meta-cognition, professional interactions, professional sharing, and openness to the ideas of others. While these rubrics and the topic list shifted the course from being fully agentic, the common frame of reference they created appeared to allow the student teams to more readily overcome the culture shock of experiencing an agentic course.

Within this course framework, students were able to decide, as part of self-organized teams, when any given technology would be learned, how deeply it would be learned, how this learning would be shared with team members, and if they would help other teams learn the concept. The teams also decided what to produce to express their fluency in the 13 topics.

I suggested to the student teams that this expression be one or more artifacts that used many, all, or most of the topics. The teams were encouraged to produce artifacts they were interested in and get feedback on technical feasibility from other student teams and myself. Teams were never told they should or should not attempt to produce any specific piece of work. The decision was left to them. My role was to help the team understand and then discuss amongst themselves any technical roadblocks that may impact what they wanted to accomplish. These interactions, the expectation management, and the rubrics appeared to help students generate an agentic course culture and system that would meet their needs and prepare them both technically and professionally.

Morrison (2005) proposed, “We exert our own agency and intentionality, creating, producing and reproducing systems through our daily interactions, and in turn those systems

constrain and influence the way in which we behave” (p. 313). Morrison’s statement of agency producing constraints is reflected in the classroom. As students make choices (agency), other choices become unavailable to them (constraint). These student choices also influence, both positively and negatively, the “cognitive and affective outcomes” (Johnson, Johnson, & Scott, 1978, p. 207) of other students’ learning. These peer influences are not mentioned in Morrison’s reflections on the bidirectional relationship between an individual and society. Acknowledging the existence of student-to-student influences as an additional component means that societal influence relationships form a multi-nodal, complex web. This web of influences swaddles every individual and is composed of relationships between individuals, between individuals and the societies to which they belong, and between individuals and the knowledge surrounding them.

A deeper understanding of the social interaction web may be understood and enhanced by the implications of complexity theory (Mason, 2008; Davis & Sumara, 2006; Mitchell, 2009; Johnson, 2007; Kampis, 1991). Morrison (2005) claimed that societies, and therefore social interaction webs, are constantly changing.

In complexity theory, society can be thought of as a dynamical, open, complex adaptive system wherein agency and structure combine and wherein a system has to be addressed holistically rather than as the sum of its parts (p. 315).

Kampis (1991, p. 268) explained the meaning of a whole being more than the sum of its parts. He provided a thought experiment where some number ( $n$ ) of elements of a system interacted through some other number ( $k$ ) of relationships. In his experiment he asked if the system relationships could be severed, the system devolve to a collection of elements, and

then the system rebuilt by re-establishing the relationships. His answer was no.

It is of course not (i.e. not always) possible to perform a complete reconstruction even if we cut but *one* line. If all the [relationships] are important, ... then the system can only be defined by the *interacting* and not by the *isolated* components (emphasis in the original) (Kampis, 1991, p. 268).

A more direct example of Kampis' thought experiment would be a team of professionals. If such a team has been working together, one or more team members is removed, and then later the team is re-assembled, is it the same team? According to Kampis the answer is no.

Why might this be? During the time the team member or members were gone they and all continuing members of the team have built relationships with others. They will not be able to re-establish the same relationships with their old teammates since all the team members have changed due to the relationships they have been forming, breaking, and re-forming.

The constant changing of student social interaction webs and Morrison's statements regarding change and holism guided me beyond using complexity theory for data comprehension alone. Instead I decided to ground this research in complexity theory and selected an action research design for this study; particularly, because of its direct and practical implication for teaching and learning. Among other complexity theory influences, CIT 360's course design was informed by Ricca's (2012) critique of education.

Education viewed as a complex system provides three critiques of the commonplace methods of teaching. First, the complex notion of growth critiques the usual planning

and implementation of lessons. Second, the mutual influence of complex systems stands in opposition to the commonplace delivery of content. And third, the nonlinear connectedness of complex systems points to an interweaving of novice, expert and discipline that is often missing in teaching (Ricca, 2012, p. 39).

If these critiques are turned into positive statements they become actionable. They then state in the complex environment of teaching and learning; (1) pre-planned lessons should be at least questioned if not avoided, (2) non-commonplace content delivery must be achieved, and (3) the teacher, students, and the discipline must continually interact with each other—where continually is defined as used by Vaill (1996); “recurring at short intervals” and “never comes (or is regarded as never coming) to an end” (p.5).

### **The Study Design**

Choosing action research allowed me to “link praxis and theory” (Levin & Greenwood, 2011, p. 29). Specifically, its selection enabled me to use the understanding I gained to meet my desire of evolving and improving my software development course. Action research also encourages interaction between the researcher and the participants. This results in a “cogenerative inquiry” (p. 29) where the research comes alive through the expression of the combined experiences of researcher and participants. By embracing the participants’ experiences and applying my own, I was able to work with the students during the iterative development of the research purpose and tools. Through discussion, the participants and I adjusted the purpose and tools to aid in gaining more accurate understandings of the participants lived-experiences such as the aforementioned dropping of the professionalism questionnaire from the data collection tool set.

This questionnaire consisted of three requests for information and was based on



questions developed by Dall’Alba (1998, p. 103). These requests were:

1. Give a concrete example of a situation that shows what you think is central to the work of an IT professional.
2. Give a concrete example of a situation in an IT professional’s day that can be difficult to deal with.
3. What attributes, attitudes, and life perspectives do IT professionals have?

Students stated that they felt that this questionnaire was busy-work and didn’t help them understand the changes they had experienced—a key data set for the study. Instead they preferred to spend more time developing their self-reflective journaling report.

Therefore I dropped the questionnaire from the research’s data collection tools.

I also decided to merge rapid assessment process (RAP) (Beebe, 2001) with action research as part of the research design process. RAP brought with it “intensive, team-based qualitative inquiry using triangulation” and the concept of repeated “data analysis and additional data collection” (p. xv) before reaching conclusions. The recursive nature of Beebe’s data collection-data analysis and triangulation-data collection cycle reflected Radford’s (2008) discussion of complexity. He described complex phenomenon as having “recursive symmetries ... [that] can be detected at the level of the system as a whole” (p.152). The recursive nature of RAP seemed to fit well with the recursion that is natural in complexity theory.

RAP’s triangulation component consists of effectively using a multi-disciplinary team of researchers. This team “works together to collect data through semistructured interviews, through observations, and from information collected in advance” (Beebe, 2001, p. 22). The team for this research consisted of myself and study participants as “insiders” (p.

22) and David Joshua Wilson, an elementary teacher and fellow doctoral researcher, who gave an outside perspective on the data. This mix of perspectives was designed to allow effective triangulation in a “reduced time in the field” (p. 23) rather than the protracted time required for triangulation if only a “lone researcher” (p. 23) is involved.

With decisions made regarding action research and RAP and a desire to understand student lived-experiences, qualitative research emerged as a suitable research design. Denzin and Lincoln (2011) expressed their concept of what qualitative researchers do. They observed that “qualitative researchers study things in their natural settings” and that qualitative researchers “attempt to make sense of or interpret phenomena” (p. 2). I desired to make sense of and to understand the lived-experiences of students in my classroom; their “natural setting;” the place of our natural, complex, “educational discourse” (Davis & Sumara, 2006).

### **Procedure**

Selecting action research, a qualitative approach, and a foundation of complexity theory led to a question of how to do qualitative research informed by complexity theory while in the classroom. The answer I arrived at was the result of a recursive emergence-adaptation-growth process. It resulted in a procedure that consisted of using eight steps. (I was assisted in the development of this procedure by B. Ricca— former Chair of the American Educational Research Association Chaos & Complexity Theories Special Interest Group—(personal communication, May 20, 2013) who provided invaluable feedback and suggestions for change) The steps of the procedure were:

1. Inception (create the research team, question, purpose, and literature review),
2. Design the research support materials (questionnaires, target population

- descriptions, data collection techniques, etc),
3. Enframe the system and the phenomenon to be studied,
  4. Collect data,
  5. Evaluate the data,
  6. Evaluate and modify the research support materials, enframing, question, purpose, and literature review as needed,
  7. Repeat steps 4 - 6 if modification is significant, and
  8. State modest conclusions.

Each recursion of the study procedure process included creating or modifying the study's components, executing design changes, and gathering of participant feedback, conversations, and artifacts. By taking this approach, the research topic, purpose, question, enframing, and tools such as questionnaires and other data collection techniques emerged from the recursive process as the completed study implementation.

As part of the inception step of the study's first recursion I came across Dall'Alba's (2009, p. 38) concept of "becoming professional." Because of the BYU-Idaho Learning Model's emphasis on becoming, and my focus on helping students prepare for industry, I thought an attempt to understand the "becoming professional" expressions of students in this complex environment might be useful. I created an assessment to see if students would reveal professionalism changes. In this assessment the students were asked to express, in a form of their choice, how they had changed over the semester. The students were told to be deeply reflective in their work and were given a rubric (See Appendix B for a complete listing of course assessments and associated rubrics) that encouraged, among other professional behaviors, reflection, meta-cognition, originality, and creativity.

The rubric's assessment statements aided in quantifying each student's self-reflection, meta-cognition, their ability to rationally evaluate problems and situations, their openness to new ideas, and the creativity and originality of each student's artifact. When students would ask questions about producing their artifact, they would be referred to the rubric and told to be deeply self-reflective and meta-cognitive.

When I sat down to qualitatively code these student artifacts, I was amazed to find that all 31 students who had participated discussed taking learning-risks in various forms. It became obvious to me that my concept of what I needed to understand had to shift from the more general "becoming professional" (Dall'Alba, 2009, p. 38) to the more specific professional attribute of taking learning-risks. I began recursively modifying the problem definition, research question, literature review, and other preliminary work and this study emerged.

The study's second and third recursions, through many sub-recursions, eventually produced a stabilized study where the research purpose, question, enframing, and support materials had assumed forms that were no longer shifting to any significant degree. Recursive stabilization created a study that could effectively focus, using a non-naive "holistic perspective" (Kampis, 1991, p. 268), on a group of students, their experiences taking learning-risks, and how they had reflectively changed. It also meant that the study's purpose, question, and tools emerged rather than having been designed ahead of time.

### **Enframing**

Ricca's (2008) definition of enframing is "to treat the subject of the research, the researcher, and the process of the research simultaneously" (p. 116). This definition led me to recursively discover what should be included as enframed systems. It also allowed me to

refine what was included as “the subject of the research” (p. 116); a shift from the more general “becoming professional” to the more specific effects of risk taking in agentic environments.

One recursion of the enframing included a phone conversation with B. Ricca (personal communication, May 13, 2013). Our conversation incorporated a discussion of what to leave out of enframing to reduce distraction. As a result of this discussion, I decided that it was appropriate to retain the student participants, the design of the course, and the emergent class society jointly created by the students and myself as being among the open, complex, fuzzily bounded systems in the enframing. Conversely, including BYU-Idaho, higher education, and the professional practice of computing didn’t appear to strengthen any implications for practice if they were included; therefore they were left out. It seemed that questions and data regarding student interactions with those two systems would have distracted from rather than enhanced the understanding of the students’ lived-experiences.

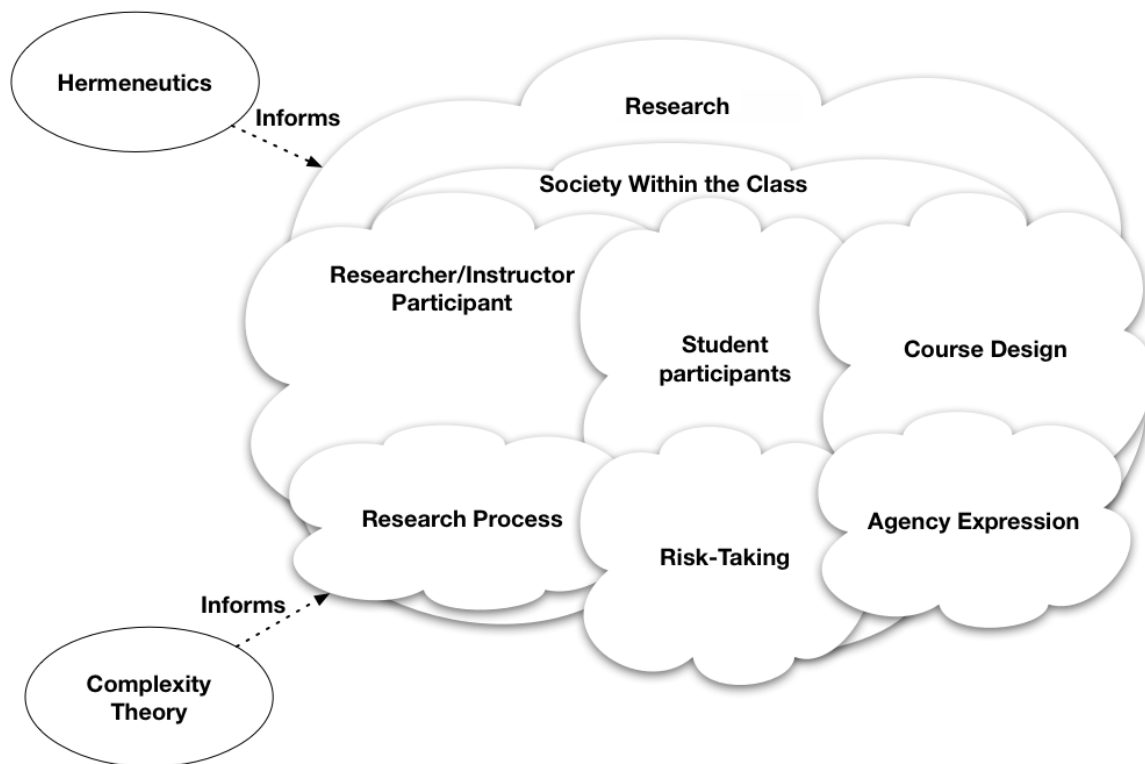


Figure 2. The enframing of the systems.

Figure 2 shows systems I considered to be part of the study. These are shown as extending beyond the enframing. This is a reflection of Kamps' statement regarding boundaries. "The units of our observation and the units that define natural boundaries for the systems may not coincide" (Kamps, 1991, p. 266). Since the boundaries I perceived may not have been the natural boundaries for the selected systems and the enframing, I needed to recursively examine the meanings I associated with those boundaries. As I did so other portions of the study were affected and I found a need to modify the rubrics and other tools used to collect data.

Ricca's definition of enframing (2008, p. 116), quoted above, informs the emic, etc,

and bracketing concepts used in qualitative research. Due to Kapmis' (1991) description of complexity theory's implications regarding the ambiguity of boundaries, what is internal (emic) and what is external (etic) also becomes somewhat ambiguous. During this research I was in some ways distinct from each of the participants and yet they appeared to be changed by their experiences with me and I by them. In essence, based on student expressions, my experiences and their experiences became internally shared—they became *our* experiences; an intrinsically intertwined journey of “becoming professional” (Dall’Alba, 2009, p. 38). The enframing shown in Figure 2 expresses this by the inclusion of the overlapping cloud-like researcher and participant systems.

Bracketing, acknowledging preconceptions and biases without ignoring them, was part of the enframing process for this study. My preconception of the value to the research of information transferred from and to the BYU-Idaho University system was bracketed. This caused a removal of the university and its constituent parts from the enframing and the concurrent removal of the BYU-Idaho system representation from Figure 2, the enframing diagram. By surfacing my preconceptions early and explicitly in the iterative research process, enframing yielded a more robust study.

### **Data Collection and Analysis**

Nottingham (1998), in his article discussing the educational environment of a specific business, claimed employees, through self-reflection, “must have a meaningful understanding of themselves to maximize their individual effectiveness” (p. 72). In accordance with Nottingham, the initial data collection tools included a student-produced, self-reflective “How I Have Changed” artifact, student interviews, the professionalism questionnaire mentioned earlier, and an evaluation of reflective public postings made by

students for the class. During the second design recursion I eliminated the postings review as they didn't generate any information not available in the "How I have Changed" artifact. The final design used as its data source student-created artifacts in written, audio, video, or other formats, and selected student interviews. The artifacts were transcribed if not in written format and then were evaluated via primary and secondary coding to gain a deep, rich, thematic understanding.

Six students were purposefully selected to participate in interviews. The interviewees were selected in such a way as to cover those who did well and poorly in the course and to include male and female participants. The interviews had a loosely structured design with the interviewees encouraged to express their lived-experience with taking learning-risks and how they had changed during their time in the class. A timeline for this data collection and instructions for the students can be found in Appendix A.

In order to code the artifacts created by the 21 students mentioned earlier and the six interviews collected, a large number of data sources for a qualitative study, I developed a piece of software for my tablet computer. This software allowed me to do in vivo and comment based coding in the textual data. The software also accumulated matching codes and displayed in one view all instances of any selected code and the text immediately before and after that code. This thematic view allowed me to gain a deeper and richer understanding from the large dataset.

With this thematic understanding in mind I performed a secondary coding. I did this by putting individual codes on a small note and pasting them on the wall. By grouping, moving, regrouping, and shifting the codes, higher-level themes emerged that added to my understanding. Risk taking and agency emerged as two of these higher-level themes.



## **Ethics**

Near the end of the semester and prior to doing the data collection or accepting volunteer participants, students were informed that study participation, or lack thereof, would have no bearing on their grades nor the esteem I held them in. Instead, they were repeatedly encouraged not to participate in the study if they had *any* concerns regarding participation. I provided an informed consent form (see Appendix D) explaining the purpose and scope of the research prior to participant selection. I did not personally hand the participation forms to the students. Instead, the forms were placed at the end of each of the table rows where students were seated and I left the room. The students then passed the forms among themselves. When the students were done with the forms they stacked them. Both signed and unsigned forms were placed in one pile at the end of each table. At this point I came back, collected the forms, and locked them away.

After grades had been recorded in the university registrar's system I examined the forms. Twenty-one students had volunteered to be participants. From this pool of participants six were selected according the criteria mentioned earlier.

## **Participant Stories**

During the initial qualitative coding process four major themes emerged

- Taking learning-risks
- Journeying from discomfort to comfort
- Recognition of change
- A feeling of readiness for industry

Student expressions of these themes are included here using pseudonyms rather than the students' names.

