Teacher Learning in Action: Using Self-Study to Connect Practice with Theory

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This dissertation titled
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Abstract

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Teacher Learning in Action: Using Self-Study to Connect Practice with Theory

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The purpose of this research study was to provide an example of teacher learning “in action” that bridged the gap between theory and practice in order to inform processes for teacher learning in other contexts. Most teachers utilize little, if any, pedagogical theory in their practice. Instead, they select instructional methods based on unconscious personal preferences and their past experience as learners. This gap between theory and practice is problematic because teachers’ unconscious preferences might be incongruous with the ways their students learn best. Insufficient research exists on how teachers’ unconscious preferences can be made explicit. When teachers recognize their teaching methods may not enhance student learning, they can begin to work towards integrating theory into their practice and provide higher quality learning opportunities for their students.

A nested, self-study research design using Korthagen and Lagerwerf’s (2001) three-level teacher learning and behavior model was used as a guiding framework to structure a comprehensive teacher professional development episode that explicated one teacher’s unconscious instructional preferences and connected his teaching practice with pedagogical theory. The teacher-as-researcher reflected on his experience designing, teaching, and analyzing his personal finance curriculum, Society X. Self-study and a nested, phenomenological study provided data to completely explicate and exemplify the
teacher’s learning experience. Findings suggest that if teachers are to connect theory to their practice, their professional development should include: (1) a curriculum including theory-based subject matter with clearly established expectations and accountability measures for the teacher-as-learner; (2) extended, intense learning, (3) autonomy and the explication of teacher self-as-learner; (4) mentoring by informed others; (5) theory-integrative praxis; and (6) access to theoretical research and literature. A three-step gap-bridging process for teachers, recommendations for educational stakeholders, and suggestions for future research are provided.
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Chapter 1: Introduction

I never wanted to teach personal finance.

So, when I was tasked to do so as a result of a colleague’s transfer in 2004, I was reluctant. The subject matter did not appeal to me, nor did the immense workload that commonly accompanies a new prep. At my high school, writing lesson plans and teaching classes were usually solitary experiences and now with the only person having taught the course gone, I would be starting from scratch. As I think back to that time, I realize this unexpected turn of events set into motion a learning progression that would lead me to reconceptualize and transcend my knowledge of pedagogy in ways I never could have predicted.

During my last precious week of summer vacation, I began developing a semester-long, elective course in *Personal Finance* for 12th grade students. Planning included outlining the first textbook chapter, making lesson plans, doing homework problems, and filling in test keys. As always, fall passed quickly and by semester’s end (and despite my initial negative attitude) I was surprised to find that *Personal Finance* had become my favorite class to teach. It was clear that students found the content relevant. Not only were they paying more attention in class, but their homework completion rates were comparatively higher than in my other classes. Second, I found the content relevant. My engagement with course material expanded my knowledge of consumer math and assisted me with my own financial obligations, such as budgeting my spending money, diversifying my income, and refinancing my home mortgage. My growing sense of financial competency, garnered through my own lived experience,
allowed me to weave autobiographical narratives into my lessons in order to illustrate how class objectives played out in the real world. I assumed these insights would provide tangible evidence that class lessons were indeed applicable to my students’ lives.

Initially, I struggled. Despite the relevance of the material, my stories of the real world did not so easily connect with students because my experiences were not their own. But how could I connect their learning to their real world? They didn’t have house payments; they didn’t write checks or balance a checkbook; they didn’t do taxes; most of them didn’t have to pay for their own food. For now, I told myself, their experiential connections with course content would have to happen vicariously through me, with real-life application saved for after graduation.

Then in 2007, after nearly three years of teaching the personal finance course, I read Esquith’s (2003) *There Are No Shortcuts*. It provided a solution to my dilemma that could bring my students into the grown-up world of personal finance and allow them to simultaneously practice concepts from my class in a real world context. A fifth grade public school teacher in urban Los Angeles, Esquith had created a classroom economic system that simulated real life by assigning every student a job, which in turn earned them paychecks that they deposited in bank accounts, from which they paid for rent, fines, and discretionary items. Esquith described his learning model as “an all-encompassing class economic system that not only helps students understand important concepts in arithmetic but also deals with classroom behavior and teaches the children valuable skills to help build their characters and their futures” (p. 137). I was sold. I had a feeling this was exactly what I needed. The added bonus of wrapping up my classroom
management in the process sealed the deal. I immediately began designing a similar system for next year’s class, tailored to my textbook’s content. I had also found a similar system to Esquith’s online called the “J Society.” I chose a similar name for my economic community, Society X, by replacing the letter of the teacher’s last name, Jennings, with my own. I also traded Esquith’s cash system for the J Society’s check-based system.

The process of designing Society X transformed my conceptualization of instruction. I had been teaching math at a rural high school in Southeast Ohio for ten years without ever questioning the textbook or its prescribed lessons. And while the first instantiation of Society X was essentially a copy of Esquith’s (2003) system, it marked a point of departure from my traditional role as my students’ information deliveryman. I had reached a point where I was not just working through textbook examples and redoing them in class. Rather, I was creating my own unique incarnations from course material, which invested me in seeing whether my approaches would produce tangible results. Although the textbook still provided content, the process of learning had diversified, becoming more adaptive, dynamic, and contextualized. Furthermore, I witnessed how these methods engaged my students in meaningful ways, ways in which they experienced personal finance and motivated them to learn it.