### **Taking Learning-risks**

It was interesting to note that even though there was no request for information about taking learning-risks in the assignment that produced the student self-reflective artifacts, students overwhelmingly described learning-risks they had taken and what they learned from taking those risks. Their stories speak directly to what Wozniak, Bezos, and the other industry experts advised students during their commencement speeches.

In Sam's story he told how he discovered that taking learning-risks could create a "fun" experience.

What I found the most helpful was to go out read about something ... and then make some test code, get frustrated when it didn't work, Google it and find the answer, fix it and watch it work. This was a simple but revolutionary way for me to think and learn. To be able [to] do this just for fun.

Sam expressed an appreciation for his independence and the opportunity to learn from temporary failures. He described trying, failing, fixing, and seeing the end result of his effort when he succeeded. Sam's expression of taking learning-risks that allowed him to have fun and see what he had created, is an example of Lupton and Tullock's (2002) concept of voluntary risk taking producing "a feeling of accomplishment and agency" (p. 123).

Kaylynn's experience helped her gain a realistic view of the professional environment she would enter after graduation. Her view changed because she took learning-risks, experienced temporary failures, and took more learning-risks based on what she had learned.

I learned that we were not expected to do everything right the first time.

Trying something and getting it wrong and learning and trying again are all

part of the process that goes on when developing software. When [the instructor] told me that there wasn't a way to do things right the first time, I thought he was a little crazy, but I went with it. . . . I didn't have to understand everything perfectly before I tried something.

By helping Kaylynn understand that temporary failure was not only OK but expected, she learned she didn't have to wait for a perfect understanding of how to resolve a problem. She could act on partial knowledge and learn from experience.

Taking learning-risks and experiencing temporary failure allowed Gilbert to express his creativity. He explained, "When . . . I made mistakes, I was able to imagine [sic] better ways and ideas."

James decided to take a learning-risk in how he created his self-reflective artifact. Against the advice of his teammates he decided not to write a report. Instead, he reached back to something he had enjoyed when he was younger and created two drawings of undersea-life near his home in Southern California. He felt this was risky since he was unsure, in spite of me encouraging students to do something other than a written report, how I would receive what he had done.

He expressed his worry in our interview by saying that he had had experiences where teachers told students it was good to do something unique and different but when they were graded, if it was unique and different the students were given poor grades.

I didn't want to come in here completely out of left field and be like 'What, you're drawing pictures in class? That's what you got out of class?' That's a fear, but I probably wouldn't have even presented that idea to you at the beginning of the semester.

In spite of the advice given by his teammates and his own past experiences he had learned the importance of taking learning-risks. He wanted to have a unique experience and learn from it.

Bill wrote of an instance where he and his team sought feedback from me about a part of the design for their software project. He mentioned that the design had several flaws that the team discovered just as they were about to present it. He went on to explain how through taking a learning-risk and presenting the design to me anyway, he came to a realization that he had changed and grown.

So it wasn't perfect. But with a little work it was fixed. That was a huge moment for me; a moment where I realized I had become something different. I used to think that I was no good at designing, engineering, or developing software. I am a newbie. But I am a newbie with potential.

In our interview, Will expressed how at the beginning of the class he feared asking me questions. He had heard that you had to frame questions "correctly" but initially didn't understand how. He took a learning-risk and decided to ask questions anyway.

I am terrible at asking questions and I was worried that I would ask you a question and you'd be mad at me because the question wasn't properly framed. I didn't have that experience with you. I seriously did not have that experience. You did react differently if I asked a poorly framed question like, "Okay so how do you do this?" Then you'd say, "What have you tried to do to solve this problem?" I learned that when I went to you, had tried to solve a problem on my own, and was stuck, you could really teach me.

Will discovered that he could take a learning-risk and try something on his own

before asking a question. He found that doing so led to a much deeper teaching moment when he interacted with me. He mentioned in our interview that this was because we had “somewhere to begin” our discussion.

Kaylynn decided she needed to change teams and projects in the middle of the semester. She felt that the team she was on wasn't working well and that she may have been part of the problem along with her teammates. This was a major learning-risk since she would have to quickly understand not only the personalities of her new teammates and the new team's dynamics, but she would also have to quickly catch up on the work they had been doing for half a semester. Kaylynn explained in our interview her fear at taking this big of a risk.

Change is scary. I was really anxious and nervous about [changing groups].

No one in the class had done that before. It was half way through the semester, but after I did it, I was really glad that I had.

After she made this change she was able to weave herself into the complex web of social interactions of the new team and felt much happier. She became an important contributor to her new team's project and grew personally. When asked, in our interview, if she would take more risks of this same scale she indicated that she would still be concerned. Such a decision would depend on the circumstances and the need.

Jason, following Kaylynn's example, had changed teams late in the semester. He found that in order to be successful in his new team he had to overcome his reticence to speak out. “I needed to have the courage to say what I thought. If I did not, I would lose the chance to communicate.” He went on to discuss how taking this learning-risk and overcoming his internal fears helped the others accept him as a new teammate. He could

then have a more positive role.

Mary also had an issue with speaking up. In previous teamwork she “would just go with the decision” made by other teammates. In this class, she decided to “stop following the crowd” and be more vocal about decisions the team was making. From taking this learning-risk she realized “doing so helps the team members be on the same page” and “everything flows more smoothly” when she participated by rationally discussing solutions with her team.

During our interview, John described why taking the class encourages students to take learning-risks. “[Taking the class is] risky ... some students ... want this is ABC. We’ll teach you and quiz you on ABC.” Since the course doesn’t have a commonplace (Ricca, 2012) design, John thought taking the course as a learning-risk in and of itself. In such a course, coping strategies students may have used in more commonplace courses might not work. In our interview, Will confirmed this saying that students in this class had “to get out of their comfort zone and put themselves out there.”

### **From Discomfort to Comfort**

Interestingly, students’ expressions of movement from discomfort to comfort emerged from the data. Their arrival at comfort may have been the result of experiencing self-recognized growth due to both successes and temporary failures while expressing their agency through taking learning-risks, a reflection of Lupton and Tullock’s (2002) linking of voluntary risk taking and agency (p. 123).

In an interview, John expressed how he journeyed from discomfort to comfort.

At the beginning of the semester I was really *conflicted* because I was like, well, where do I even begin?...Now I really *enjoy* it because I feel like it’s

helping me *prepare* better for the future and for a career, and for my own enjoyment (emphasis added).

When placed in an agentic environment John was initially unsure of what he should do. He was out of his comfort zone and experiencing conflicting emotions. Through his experiences with taking learning-risks, he came to be comfortable with choosing, trying, experiencing temporary failure, and trying again. He became so comfortable that he recognized that the experience would be valuable in his future career.

Joseph wasn't interested in software development as a career, but he did find value in taking the class. He expressed his new understanding of the importance of getting out of comfort zones. "We need to get out of our comfort zone and learn something new *so we can make ourselves more valuable* (emphasis added). In this class I had to get out of my comfort zone and learn." He felt he had to learn rather than skim information and pass the course as he had in other software development courses he had taken.

Fred also described his experience as he started the class and how he was uncomfortable. He explained his journey from discomfort to comfort through taking learning-risks. In an attempt to add uniqueness to his written artifact he wrote in third person.

And so, as he stood, staring at the ever-widening collection of unknown consequences, it was with a great degree of trepidation that he began to wonder, "Where do I start?" It turned out that starting was the answer. By solving one dilemma, Fred became better equipped to handle the next one and then the next one. As he moved forward, the path behind became clear, which made it easier to see the way ahead. Before long, what once was an endless

ocean of cataclysmic chaos had become ordered and understandable.

Fred moved from trepidation to understanding; from discomfort to comfort. He found that his answer for uncertainty and being out of his comfort zone was to act; to do; to take learning-risks. In doing so he discovered action could cause order to come from chaos.

Jill, another student not interested in a career in software development, emphasized her trepidation and initial unwillingness to engage with the course, the information, the learning environment, and her team. “In the beginning of this class I refused to be a part of it. Application development ... just made me want to throw up.... [it] was so far from what I want to do as a career that I didn’t see the benefit of the class.”

Yet in spite of these initial feelings of discomfort, she found she learned and described this experience in her written self-reflection.

I did learn something about myself.... If it weren’t for this class I’d still be very dependent on others to teach me what *they* think I need to know.... I took a lot of risks in this class. Now I know how I can learn when it comes to my own life and my future career. I’m grateful I had the opportunity to take this class. (emphasis in the original)

Her learning-risk driven journey from discomfort to comfort, from resentment to appreciation, generated a realization that she had been a dependent learner; that she now knew how to learn without dependence and how this would benefit her career.

Getting out of his comfort zone by listening to and learning from other students was described by Josh as “very beneficial.”

During this class, I have trained my mind to accept new things without fearing it. When a member of the group brought up something new I was ready to



listen and be accepting of things because they could be very beneficial and make things a lot easier.

He recognized how, through his agency, he had moved from fear to acceptance.

Joseph, by applying himself in this non-commonplace (Ricca, 2012) learning environment, learned to no longer be “afraid to ask questions.”

Considering this is my last semester and I am getting ready to graduate I feel like this was the perfect class to have in my last semester. It helped me to get out of my shell and to not be afraid to ask questions.

Joseph’s journey took him from fear to confidence. It helped him to break through the shell he had erected between himself and others due to his fear. Joseph and the other participants in the study came to a realization of their journeys and the changes they experienced due to self-reflection.

### **Self-Reflection and Recognition of Change**

According to Stajkovic and Luthans (2003) nothing “is more central to human agency than people's judgment of their capabilities to deal effectively with specific environmental realities” (p.130). The accomplishment of this, according to them, is done via self-reflection.

David found, through self-reflection, a need to change how he treated others. During our interview, he explained he had “ treated some members of my group badly, and they left.”

You have to be a people person. You have to be polite. You have to know how to talk to people. You have to be aware of their needs in the group too—not just what you want to get out of the group. The methods that you use to

motivate yourself aren't the same methods that other people use. You need to be aware of that as you talk to them, and as you try to assign things to people.

The meaning of education changed for Dan. He realized his understanding of the role of the instructor shifted dramatically.

A major way that this class impacted me was how I viewed education. I had always just thought that the teacher would stand up there and tell us what he knew about a subject hoping we would retain it.

Joe wrote of a realization he had regarding a change in his perception not just of the instructor role, but in what it meant to be a student. In this he reflects Knowles adult learner statement "Adults are motivated to learn as they experience needs and interests that learning will satisfy...[Adult learners] have a deep need to be self-directing" (Knowles, Holton, & Swanson, 2013, p. 39).

No one is going to guide me through and through to the end. I must adapt *myself*, my ability to push forward and learn. Doing so this semester has led me to have a more enjoyable time learning and creating. (emphasis in the original)

Chad, on the other hand, had a friend that wanted to learn how to create software. Since he had recognized how he had changed he was now able to teach his friend.

I saw how my friend was like me at the beginning of this semester. He wanted to jump right into the code, but as we went through the design steps as in class, he began to understand the code and things that he needed to learn and what he was missing.

Chad's interactions with his friend spread what he had learned and his excitement about

software development to people outside the course. His experience reflects Davis and Sumara's statement that the complex system of the class was "open." It was constantly exchanging "information with other contexts" (Davis & Sumara, 2006, p. 94), people, and other systems outside the class.

Interactions with others was also a major point of Gilbert's reflection on his experience. He said his development of a "willingness to learn things (sic) from others had a huge impact on the way I compose myself and interact with others." Parallel to Gilbert's experience, Ben's story also included interacting with others, his teammates. He realized that he is weak when he separates himself from others.

Working with my team has helped me realize that I am weak by myself. I truly have started changing how I view life.... I now have a greater desire to be part of something instead of being by myself.... I yearn to be part of something.

Ben found a desire, a yearning to be "part of something" bigger than himself. He found being part of his team satisfied this desire.

Mary's team experience was different from Ben's. Mary had previously disliked working in teams yet "my perspective of working in teams has changed because I [came into] the team with a different attitude, the [willingness] to make this team function and succeed." She realized that she had to change her attitude. She could then express her agency and help her "team function and succeed."

Ben, Gilbert, and Mary express complexity at a different level than Chad did. They spoke of interacting with others within a system and recognizing its importance. In this they expressed that they, as complex systems themselves, were "influencing and being influenced

by their context” (Davis & Sumara, 2006, p. 95).

Bill’s self-reflective story was particularly deep. In it he expressed his discovery, through self-reflection, of a need for a major personal change. He had discovered an unrecognized bias and felt a strong need to become a different type of person than the one he found himself to be. He explained:

I am embarrassed to share this. About half way into the semester we had an addition to our team. She was not happy with her other team, for reasons that are her own, and so we took her into ours.

The part that embarrasses me is that I had a hard time taking correction from her. If correction came from my other team members it was ok, but for some reason it was a little harder to take it from her. When she had a concern I would automatically dismiss it in my mind. It was as if I thought she had no idea what she was talking about.

Was it because she was an outsider? No. I took correction from other students in the class who were not in my group. I am afraid it was because she was female.

When I discovered this I was deeply disturbed. Discrimination against women is against my beliefs as an American and as a Mormon. I quickly worked to dismiss this bias. As I worked on being more open-minded I found that her contributions were substantial. She would often be correct when it came to creating our [design] diagrams and she was much better at remembering what [the instructor] said than the rest of us. Having her on our team turned out to be a very positive thing for everyone. I did not dare share

this bias with her. But I am very happy she joined us. And I did let her know that I very much appreciated her contributions.

This class provided an opportunity that helped me overcome a prejudice I had been unknowingly harboring. I was able to discover a handicap I didn't know existed. And I was able to remove it. It is a good thing I discovered it here and not in the work place.

Bill's self-reflection led him to a place he never even thought he needed to go; certainly nowhere he expected to go in a software development course. It helped him change himself in such a way as to make him feel more prepared for his career. It saved him the greater embarrassment and risk of discovering and facing his prejudice after he graduated.

In his story, Tim reflected on what he discovered about himself regarding how he could solve problems.

I had to leave it alone and walk away from it. When I think too much about something I feel like my mind is doing too much and I need to clear it and start over. When I clear my mind and think about new things instead of old things I don't get stuck back in the same rut.

Ben, a married student, also realized that he changed his thinking process: I have realized that I find myself stepping back and looking at a bigger picture. An example of this was just the other day. My son was being really ornery and was driving me up the wall. I stepped back and thought, "Is there something more to this?" Come to find out, he had two teeth coming in. This is not a normal reaction I would have had prior to this semester.

At the conclusion of his self-reflective article, another student, Fred, summed

up his experience with change when he declared, “The worth of any class is perhaps best measured in the change it brings to its students.”

### **Readiness for Industry**

Gore and Gore (1999) contended, “Teamwork is vital to a knowledge management-orientated organization” (p. 556). Since software development and other computing careers exist within knowledge management-oriented organizations, teamwork will be important to the participants’ future. Interestingly, a realization of this and how to better work within teams emerged as a part of the culture of the class. For example, Dan experienced a newfound confidence with being part of a team due to working in the class with other students.

This class helped me gain confidence in working with others. For the first time I was able to apply [my previous] leadership training. The planning stage and organizing what we would do and how we would accomplish it used to be my least favorite part of any project. By focusing on these aspects in this class it made me want to do this more often.

His enjoyment, engagement, and realization of the importance of this aspect of teams and software development caused a significant professional change. He decided to make project planning and management his career; something he had previously decided against.

Ben also had a significant realization regarding teamwork though it was different from Jerry’s. Ben realized why in the past he had preferred to work alone.

I was always the kind of person that could work in a team, but didn’t mind working alone. In fact, far too often I preferred to work alone. It was more than that; I wanted to prove it to myself that I could do things by myself

because that is what I thought made me a man. This was the same mentality I have used to attack many issues in life which I have come to learn is vain and wrong.

Kevin explained that he also had had issues when working in teams previously, but that this class helped him overcome those issues.

I feel that I have made progress in my goal to be more people oriented rather than self-oriented (which is at the heart of my group work problem) and that it is in no small part thanks to this class and the chance I had to see how well [working in a team] could go.

Reflection on how he also could be a better team member shows Bill's growing preparation for industry.

Changes in myself that I can directly trace to this class...have, in my opinion, made me more professional....[I have] become a stronger learner and team member, who can appreciate a creative, original, and working solution—yet remain open-minded to recognize where it can improve.

Bill realized he had become more open-minded and supportive as a team member; both in and out of leadership roles.

In addition to teams and teamwork realizations, Will had an opportunity to redesign the experience attendees have at a national technology conference. He volunteered to completely revamp how attendees interacted with the conference's course, time, and place information. In our interview, he explained how the class helped him accomplish this task.

I had a great opportunity to help [a national technical conference] develop a user interface design for an application that is going to be used [at the]

conference. The development of this interface design is a landmark in my life right now, which would not have happened if not for this class.

Will understood that an opportunity to work directly with actual customers would propel his preparation for graduation and his career. Kaylynn, when asked in an interview if the course had helped her prepare for the internship she started after the class ended, was unsure of the impact the class had had on her preparation.

It's hard to answer, because I think different things shape how I approach things without me realizing it a lot of times.... So, day four, there hasn't been too much impact, but I don't know, I'll see later on. I felt the class was almost more about life in general. Teamwork was a big thing.

John was working as part of a technology company while taking the course. He realized before taking the class that he needed to be able to better apply self-reflection to grow professionally.

At the beginning of the semester, since I have been working remote, a huge goal of mine was to understand how I could better self-evaluate. I'm working away from my managers and my team. When I first started working remote it was really hard for me to gauge where I was at; hard for me to understand where I can improve; what I'm doing well. So throughout this semester [I was working on how to] better self-evaluate....[The class is] pretty much just like the workplace where you have certain duties but it is up to you how to perform those duties.

John grew professionally in a way that he needed (Knowles, Holton, & Swanson, 2013, p. 39) and pronounced the course and classroom experience, in some ways, was "just like"



being in the workplace. Cairns (1995) concluded such a course “can be an effective way to bridge the gap between students’ initial cognitive understanding...and their full engagement in the workplace” (p. 2).

Joe recognized a needed change in his work ethic to be ready for the workplace.

Work ethics in the business world can be rough. I learned a bit of that same work ethic in this class. I need to be doing things, I need to be creating and learning to get any sense of accomplishment, and if I don’t?...*Nothing gets done* (emphasis in the original).