I continued to teach in my original Society X model for about three years until I returned to Ohio University in 2010 to pursue my master’s degree in curriculum and instruction. My research project provided an opportunity to yet again overhaul Society X, this time trading in textbook objectives for state-adopted standards developed by the
Jump$tart Coalition for Personal Financial Literacy (2007). I also added other relevant content from my own financial experience as well as from a review of literature I conducted on financial literacy in the United States. I diversified day-to-day teaching lessons, moving away from a lecture-based model to more interactive student-centered activities, both in class and online. I also varied assessment methods by adding projects and portfolios to standard tests and quizzes.

Society X created a buzz that extended beyond the walls of my classroom. Many students who had taken the class said it was their favorite, and students enrolled in subsequent classes voiced their enthusiasm to interview for various job positions the following year. Colleagues were intrigued by my methods of engagement and often asked how they might incorporate them into their classroom management. Administrators were highly supportive of my efforts and gave excellent evaluations. Parents were pleased that the high school offered such a course and enthusiastically (and authoritatively) attested to its real-world utility. The positive feedback made me proud of the learning environment I had so assiduously created.

Statement of the Problem

At first glance the learning progression in the above narrative may seem typical: a young teacher developing into a mid career professional, problem-solving his way through obstacles, and constructively refining his teaching practices to help his students learn better. To those familiar with an educational phenomenon called the gap between theory and practice, it is yet another illustration of how educational research and educational practice do not always coalesce in expected ways. We want to believe
teachers evaluate each and every method for use in their classroom against a logically organized, objective, and fairly evaluated knowledge base (Korthagen & Lagerwerf, 1996). Even as “theory driven” or “evidence-based practice” rhetoric is wielded like a mantra for educators across the US, teacher behavior in practice is not so clear-cut.

Case in point, I based my decision to adopt Esquith’s (2003) system on the following assumption: that his method for learning financial literacy did, in fact, reflect sound educational practice. The problem with this assumption is that there is neither theory nor evidence to substantiate it. Worse still, I never even thought to consult the evidence before making my decision. However, was it necessary to explicitly ground my method in theoretical framework when students were passing my classes, colleagues solicited my advice, administrators renewed my contracts, and parents were satisfied with their children’s progress?

The short answer is yes; teachers must be familiar with various theories and methods for student learning. How can a teacher claim that their students are really learning if they don’t know which learning methods work best for that particular group? My story is not unique. It is common for teachers to intuitively choose their instructional methods (Elbaz, 1991; Korthagen & Wubbels, 2001; Schön, 1983) without explicit connection to educational theory (Cruickshank, Bainer, & Metcalf, 1999; Korthagen & Lagerwerf, 2001; Zeichner & Liston, 1996). In fact, many teachers tacitly select instructional methods based on their preferences and experiences as learners (Argyris, 1990; Brookfield, 1995; Stofflett & Stoddart, 1994; Korthagen & Lagerwerf, 1996). This can be problematic because the methods teachers assume will help students learn better
might actually hinder students’ learning. Therefore, it is imperative that teachers cultivate and engender a sustained awareness of their implicit cognitive behavior and reflexively analyze their preconceptions for potential weaknesses (Korthagen, 2001).

The gap between theory and practice begins with pre-service teacher education, which does little to engender lasting theory-informed instructional practices (Ashton, 1996; Cochran-Smith & Zeichner, 2005; Wideen, Mayer-Smith, & Moon, 1998). Furthermore, existing professional development (PD) research is inconsistent and does not contribute to helping in-service teachers to develop theory-based practice (Cochran-Smith & Zeichner, 2005). Many PD opportunities exist for teachers to address their theory-practice divide (Avalos, 2011; Postholm, 2012; Villegas-Reimers, 2003); however, teachers are extremely reluctant to change their pre-existing perceptions of how learning should transpire (Joram & Gabriele, 1998). Research indicates teachers need assistance developing as professionals (Hoekstra & Korthagen, 2011) and will not likely do so on their own (Hoekstra, Brekelmans, Beijaard, & Korthagen, 2009). Few studies have been conducted on experienced teacher PD interventions with the explicit purpose to culture teacher behavior towards a theory-based approach to practice.

Since little is known about teacher learning processes to this end, I engaged in a personal learning experience to fill the gaps within my own practice. Using two forms of inquiry, I nested a phenomenological study within a self-study research design and reflected on my experience filling the gaps within my own practice through an analysis of my self-authored personal finance curriculum, Society X. I described my learning experience through Korthagen and Lagerwerf’s (2001) three-level model for teacher
learning and behavior. In order to show this progression “in action” I adapted the dissertation chapters so that my full experience with Society X, from design to theory, was fully contained within the document. I embedded my pre-dissertation experiences with Society X within the introduction and literature review. These experiences mostly comprised the first two levels of the three-level model (gestalt and schema).

In order to completely fill the gaps within my practice, I needed to meet three criteria for a theory level understanding of Society X, which were: (1) define Society X’s characteristics, (2) represent Society X’s characteristics holistically, and (3) connect my findings with underlying theories that supported my students’ learning. I nested a phenomenological research study within the self-study in order to facilitate my learning from the second stage (schema) to the final level of the three-level model (theory). Movement from one level to the next transpired through reflection; therefore, many reflections have been purposely embedded throughout the study to aid with the exemplification of the learning process. This research serves two purposes. The first objective is to present an example of teacher learning that bridges the gap between theory and practice “in action” to inform processes for teacher learning in other contexts. The second objective is to deepen my understanding of pedagogy so that I can provide better instruction for my students.

**Research Questions**

The primary question guiding this study is:

- How can an analysis of one’s self-authored curriculum inform teacher learning processes that facilitate connections between theory and practice?
Questions that will inform processes for teacher learning (self-study):

1. How do teachers learn about teaching? How did I learn about teaching?

2. What factors enhance/inhibit the quality of teacher learning? What enhancing/inhibiting factors shaped the quality of my teacher learning experience?

3. What is known about teacher learning processes? By what process did I deepen my understanding of Society X?

4. How does my analysis of Society X inform my own teacher learning processes?

Questions that will guide my analysis of Society X (phenomenological study):

1. What are the prominent characteristics of Society X?

2. How are these characteristics holistically related and logically organized?

3. How is this understanding significant for student learning?

**Delimitations**

This was not an action research study. Although personal finance was the subject under analysis, the focus of this dissertation was on teacher learning. This research employed two forms of inquiry: (1) a self-study within which a (2) phenomenological study was nested. The overarching self-study research framework was utilized to guide the teacher learning experience chronicled through three stages of teacher learning according to Korthagen and Lagerwerf’s (2001) conceptual framework. It is important to note, the learning progression within this document mostly flowed from informal to formal understanding through Chapters 1 through 5 but actual learning did not occur linearly. Each chapter was written to accommodate pertinent experiences within the
learning progression that appropriately exemplified each stage of the three-level model (i.e., gestalt, schema, theory). Within the self-study a second nested phenomenological study was employed to foster transition from the second stage (schema) to the third stage of learning (theory). Although the approach to inquiry was nontraditional, each chapter still remained compliant with traditional dissertation specifications and expectations.

A note on transferability. In qualitative research the onus is on the reader to decide whether study findings transfer to other contexts (Patton, 2002). Information about the context in which the research was conducted will allow researchers to determine the applicability of study findings. The self-study portion of this dissertation (Chapters 1 – 5) provides descriptions of the context in which my learning experience unfolded, so readers can make their determination accordingly.
Chapter 2: Literature Review

The literature presented in this review serves two distinct purposes. The first satisfies the traditional aim of a literature review or conceptual context by assisting to frame, investigate, and answer the delineated research questions. The second is to provide a context in which my learning experiences are naturally revealed alongside period specific professional development literature to authentically inform my case study learning progression through the three-level model. To provide a rich dataset, professional development frameworks that described how I learned to be a teacher were chosen to both cue past memories and preserve the professional development practices of the time in which I remembered them.

The autobiographical, historical narrative presented in Chapter 1 offered an overview of Society X up to the onset of my dissertation research. It also made light of a practice known within the teaching profession as the gap between theory and practice. Chapter 2 will focus on the gap between theory and practice from both personal and academic perspectives, synthesizing the existing body of knowledge through juxtaposition with my own chronological in-depth teaching experience. That is, where the narrative in Chapter 1 mostly followed an informal, expository style, Chapter 2 begins a critical self-examination scaffolded by intentional linking of my teaching experience (practice) and pedagogical research (theory).

The professional development literature base is massive and unwieldy. Therefore, I chose to conduct my review using primarily four extant professional development literature sources: Avalos (2011), Postholm (2012), Villegas-Reimers (2003), and Day
(1999). I chose these sources because of their goodness-of-fit for supporting direct response to my research questions and provided relevance for adding conceptual frameworks. Three sections comprise this chapter. In the first, origins of the gap, I will explore what is known about how teachers learn about teaching. Through recollections from my pre-service and early teaching years, I will discuss how current teacher education practices create and perpetuate the gap between theory and practice. In the second section, setting the stage for change, I will discuss factors that can enhance or inhibit teacher learning aimed at narrowing the gap between theory and practice. In addition, I will highlight relevant factors present during my career as well as my experience of them. In the third section, bridging the gap, I will formally present the three-level model of teacher learning (Korthagen & Lagerwerf, 2001) as the conceptual framework for my self-study, which will provide means to bridge the gap between theory and my practice.