He found he needed to act; to “be doing things,” to be expressing his agency. In doing so, he could not only take more control of his mental activity (Bruner, 1996, p. 87), but could also complete tasks and feel accomplished.

Mary gained a professional perspective on the importance of doing design before attempting to produce solutions to problems.

I have come to understand how important it is to think before acting. I believe that no matter what type of application I’m looking at, I should try to get the big picture; see how it works, and understand the way it will be put together. I know that in a work place I will be doing a lot of thinking to come up with a solution. It was a good skill to learn in this class and I feel that now I’m more prepared to succeed in life.

She found that the skill she gained made her more prepared to enter the workforce. Gilbert wanted to apply this same professionalism. He had a job while taking the class. His co-workers wanted to create a software solution immediately without planning.

We are creating a new [piece of software] where I work. We began having

meetings for what we want and what is needed. Due to my experiences [with planning in the course], I was excited to try to implement this tool. I saw that in the past in our development, we had a lot of situations and bugs that we ran into caused by bad planning.

As I watched and as we worked on the software, we ran into issues...and we introduced bugs into our code. I thought this was something that could have been avoided. There were features that our end-users needed that we overlooked as well. I felt that there were a lot of things that would have been avoided and weeks of bug fixes saved if we had [been allowed to do] proper planning. I have learned not to rush into coding, which was something that I used to do often.

Gilbert's workplace experience of not designing a solution reinforced for him the preeminence of design with respect to software development. He had learned this by taking learning-risks in the class environment and saw the negative consequences that went unseen by his coworkers.

### **Reflections**

While computer software development requires a high degree of technical rigor, the focus of this study was self-perceived growth in the realm of tacit knowledge—the development of relationships with peers, the instructor, and the technical information to be learned. This is not meant to imply that there is no anecdotal evidence of rigorous technical learning taking place. Participants, former students, and employers of those students have repeatedly indicated that the course aids students in developing technical rigor and knowledge. For example, Jens was a study participant who declared a hatred of software

development at the beginning of the course. As an expression of one portion of his technical learning he discussed Hibernate, an industry standard technology seldom covered in undergraduate work due to the high degree of abstract thought required to use it professionally. Jens claimed, “I decided that I was going to learn Hibernate...I learned it. I taught it. I owned it.” This level of technical learning also appears to be common among students having taken the course for other technical items from user parallel processing to client-server socket communication. Further research may support or refute this assertion.

The depth of understanding achieved by the students in the course was attributed by Will to the lack of traditional quizzes, tests, and assignments. During an interview he explained that those types of assessments would “force” him to focus on memorization or “getting it done” to pass the quiz, test, or assignment rather than understanding the technology. He claimed that such assessments encouraged students “to dump what they learned as soon as possible to prepare for the next assignment.” In the past I organized and taught this course in a much more traditional manner. The course had structured assignments with periodic due-dates. When I dropped the assignments and retained only two due dates at the end of the semester, one for a presentation using the technology to explain how the students had changed and another for their self-reflective artifact, it appears that the students are more engaged with the material earlier in the semester. It also seems that they come away with a stronger understanding and ability to use the technologies than students who took my past course with the more restrictive structure. By focusing the course on technical fluency and competence of execution rather than completion of tightly defined assessments, the students appear to learn more in a deeper fashion and retain more of what they learned when compared to students that took the more structured course. Future research may

support or disprove this assumption, but this seems to be borne out by graduate emails I have received regarding their employment and discussions I have had with employers of graduates.

### **Implications for Practice**

Student expressions of their experiences indicate that they were able to prepare themselves technically, tacitly, and professionally for the workplace in ways other more commonplace courses had not. The course aided them in their preparation by planning and giving space for expressions of agency, the taking of learning-risks, experiences of temporary failure, performance of self-reflection, and self-driven change.

### **Implementation of the Actionable Statements**

After reading Ricca (2012), I realized the CIT 360 course achieved the actionable statements described previously: (1) pre-planned lessons should be at least questioned if not avoided, (2) non-commonplace content delivery must be achieved, and (3) the teacher, students, and the discipline must continually interact with each other.

I took a risk by stepping away from my familiar and comfortable course designs and teaching methods. I created no lesson plans. Instead, students were informed that if they wanted to be a professional in the software development industry they should become fluent in a suggested list of industry topics and ideas. Although students' fluency in the technical topics was assessed, I did not determine the timing of learning these topics, rather it was determined as the students engaged in learning communities (teams). This enabled the students, individually and/or collectively, to focus on, investigate, and learn any of the course's suggested topics, or others of their choice as deep as they desired. It also allowed students to begin learning *where they are*, as adults who bring experience to the course and

their team.

Instead of providing lectures or other commonplace (Ricca, 2012) types of content delivery students had seen in previous courses, I, as the instructor, took the role of active team member. My common tasks included (a) encouraging student exploration by indirectly answering questions when appropriate, (b) aiding students in finding resources if they had already expended considerable learning effort (c) explicitly answering questions when appropriate (with the same caveat used to determine if I should help them find resources), (d) advising teams and team members regarding team issues, (e) brain-storming with the students as peers, (f) attempting to obtain, through observation and interaction, what I have come to think of as truly knowing each student's technical fluency, personality, strengths, and fears, and (g) regularly encouraging the students to give back to the discipline by aiding other students and by creating technical blogs for public consumption.

Replacing lesson plans with a suggested list of industry topics, intensifying individualized teaching interactions with students, achieving non-common/non-traditional content delivery, and increasing the quantity of students interactions with me, other students, and the discipline allowed me to help the students figure out what they wanted regarding their learning goals and the software they wanted to create. It also allowed me to assist each individual and team to achieve *their* goals rather than artificial ones created by me.

An unexpected and unintended consequence of this course design was the personal and professional growth I experienced as the instructor. Students found ways of explaining topics that I had not previously considered. They also helped me stay current in the rapidly changing software development field. They sometimes found emergent technologies of which I was unaware and taught them to me. These interactions led to a complex web of

relationships encompassing the students, the classroom community, the discipline, and myself. The students also, through the described implementation of an agency and complexity theory-based course, assisted each other, according to their own statements, in developing the professional attributes of taking learning-risks and embracing self-reflective change.

### **Participant Story Evaluation and Course Design**

In order for students to take learning-risks, they must feel they are not judged when they have temporary failures. For this reason, course designers and practitioners adopting agency and taking learning-risks as foundations for their courses should not assess temporary failures. Instead, these failures should be viewed as positive and part of the growth process. This is not meant to imply that any course should be designed so that all students receive passing scores. Such a design would negate learning from agency since all student choices would yield the same outcome. Instead, student evaluation should, in some fashion, be continuous in nature. This would allow students to fail temporarily due to their agency, learn from their failure, and then change as needed.

The cumulative result of each student's personal changes and some student-created works appropriate to the course's discipline, a technical product, could then become the data evaluated for the grading process. Such an assessment appears to require instructors to have continuous, consistent, meaningful interactions with each student to provide the amount of assessment and feedback needed by students in order for them to make the changes that produce success. This amount of interaction may also be needed in order for the instructor to gain a deep enough understanding of each student to accomplish a valid final assessment.

## **Implications for Research**

In addition to the impact this research has had on my work, further research opportunities were opened. Now, with a better understanding of students' experiences of taking learning-risks, studies could be performed to determine emotional responses and changes in stress levels experienced by students as they take learning-risks in agentic courses. A second study might be performed to determine if probability distribution patterns exist relating class environment, course design, instructor behaviors, and other influences with the types and numbers of learning-risks taken by students.

Studies could also be done to determine the amount of student agentic expression and learning-risk taking in higher education courses and compare that data with student and instructor impressions of the amount of agency they believe are in the courses.

As agentic, risk taking course design becomes more defined; studies could determine the extent to which interrelationships exist between student learning-risk expressions and changes in student learning behaviors. Such studies might enable loose predictions, through probability distributions, of the achievement of learning outcomes.

## CHAPTER 3: EXPECTATIONS FOR AGENCY BY PROFESSIONAL DEVELOPMENT LEARNERS

### Abstract

This study examined of the lived experiences of two distinct groups of adult learners. One group consisted of pre-professional undergraduate students, while the other was made up of practicing K-12 public school teachers. The study was conducted using a Secondary Qualitative Analysis approach. It combined two heterogeneous datasets from separate studies to determine if common themes expressed by participants would provide insight regarding their expectations for well-designed professional development courses.

The data consisted of self-reflective works generated by the undergraduates and interviews with teacher and undergraduate participants. Data analysis indicated that they desired agency, relationships, and a sense of belonging to a community. The analysis also indicated that participants thrive in agentic learning environments while seeking to experience meaningful, personal change and growth. It was also found that participants' experiences with agentic learning environments impacted their expectations for principles they might deem to be part of well designed professional development courses. In particular, this study was intended to impact the practice of professional development course design at the university and public school district where the data were collected.

*Keywords:* community, agency, professional development



### **Expectations for Agency by Professional Development Learners**

When we, Lee Barney and D. Joshua Wilson, sat down and examined the research each of us was doing, we found a distinct overlap in topics and the data we were collecting. Because of this overlap, we realized our data could be combined to create a heterogeneous dataset and reused as part of a Secondary Qualitative Analysis (SQA). The combined dataset created for this study included the data from Barney's study regarding students' experiences in an agentic course and Wilson's regarding K-12 public school teachers' professionalism changes due to professional development (PD).

SQA is a research procedure that reuses datasets to "pursue a research interest which is distinct from that of the original work" (Heaton, 1998). It can also "be employed by researchers to re-use their own data" (Heaton, 1998). Applying SQA produced new information by examining our existing combined data from a new perspective. Care was taken to align with Hines, Vogel, and Clarke-Steffen's (1997, p.411) warning that the problem and questions for an SQA-based study must not duplicate the questions and problems of the underlying study or studies.

Through primary and secondary qualitative coding of the combined dataset, a strong theme of agency arose. Using this and other emergent themes as our basis, we decided to examine whether individuals' agentic learning experiences outside of PD generate expectations for additional agentic experiences in PD courses.

#### **Problem Statement**

PD courses for public school teachers consume large amounts of time, effort, and money (Milanowski & Odden, 2007, p. 6) and yet PD courses, according to some, generate small returns in regard to changed behaviors (Redwood, Winning, & Townsend, 2010). In

addition, productivity gain claims of current PD experiences are difficult to reliably measure (Guskey, 2000, p. 67). The lack of measurable growth and change in learners taking PD courses indicate a mismatch between learners' expectations for their PD course experiences and their experiences in PD courses they are taking. This expectations gap may be due to their life experiences creating an expectation of "transformation and positive change at an individual level" (Balmer, & Richards, 2012, p. 7).

### **Research Question**

As we examined data available to us from our previous research, a question arose. How do adults' agentic learning experiences outside of PD courses impact what they expect from PD courses? Through further evaluation and exploration of this question it became apparent to us that we were asking two subquestions. These were:

1. In what ways do agentic learning experiences outside of PD impact learner expectations for PD courses?
2. In what ways do PD learners' expectations impact what they might consider to be well-designed PD courses?

### **Purpose of the Study**

We evaluated recorded lived experiences of groups of professional practitioners and pre-professional Computer Information Technology (CIT) students for the impact that agentic learning has on expectations for PD course experiences. The evaluation was used to determine if common themes expressed by the participants would identify principles they expect for well-designed PD courses. In particular, this study was to inform the practice of PD course design at the university and public school district where the data were collected.

### **Significance of the Study**

By examining the lived-experiences of a heterogeneous set of practicing professionals and pre-professional adult learners, we discovered their expectations for PD experiences. Their expectations included principles of agency, collaboration, community, and others. In contrast to common PD experiences, PD course designs informed by the full suite of principles found as part of this study aid PD learners in “becoming professional” (Dall’Alba, 2009, p. 38). PD courses based on these principles could also generate, through increased productivity, measurable growth and job-specific changes in learners.

### **Limitations**

SQA was described by Irwin and Winterton (2011) as the “(re)using of data produced on a previous occasion to glean new social scientific and/or methodological understandings” (p. 2). In qualitative research, data reuse “enables greater use to be made of qualitative data beyond the project which originally produced them” (p. 3). Since qualitative research is “labor intensive” (p. 3) and produces data not used in the original research’s analysis (p. 3), SQA can yield new understanding from previous research projects’ data. This understanding is “gained from acknowledging the legitimacy of multiple interpretations derived sensitively from the same data” (p. 16).

Using a predefined dataset meant that participants were not asked additional questions and additional participants would not be recruited. The adults who chose to participate in the underlying studies consisted of six K-12 teachers in a public school district and 21 students from a private, not for profit, large university. Both of these institutions were situated in the western United States.

### **Participants in each Study**

The student participants were Computer Information Technology (CIT) majors, most of whom were United States citizens of Caucasian descent. Two students were sub-Saharan Africans, one was Malagasy, and one was Asian American. The median age of the participants was 25, 71% were married, and most were seniors.

The teacher participants were all United States citizens of Caucasian descent. Two were male and four were female. These six participants consisted of four elementary education teachers who taught grade level courses. One taught third-grade, two fourth-grade, and one fifth-grade. Also two secondary education teachers participated, one junior high math teacher and one high school political science teacher. The participants' teaching experience ranged between 5 and 25 years.

### **Delimitations**

With the rich data already collected as part of the two underlying studies, we decided not to generate a new dataset and new data collection tools and processes. Since the studies were examining similar, though distinct, experiences, we decided that additional data collection was unnecessary and redundant.

By choosing to do an SQA, we acknowledged that there would be problems, questions, and understandings that would not become apparent to us had we chosen to do a new ethnography that included the two types of participants from our independent studies. This choice implies that further study and focus in this research area could yield additional and deeper understandings.

### **Theoretical Framework**

#### **Professional Development**

PD programs are designed and delivered to help educators achieve their teaching potential and become masters at their craft. These programs are “systematic efforts to bring about change in the classroom practices of teachers, in their attitudes and beliefs, and in the learning outcomes of students” (Guskey, 2002, p. 381). PD programs, such as those described by Guskey, can provide education professionals with opportunities to experience “transformation and positive change at an individual level” (Balmer, & Richards, 2012, p. 7).

Professional development is seen as “essential” (Borko, 2004, p. 3) to education reform. Unfortunately, PD opportunities may be unequal to the needs of teachers as suggested by Ball and Cohen (1999), who concluded that most PD was “often intellectually superficial, disconnected from deep issues of curriculum and learning, fragmented, and noncumulative” (p. 3-4).

Diaz-Maggioli (2004) described how administrators tend to take a “one-size-fits-all” (p. 2) approach and place all participants into the same learning groups, regardless of experience, subject, or grade-level. This standardized type of PD assumes all teachers perform at the same level, and doesn’t account for varied backgrounds and philosophies. Diaz-Maggioli (2004) explained that current professional development practices are generally constricted because they tend to be “top-down” rather than part of a “collaborative decision-making” (p. 2) process that includes the teacher-learners. This limits the teachers’ ability to choose what they learn, which leads to a “lack of ownership” (Diaz-Maggioli, 2004, p. 2) of the learning experience. Teachers have little investment in PD courses created without their input, so changes to teachers’ knowledge and capabilities may not occur.

Wilson and Berne (1999) noted, “Teachers need to own and control their professional development” (p. 176). Unfortunately, the educational hierarchy, administrators, and other educational decision-makers tend to make choices that reinforce the system’s continuation of “the status quo” (Fullan, 1993, p. 3) rather than cede control of PD to teachers. This may be because administrators don’t trust teachers’ decision-making skills or because of requirements placed on administrators by regulatory and other agencies. Therefore administrators may mandate what is to be learned in PD courses. In order to combat this “top-down” (Diaz-Maggioli, 2004, p. 2) mandated approach to PD, Fullan suggests teachers become “agents of change” (1993, p. 12) by exercising their agency to implement new practices.

### **Agency**

Bruner (1996) defined agency as “taking more control of your own mental activity.” (p. 87). He also described selfhood as being derived “from the sense that one can initiate and carry out activities on one’s own” (p. 35). This second statement by Bruner reflects Bandura’s exploration of self-efficacy and agency (Bandura, 1989). Within this analysis, Bandura explained that nothing is more important to agency than a person’s belief that they can “exercise control over events that affect their lives” (Bandura, 1989, p. 1175).

Human societies are linked with agency according to Ballet, Dubois, and Mahieu (2007). They claimed, “When, through commitment and social interactions, personal responsibility is introduced, it leads to a strong version of agency” (p. 198). They also expanded on strong agency by asserting it occurs when personal responsibility is expressed in such a way as to self-limit the exercise of agency via self-restraint. Ballet, et al. further maintained that this self-restrained expression of agency leads to a “collective capability” (p.

199) in an organization or society. Building capability among a society of learners and educators is one of the fundamental purposes of PD.

### **Community and Belonging**

Agency does not operate in a vacuum. Barnett (2013) described the social dimension within which agency is functional by insisting that community and connectedness are required for adult learning. She incorporated agency with learning and explained, “It was only after I was part of a social community that my life as an adult learner felt complete” (p. 77). She aligned the belongingness component of Maslow’s (1970) hierarchy of needs to her becoming part of something larger than herself—a community. According to Moores-Abdool & Voigt (2007), as Barnett became “grounded in community” she then experienced self-worth since “self-worth can arise only” (p. 70) from such social situations.

Social interactions and the feeling of belonging are important to adults. Duvendra and Kumar (2013) claimed, “Social contacts at the workplace are very important for employees” (p. 22). These contacts are so important that Linder (1998) found “being in on things,” a feeling that can be associated with social contacts, interactions, and a reflection of belongingness, was ranked as the seventh most important factor for employee motivation. The social aspects of the professional environment are important to self-driven changes instigated by professionals. This is in opposition to the top-down, disconnected experiences previously described as problematic in the professional development section.

### **Becoming Professional**

A combination of the self-driven changes instigated by professionals is described as “becoming professional” by Dall’Alba (2009, p. 38). These changes follow Heidegger’s (2010) ideas regarding the ontological “being” and Kierkegaard’s (Carlisle, 2005) ideas

about repetition. Dall’Alba (2009) stated that there are “professional ways of being” (p. 43). These ways of being are described as ongoing and unending; a Kierkegaardian repetition. To become professional in this sense includes changing oneself to be professional with an appropriate set of attitudes and outlooks on life and work. This emphasis on changing oneself is beyond the knowledge and skills traditionally provided by PD programs as can be seen in Diaz-Maggioli’s (2004) and Ball and Cohen’s (1999) critiques of common PD practice.