Origins of the Gap

My pre-service teacher education began at a four-year, undergraduate university. As part of my course of study, I was expected to memorize a myriad of teaching techniques and supporting theories for their use. My program of study was designed to instill pedagogical principles from which I could one day guide rigorous, thoughtful practice. By the end of my professional internship, I had amassed a comprehensive theoretical knowledge base evidenced by a proficient score on the National Teacher Exam (NTE), passing grades in my pre-service education program, and a glowing student
teaching recommendation from my cooperating teacher. I eagerly awaited the day I could apply all I had learned in a classroom of my own.

However, when I finally became a teacher, my vision of evoking profound student learning experiences did not quite materialize as I had anticipated. My attempts to apply the student-centered approaches from my studies at university were often met with futility and I felt that instances of actual student learning were few and fleeting. I quickly grew to resent the college education that had set me up for failure and that had left me with no practical way to address perpetually disruptive and disinterested students. After my first year in the classroom I realized student learning could only transpire if I limited classroom distractions. In reflecting on how I might accomplish this, I distinctly remember an urge to return to a more traditional teacher-centered approach to instruction, one that resembled the way I was taught as a student in public school.

So, at the start of my second year I adopted a more customary “back to basics” teaching style that was not endorsed by my college training but did allow me to gain control of my class to refocus students on learning. Having a competent grasp on classroom management, I fell comfortably into the role of “sage on the stage.” My daily routine mirrored my own high school math class: students would come in, I would check homework, I would go over homework with the class, I’d present the lesson for the day, and students would work on their new practice problems until the end of class as time permitted. I performed this ritual daily, with the exception of review and test days.

I taught in this manner for ten years during which I supplemented my understanding of pedagogy through compulsory and voluntary means, in formal and
informal settings. I occasionally volunteered to attend a math conference, which often provided me with new teaching techniques to apply in my classroom. I attended required district led in-service workshops that concentrated primarily on policy updates to maintain compliance with various educational agencies. I took university classes when it was necessary to renew my teaching license or receive an increase on the salary scale. In those days, jaded by my resentment of higher, formal education, I had mostly dismissed district mandated sessions and college coursework as necessary bureaucratic hoops through which I had to jump but for which little classroom purpose was served. Instead, I favored more informal, proximal, and personally meaningful learning activities such as experimenting by trial-and-error in my classroom or by asking mentor colleagues’ advice.

The gap between theory and practice is a phrase used to describe instruction that is not informed by methods for how students learn best or, evidence-based theory and research. My reflective narrative within this section sheds some light on how the gap manifested for me. Incidentally, the formation of my gap is not unlike the path that has led many early and experienced career professionals to this same end. One root of the problem lies in the friction caused between the way it has been decided teachers should learn and a failure to recognize and support how teachers actually do learn (Edwards & Thomas, 2010; Korthagen, 2001). Below I will explore the former, leaving the latter for discussion in subsequent sections.

The traditional “theory-to-practice” approach to teacher education (Carlson, 1999) is where “the university provides the theory, methods and skills … [and] the schools provide the setting in which that knowledge is practiced” (Wideen, et al., 1998, p. 167) in
almost complete isolation from each other (Barone, Berliner, Blanchard, Casanova, & McGowan, 1996), does little to instill within educators a lasting theory-based approach to teaching in authentic contexts (Ashton, 1996; Cochran-Smith & Zeichner, 2005; Wideen et al., 1998). Pre-service candidates educated using this ineffective model advance through their certification program retaining only the superficial knowledge required to receive their degree, which quickly “washes out” (Zeichner & Tabachnick, 1981) as they frantically attempt to cope with profound and challenging classroom situations for which they often feel underprepared to manage (Goodlad, 1990; Katz, Raths, Mohanty, Kurachi, & Irving, 1981; Veenman, 1984).

Several studies cited in a review conducted by the Research Panel on Teacher Education of the American Educational Research Association (Cochran-Smith & Zeichner, 2005) found that new teachers often feel defeated, angry, and confused and in their early years they focus primarily on managing the students in their classroom. Reduced to a level of survival (Fuller, 1969), instinct overpowers reason and young teachers seek to regain control through emulating images of security and order from their past experiences as students (Brouwer & Korthagen, 2005; Lortie, 1975; McIntyre & Hagger, 1992). Early resentment towards university for ill preparedness (Katz et al., 1981) may redirect teachers towards informal learning techniques (Kwakman, 2003; Lohman & Woolf, 2001). By doing so, they risk becoming trapped within a cyclical, stagnant state (Hoekstra et al., 2009), which may prevent them from evaluating their preferential methods and ultimately, from delivering appropriate instruction to their students.
Experienced teacher learning (i.e., in-service or professional development) is equally misguided as it focuses primarily on learning isolated techniques (Ryder, 2012). Schön (1983, 1987) called this approach to teacher learning the technical-rationality model, which espouses that knowledge originates from experts (e.g., university professors, scholarly publications); teachers learn about this knowledge and then convey it to their students. Underpinning this ideology is “the belief that it is possible to operationalise directives, ‘deliver’ standards or impart knowledge using tips, tricks, and formulae” (Edwards & Thomas, 2010, p. 411). For others, the nature of teacher learning is not that simple (Hoekstra & Korthagen, 2011; Lampert, 2001; McDonald, 1992). Larrivee (2000) contends that if teachers do not think to connect techniques with their beliefs, teaching contexts, and personal style, “they stay trapped in unexamined judgments, interpretations, assumptions, and expectations” (p. 294), which may cause them to fall into routine action (Zeichner & Liston, 1987, p. 24) and/or stagnation (Korthagen & Vasalos, 2005).

The widespread proliferation of the transmission model of teacher education (Korthagen, 2011; Sprinthall, Reiman, & Thies-Sprinthall, 1996; Imig & Switzer, 1996) has left in its wake a problematic aftermath. The assumption that teachers should learn through a technical rationality model has caused difficulties for young teachers transitioning from interns to professionals (Cole & Knowles, 1993; Veenman, 1984; Wideen et al., 1998) who later abandon theory in their teaching practice (Brookfield, 1995, Cochran-Smith & Zeichner, 2005). Unless teachers are taught to analyze their practice in ways that deliberately reconnect academic theory to instructional practice,
they risk becoming trapped within a self-preferential cycle (Hoekstra et al., 2009; Hoekstra & Korthagen, 2011), which may hinder student learning. Unfortunately, the current professional development literature offers little help to teachers who wish to integrate theory in their practice (Cochran-Smith & Zeichner, 2005). In the next section I will discuss factors associated with high quality teacher learning which can be influential in narrowing the gap between theory and practice.

**Setting the Stage for Change**

I believe two critical events during my teaching career led me to reestablish the link between theory and my practice, which also set a trajectory to deeper understanding of pedagogy. The first event came in my 11th year of teaching when I read *There Are No Shortcuts* (Esquith, 2003). This black swan was a catalyst for the creation of Society X. Although teaching Society X for the next four years did not compel me to reconnect with educational theory, the local notoriety of Society X led to a second event that did set me on a path to narrowing my gap: a graduate assistantship at the local university. Once in the master’s program, I developed a new appreciation for educational philosophy, theory, and research. Although these two incidents were responsible for the eventual change in the way I thought about teaching, they were neither random nor isolated.

The ability for educators to increasingly ground their teaching in how students learn best (educational theory) using methods that facilitate this process (evidenced-based practice) is an intended outcome of professional learning and effective teaching (Avalos, 2011; Day, 1999; Postholm, 2012; Villegas-Reimers, 2003). Many professional development models exist but their ability to sustain teacher change is questionable
(Avalos, 2011). Since little is known about how experienced teachers bridge the theory-practice divide, I will examine the path I took through existing PD models that describe my past experience in order to discover the elements in my personal history, identity, and social context that enhanced or hindered my ability to narrowing my gap.

Day (1999) identified three categories that affect the quality of professional learning to this end: (1) the teacher’s biography of professional learning; (2) the teacher’s learning values, preferences, attitudes, and teaching practices; and (3) the caliber of the teacher’s previous professional learning experiences (p. 4). Below I will explore these factors and provide examples from my own experience to illustrate the significance, I believe, each had on closing my gap.

**Biography of professional learning.** According to Day (1999), a teacher’s biography of professional learning is drawn from his or her *life history* and *career phase*. *Life history* can include family background, community, and education (Zwozdiak-Myers, 2012). I grew up a 1980’s Ann Arbor, Michigan suburbanite and student of the technical rationality model, which likely contributed to my adoption of this ideology early in my career (Korthagen & Lagerwerf, 1996; Stofflett & Stoddart, 1994). As a young child, I was always curious, creative, and project oriented. Among other activities, I enjoyed exploring the woods near my home, planning neighborhood talent shows, and conducting “experiments” in my basement “laboratory” using a junior chemistry set. As a high school and college student, my creativity shifted to writing and performing music as a solo and ensemble musician. When I became a teacher after graduating from Ohio University in 1996, I redirected my energy to designing new math courses, constructing
sets for the high school play, and adapting a high school version of Quidditch based on the popular *Harry Potter* books by J. K. Rowling.

Throughout my life I have always enjoyed planning, creating, and actualizing my visions. I tend to learn best in spurts while I am immersed in an environment that allows me to explore and experiment. Literature supports my dispositions as prerequisites that enhance professional learning. For instance, studies suggest that teachers should be intrinsically motivated to learn (Zwart, Wubbels, Bergen, & Bolhuis, 2009), self-directed in their learning (Villegas-Reimers, 2003), and committed to lifelong learning (Villegas-Reimers, 2003; Zwozdiak-Myers, 2012).