Dall’Alba (2009) concluded that individuals should be allowed and encouraged, through PD programs, “to integrate their ways of knowing, acting and being professionals” (p. 44). She also stated that such should and can be done without sacrificing the traditional epistemological focus. Dall’Alba’s “becoming professional” appears to encourage the development of both hard and soft skills. Because of this, becoming professional appears to be outside the scope of pedagogically designed PD courses as explained in the next section.

### **Pedagogy**

Understanding the links among and differences between pedagogy and andragogy places PD programs in context of a larger picture. Knowles (1970) described how the monastic schools of Europe between the seventh and twelfth centuries employed a type of learning that was based on the “art and science of teaching children” (p. 40). He referred to this as pedagogy and claimed it was based on the assumption of the learner is in a submissive role (Knowles, Holton, & Swanson, 2013, p. 60)—the attitude of *tabula rasa*, or blank slate. Within a pedagogical classroom, the teacher is ultimately responsible for the education of the learner (p. 60).

Wiles (1952) described this type of teaching.



Teaching consists of organizing knowledge into some pattern, of presenting the facts and generalizations in a clear, easily understood fashion, of testing to determine the amount of information acquired, and of marking the pupil's attainment. (p. 11)

In the pedagogical teaching described by Wiles, knowledge the student brings to the classroom is of little or no use since the teacher is responsible for “presenting the facts and generalizations” (p.11) that are intended, by the teacher, to be learned. Knowles, Holton and Swanson (2013) state “the pedagogical model assigns to the teacher full responsibility for making all decisions about what will be learned, how it will be learned, when it will be learned, and if it has been learned” (p. 60). In this teaching model, the student is dependent on the teacher. Those who espouse pedagogy assume that the best way for the learner to acquire knowledge is to gain it through the prescribed medium the instructor has prepared. Pedagogical learning therefore is a process of acquiring subject matter knowledge.

When adult education became a focus of researchers in the 1920s, instructors were concerned about the consequences of using pedagogy to teach adult learners (Knowles, 1970, p. 40). Adults were resistant to the teaching styles of the child-centered methodologies. Teachers found adult students were not engaged in the assigned lectures, quizzes, drills, and examinations (p. 40). Pedagogy, as described here, has been the authors' general experience with PD in our varying professional situations. Because PD programs are designed to provide material and motivation for adult professionals, it seems a more adult friendly approach would produce better results.

Researchers and instructors experimented with different assumptions about how adults learn. The term Andragogy was coined as a label for their discoveries. Knowles

(1970) found that rather than being dependent on a teacher to acquire knowledge of the world, adult learners have “a deep psychological need to be generally self-directing” (p. 43).

### **Andragogy**

One of the main differences Knowles, Holton, and Swanson (2013) identified between pedagogy and adult expectations of learning is, “Adults come into an educational activity with both a greater volume and a different quality of experiences from that of youths” (p. 64). Through their lived experiences, adults gain a reservoir of knowledge that can be used to continue learning.

Knowles, Holton & Swanson (2013, pp. 63-67) provide six assumptions about how, and why, adults learn.

- Adults are aware of their need for knowledge. As adults become aware that they are lacking vital information or useful skills, they become motivated to seek after knowledge.
- Adults wish to be self-directing, and to be seen as responsible and capable individuals. Adults resist learning situations where they are expected to be entirely dependent on the teacher. When adult learners are placed in this child-like position, it creates inner conflict.
- Adults have obtained a great deal of life experience, and these experiences vary among individuals. Adults want their experiences to be recognized and valued. Teaching methods that permit peer-to-peer learning and individualized learning strategies are desirable, as they reinforce the learner’s self-identity.

- Adults are inclined to learn when the need for learning arises. As they gradually master basic skills, they become developmentally ready to accept more difficult learning challenges.
- Adults are motivated to learn when the perception is that the knowledge will be applicable to and useful in their daily lives. Learning is optimized when connections are made to real-life situations.
- Adults are driven to learn because of both external and internal motivations. External motivators include employment or salary raises, while internal motivators include quality of life and personal satisfaction.

These assumptions lend themselves to a teaching approach that honors the agency of learners who are a part of a community of practice. The assumptions also provided a springboard for yet another way to approach adult teaching and learning. While holding to many of the assumptions of andragogy, social scientists Stewart Hase and Chris Kenyon (2001) expanded the theory of andragogy and assumed that adults move beyond self-directed learners to becoming self-determined learners. The term coined for this theory is heutagogy.

### **Heutagogy**

As pedagogy is the art and science of teaching children, and andragogy is the art and science of teaching adults, heutagogy is the “study of self-determined learning” (Hase and Kenyan, 2001, p. 2). Hase and Kenyan identified the learner as someone willing to change, based on a clear need to change. A teacher may think that he or she can “control the learning experience,” but they are limited to “the transfer of knowledge and skills” (Hase & Kenyan, 2007, pp. 112-113). A heutagogical approach recognizes that while a teacher can provide

resources, the learner is responsible for his or her own intellectual growth. The instructor gives support while “fully relinquishing ownership of the learning path and process to the learner” (Blaschke, 2012, p. 59). It is the learner who determines what is to be learned, and how it is to be learned.

Kenyon and Hase (2001) supported this method when they claimed teachers “should concern [themselves] with developing the learner’s capability not ... embedding discipline based skills and knowledge” (p. 4). Heutagogical learning is a practical and effective method of preparation for real-life situations, which makes sense for working professionals who return from PD courses to real-time, real-life work experiences. Blaschke (2012) explained why heutagogy is a more beneficial approach than pedagogy or andragogy:

“Pedagogical, even andragogical, educational methods are no longer fully sufficient in preparing learners for thriving in the workplace, and a more self-directed and self-determined approach is needed, one in which the learner reflects upon what is learned and how it is learned and in which educators teach learners how to teach themselves.” (p. 57)

Learning, for a heutagist, is defined as “an integrative experience where a change in behavior, knowledge, or understanding is incorporated into the person’s existing repertoire of behavior and schema (values, attitudes and beliefs)” (Hase & Kenyan, 2007, p. 112). Self-determined learning is more than an accumulation of facts; it is a process of deep change. Knowledge is not shelved for later reference, but is acted upon.

In self-determined learning, learners must not only acquire knowledge, but also know how and when to apply it. They must be both competent and capable. Blaschke (2012) defines competency as the “proven ability in acquiring knowledge and skills,” and capability

as “learner confidence in his or her competency” (p. 59). Competent individuals demonstrate the ability to acquire skills and knowledge; they are capable when they are able to apply the skill or knowledge in unfamiliar situations.

### **The Study Design**

The research for this study consisted of a secondary qualitative analysis (SQA) of data from two independent qualitative studies. In the first study, adult learners reflected on their experiences with PD courses. The second study used data derived from undergraduates’ lived-experiences with learning in an agentic, community environment.

SQA is a qualitative research procedure that reuses datasets to “pursue a research interest which is distinct from that of the original work” (Heaton, 1998). It can also “be employed by researchers to re-use their own data” (Heaton, 1998). SQA is different from systematic reviews or meta-analysis of existing qualitative studies. Instead of being an effort to “compile and assess the evidence relating to a common concern or area of practice” (Popay, Rogers, & Williams, 1998), SQA seeks new understandings from existing data from constituent studies.

Hinds, Vogel, and Clarke-Steffen (1997) described four types of SQA studies they found as they examined published qualitative studies and claimed “all four approaches result in useful findings” (p. 411). The first study type they discussed was to view an existing dataset from a new frame of reference or perspective. Here researchers ask a new question, related or unrelated to the original study’s question, and new understanding is developed (p. 409).

The second type of SQA is to use a subset of the initial data and more deeply focus on the purpose of the original study (Hinds, et. al., 1997, pp. 409-410). The selection of the

data subset is based on characteristics of the data or participants that enable a common description. An example of such a characteristic may be the examination of the lived-experiences of female participants when the initial study included all genders.

The third type of SQA described by Hinds, et. al. (1997) is “to reanalyze all or part of a data set by focusing on a concept that seemed to be present but was not specifically addressed in the primary analysis” (p. 410). These emergent concepts are explorable in a new study since they were not part of the original study.

An emergent study is the fourth type described by Hinds, et. al. (1997, p. 410). They describe this approach as using a preexisting data source to aid in defining “the study purpose, questions, and data collection processes” of a new study. In this case, observations of interest in one study inform the production of another.

Our study is a merger of SQA study types one and three. Being aware of each other’s research and the data being collected, it appeared to us that there were concepts or themes existent in both studies that were not being explored. Therefore, we decided to create a set of data that included the datasets from both studies to enable exploration.

### **Data Collection and Analysis**

The merged dataset consisted of self-reflective artifacts produced by 21 undergraduate students, transcriptions of interviews with six of these students, and transcriptions of interviews with six public school teachers who had been deemed successful by their peers.

The student-produced artifacts, written reports, paintings, drawings, audio recordings, and oral descriptions were the result of a class assignment where the students were to reflect on “How I Have Changed” over the semester as they experienced a software

development course. This course was designed to give space for student expression of agency and allow community to develop in small groups and as a class. As source material for the student self-reflections each student was asked to keep a learning journal throughout the semester. Their reflective journal reports, the student-produced artifacts mentioned above, were collected as the concluding assignment for the course.

For the student interviews, participants were purposefully selected to span gender, ethnicity, and, based on the grade they received, those who did and did not do well in the course. The interviews focused on student experiences of agency and learning during the class. The interviews with the public school teachers focused on the design and implementation of the courses they teach, how much space their course designs create for the expression of agency by their students, risks that they have taken in their careers, their experiences of being a consumer of PD courses, and their desires for how PD courses should be run. Both the student and teacher interviews were arranged to be at a time and place that was convenient for each participant. Recordings and transcriptions were made of these interviews.

By combining the two data sets, a richer and more diverse set of adult experiences was available for study. Primary and secondary coding was done on the combined dataset to identify themes related to expressions of agency, community, relationships, and expectations for learning experiences. The researcher for each study did the primary recoding of the research data from their study. Once this recoding had been completed, we came together, discussed the codes, and began a new secondary coding process by combining the primary codes from each study into one dataset. Once the new dataset was complete, we created groupings of the primary codes by thematic association and descriptive codes for each

grouping. This coding process aided us in gaining a deep, rich, thematic understanding of the participant's lived-experiences. Student lived-experiences are presented here using pseudonyms to identify their gender.

To ensure accuracy and triangulation, we performed a member check. The understanding of the data found in the next section was presented to the participants and they were told which pseudonym represented them. The quoted participants were asked to comment on the quotations and understandings generated by us from their lived-experiences. All of the quoted participants stated that our understandings correctly represented their experiences and desires.

An examination of student agentic learning experiences in the classroom and how they impacted the students' expectations for future professional learning is informative. When this understanding is combined with teachers' stories that include both the way they use agency in their courses and their experiences of PD, adult expectations for PD courses emerge. Student lived-experiences will be examined first followed by an examination of the lived-experiences of the teachers.

### **Agentic Learning Experiences and Changed Expectations**

The students were part of a class designed around student expressions of agency, working as communities of learners, and encouraging "becoming professional" (Dall'Alba, 2009, p. 38). The students expressed their agency by forming self-assembled teams and each team then proceeded to explore their own ideas of how they could use a series of technologies and ideas to create software applications. After finding an idea for an application they wanted to create rather than one the teacher wanted them to create, each team decided how and when to learn about the technologies. The course was designed to



promote development of relationships between team members and between teams as participants expressed their agency by helping each other learn the technologies they needed to use to create the software they had decided upon.

The students experiencing this course changed their expectations of themselves, of the utility of teams when working and learning, and their expectations for future PD learning experiences. These changes are a reflection of how these students were becoming professional. Through agentic community interactions they learned “professional ways of being...through integration of knowing, acting and being the professionals in question” (Dall’Alba, 2009, p. 43).

Sean knew, acted, and was professional. He said, “When I discussed ideas with my team and tried to apply them to our project, we created new ideas.” By choosing to be the professional he wanted to become, he and his teams’ creativity bloomed and they learned from that creativity. Sean explained that he had not had this view of agency and professional learning before this experience. He experienced a change.

Stan experienced a change in his level of professionalism by using his agency to build and maintain community relationships. He contrasted this with how he had done group work in courses he had previously taken.

This group was different [from] any other groups that I have been in.... I couldn’t just sit back and quietly complete my portion of the project. I needed to get involved and voice my ideas and my concerns.... I really enjoyed the group that I had.

Stan described how he expressed his agency by sharing his ideas. He found that he could no longer “sit back” but needed to “get involved” with his peers and ended up enjoying the learning experience.

James told how, at the beginning of the class, he feared work after graduation. He expressed his agency during the class by changing his expectations of himself. He said:

I have a job lined up for after graduation. I know that I am going to have to work with people. This was something that I feared. I was even hoping to receive a different job offer, but ... that didn't happen. However, after taking this class I feel I am ready to work with a team and to be successful with that team.

James' movement from fear of working as part of a community to feeling that he was ready to do so was the result of recognizing his weakness and expressing his agency. He did this by choosing to accept and make deep changes in his view of what he needed to be in order to become, as he pointed out, valuable and successful.

William, in an interview, explained how students used agency to develop relationships with the teacher. “When you ask a question; [the teacher] teaches you what you don't know ... about [the student proposed] solution ... and [then] teaches you a better solution. That was good.”

Using their agency, students would ask non-trivial questions when they had a need for knowledge (Knowles, Holton, & Swanson, 2013, p. 39). These questions then produced a learning experience beyond that expected by the learner. By asking questions about solutions to problems his team was facing and proposing a potential solution based on the team's previous experience, Dan and his team could have a learning experience that

expanded their perspective and allowed them to arrive at a solution they had not considered or known about.

Graham also found a need to express his agency. He communicated how important acting rather than waiting to be acted upon became to him. He described what he discovered about expressing his agency by acting in the face of the unknown. Graham did this by telling a story about himself in the third person. He expressed how he initially felt unprepared and anxious.

It wasn't the first time that Graham had felt ill prepared for a new adventure....

The obstacles were clear enough, but there were no signs or footprints to point the way others had gone. It was not even apparent there had been others.... He began to wonder, "Where do I start?"

It turned out that starting was the answer.... As he moved forward, the path behind became clear, which made it easier to see the way ahead. Before long, what once was an endless ocean of cataclysmic chaos had become ordered and understandable.... He had found it difficult to walk into darkness, when there was no light in view beyond the entrance. This was his folly. He was so busy looking for the end of the tunnel that he failed to see the lightning bugs along the way.

In a conversation with Barney, Graham also mentioned William as a major factor in the changes he made in himself and his perspective of what was meant by becoming professional (Dall'Alba, 2009, p. 38). When asked why other students mentioned him as having an impact on how they had changed, William explained, "Maybe it was because I was willing to teach ... to share my experience with others. Most of the time when I learn

something new I get really excited. I just want to go out there and share.” William, through his excitement, expressed his agency and chose to teach others. He helped Diego understand why “it is important to learn everything” they could rather than wait to be told what to learn. Diego was willing to listen to William; they were on the same team, had developed a relationship of trust, and Diego changed his expectation for his future professional learning.

Julie struggled to find a community in which she felt appreciated and comfortable. “My group didn’t listen to my ideas and everything I did was wrong.” Halfway through the semester she expressed her agency and switched teams.

This was not easy for Julie. She explained, “Any change in life is scary for me. So finding a new team made me a little nervous.” Yet after finding a compatible community she felt more complete. “I was finally happy in class.... The group communicated about what we were doing and wanted to do. We worked on things together. I also discovered that I did have things to contribute to my new team.”

Julie expressed her agency. She selected a new team to join and integrated herself in the new community. She found an opportunity to voice her opinions, learn new ideas, and teach other students. She felt these opportunities had been lacking in her previous team.

Alex had a learning experience regarding teams. He found that he could express his agency by helping rather than competing.

As a student at the beginning of the semester I felt [that learning] was a competition. The more I know, the better I can be ahead of the next guy, but that’s not the case as a student. The more I know, the more I’m able to help other people understand. The more I know [the more] I can help my team grow and we can create amazing products.

By using his agency to build community in both his team and the class, Alex found an increased self-efficacy and arrived at a professional outlook on learning. He discovered that helping could fulfill him in ways that competition could not.

Carl took the class with two of his friends. The three of them formed a team though all three disliked the topic of this required course.

[Being on a team with them] was the biggest mistake, and the best thing that I did this semester. It was a mistake because we were too complacent. This led to us sputtering around for a few weeks, which of course led to what I like to call the great chastisement. To come clean, I completely and fully understand why [the teacher] did it. I know he did it with much love, and a desire for us, as students, to succeed. This talk led us three to truly reflect on what was going on and get our act together.

At the beginning of the course, Carl's team failed to engage with the material. After "a few weeks" of observation, the teacher intervened. This intervention allowed Carl and his team to express their agency in a positive way. As a team, they reflected on what they wanted to get out of the class. Carl explained they, as a community, were then able to use their agency more productively and "mold this course into what we wanted it to be."

Blake exercised his agency when he chose to give up his desire to plan and create an application based on his idea. Instead, he chose to agree to create an application proposed by another member of his group. "I'm not a big fan of baseball, but I agreed to Craig's idea for a baseball app." This decision was hard for Blake because he "knew nothing about baseball." He and Dylan, another of his teammates, chose to sacrifice what they thought

might be in their best interest to the interest of their team; an attribute important to professional learning and development.

Gary used his agency to gather ideas that were generated by other teams and the classroom community.

When Joe explained new ideas or wanted to share things he had learned with me, I was glad to learn those things from him. I wanted to learn as much as possible from him and other students in class. However, I did not want to accept their ideas as “best solutions”. In other words, I wanted to compare those ideas with those I found from other resources. It was not because I did not trust them, but because I wanted to verify the ideas.

By exercising his agency through exploration, Gary was able to evaluate others ideas and accept them when applicable. When he found or had a better idea he could share it with his team and the class.