Teacher’s *career phase* can also contribute to the effectiveness of teachers’ professional learning (Day, 1999). From an extensive review of existing literature, Leithwood (1990; see Table 2.1) synthesized a three-dimensional model of teacher development comprised of: (1) professional development, (2) career-cycle development, and (3) psychological development.
Table 2.1

_Leithwood’s Three Phases of Teacher Development_

<table>
<thead>
<tr>
<th>Phase</th>
<th>Stages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional Development</td>
<td>1. Developing survival skills</td>
</tr>
<tr>
<td></td>
<td>2. Becoming competent in the basic skills of instruction</td>
</tr>
<tr>
<td></td>
<td>3. Expanding one’s instructional flexibility</td>
</tr>
<tr>
<td></td>
<td>4. Acquiring instructional expertise</td>
</tr>
<tr>
<td></td>
<td>5. Contributing to the growth of colleagues’ instructional expertise</td>
</tr>
<tr>
<td></td>
<td>6. Participating in a broad array of educational decisions</td>
</tr>
<tr>
<td></td>
<td>at all levels of the education system</td>
</tr>
<tr>
<td>Career Cycle Development</td>
<td>1. Launching the career</td>
</tr>
<tr>
<td></td>
<td>2. Stabilizing</td>
</tr>
<tr>
<td></td>
<td>3. Facing new challenges</td>
</tr>
<tr>
<td></td>
<td>4. Reaching a professional plateau</td>
</tr>
<tr>
<td></td>
<td>5. Preparing for retirement</td>
</tr>
<tr>
<td>Psychological Development</td>
<td>1. Simplistic</td>
</tr>
<tr>
<td></td>
<td>2. Conformist</td>
</tr>
<tr>
<td></td>
<td>3. Conscientious</td>
</tr>
<tr>
<td></td>
<td>4. Inner-directed</td>
</tr>
</tbody>
</table>


The professional development phase of the model focuses on teaching proficiency in the classroom and leadership at school and district levels. The career cycle development phase is marked by various challenges spanning a teacher’s tenure during which some become disengaged and increasingly negative towards the profession while others continue to meet challenges and expand their professional repertoire. The psychological
development phase is a series of increasingly complex moral, social, and scholastic benchmarks that deepen teachers’ understanding of themselves and others in the profession. Below I will share my experience of Leithwood’s developmental stages using expanded citations (e.g., *psychological dimension, Stage 3: conscientious*) to denote my placement within this model and to provide a personalized context alongside major landmark stages of teacher development.

At the time of Society X’s inception, I was ten years into my teaching career. I had survived my formative phase and was fully acclimated to my high school work culture. I felt confident in my teaching skills (Leithwood, 1990; *career, stage 2: stabilizing*) and classroom management had become well-established routine (*ibid*; *expertise, stage 3: expanding one’s instructional flexibility*). No longer preoccupied with student discipline I began to grow my teaching repertoire by authoring new courses and taking on additional professional responsibilities such as chairing the math department and serving as local union president (*ibid; career, stage 2: stabilizing*). I routinely participated in staff meetings and added my voice to the common complaints haunting the teacher’s lounge (*ibid; psychological, stage 2: conformist*). I had made a long-term commitment to the teaching profession and received a similar commitment from my principals in supporting my work in the classroom (*ibid; career, stage 2: stabilizing*). I possessed the characteristics of a mid-career teacher just before and during the early years of Society X (cf. Leithwood, 1990). I chose to include this information because it is during this period that I developed a renewed interest in pedagogical study. Teachers at
similar junctures in their careers “are most likely to be in high states of readiness to reflect systematically on their thinking and practice” (Day, 1999, p. 68).

**Attitudes, values, preferences, and practice.** A teacher’s learning attitudes, values, preferences, and practices also contribute to the effectiveness of professional learning and are influenced by their professional learning biography (discussed above), learning culture within the school, and outside authorities such as government, independent educational agencies, and the media (Day, 1999, p. 4). Postholm (2012) stated teacher learning is optimized when it is situated (cf. Vygotsky, 1978; Warford, 2011) or when it transpires at school. Therefore, it follows that workplace environment can greatly influence the quality of teacher learning (Day, 1999). Leithwood and McAdie (2007) compiled a list of working conditions conducive to effective professional learning (see Table 2.2). An addition or subtraction sign next to each factor in Table 2.2 denotes the presence (+) or absence (−) of said factor within my work environment during Society X’s inception and formative years.
Table 2.2

*Teacher Workplace Conditions Present or Absent at my High School*

<table>
<thead>
<tr>
<th>Present (+) or Absent (−)</th>
<th>Management Level and Conditions</th>
</tr>
</thead>
</table>

**Classroom Level Conditions:**

+ • Workload volume is perceived to be fair  
+ • Class sizes are reasonable  
+ • Out-of-classroom duties are not excessive  
+ • Teachers are only asked to teach subjects and grade levels for which they feel adequately prepared  
+ • Students are cooperative and able to learn  
+ • Teachers have autonomy in their classrooms  
+ • Instructional resources are adequate

**School Level Conditions:**

− • Teachers are given goals that are clear, explicit, inspiring, and shared  
+ • The school atmosphere is friendly  
+ • Student discipline and teacher and student safety are not problematic  
− • Teacher collaboration is valued  
+ • The school values and supports academic achievement  
+ • Teachers can access professional development opportunities  
− • Teachers receive regular, helpful feedback if they participate in school improvement projects  
− • Teachers can participate in school-level decisions, and the school’s plans for improvement coincide with their priorities for improvement  
− • The quality of communication throughout the school is good  
+ • The physical facilities enable teacher to provide good instruction  
+ • The school’s curriculum and programs are stable and well-developed  
+ • Parents and the local community support and approve of the school  
+ • The school principal inspires teachers and advocates for continuous school improvement, but has reasonable expectations for what teachers can accomplish  
+ • The school principal looks out for teachers’ welfare, acknowledges their good work, and exhibits personal behavior that is consistent with her expectations for teachers  
+ • The school principal is flexible in enforcing rules
Table 2.2: continued

School Level Conditions (continued)

- • The school principal follows through on decisions
+ • The school principal is able to work with district administrators for the benefit of the school

District Level Conditions

+ • The district provides teachers with access to meaningful professional development
+ • The district’s salary structure is fair and consistent with comparable districts
− • The district does not call for changes that lack teacher input, that are inconsistent with teachers’ priorities, or that have unreasonable timelines


At the classroom-level, working conditions were optimal (ibid). For instance, I was not saddled with an overwhelming workload, which meant I had few responsibilities outside my classroom such as being a coach or class advisor. My class sizes were small, less than 20 students in each class. I felt prepared to teach the content of my courses and students seemed willing and able to learn. I could choose the specific content, the textbooks, and the resources when designing and teaching my curriculum. I had open access to professional development opportunities. The school environment was positive, friendly, and safe. The district paid me enough to support my standard of living as a single male, which at that time was about $40,000. Additionally, the district funded professional learning opportunities such as workshops, conferences, and college classes whenever I expressed an interest in participating in them.
Two major issues hindered my efforts to deepen my practice beyond my personal perspective: lack of collaboration and poor communication among staff. For me, the extent of collaboration with other teachers was sitting together at lunch and gathering for required department, school, or district meetings. The communication practices among staff were dysfunctional. Directives from the principal were often vague and misunderstood. Except for union intervention, staff input was minimal in school decisions, which were often made unilaterally by the principal, superintendent, or board of education. Furthermore, many new school initiatives lacked follow-through and failed. For example, each year the principal appealed to staff to consistently apply the rules of the school in their classroom and each year inconsistencies remained. Had I been in a work environment where collaboration and communication were functioning more effectively, my professional learning could have been enhanced (Avalos, 2011; Leithwood & McAdie, 2007). Instead, I believe these negative factors further reinforced my isolationist learning.

My high school classes were relatively insulated from external influences such as government, agencies, and media. While No Child Left Behind (NCLB) brought an increased emphasis on standardized testing, *Society X* fell outside the testing regimens that dictated curriculum in lower grades. Since my class did not directly impact district funding (because it was not tied to a proficiency test), I was free to design my own curriculum as I saw fit. As long as I maintained my teaching certificate and attended required in-services, contact with the principal and district leadership was minimal which afforded me autonomy in classroom teaching decisions. Similarly, local media in our
small rural district was almost nonexistent and rarely, if at all, influenced what happened in my classroom.

My beliefs about learning were informed by my experience as a learner and were reinforced when my students shared my beliefs. To me, learning was fun, which meant working on a problem until I solved it. When I observed students working, I noticed they exhibited similar characteristics when they were engaged in a problem they felt they could actually solve. I believed if I could teach students to become autonomously engaged in self-directed learning (like I was) they could someday actualize their own visions. Since I preferred to learn by doing and through problem solving, I often tried to incorporate these elements into my curriculum. But because my level of pedagogical understanding was limited, my efforts to implement activities that encouraged students to self-direct their learning through open-ended and intrinsically motivating lessons were sporadic (i.e., a tower building project once a month) However, I eventually did design my first system to help with classroom management that also gave students a measure of autonomy and self-direction.

A few years before creating Society X, I designed a point system to manage classroom behavior (viz. Xenos, 2011). Within the point system I had inserted elements of respect, responsibility, fairness, and accountability. When students followed the rules, they amassed points they could then use to buy rewards. When students broke the rules they lost points and received disciplinary action. The point system was designed to help me manage classroom minutiae such as taking attendance, recording homework, and tracking discipline. It also encouraged students to take responsibility for their own actions
such as coming to class on time, participating in class activities, and completing assigned homework. I applied the rules fairly and consistently but always emphasized to students that they chose whether they would abide by the rules of the class. The point system allowed me to know what was going on in the classroom at anytime. I began to wonder what it would be like if students were immersed in an environment where practice with course content was perpetually reinforced from all angles in the way the point system managed behavior. I envisioned a dynamic, self-organizing learning space where students chose to learn in the way they preferred: independently, teacher-to-student, and/or student-to-student according to each pupil’s cognitive needs and interests.

Before Society X, I was unable to articulate exactly what I was looking for and lacked the pedagogical expertise to create something so extensive myself. What I did possess was an imminent readiness to undertake such an innovation should the perfect opportunity present itself. I was in the zone of proximal development, a high potential learning space where nascent possibilities were in process to realization but in need of assistance to be brought into existence by “more capable” others (Vygotsky, 1978, p. 86). For me, Rafe Esquith (unknowingly) became that “more capable other” who scaffolded my learning in the very particular way I needed. This occurred at a time in which I was actively seeking assistance and had acquired the organizational skills, confidence, and emotional stability to orchestrate the massive undertaking necessary to prepare, implement, and maintain Society X.