Jill, a teammate of Carl, expressed appreciation for an agentic learning experience. She appreciated guidance not direction, a place to turn to for advice, and an opportunity to make the learning her own. “[The class gave us a] chance to experience learning.... We did have guidance ... but what we got from it and how we learned it, was completely our own. I think that’s what learning is all about.”

She was happy not to be “dependent on others to teach me what *they* think I need to know” (emphasis in the original). She changed her expectations for future learning.

Dan’s teaching and learning experience expectations changed dramatically due to his agentic learning experience.

I had always just thought the teacher would stand up there and tell us what he knew about a subject hoping we would retain it.... By allowing us to teach each other and to direct how we navigated the course and what we would take from it, I was able to learn more.

Dan no longer expected to passively absorb information. Instead, he learned that expressing his agency by “navigating the course” in the way he wanted and choosing to teach other learners improved his learning experience. William, like Dan, had a change in his expectations of learning experiences. He expressed frustration with courses he was taking that were not agency based. During class he exclaimed, “Why can’t other classes be taught this way? They are so frustrating! They keep getting in my way!” In an interview he explained this further. He claimed that non-agentic courses with their tight timelines and proscribed artifact production force students to study specifically to pass evaluations and match rubrics. This, he said, encouraged a “cram and dump” approach to learning instead of stimulating students to explore knowledge beyond what is required to pass evaluations and meet rubric requirements.

William, Dan, and the other students’ changed expectations of teaching and learning will affect their experience of PD courses as they continue their process of “becoming professional” (Dall’Alba, 2009, p. 38). Is it possible that professionals working in their field could be frustrated with PD courses as was William with the non-agentic courses he was taking? Could the PD courses be “getting in the way” rather than enhancing becoming professional?

### **Learner Expectations for Professional Development Experiences**

The descriptions of teacher lived-experiences included here portray a set of public school teachers' desires for community, relationships, and agency in PD courses they experience. Their complete stories expressed their frustration with PD courses. The stories also included how the teachers incorporated agentic learning in their classrooms and an expectation for community and agency in PD courses provided by their school district. Instead they had PD experiences that were pedagogical, passive, disconnected, information absorption classes.

Each teacher's story is presented here in two parts; (a) a discussion of their students' positive experience with agentic learning and growth, and (b) the teachers' desires for or frustrations with PD course designs they have experienced. Pseudonyms are used in all the participant's stories.

Heather, a 4<sup>th</sup> grade teacher, told about the success she's had creating an agentic learning environment in her classroom. She took a student-directed approach, where students were allowed to ask questions and explore concepts.

They really do become more engaged when they recognize that you're willing to answer their questions, and if you don't know, then you open up the computer, turn on the computer, and look it up on the Internet. I think they do engage so much more when they know... "Hey, I wanted to know this, and she's going to actually give me an answer instead of just going through information I really don't care to know."

Heather recognized that her students were more engaged when they were involved in learning they felt they needed. She explained why a more "traditional" lecture-style classroom doesn't have the same impact on her students. "It's impersonal. They're just



sitting there feeling like I'm talking "at" them. I'm having them answer [questions], and ... do things, but they're not connected." It is interesting to note the application of heutagogical principles in a 4<sup>th</sup> grade classroom. Heather saw students disengage when lecturing replaced student focused learning within her classroom. When students were permitted to share and explore their ideas, to truly become influential participants, the lesson became more relevant and meaningful.

Heather believed her students also found meaning and developed confidence by collaborating with each other. When students were given space to express their agency while learning from and teaching their peers, their understanding of the material increased, and they became a community of learners.

So they're talking, and they're helping each other, and they're reviewing things ... saying, "No, that's not right, fix that, do this, do that." I feel like their relationships with each other have really grown because they're confident in asking. They're confident to walk up to their partner and say, "I didn't get that, help me out." Instead of trying to hide what they don't understand. They feel confident in speaking up because they know that's what they're there for, and they can ask each other.... The relationships among my students have really developed as they build confidence in each other.

As students were given the opportunity to collaborate in an agentic classroom and teach one another, they formed a support network that increased their morale and aided learning. The embarrassment of not "getting it" was replaced by self-awareness that promoted confidence.

Heather also discovered that each of her students had unique needs. She accommodated individual learners by assessing their abilities and forming collaborative groups designed to give each student the particular support they needed.

You have to adapt for different children. It's something that I try to watch carefully; noticing, "Is this person struggling?" So I think it's something that you have to constantly be on top of, and be assessing and watching....

Students' needs are always changing. It's based on where they're at in their learning process.

Heather differentiated learning within her classroom. She did this by having small group sizes, frequent assessments, and adapting lesson plans and groupings based on assessments. She shared these ideas with her fourth-grade teaching colleagues. They appeared to be eager to try them in their classrooms:

The other fourth grade teachers have started with math and a little bit with reading doing the same things I've been doing. I've been able to ... help them on review days. I've been able to show them what I've been doing, and they're starting to want to do it too.

After finding success with agentic learning, differentiated instruction, and addressing student needs in her own classroom, Heather felt teachers and other district personnel would benefit from a similar approach in PD courses. She saw teachers respond to lecture-style classes in a manner similar to her students; disengaging when they did not feel they had control over their learning. Heather expected more from PD; more involvement from the participants, more quality content, and more meaningful experiences. She said,

In the district, PD is very superficial. It's like; we'll get up in front of you and talk at you. What I said doesn't work in the [classroom] isn't going to work when you have teachers. They just get up and talk at someone and... throw information at them. They don't give teachers any reasons why they should care, or any backing to what they are saying. All they do is give some program you can use. I feel like the majority of teachers would love—truly would really love—to be taught something meaningful like management or educational philosophy. I feel there are teachers who would like that.

Heather felt that most teachers had a strong desire to learn and improve, but the PD material available was sub-par, and not presented in a relatable manner. The PD lessons were superficial, were not focused on teacher needs, and didn't permit agency or exploration. She felt this caused teachers to disconnect from the intended learning.

Jack, a fifth-grade teacher, had experiences similar to Heather's. He recognized the importance of agency and choice in his classroom.

Agency is huge in the motivational realm. Choice is a tool that I take advantage of in everything from managing the classroom to planning. My students are involved in planning ways to demonstrate learning. I want them to drive that. They know it's their classroom and I am a facilitator and we have goals to accomplish and things to learn. Much of how we go about learning is going to be determined by them. I can give you a "gazillion" examples where I made choice a part of assessment due to its motivational aspect. I can get them to "buy in" when choice is there.

Jack described one successful experience where his students expressed their agency by designing their own “history museum.” They did this by reading history books and then using what they learned to design and create displays of their choice.

It was the students who, once they tasted a little bit, came back for more. They said, “Can we read more than two books?” Some of them are reading 20, 25 books, watching documentaries, and experiencing other kinds of things.

Jack, like Heather, found that students became excited about learning when they were given the opportunity to direct the process. When Jack gave his students control over how they studied and presented the material, they became fully engaged. Students took responsibility for their own learning.

Both Jack and Heather recognized how important peer collaboration was in their classroom settings. Jack felt this teamwork and student-led teaching approach fostered a healthy learning environment.

The students collaborate all day, every day; because a big part of learning comes through the expression of language; the oral/aural exchange. But also because the best ideas are ones that come through collaboration, that are bounced off of others and receive healthy critique.

Because of this, I can set up a classroom community, a culture, an environment, where they feel safe enough to have those kinds of exchanges. That’s because these things are done every day. It’s not once in a while that they turn and talk to their neighbors. It’s all day, every day. We’re about togetherness, and us, and collaboration, and sharing ideas and talking.

Jack attributed a lot of his classroom's success to a classroom culture where students are encouraged to talk freely, without any impediment of their shared ideas. He claimed group ideas were often the best ideas, because they received constructive critique from peers.

Jack helped his students develop this classroom culture by listening to the ideas of his students. He valued their input and allowed students to have a voice.

I have set up ways that they can give suggestions. They don't begin to volunteer ideas, they don't begin to take charge of their education—call it choice, agency, whatever—until those opportunities are given to them and relationships are built. You have to see your role as a facilitator, and you have to see the students as equals.

When Jack demonstrated respect for students' opinions and experiences, they began to volunteer ideas and take ownership of their education. Jack treated his students like important team members. Through these choices, the students exhibited “professional ways of being” (Dall’Alba, 2009, p. 37) by providing valuable critique of each other’s ideas and taking ownership of their learning.

It is interesting to connect a teacher's teaching style to their expectations of PD courses. Because of Jack's unique style of teaching and personable relationship with his students, he expected PD courses to have the same, or similar structure. Jack was disappointed that the district's PD courses did not reflect his same standards. He said,

On a school level, on a team level, on a district level, we don't run education the way that it's run in an effective classroom. I think we know how to take a group of people and motivate them to come together instead of being horses

pulling in every direction, to yoke up and pull together. Then they can accomplish amazing things. I think it's possible, because I've seen it year after year with children. If they can do it, so can adults in teams and so can schools and districts.

Jack felt that PD education experiences he had, the "running of education," did not mirror the practices of an effective classroom. He wanted PD courses to have high standards and transmit professional ways of being. Since the district's PD courses did not implement effective practices nor embrace best teaching methods, Jack found himself in opposition to the very resource that was designed to support him. He said a positive change to his PD experience was needed.

Part of what I would change is modeling. It's something everyone laughs about: you go to an in-service where they talk about differentiated instruction or technology, and they're teaching about it by using a flannel board. Literally, we experienced that, a flannel board! If you want to develop a feeling of agency throughout the district in classrooms, then that has to happen at the training level as well.

I recognize that they do ask, once in a while, what kinds of things teachers would like to have as training. There's some effort there, but again, it's bigger than that. If all I did in my class was to give a survey on a piece of paper and say, here are your options, which ones would you like? I don't know that I would get student buy-in.

Jack would like to have more input regarding the training available to him. He would like to choose his PD experiences and have them be similar to the experiences his students have in

his classroom. He felt agency was key to “buy-in” for PD learners. As Jack stated regarding his own classroom, PD learners would then “feel valued, and begin to volunteer ideas and take ownership of their education.” Regarding what is learned in PD courses, he emphasized, “You can’t force it. That’s where they’re missing the boat a lot of the time, they’re trying to force. You have to convince somebody to choose to change.”

Jack’s frustrations with district-forced PD have led him to seek training through other sources. “I’ve learned a lot, content-wise, heutagogically. Through a variety of ways, college courses, inservices, state classes, science and social studies grants, that kind of thing... but a lot of it has been personal study.” While Jack experienced success by utilizing outside sources, he felt that he could benefit from a more positive learning community within the district, where teachers have the freedom required to grow and mature professionally.

The feeling that I have had, in the ten years I’ve been here, is I am asked once in a while which of these things I would like to get more training on. First of all I have no relationship with the people who are asking. It’s hard to develop respect and trust in them when you don’t have that relationship, but also when you have never really watched them work for you and with you.

Ultimately, Jack desired what he gave his own students: a relationship built on mutual respect and an open exchange of ideas. Jack wanted to feel that his experiences were understood, valued, and utilized by administrators in the district.

Sally, a 4<sup>th</sup> grade teacher, also developed opinions on how to create a positive learning community. She explained how she encouraged agentic learning in her classroom.

I feel students need to choose. For instance, with book clubs.... I put up six different books. Then they come back saying, “Oh, my goodness, you guys

should have chosen my book, it's the best!" "No, mine is!" Then they're grabbing each other's books. I have extra copies of the titles, so now they're not only reading the ones that they were assigned to read, but they're reading other students' books as well.

Sally, like Jack, sees her students become excited about learning when they express their agency and pursue content that interests them. Both Sally and Jack's students took control of their own learning and went beyond requirements of their assignments. As the students chose, they became more engaged and developed a desire for deeper understanding. Sally explained,

The author of *Love and Logic* says, "Keep the control you must have, and you give all the rest of it away." The more control students have the better the results they will achieve, and the more in control they are, the more they will learn.

Much of Sally's classroom success came from her willingness to relinquish control as the teacher. Like Jack and Heather, she used student-directed learning to encourage students to take responsibility for their own learning process.

The only thing that I do differently [than most teachers] is student self-monitoring. I try to develop an environment that gives them a desire to do work that will be a challenge.... I have a few students who pick the easy work every week, and I start to notice. Then I have an interview with them and give them a few little challenges. That happens, but for the most part it's been a joy to watch the kids choose [and decide] "This is what's good for me."



As Sally's students expressed their agency, they often chose to challenge themselves. She found that self-determined learning encouraged her students to discover their abilities and push past personal limitations.

Like Heather, Sally recognized that student abilities and limitations vary. They each discussed the need for teachers to assess their students' needs. For Sally, this is an ability she developed over the course of her professional teaching career.

I think that probably the biggest difference from 25 years ago would be... I've gained a sixth sense; that I finally feel I know what works well with kids, I know what my targets are, and I know what the manual says. [I know which] things are effective and which aren't. I'm also willing to divert from that path to get ... the students to where they should be in a more effective way.

Through years of experience, Sally developed a flexibility that aided her students learning. She avoided the traditional pedagogy of lecture-style presentations and switched to an agentic, topical approach. Through this she facilitated classroom discussion in order for students to achieve a deeper comprehension of the material.

I put down different topics, then they can research what topic they want, and then get on that team. Then they all come back and present. When it was done, we said, "What else did anybody learn about Sacagawea's role in the corps of discovery?" The discussion that was facilitated went beyond the students' instruction.

Sally's students benefited from the same types of team collaboration suggested for PD courses by Little (2006) where she described PD in the form of learning communities. In her PD learning communities, teachers were "encouraged to frame research topics tied to

school goals, priorities, or problems. In other cases, they are afforded complete independence in deciding what to investigate” (Little, 2006, p. 21). This type of collaborative learning community was similar to Sally’s: students were given topics to research and then shared what they learned.

When Sally’s students were given the opportunity to share their experiences with their peers, she found that her students were eager to learn more than what was required to complete the assignment. As seen in the quote above, she also left time for discussion, permitting students to drive their learning.

Discussion and peer collaboration played an integral role in Sally’s classroom. She related how one of her students described the importance of teamwork in their class:

I said, “Angelique, what do you think teamwork is?” She said, “It’s not only about working together as a group, but if any one person in your group doesn’t agree, it’s the group’s responsibility to see if their view has any purpose or any value, and then to either accept it or find another way so that everyone in your group will agree, as part of the team.”

Angelique’s description of teamwork appeared to be a point of satisfaction for Sally.

Sally appreciated an agentic learning environment similar to what she had created for her classroom. “I love the agency of getting to choose what I’m going to take and learn and do.” Like Jack, Sally expressed her agency by seeking PD experiences outside of her school district. She traveled to a university four hours away to attend their PD courses. She described one of the PD courses she chose.

The university sponsors this class called “Art Express.” They spend two days and you go down there and they say, “Give us your history curriculum, and

we'll turn it into a movement experience. You give us your science and we'll turn it into a musical experience. You give us your reading, and we're going to tie it into visual arts in some way." So I've chosen to attend that several times because it taps into my creative end, and I've been able to have freedom to do that.

The class that Sally described appears to be a student-led, agentic environment. Instructors asked participants what they needed help achieving, then designed the class around individual participants' needs. This approach invited Sally to be involved. It's a method that Sally indicated was valuable to her by repeated travel and attendance.

Tina, a 3<sup>rd</sup> grade teacher, has grown as a professional over the course of her career. Like the other teacher participants, she shifted to a teaching style that is more adapted to individual student's needs. She discussed the importance of changing and adapting to situations.

I've always had a pretty good ability to see a child and find a different way to teach, I don't just stick to the same way. I want to stay fresh, if I ever feel like all I have to do is pull out the folder and do the same thing I did the year before, I don't think I'd be a good teacher. Every year I have a different group of learners. Just like I'm changing, I should bring to them what they need, just like what I would want as I'm changing, too.

Tina made an effort to see her students as individuals, and to give them the type of instruction she felt they needed. She provided them with an agentic learning environment, where they were able to make choices during the educational process. She described a recent art activity.

I put four different projects at four different tables, gave the students the instructions, and just said, “Go.” Every 15 minutes when they were done, they’d move. So it was a lot more of just letting them be third graders and be responsible.

So I try to pull myself out of that, “open the head, throw the information in” type of teaching and do more of letting them be the teachers, letting them explore, then share with the community what they’ve learned.

The class listens much better to each other than they do to me.

Tina took advantage of the correlation between agency and responsibility. As she shared control of the classroom and allowed students to make choices, the students took more ownership of their learning process.

If I’m not the one dictating how [the students] do it, then they take more ownership of it. I do give spelling homework, but I don’t tell them what they have to do every night. It’s their choice. There are 10 options; they pick four of the 10 for the whole week. It’s not me dictating, it’s them choosing and taking accountability for their own education.

Tina’s experiences reinforce the experiences of the other teachers: agency, collaboration, and student-led discussion created a positive community where meaningful learning took place.

Tina felt that district sponsored PD could be enhanced. She advocated for PD that offers relevant instruction in current methodology.

One of the things that I’d like to see with professional development is that we need to go outside of our bubble and see what the rest of the world is doing.

We need to always be reaching up. We need to send more people to national conferences. We need to bring in speakers.

You can be here teaching and things are changing in education all the time. If you don't continue to learn after you get your college degree you're going to be stagnant. We need to keep growing and see what's out there, what's changing.

Tina desired professional development that models effective teaching practices. Just as Tina was continually changing and evolving to meet the specific needs of her class, she felt that PD ought to provide teachers with the opportunity to “reach up,” “keep growing,” and “changing;” reflecting Dall’Alba’s (2009) “becoming professional” (p. 38).

Tina, like the others, suggested collaboration as a possible solution for achieving effective PD learning. She wanted more time with her teaching peers. She explained, “We’re having faculty meeting once a month. That is my professional learning committee. They are the professionals I deal with, and I’d love to be on the same page with them regarding teaching.”

Like Jack and Sally, Tina turned elsewhere for PD instruction. She described a conference she attended sponsored by the National Council of Teachers of Education:

It was great, I got to attend classes on writing, and differentiation. I feel like my battery was charged. It was great.... It was four days of feeling like my battery was charged by getting cutting edge research. I feel like that’s what I brought back to my kids, a better, renewed teacher.

As with the other teachers, Tina met her need for learning, improving, and “becoming professional” (Dall’Alba, 2009, p. 38) by going outside her district’s PD environment.

Don, a junior-high math teacher, has moved away from the pedagogy of lecture-style instruction. He elaborated on how he shifted to a heutagogical student-determined learning environment:

Now, I go in [and have] more of an interaction. I try to get the students to participate with me, I try to get them to ask questions. I try to create an environment where they feel free to ask whatever they want. “Let’s interact, let’s ask questions, let’s figure things out, let’s work together.” I think, for the most part, the students have responded to that. I usually get quite good feedback, and students usually enjoy coming to my class.

Don saw his students respond to an environment that promotes freedom, interaction, and discussion. He recognized that when students express agency by asking questions and work together toward a common goal, they enjoy the learning process. Don was discouraged that the district had not come to the same realization regarding PD.

I do enjoy taking classes [and the other things the district offers]. Oftentimes the ones that are held inside the district seem like they’re not the ones that are best prepared. Often they’re the same things over and over again. So you go and try to make it through the day. That’s what my experience has been.

Another concern of Don’s was that classes were not developed with the needs of individual teachers in mind. Directors and instructors made no effort to address or utilize the experience or prior knowledge of the participants. Knowles et al. (2013) described what Don was experiencing as a “pedagogical methodology” (p. 62). In this methodology the learner’s needs and “experience is of little worth as a resource for learning” (P. 62).

I've seen the overhead projector class offered several times and I don't have one! I'm thinking, "I don't have that in my classroom yet. I don't have experience prior to this, and you're teaching me something I'm not going to be able to go back and use, so that's not going to work."

By failing to recognize Don's previous knowledge, past experiences, and current needs, the PD instructors alienated Don and he did not learn any skills he could use in his own classroom.

Don did have suggestions for improving district provided PD. As Jack stated, Don thought PD course designers should connect with teachers and make an effort to understand their needs.

Maybe some of the people at the district level have been out of the classroom for so long that they don't know? I don't know if they get teachers' input on what they want, what they think would be an important class?

I don't know if it's because the district office is a little out of touch, maybe they don't get enough teacher input on, "Here's what we want to learn. Here's what we think is really valuable."

As with Jack and Tina, Don also desired more collaboration and peer-to-peer learning. He felt that teachers could best learn from each other. He described a defunct PD program called "Teachers Visiting Teachers."

A few years ago we had an opportunity to do a program called "Teachers Visiting Teachers." I really liked that. I'd go into another teacher's classroom. I'd take the opportunity to observe them and see what they did. I'd go, "I like that, I like the way they presented that situation or that concept," or, "That is

how they did it.” Then I’d try to build on what I saw and refer to it and mimic or copy what they did. I really liked that.

In addition to peer learning, Jack wished that the district’s current PD offerings focused more on teacher involvement and collaboration. Don envisioned how this could be accomplished through classes where fellow educators swap ideas and share solutions:

“Here’s the way I taught this concept. How do you teach it?” And get ideas on, “I could do that, I could apply this.” Instead of going to some random class where they just talk about stuff. I think teachers sharing with each other would be the best part. “Here are some things that work.”

Don desired a peer-learning environment as described by Wenger (2011) where “members engage in joint activities and discussions, help each other, and share information. They build relationships that enable them to learn from each other” (p. 2). Don felt that he would be better served through PD based on peer-to-peer collaboration.

Sophia, a high-school government teacher, was also an advocate of peer learning and collaboration. She developed lessons that allowed students to collaborate to find solutions to problems.

We did a program called “We the People.” Rather than taking a paper test, the students create a group and form a government. They tell me what they’re going to do with Freedonia, a pretend country. I ask, “Why did you choose unitary over federal? Why do you like the unitary government?” And that’s their test.



During this process, Sophia's students encountered problems, learned to share ideas, and collaborated to achieve a common goal. They were not told how to solve the problems they faced, but explored and discovered solutions that reflected their own beliefs and ideas.

Sophia felt that agentic expression within the classroom was a key factor in her success as a teacher. She encouraged students to find ways of making the material relevant to them.

I tell them, "find a passion." I'll have a student say, "I don't like anything but hunting." And I'll reply, "Okay, let's talk about wolves in Yellowstone. Let's write a federal bill." And he says, "Oh yeah! I can!" It's their passion or something they're thinking about; that's what they do with these projects....

They're living it.

As Sophia's students studied what interested them, they became immersed in the learning process.

Sophia, like Jack and Sally, adapted her teaching to students' needs. She viewed planning as an ongoing process. She explained, "Even though I teach the same class first and fourth hour, they're completely different. I don't teach them the same way because my students are different." Sophia hoped for the same type of differentiated instruction for her PD course experiences. She felt frustrated that the content was not applicable to her particular needs.

I'm looking at the PD we have upcoming. [The district in-service leader] set it out and I looked at it.... What it tells me is math teachers need to get together because they have a large program change coming and it's something that will really help them. But they'll fill in everything else for the rest of us so we can

do something that isn't as important or doesn't even apply to our subjects. But we'll fill it in to make sure that you are here. I have to be there, but it's not going to supplement my teaching hardly at all.

Sophia did propose a potential solution. Like Heather, Jack, and Don, Sophia claimed that collaboration would provide a more relevant experience.

I really think we can learn the most from each other within our subjects. I think if you put teachers [of the same subject] together, you're going to get a lot more learning. [They can] cooperate and share information and make each other better teachers. Give each other ideas. I can say the best ideas I've got are from other teachers in my subject.

Webster-Wright (2009) reflected these teachers' hopes for their PD experiences when she suggested that PD research switch from "how best to deliver programs to 'develop' professionals to seeking insights from the authentic experience of professionals" (p. 723). Jack, Sophia, and the others' stories appear to fulfill Webster-Wright's intended PD research data source. Their experiences and frustrations suggest a series of principles they would prefer to have incorporated in district PD courses.

### **Implications for Practice**

Adults, as seen in the teacher and student lived experiences described, desire relationships, community, meaningful changes in themselves, and agency in learning environments they experience. These expectations can arise at any time during a learner's educational experience, even as undergraduates. As seen in the student stories above, expectations for future learning, which would include PD, change when adults experience agentic learning. If adults are given the learning environment they expect, they thrive. The

elementary school teachers stories of experiences with agentic learning, both in their classrooms and as they developed themselves professionally, changed their expectations for PD. Their change mirrored the expectations for future learning by the undergraduates. Based on the experiences of both these groups, what principles might adult learners expect to find expressed in a PD course that matched the environment they desire?

Don, the math teacher, and Alex, the student, said that collaboration with their peers was an important part of their learning experience. They both described how they could express their agency through acting for the benefit of others. Jack, the fifth grade teacher, added to this a need to feel “trust and respect” when sharing ideas. They believed these three components are essential to their learning experiences.

One set of participants expressed the importance of agency in their learning. Heather, a fourth grade teacher, wanted more from PD than being talked at and having information “thrown” at her. Both Sophia, the high school teacher, and Heather expect their students to go beyond memorization and do not lecture their classes. Instead, they have provided space and time for their students to act, choose, and express agency in their classrooms. They also expect this for their learning experiences. William, one of the students, expressed his frustration with traditional courses that adopt a pedagogical style and delineate exactly what and when to learn. These learners would expect PD to support their expression of agency through providing space and time for them to become professional rather than listen to a lecture, participate in question/answer sessions, or sit through a guided “hands-on” training since these types of experiences do not promote “becoming professional” (Dall’Alba, 2009, p. 38).

As learners, several of the participants (both undergraduates and teachers) noted a strong preference for active learning over more commonplace passive learning experiences. Jack, Alex, and Don expected agentic, trusting, community experiences in order to be successful. Perhaps their belief that each of them, from very different learning environments, learn better when part of a community was a reflection of the “ceiling effect” (Fullan & Hargreaves 1991, p. 38). This effect can be described as a limitation when learning independently due to a lack of variant perspectives and ideas.

Exasperation with courses that were not applicable was also an issue. Don strongly disliked courses about technology that didn’t exist in his classroom and told of how he much preferred visiting other teachers’ classrooms to get to know them and see what they were doing. Sophia also stated how she enjoyed collaborating with her peers, sharing and spreading good practices across the members of her teaching community. The student Gary expressed how much he appreciated collaborating with other learners. Don, Sophia, and Gary would expect PD courses to focus on their individual needs and encourage agentic community building and sharing inside and outside of the PD class rather than meeting some hypothetical need of a large, aggregate, heterogeneous group. Their PD course expectation would also include avoiding the tyranny of the majority.

Both teachers and undergraduate participants loved the idea of team collaboration. Don’s meaning of collaboration included expressing ideas and applying creativity to shared problems of practice and aiding each other in becoming professional. Julie, a student, found an ability to learn by sharing and being creative when solving problems faced by her community. Heather talked about her peer meeting of the fourth grade teachers getting together and using creativity to resolve a difficult problem of practice. For these learners,

sharing previous experiences and knowledge to creatively resolve a problem is an important part of their becoming professional. They would have an expectation that a PD class would go beyond acknowledging the learners' prior knowledge and experience; that to accomplish learning the learners' knowledge, experience would be leveraged and used.

Self-reliance and self-efficacy was another category that emerged from the stories of both groups of participants. Sally declared how much she enjoyed expressing her agency by being able to "choose what I'm going to ... learn and do." The student Jill was happy not to be dependent on others to teach her what they thought she needed to know. Instead she could exercise her agency by exploring what she found important to her. These declarations are expressions of appreciation for a heutagogical learning experience; an experience where each of these adults could make decisions about what, where, and when to learn.

It is interesting to note how these two very different populations, undergraduates who have had an agentic learning experience and professional teachers providing agentic learning experiences to their students, and expecting the same, or similar agentic ideas in PD courses, share similar desires regarding their learning expectations. From the stories of Jill, Jack, Don, Sophie, and the others emerged principles that underpin expectations for well-designed PD courses. Well-designed PD courses

- Foster agentic collaboration among the learners;
- Leverage and uses the learners previous knowledge and experiences to accomplish learning;
- Set up space and time for learning and avoid lecture, question/answer sessions, and forced independent explorations;
- Assist in the transmission of positive professional ways of being;

- Focus on individual learner needs; and
- Encourage agentic community building both inside and outside the PD course experience.

The purpose of PD is to assist professional learners of all kinds in continuing their learning yet PD courses often are “episodic updates of information delivered in a didactic manner, separated from engagement with authentic work experiences” (Webster-Wright, 2009). In contrast to this common PD experience, if PD courses were based on the six “good” PD course design principles expected by the participant-learners, people taking PD courses would be aided not only in becoming professional but measurable productivity gains and modified behaviors would occur.

## CHAPTER 4: MEETING BYU-IDAHO'S BECOMING OUTCOMES IN THE CLASSROOM

BYU-Idaho's long declared desire for a focus on the scholarship of teaching and learning (Clark, 2011) and its ongoing declaration of student learning outcomes regarding "becoming" (Brigham Young University-Idaho, 2013) raises an interesting question. Does the faculty have sufficient knowledge and experience to enable them to include and measure BYU-Idaho's declared student learning outcomes in the classroom?

### Meeting BYU-Idaho's Becoming Outcomes in the Classroom

#### Problem

The *Student Learning at BYU-Idaho* (Brigham Young University-Idaho, 2013) flyer lists a series of learning outcomes that should guide each Brigham Young University-Idaho (BYU-Idaho) student's educational journey. From student writings, interviews, and an examination of some course syllabi, it appears that many course-level learning outcomes at BYU-Idaho depart from the university's student learning outcomes. Instead, they appear to focus almost entirely on skills and knowledge the students should gain. The difference between university outcomes and the outcomes actually measured in courses could result in a disconnectedness between BYU-Idaho, students, and the public due to students' experiences in the classroom often not matching the expectations set in devotionals (weekly gatherings of university faculty and student body), by being exposed to *Student Learning at BYU-Idaho*, and BYU-Idaho promotional materials.

#### Background

The learning outcomes, described in *Student Learning at BYU-Idaho* (Brigham Young University-Idaho, 2013), are embodied as six statements of *becoming*. They declare

that students should become disciple leaders, lifelong learners, creative and critical thinkers, effective communicators, skilled professionals, and engaged citizens. These *becomings*, if they are to be actualized, require each student to change; to go beyond their comfort zone; to become a different person. While attempting to create a course designed around and measure BYU-Idaho's learning outcomes in a classroom environment, it became apparent to me that the outcomes and associated student changes they create imply the understanding and application by instructors and course designers of several underlying principles. These appeared to include agency, risk taking, becoming, and complexity. A discussion of each of these principles as experienced by students in a course based on the university's student learning outcomes should be informative for instructors and designers as they seek to become the instructors and designers they "ought to be" (Kerr, 2013) and create and teach the courses in a format that ought to be.

### **Research**

As part of the process of obtaining my doctoral degree, I completed a research project that studied a course designed to support the student learning outcomes found in *Student Learning at BYU-Idaho* (Brigham Young University-Idaho, 2013). The course has been taught with this design for five semesters. To improve both the course design and myself as a teacher, I decided to try to understand the risks taken by students that were necessitated by the need for them to become "the people [they] ought to be" (Kerr, 2013).

Because I was attempting to gain a deep, rich understanding of the students' lived experiences. I wanted to dive deeply into the student's lives; to speak with them to gain clarity, and to examine a wide range of student experiences in their own words. In order to



have this experience and to gain that type of knowledge I decided to implement my research qualitatively.

My research has changed me—my practice and my life outside of my profession. I have continued on my path of becoming a teacher. I can now both understand the risks the students are taking and how I can help them face and accept those risks in a way that is supportive without restricting their agency. I have learned how to support the students when they experience temporary failure so they can embrace it and learn from it (McGrath, 2011).

The research also aided me in deciding what changes should be made to the course in order for it to continue its process of becoming the course it ought to be. One of the larger changes was the addition of resources designed to help the student understand the distinct culture of the class. I had not previously realized how distinct this culture would become. A culture based directly on BYU-Idaho's student learning outcomes can be dramatically different from course cultures to which students have become acclimated through previous educational experiences. By creating these resources and carving out a safe time for students to understand the course culture, they have the opportunity to deeply embrace Kerr's (2013) statements regarding becoming.

### **Becoming**

"I may not be an expert at writing diagrams or designing a user interface, but practice and use will make perfect" - Stan

Kerr (2013) spoke at a BYU-Idaho devotional regarding what education should be. He described learning "as a progressive process—that we not just learn 'about' something, but that we learn 'from' it—that learning is not just about acquiring knowledge; it is all about becoming the people we ought to be" (Kerr, 2013). Dall'Alba (2007) made a similar

statement. She claimed “the question for students [should] be not only what they know, but also who they are becoming” (p. 683).

Dall’Alba (2007) expanded her becoming/change/growth statement. She declared, “becoming is, by definition, never complete”(p. 9). Carlisle, in agreement with Dall’Alba’s claim of the continuation of becoming, summarized a portion of Kierkegaard’s work saying, “For an existing thing to endure—to be itself—it must be repeatedly renewed, for without this actualizing movement it falls into non-being” (Carlisle, 2005, p. 69).

President Clark quoted former president of BYU-Idaho (then, Ricks College) Henry B. Eyring in an all employee meeting. Eyring was discussing the futures of BYU-Idaho graduates. He foresaw them in their places of employment as knowing “how to learn” (Clark, 2008). Learning is a form of change, of becoming, and is an ongoing, pre and post-graduation choice made by learners. It is an expression of their agency.

### **Agency**

“The things I learned this semester are those things that I went out and put effort into learning. I did not happen upon the things I learned. I learned them because I asked questions... I attempted to understand.” - Carl

When students choose to act rather than be acted upon (Gilbert, 2009; Bray, 1984, p. 58) they take control of their learning. They epitomize one of Bruner’s (1996) ideas. He described agency as “taking more control of your own mental activity.” (p. 87). He also described selfhood as being derived “from the sense that one can initiate and carry out activities on one’s own” (p. 35). This second statement by Bruner reflects Bandura’s exploration of social cognitive theory, self-efficacy, and agency (Bandura, 1989). Bandura claimed a basis for agency in social cognitive theory. He explained that nothing is of greater

import to agency than a person's belief that they can "exercise control over events that affect their lives" (Bandura, 1989, p. 1175). Bandura and Bruner's descriptions of agency, when combined together, are implicit in the BYU-Idaho student-learning outcomes as illustrated by the student quoted above.

In order for the BYU-Idaho student learning outcomes to be achievable, the students, according to Bruner (1996) and Bandura (1989), must take and exercise more control over themselves, their thoughts, and their lives. If students are to take more control and are to "act rather than to be acted upon" (Gilbert, 2009; Bray, 1984, p. 58), then instructors must exercise less control. Ceding control over student learning activities allows student expressions of agency and increases the taking of learning-risks by both students and instructors. Both agency and taking learning-risks seem fundamental to BYU-Idaho's student learning outcomes. In contrast, commonplace (Ricca, 2012) course designs tell the students what to do, how to do it, and when to do it. Such designs, often founded on paper production and/or test production, and some educational environments tend to minimize risk taking by students (Davies, 2000). This would be in opposition to the BYU-Idaho student learning outcomes.

If the BYU-Idaho "lifelong learner" student-learning outcome is used as an example, the intended meaning of "lifelong learner" and the outcome's agency root become apparent. The descriptors are (a) "Locate, evaluate, and appropriately use needed information", and (b) "Master strategies to continually gain and apply knowledge and skills in new situations." It is easy to see the later descriptor's agency root. According to it, a lifelong learner expresses their agency by choosing to continually gain knowledge and skills of their own volition.

This expression of the learner's agency leads to a need for the abilities listed in the former descriptor; also rooted in agency, but less conspicuous. Evaluation of information, like any type of evaluation, requires an eventual choice; that the information is either valid or invalid. Yet examining information for validity is fruitless if no conclusion is reached, therefore, evaluation implies a choice. Agency is exercised in order to make that choice.

Lifelong learners should, as part of the process they use for evaluation, examine the information's strength. Is the source of the information reliable? Is the information presented in an understandable fashion? Is the information well rooted in reality, theory, or philosophy? Each of these questions requires a decision. Decisions require a choice in order to become actionable and choice is an exercise of agency.

In *Student Learning at BYU-Idaho* (2013) the outcome of becoming effective communicators expresses a type of agency expression where each choice is small but the cumulative effects are large. The outcome declares that students become effective communicators through (1) "clearly presenting ideas and arguments in oral, written, and visual formats", and (2) the ability to "listen, understand, and effectively engage others". Here agency can seem hidden unless one remembers the large number of choices involved. Professional speakers, and many teachers, make conscious choices about the words and tones they use. Professionals combine these with facial and body communication clues. Such choices in someone who is a dynamic and profound orator occur so rapidly that they seem, to the audience, not to be choices at all. Yet these choices are all made at some conscious level before or when speaking.

Item two of this outcome description takes into account the communicator's audience. It implies a conscious choice to understand another's perspective well enough to

defend it before comparing it to one's own ideas. This expression of agency positions individuals to accept others and their ideas as being of equal worth to one's own. Such an acceptance can be viewed by some as being risky since long-held, erroneous beliefs may be challenged.

### **Risk Taking**

I took a lot of risks in this class and learned the consequences from my actions. Now I know how I can [learn] when it comes to my own life and my future career. I'm grateful ... I'd rather learn that lesson in school versus my career because those consequences would have been much worse. This class has truly changed the way I learn and I am thankful for it  
- Jill

By adopting an agentic course design, instructors increase risk taking for both themselves and their students (Barton & Greenwood, 2009, p. 1). Yet when instructors provide space for students to take risks, students develop a greater sense of agency (Lupton & Tullock, 2002, p. 123). Instructors pondering the risks associated with student agency may have some common concerns. If students are not told exactly what to do and when it is due will they complete it? If students are not told explicitly what information they must know will they bother to learn it? If a course design doesn't include exactly what to read and what to gather from that reading is the course design weak? These questions are concerned with the imparting of knowledge and the development of skills, but President Clark taught that teaching knowledge and skills is insufficient. We must also teach by example.

“We want everyone in this university to teach by example and by precept” (Clark, 2007). Here, President Clark teaches that in order for a student to become what is being described in BYU-Idaho's student learning outcomes, instructors must be seen by the

students to be models of becoming; changing and transforming. Actualization of this change in behavior is achievable if faculty members fully relinquish the safety of the role of “sage” and embrace the risk and complexity of human interaction in the classroom. Faculty can do this by becoming active classroom members and mentors to students in the classroom.

### **Complexity**

I was helping and contributing and allowing others to contribute just as much. The end result was our ideas, as misguided as they were, were not my ideas with a few modifications. They were ours. Each of us was able to bring something to the table and allow it to be molded into a totally different idea. This was a process so very different from the groups I had tried to fit into before - Kevin

Life is not compartmentalized. Each day, as students enter classrooms they bring with them previous experiences, acquaintances, attitudes, health concerns, and many other items (Knowles, Holton, & Swanson, 2013. pp. 63-64) that may be completely unknown to the instructor. Add to these the interactions between students, students and instructors, students and previous students, and students and individuals they respect outside of the university and the number of factors and interactions between these factors that can affect learning becomes mind-boggling. It is natural to attempt to find a simpler view of these relationships as science has attempted to do since the enlightenment.

Kampis (1991, pp. 157-196) effectively describes reductionism, the enlightenment era view of the world. It explains that a total (the aggregate) is always the sum of its parts, unsolvable problems can always be reduced into smaller problems that are solvable, and cause and effect are always discoverable and explicitly describable. This enlightenment era view of reality has been of great worth. Huge technological leaps have been made because

of it, yet it does not seem to be able to resolve all types of problems. These include human behaviors and their outcomes such as war, financial market fluctuations, and traffic jams (Johnson, 2007).

Learning and education also appear to be too complex for a reductionist approach (Davis & Sumara, 2006). It is difficult or impossible to delineate a single, direct cause and effect relationship when an individual learns something. One of my favorite sayings when talking to my peers is, “A student learned something in my class today because she had bacon for breakfast.” It may be that she learned something new because her eating of bacon changed her attitude. Or, it may be that she said “hello” to someone and that triggered a whole cascade of thoughts and events in her life that enabled learning.

With all of these uncontrollable variables, an enlightenment era approach where all but one variable is held constant and the other is manipulated to evaluate its effect, become suspect with regard to learning. It is not possible to hold all education and learning variables but the one of interest constant. This causes direct causality learning claims to be suspect, but does not imply that instructor preparation and behavior, along with course and classroom design, are irrelevant. Instead, as instructors, course designers, administrators, and students we must embrace the complexity (Kampis, 1991; Johnson, 2007; Davis & Sumara, 2006; Mitchell, 2009) of learning and become stewards of the process (Shulman, Golde, Bueschel, & Garabedian, 2006).

As educational stewards, all of these individuals may need to realize that each moment of learning is greater than the sum of its parts, that cause and effect exist but may not be explicitly definable in every case, and that a complete understanding of every component and relationship in educational settings is not possible. Instead of attempting to

delineate the impossible, course design and teaching should, through agency, release the energy of the student (Knowles, Holton, & Swanson, 2013) so that it can combine with the energy of the instructor to optimize learning. One participant, James, in my research expressed this as, “I feel like classes should give students an opportunity to go and explore by themselves and try not to be so restrictive.”

### **Agency, Becoming, and Course Design**

“Some students ... want that this is ABC. We’ll teach you, and quiz you, on ABC.”-

Alex

James described what he meant in the previous section by a “restrictive” course design as students having their “hand held”. He also claimed that these restrictive classes are “streamlined.” It appears that his conception of a restrictive course design reflects Wiles (1952) description of teaching. “Teaching consists of organizing knowledge into some pattern, of presenting the facts and generalizations in a clear, easily understood fashion, of testing to determine the amount of information acquired, and of marking the pupil’s attainment” (p. 11).

Wiles’ (1952) claims regarding “good teaching” are found in “commonplace methods” of course design and teaching (Ricca, 2012). Wiles’ claims are often interpreted as meaning students should be told everything they need to know, what they need to do, how they should do it, and when they need to do it. In addition to these informational and calendaring statements, implementations of Wiles claims generally include assignments, activities, lectures, quizzes, exams, and assessments that are created by the instructor and executed on the instructor’s timeframe. Implementations like these of Wiles’ “good



teaching” (1952) sound much like activity-quiz-test course designs. These types of courses take on a generalized format where

- the information to be learned is explicitly declared,
- all, or nearly all, the required information is found in the declared resources for the course,
- all, or nearly all, the required information is covered by lectures, discussions, and student activities,
- quizzes attempt to measure student uptake and retention of explicit pieces of information, and
- exams attempt to re-measure uptake and retention over longer timeframes.

Lecture/discussion-reading-paper production courses also follow this interpretation of Wiles (1952) and have a form similar to that of the activity-reading-quiz-test course designs. In these

- all knowledge and skills to be gained are explicitly declared,
- resources to be read and studied are all listed for the student,
- each lecture/discussion covers a pre-defined number of readings, and
- each student-produced paper attempts to measure uptake and synthesis of topics covered in the required readings.

Ricca (2012) claimed, “Many people (and teachers) continue to subscribe” to Wiles ideas. Evidence for this can be found in Kember and Kwan (2000). They examined teaching in higher education courses and found, for the teachers they studied, student “assessment often demands reproduction of transmitted information ... encouraging a surface approach” (p. 470) to student studying. Is it possible this is what James was referring to when he

claimed BYU-Idaho classes he took “almost always” were structured in such a way that they did not “give any opportunity for a student to look at other things that are not in the rubric”; that they only encouraged students to “vomit everything back during a test or a quiz?”

This “surface approach” contrasts what President Clark referred to as deep learning.

Deep learning ... only comes with diligence on the part of the learner—seeking, knocking, and searching.... It comes under the guidance and direction of inspired teachers. It comes when we gather together to learn together in bonds of charity. It comes when we act in faith to step out beyond what we already know trusting that the light will come—that we will come to know, and then do, and then become (Clark, 2011).

Deep learning is contrasted to a shallow approach by Kimber and Kwan (2000). “A deep approach is characterized by students directing their attention to the underlying meaning of the task, whereas for a surface approach the attention is directed to the text itself leading to a reproductive orientation.”

In a piece of BYU-Idaho promotional material Gilbert, Hunsaker, and Schmidt (2010) quote President Clark as he declared “students need opportunities to take action, ...where prepared students, exercising faith, step out beyond the light they already possess, to speak, to contribute, and to teach one another.” In contrast to Gilbert, et. al., one participant described “all the foundations courses” he had taken at BYU-Idaho and “the majority of classes” at the university as following designs based on Wiles (1952) ideas of good teaching. If this is the case and student expectations continue to be set differently by devotionals (Kerr, 2013) and BYU-Idaho promotional materials, a disconnect between student expectations and experiences will occur. This could reduce the students’

achievement of the university's student learning outcomes. An understanding of students' experiences in courses that measure the university's student learning outcomes may help instructor/designers avoid contributing to and even reverse this disconnect.

### **Understanding the Student Experience**

“When I realized that it is either I faced my fears or lived in that shadow forever, I chose to face my fears” - William

In a 2011 faculty meeting President Clark quoted former President Henry Eyring regarding the experience of students and the role of instructors (Clark, 2011).

Students, when they learn, have an experience like discovery. It can be frightening to them ..... It may tell them something about themselves that can devastate them. The teachers who will make the difference are the ones who somehow can enter into that world with the student and feel what they feel, know what they fear, care about their fear, and help them move through the fear to learning.

Based on the findings of the study this white paper is built on, I have learned that is it vital for me to design agency-based courses that have outcomes centered around the process of growth and change, known as the process of becoming, understand the student experience as explained by Eyring (Clark, 2011). He made clear that teachers must come to understand the fears and risks experienced by students if they want to make a difference. Such an understanding enables teachers to adjust their perspectives and behaviors to help the student “move through fear to learning” (Clark, 2011).

In the course studied as part of this research project the students appeared to experience an educational and cultural shift. For them this was scary with one student saying

she experienced “horror” in anticipation of the course. Why? Gone was the safety of defined assignments and readings with predefined quizzes and tests to perform against. Gone were explicit declarations of what students need to know in preparation for those missing assessments. Gone were many structures that students had been trained to depend on by previous educational environments and experiences.

Instead the course focused on the learning interactions between students, between students and the class, and between students and me. This change enabled me to speak directly and deeply to the students’ fears in a timely fashion. By teaching courses using this design, I became deeply involved with the students and helped them overcome their reluctance to speak, question, and deal with the unknown. This deep interaction also allowed me to constantly aid, support, advise, and give feedback to the students as individuals; both in and outside of the classroom.

In an ongoing attempt to adjust my mentoring and my understanding of the students’ fears, successes, becoming, and risk taking, I collected a “How I Have Changed” student self-reflective/meta-cognitive work as a capstone assignment. These documents are now available as I seek to become the teacher/mentor I desire to be.

There are some common themes expressed in these “How I have Changed” works. One student, regarding his fear of self-reflection, stated, “When I realized that it is either I faced my fears or lived in that shadow forever, I chose to face my fears.” Through choosing to face his fears he decided, “This pattern of reflecting on my learning is going to be an integral part of my educational pursuit.” It appears, through his own declaration, that he is growing and becoming a different student.

Another student had a “fear of counseling with the teacher. The teacher will want you to change what you have done. This change can be painful because we tend to view change as a step backwards. I see this change differently now: it is a change for the good and a change that will move you forward.” People can fear evaluation of what they have created or done. They may have this fear for any number of reasons. This student feared counsel because it may have required a throwing-away of his current work and notions. Exercising his agency through choosing allowed him to become more willing to take counsel and now realizes that counsel is an aid rather than a hindrance.

Some students discovered negative things about themselves. One student confessed: About half way into the semester we had an addition to our team. She was not happy with her other team, for reasons that are her own, and so we took her into ours.

The part that embarrasses me is that I had a hard time taking correction from her. If correction came from my other team members it was ok, but for some reason it was a little harder to take it from her. When she had a concern I would automatically dismiss it in my mind. It was as if I thought she had no idea what she was talking about. Was it because she was an outsider? No. I took correction from other students in the class who were not in my group. I am afraid it was because she was female.

When I discovered this I was deeply disturbed. Discrimination against women is against my beliefs as an American and as a Mormon. I quickly worked to dismiss this bias. As I worked on being more open-minded I found that her contributions were substantial. She would often be correct when it

came to designing our use case diagrams and she was much better at remembering what [the instructor] said than the rest of us. Having her on our team turned out to be a very positive thing for everyone. I did not dare share this bias with her. But I am very happy she joined us. And I did let her know that I very much appreciated her contributions.

What am I saying? I am saying that this class provided an opportunity that helped me overcome a prejudice I had been unknowingly harboring. I was able to discover a handicap I didn't know existed. And I was able to remove it. It is a good thing I discovered it here and not in the work place.

This student became more open and realized the problem he was experiencing resided in himself not others. He chose to begin a change journey that will aid him throughout his life and career.

### **Foundations for Instructor Action**

“It was definitely more beneficial for me ... it is something that I wished I had my whole college career” - William

In courses or lessons based on Wiles (1952) concept of “good teaching,” the instructor often reduces risk and maintains control through a series of decisions. Barton and Greenwood (2009) illustrated one of these choices by examining single-speaker teaching often referred to as lecture. They observed that these methods reduce instructor risk by “closing down discussion that may challenge teachers beyond their comfort zones and prevent questions” (Barton & Greenwood, 2009, p. 1).

As shown earlier, becoming is dependent on agency and agency and risk taking are intrinsically linked. Because of this, lecture type methods, and others such as those where

the instructor controls the dialog with students and the flow of the class through question asking, may not be of greatest worth with regard to students “becoming the people they ought to be” (Kerr, 2013).

As an alternative to the end result of lecture type methods Knowles, et. al. (2012) proposed, “One way of gaining control is by giving up control” (p. 261). He went on to suggest that this giving up of control is a difficult lesson to learn, but that it frees-up the energy of both the instructor and the student. Now they can cooperatively use their combined energies to enhance learning and growth instead of using it in a struggle for control.

Mike McGowan, a school teacher, explained how giving up control can be difficult. “The idea that you are no longer fully in control of the learning in the classroom...is very hard for some teachers to understand.... This is the first and hardest step” (McGowan, 2012).

Giving up control appears to many teachers to be fraught with risk. McGowan claimed students will “get engaged everyday” with learning if instructors accept the role of “being a mentor in the classroom.”

Denson (2008, p. 8) describes mentoring, which Christensen and Eyring (2011) describe as equally or more important than any other” (p. 919) job the university performs, as consisting of two parts; emotional support and coaching. His emotional support component includes “guiding, counseling, and encouraging” while coaching is described as aiding a protégé in gaining “skills, knowledge, competence, interest or abilities in a chosen occupational field.” If mentoring is the most important aspect of BYU-Idaho it should be the most common experience students have and should happen where the university and the

student most often meet; at the instructor-student level *during class*. For faculty members to become mentors-in-the-classroom then both sides of mentoring described by Denson must be addressed. If only the coaching portion is dealt with then the instructor becomes merely a trainer/lecturer rather than a mentor. If only the emotional support component is expressed, then the instructor doesn't expose the student to discussions and information needed to understand what becoming a professional in the instructor's field means.

### **Suggestions**

If, as expressed repeatedly in *Student Learning at BYU-Idaho* (Brigham Young University-Idaho, 2013), “becoming” is a desired fundamental outcome for BYU-Idaho students then the outcomes for courses at BYU-Idaho should declare and measure these in addition to, not in place of, outcomes regarding “knowing” and “doing”. This can be accomplished by the instructor/designer focusing on what they hope the student will become through taking the course and then using knowing and doing activities, mentoring in the classroom, and assessments to support the becoming they have identified. Such a shift indicates a need for mentoring of instructors by their successful peers.

A peer-mentoring program for instructors and instructional designers at BYU-Idaho may encourage adoption of the university's student learning outcomes in the classroom. Direct one-on-one mentoring takes longer than a workshop, a lecture, or a discussion, but should relieve instructor fears and increase the probability of instructors including the university's outcomes in their course designs.

The execution of this peer mentoring should be based directly on the successes of instructors that have experience with including and measuring those outcomes in their courses. Those successful instructors should be used to mentor others. The mentoring would



initially focus on discovering the protégé's desires for their students' becoming. The mentor can then assist the protégé in uncovering the course outcomes needed to encourage the envisioned student changes. Assessments and student works can then be designed by the mentor-protégé team allowing the outcomes to be measured. Using this becoming-outcome-first design process would enable the mentor-protégé team to produce a course that embraces the complexity of the students' learning, the instructor's experience, being a mentor-in-the-classroom, and include BYU-Idaho's student learning outcomes. The protégé could then go on to produce more classes following this design and be a mentor to others.

For the proposed instructor peer-mentoring to occur, the faculty mentors and protégés would need to be able to find each other. Maughan (2006) describes two types of mentoring systems; informal, where the mentoring relationship is created without organizational involvement, and formal, where mentors have defined skill and leadership goals and often are assigned to specific protégés. Whether the mentoring for instructors be formal or informal, the mentoring should have two overarching outcomes; (1) the support of the use and measurement of the university's becoming outcomes, and (2) assisting instructors in becoming mentors in the classroom.

### **Implications for further research**

Measurement of the effectiveness of the instructor-peer mentoring program would be possible if research was done to quantify the inclusion, support, and measurement of the university's learning outcomes in the classroom prior to implementing the described mentoring. Knowing how many courses are based on and attempt to measure one or more of the university's outcomes would inform the design of the faculty-mentoring program. The

raw data for such research could be the existing course syllabi that are stored at the department or college level across campus.

Instructor interviews may also be helpful. These interviews could be used to more fully understand the fears of the instructors that keep them from becoming mentors in the classroom and designing courses that support or use the university's student learning outcomes.

Through implementing the suggested peer mentoring and doing the research, the BYU-Idaho community should be able to achieve what was declared in *Student Learning at BYU-Idaho* and meet Kerr's (2013) challenge that we aid students in becoming "the people [they] ought to be."

## CHAPTER 5: REFLECTIONS

Recently I attempted to describe to a group of people how it feels to create software. I explained to them that it is a frustrating, tedious, annoying, hateful, and incredibly fun process. The needed attention to detail and the amount of exploration required to create something that people will want, works great, and is easy for them to use is draining. I felt these same feelings during the inception, design, creation of the research studies, and writing of this dissertation.

One advantage I have had during this process is my love of reading. I read for hours every day. The research design process gave me the excuse to purchase, read and learn from books in areas I previously knew nothing about. I had the opportunity to read great books by and about Gadamer, Heidegger and Kierkegaard--to see how what they had to say blends and differs. I got to see the components of their thoughts that did and did not coincide with mine. I got to see which of my thoughts were weak and which were strong through my exposure to these philosophers. Learning of them and their ideas helped me to see and understand what I believe and thus who I am.

Another source that helped me change and grow was mentors. I was able to contact several well-known researchers both in and outside of the complexity theory space, speak with them on the phone, and communicate with them via email. It was a wonderful feeling to know that they would take time to talk with and advise me. My experience with them had a direct impact on a student of mine.

This student was doing a piece of undergraduate research and I was one of his faculty sponsors. Through his research, the student had created a mathematical algorithm based on the design of a piece of software. His team began to create the software while

taking a software development course I teach. During the inception phase of his research he sought existing literature in the field and found only two articles that were relevant (his research area was esoteric and only lightly studied). I encouraged him to contact the authors with relevant questions and ask for advice/guidance on his conclusions and what he could do with them. My student was amazed that two European Ph.D's, the co-authors of one of the papers, immediately contacted him and expressed joy that he had read their work.

While this student had not entertained the idea of graduate school these contacts may have opened his mind to the possibility. He was overjoyed when one of the other authors read his article and suggested that what he was presenting at BYU-Idaho was important and, with a little work, it could and should be published. After further editing, this student's article has now been published (Carrión L, 2014) in the same location as the work of the two European Ph.D's.

What I was looking for when I began the process of obtaining a PPD was something to help me have a greater impact for good with my students. Even if only this one student was helped all the pain, struggle, and work was worth it. But he isn't the only one. There have been and will be others. I found what I was looking for.

As part of selecting a theoretical framework for the research that became this dissertation I created poetry to explore the impact my education had on me. I called it *Pieces*.

### **Pieces**

I was a farm boy. At four I discovered the beauty of dirt. Sitting in fields of sugar beets and wiggling my toes under the hot top layer into the coolness below and understanding the yearning of beets for the coolness. They strove to root themselves. To

sink into coolness and moisture. They strove for deepness.

At five it was dams; the water coming down the furrow chasing frothy, tan foam. I had an obsession for stopping that water. It demanded downness; the bottom of the field. How could I control it, stop it, dam it? Loose, dry dirt washed away. Sloppy, wet mud washed away. Dry mud almost worked. The eureka moment; layers of sloppy, wet mud inter-layered with loose, dry dirt would stand; would stop; would dam the water! There were years of trial and error until dirt dams would stand forever in the furrow. Dad told me to stop so the beets wouldn't die.

At six it was birds; watching flocks move. Oneness. Flowing over trees in numbers too great to see. Fall. Spring. Flocking. Flying. Landing. The loudness of combined tiny chirps. Where did they go? Are these my birds? The ones I've seen before?

At ten it was dust storms; blasts of wind. Blasts of dust. From the west. Coming. Me watching them roll their way. Feeling the wind change direction. Waiting for the first touch of heat and grit. On the trampoline. Jumping high. Landing on the other end. Squinting eyes to strain out the dust.

At fifteen it was the neighbors. Their needs. Their respect. Respecting them. Working to help. Digging deep. Binding water, dirt, beets, friends. All together. All in one. They and me. Me and them. A community of life!

At seventeen college. Separation. Discrete information. A cutting off. Explicit pieces. The importance of grades; of measurement. Fear. Being told. Discrete classes. Seeking connectedness. Explicit chunks. Frustration.

At twenty-four leaving. Fed up. No connectedness. Seeking another path. No completion. Seeking community. Not finding it.

At twenty-six it was college again. Post reflection. Finding a way of overcoming the discreteness. The discrete classes and information fed to me. Synthesizing it and merging it into one understanding. I started becoming complete and whole once again. I began exploring in the world of ideas again. I found connection and understanding again. I found the peace of earlier days again. I started becoming whole again. I am a farm boy.

### **My Understanding**

My educational experience from childhood through adulthood has been a move from the open, agentic exploration and learning of my early family life through the strict pedagogy and didactic instruction of elementary, secondary, and higher education. My formal education focused on learning explicit knowledge. Regardless of well-meaning attempts by some instructors, expressions of creativity or agency were only allowed as distant, secondary possibilities if they were allowed at all.

Because they removed both agency and risk, I feel that those responsible for my education denied me the opportunity to think and experience. This impoverished me. They unwittingly and without ill intent caused a sterility of thought and experience. From a young age, I felt but did not understand this sterility. It spread in my life until my education led to a disconnectedness between myself, the knowledge being learned, education, and society. My deep desire is to help students at BYU-Idaho avoid the sterility I experienced.

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**APPENDIX A**  
**DATA COLLECTION TIMELINE AND INSTRUCTIONS**

## APPENDIX A: DATA COLLECTION TIMELINE AND INSTRUCTIONS

### Course Timeline

**Day 3** – A discussion of the meaning of self-reflection and meta-cognition was held. The students were verbally encouraged to be deeply self-reflective and meta-cognitive in their journal and were pointed to course syllabus audio resources (Barney, 2013) to help them understand its importance. The students were repeatedly informed that they would not turn in their journal and that I would never read it. Instead they would create a journal report. The students were pointed to this statement in the syllabus.

Pondering is integral to success in both this course and life. You should be pondering and reflecting and then recording this self-reflection in a journal. Record this reflection at least weekly so that you have information to work with when you create your journal report at the end of the semester.

**Through the Semester** – The students were encouraged to continue writing in their journals at roughly 4-week intervals.

**Week 16 (last week of the semester)** – The students were reminded to be deeply reflective prior to their creation of the self-reflective journal reports. They then created and turned the reports in during the week. Four of the six loosely structured interviews with students were also conducted regarding those students' experience in the course.

**Week 18 (the beginning of the next semester)** – two additional loosely structured interviews with students were conducted.

**APPENDIX B**

**RUBRICS USED IN THE CIT 360 SOFTWARE DEVELOPMENT COURSE**

**APPENDIX B: RUBRICS USED IN THE CIT 360 SOFTWARE DEVELOPMENT  
COURSE**

**Presentations**

The student is very fluent in the technical concepts presented

The student showed creativity in the solution presented

The student showed originality in the solution presented

The student showed openness to new ideas in the solution presented

The student showed the ability to rationally evaluate options and explain why  
options were selected in the solution presented

The student showed self reflection/meta-cognition while discussing the solution

The student showed the ability to communicate well

**Journal Report**

The work exhibits evidence of imagination

The work exhibits evidence of originality

The work exhibits evidence of openness to new ideas

The work exhibits evidence of the ability to rationally evaluate options and  
explain why options are selected.

The work exhibits evidence of student self reflection/meta-cognition.

The work exhibits evidence of the ability to communicate well.

**Observed Interactions**

The student interacted professionally with the instructor via questions,  
expositions, and other types of interactions.

The student was observed interacting professionally and helpfully with their team

and other teams.

The student has professionally supported the team by teaching, advising, and performing work outside of team meetings.

The student exhibited self-reflection/meta-cognition in team and instructor interactions.

### **Weekly Objectives Postings**

Each student should have at least one deeply reflective/meta-cognitive interaction description per week. The grade is calculated:  $\#interactions / \#weeks$ .

**APPENDIX C**  
**HUMAN FACTORS BOARD APPROVALS**



**APPENDIX C: HUMAN FACTORS BOARD APPROVALS**

October 30, 2013

**University of Idaho****Office of Research Assurances  
Institutional Review Board**  
875 Perimeter Drive, MS 3010  
Moscow ID 83844-3010Phone: 208-885-6162  
Fax: 208-885-5752  
irb@uidaho.eduTo: Bryan Maughan  
Cc: Lee S. BarneyFrom: Traci Craig, PhD  
Chair, University of Idaho Institutional Review Board  
University Research Office  
Moscow, ID 83844-3010Title: 'Student Agency and Risk Taking by First Year Teachers and  
Computer Programming Students'

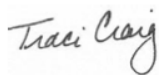
Project: 13-240

Approved: 10/30/13  
Expires: 10/29/14

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On behalf of the Institutional Review Board at the University of Idaho, I am pleased to inform you that the protocol for the above-named research project is approved as offering no significant risk to human subjects.

This approval is valid for one year from the date of this memo. Should there be significant changes in the protocol for this project, it will be necessary for you to resubmit the protocol for review by the Committee.



Traci Craig



November 22, 2013

Dear Lee,

Your request to use human subjects for the study entitled *Student Agency and Risk Taking by First Year Teachers and Computer Programming Students* is approved for 12 months from the date of this letter.

Please notify the IRB if you intend to make any significant modifications to the study's design or implementation.

Good luck with your study.

Regards,

A handwritten signature in black ink that reads "Scott J. Bergstrom". The signature is written in a cursive style.

Scott J. Bergstrom, Ph.D.  
Chair, BYU-Idaho Institutional Review Board

**APPENDIX D**  
**RESEARCH PARTICIPANT CONSENT FORMS AND INTERVIEW**  
**PROTOCOLS**

## **APPENDIX D: RESEARCH PARTICIPANT CONSENT FORMS AND INTERVIEW PROTOCOLS**

### **Research Participant Consent Form – Barney research**

As a doctoral student at the University of Idaho in the Professional Practices Doctorate (PPD) program, I am conducting a qualitative research study on *Agentic Learning Among Higher Education Students and Graduates*. The purpose of this study is to improve the practice of instruction in a Computer Information Technology (CIT) programming course at Brigham Young University-Idaho (BYU-I). It is also to gain a deeper understanding of what undergraduate students experience when they are provided opportunities to take learning risks in an agentic course. Your enrollment in a CIT course that incorporates an agentic approach to teaching makes you uniquely situated for this study. Your participation is much appreciated and your time is highly valued. If you choose to participate please read the following and sign below:

My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and/or discontinue participation at any time without penalty.

Participation may involve being interviewed by the researchers. The interview will last approximately 30 - 45 minutes. Notes will be written during the interview. An audio recording of the interview will be made.

I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

Participation in the research will involve the use of works completed as part of my coursework as a Brigham Young University-Idaho student.

I understand that the researchers will not identify me by name in any reports, publications, or discussions with others that use information obtained from this interview, and that my confidentiality as a participant in this study will remain secure. Any works produced by me, recordings, and transcriptions of these recordings will be stored using military (256-bit AES) encryption.

Any information regarding names, locations, times, or other identifying information will be obfuscated if used in any reports, publications, or discussions with anyone not listed here as a researcher. I understand that my biographical data such as age, marital status, gender, and ethnicity will be gathered from BYU-Idaho registration information.

This research will conclude by the end of March, 2014 though your interaction with the researcher may end in December, 2013 or February, 2014.

I understand that by participating in this research future students and recent graduates may be advantaged in their education and experience beyond what I have had.

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

By signing this form I verify that I am at least 18 years of age and am consenting to participate.

If you have any questions concerning this study now or at any time during the research process, you may contact me at (208) 496-3767, email: [barneyl@byui.edu](mailto:barneyl@byui.edu); my major advisor, Dr. Bryan Maughan, email [bryanm@uidaho.edu](mailto:bryanm@uidaho.edu); or University of Idaho office of Research Assurances, (208) 885-6162.

If you wish to see the results of the study please send an email to: [barneyl@byui.edu](mailto:barneyl@byui.edu) with “Agency and Risk Research Result Request” in the subject line. Results will be available after May 2014.

I appreciate your willingness to participate and the time you are dedicating to this study.  
Thank you, in advance, for your generous involvement

Sincerely,

Lee Barney,  
Computer Information Technology  
BYU-Idah0

---

Participant Name (please print)

---

Participant Signature

---

Lee Barney, Researcher

---

Date

---

Date

### **Interview Protocol – Barney research**

Suggested introductory script outline:

Thank you for taking time to help me learn about your opinions regarding your experience as a student. Please feel free to tell me what you think above and beyond any question I may ask. I want this to be as free-flowing a conversation as we can have. This will be a recorded session as you have agreed and I will probably jot down a few notes during our discussion with your permission. You have the right to not answer any question you are not comfortable with or stop participating at any time.

Do you have any questions at this time?

Interviewer: Do I have permission to record this interview?

### INTERVIEW QUESTIONS & OUTLINE

Six of the participants will be interviewed after the course. This interview will be loosely structured to allow the participant to tell their story. The main interview question will be “In what ways, if any, do you feel you have changed regarding your ability to accept and handle risk taking from the beginning to the end of the course?” Sub-questions will include:

#### PERSONAL ACQUAINTANCE

Personally get acquainted with participant (family, personal interests, etc. if appropriate)

#### COURSE SPECIFIC QUESTIONS

What has it been like for you to be a member of this course?

In what ways would you say this course affected how you view risk taking, your approach to your current or future career, and learning?

During this course, what, if anything, would you say surprised you the most?

How has your participation in this course affected the way you might work in other classes?  
(or perhaps in “your future profession”)

In what ways would you say this course has affected how you view your ability to learn?  
(can you provide an example?)

Has this affected how you view others, such as your peers, as fellow learners?

if yes... "In what kinds of ways?"

Concluding Script: Thank you again for taking your time to answer these questions.

This will help me in my professional efforts to teach college students. Do you have any questions for me?



### **Research Participant Consent Form – Wilson research**

As a doctoral student at the University of Idaho in the Professional Practices Doctorate (PPD) program, I am conducting a qualitative research study on *Becoming a Teacher: What Good Teachers Do*. The purpose of this study is to improve the immediate practice of professional development for teachers in Madison School District by gaining an understanding of the ontological shift teachers experience while “becoming” more proficient in their profession. Your participation is much appreciated and your time is highly valued. If you choose to participate please read the following and sign below:

I volunteer to participate in a research project conducted by D. Joshua Wilson and Lee S. Barney, doctoral students at The University of Idaho with Dr. Bryan Maughan (researchers) being the faculty advisor. I understand that this research is designed to determine the professional development needs of teachers in Madison School District.

My participation in this project is voluntary. I understand that I will not be paid for my participation. I may withdraw and discontinue participation at any time without penalty. Participation may involve being interviewed by researchers from The University of Idaho. This potential interview will last approximately one-hour. Notes will be written during the interview. An audio recording of the interview will be made.

I understand that most interviewees will find the discussion interesting and thought-provoking. If, however, I feel uncomfortable in any way during the interview session, I have the right to decline to answer any question or to end the interview.

I understand that the researchers will not identify me by name in any reports, publications, or discussions with others that use information obtained from this interview, and that my

confidentiality as a participant in this study will remain secure. Any works produced by me, recordings, and transcriptions of these recordings will be stored using military (256-bit AES) encryption.

Any information regarding names, locations, times, or other identifying information will be obfuscated if used in any reports, publications, or discussions with anyone not listed here as researchers.

I understand that by participating in this research future teachers may be advantaged in their education and experience beyond what I have had.

I have read and understand the explanation provided to me. I have had all my questions answered to my satisfaction, and I voluntarily agree to participate in this study.

I have been given a copy of this consent form.

If you have any questions concerning this study now or at any time during the research process, you may contact me at (208) 359-3320 Ext. 6101, email: [jaydubbs22@yahoo.com](mailto:jaydubbs22@yahoo.com) my major advisor, Dr. Bryan Maughan, email [bryanm@uidaho.edu](mailto:bryanm@uidaho.edu); or University of Idaho office of Research Assurances, (208) 885-6162. I appreciate your willingness to participate and the time you are dedicating to this study. Thank you, in advance, for your generous involvement.

Sincerely,

D. Joshua Wilson,  
5<sup>th</sup> Grade Teacher  
Madison Middle School

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Participant Name (please print)

---

Participant Signature

---

Date

---

D. Joshua Wilson, Researcher

---

Date

### **Interview Protocol – Wilson research**

Thank you for taking the time to help me understand your perceptions of how professional development has helped you become more adept at teaching. Your responses will be helpful in understanding the ontological shifts teachers' experience, as they become more proficient educators. This study will help provide both teacher preparation courses and school districts a better understanding of the changes (professionally and individually) teachers make in order to increase competency and proficiency in their professional development. This information could be used to improve course design in teacher preparation courses, and improve professional development in school districts.

I would like to record our interview and take a few notes to make sure I correctly capture your experiences; however, I hope you will feel free to just tell me your story. Let's just have a great conversation. Of course, you have the right to not answer any questions you feel uncomfortable with or stop participating at any time, and everything you say will remain anonymous.

- Do you have any questions before we begin?
- Do I have your permission to record our conversation?

Before we get started will you please carefully read through and sign this consent form?

- What initially attracted you to teaching?
- How did you come to pursue a career in education?
- In what areas of your life do you invest the most energy/attention?

VALUED GOALS, BELIEFS, AND PRACTICES

- Can you summarize the kinds of things you are trying to accomplish in your work right now?
- Are there some specific practices or principles that characterize your approach to teaching that you consider important (for example, distinctive ways of interacting with colleagues, personal philosophies about education, quality of education in your classroom)?
- What is the ideal image of the kind of educator you want to become?
- Are there any moral and ethical values that inform your work?

#### OBSTACLES, PRESSURES, AND REWARDS

- How have your commitments and values changed since becoming a teacher? Why? What led to those changes?
- Are there things that you believed in doing at the beginning of your career as an educator that have changed since?
- Are there specific qualities that have contributed to your achievements (qualities = personal attributes; for example, determination, persistence)?

#### TEACHING

- What do you see as your responsibilities as a teacher?
- What are the most important things that you hope to convey to students?
- You have identified several things that you hope to convey to students. How do you go about encouraging these things? Any other ways?
- How would you characterize your teaching style?

## PROFESSIONAL DEVELOPMENT

- What professional development opportunities have you participated in during your career?
- How have these contributed to your development as an educator?
- What types of professional development courses have been most beneficial to you?

## CLOSING

- Over the course of your career, has there been an overarching purpose or goal that gives meaning to what you do that is essential to making your work worthwhile? What is it?
- Is there anything else you would like to talk about related to the topic of this interview?
- Once I have transcribed our conversation I would like to have you look over what I wrote and make sure it is accurate, would it be alright if I contacted you again if I have any further questions? Thank you again for your time.