Quality of professional learning. A teacher’s past experiences and internal dispositions contribute to the quality of professional learning activities (Day, 1999).
These activities are enhanced with support from administrators, colleagues, and educational agencies. Before I returned to university, the professional learning activities I preferred most were informal and individually oriented. I now know my preferences to experiment in my practice coupled with my relative disconnect from my colleagues and principals greatly influenced this behavior. Still, the autonomy given to me to continue my learning in the way I saw fit positively contributed to my knowledge of practice (Bakkenes, Vermunt, & Wubbels, 2010; James & McCormick, 2009; Leithwood & McAdie, 2007; Postholm, 2012; Villegas-Reimers, 2003). Additionally, encouragement from my colleagues and principal likely improved my sense of self-efficacy, fostering persistence in working through personal barriers and failure (Zwozdiak-Myers, 2012).

Once designed and implemented, Society X was a learning model I owned. In the years leading up to my return to college I refined Society X toward higher system efficiency and increased authenticity of how adults worked with their finances and made financial decisions. Yet refinement could only exist within my own bubble of understanding. Without any external input or constructive feedback, I was merely playing out my vision based on personal preferences of how I believed learning personal finance should transpire. Had I not been asked to join a college PhD program, I may have slipped back into routine support. But admittance to the program did not wholly influence my decision to return to school. It happened when the district approved my move to half time, the university offered me a paid graduate assistantship, and both institutions agreed to accommodate any scheduling conflicts (Villegas-Reimers, 2003).
The quality of my learning activities was greatly enhanced through my master’s course of study. Villegas-Reimers (2003) and Avalos (2011) recommend professional learning take place in conjunction with educational institutions such as universities. What better place to reconnect with theory than theory’s place of origin? While colleague support at the high school was minimal, support from university faculty and students was abundant. It seemed from the beginning I was readily accepted into the academic community and began assisting with various aspects of educational research upon arrival. My university classes reintroduced me to theoretical foundations and helped me to develop a more focused philosophy of education influenced by evidence of how students learn best. I used my master’s research project to learn more about personal finance and revamp the Society X curriculum to include updated, relevant content and diverse, instructional delivery methods.

My doctoral program utilized effective methods for teacher learning. For instance, my university advisors let me design my program around my professional needs and interests (Keung, 2009). Second, I was given systematic, structured supervision, which helped to change my beliefs about teaching and inspired me to change my practice in the classroom (Hoekstra & Korthagen, 2011). Third, my learning was in conjunction with educational research (Hernandez, 1998), which also brought access to articles and books through the campus library. Fourth, the duration of my professional learning spanned a period of four years. Research suggests that meaningful professional learning needs to occur over an extended period of time between one semester and two years, “with two hours contact time per week per school year” (Avalos, 2011; Bakkenes et al., 2010;
Desimone, 2009; Postholm, 2012, p. 424). The design process of Society X began in the summer of 2007 and revisions were ongoing at the time I completed this study.

The situated nature of my PhD program (Postholm, 2012; Hernandez, 1998; Vygotsky, 1978; Warford, 2011) and the integrative design of my graduate curriculum (Brouwer, 1989) quickly moved me towards praxis. Research suggests engagement in formal education classes outside of school should be in connection with proximal experiences in the classroom (McMahon, Reeves, Devlin, Simpson, & Jaap, 2007; Parise & Spillane, 2010). I would learn about pedagogy in my university classes and immediately test them in my high school and college classrooms. In fact, much of my university studies revolved around refining my lessons for my students. Brouwer (1989) and Korthagen (2001) support this alternation of learning theory and application in practice. Korthagen (2001) further posits only an integrative teacher education curriculum of this kind can improve praxis among teachers.

In summary, effective professional learning can influence teachers to narrow their gap between theory and practice. Three teacher professional development models were explored in this chapter pertinent to my development as a teacher. According to Day (1999), the success of this outcome depends on (1) teachers’ professional learning biography comprised of life history and career phase; (2) teachers’ dispositions towards learning influenced by working conditions and external sources such as government, agencies, and media; and (3) teachers’ quality of professional learning experiences supported by district leadership, colleagues, and other agencies including higher education (p. 4).
It is hard to transform teacher practice that has been built up over nearly a lifetime disconnected with theory; each old habit reinforcing the previous, passed from generation to generation (Joram & Gabriele, 1998). Teachers do not grow as professionals on their own (Hoekstra et al., 2009). Teacher learning is a bottom-up process, which begins with the teacher knowing him or herself (Korthagen, 2001; James & McCormick, 2009).

From as early as I can remember, I loved to learn. I often self-directed and planned my learning experiences based on my interests. These positive dispositions towards learning became embedded into my personal belief system and eventually surfaced subtly within my curricula. Because my school district supported my professional development needs monetarily and colleagues, principals, government agencies, and the media, left me alone to create instruction in my own way, I was able to bring to fruition my vision of an ideal learning space: Society X. Before my graduate studies, my understanding of pedagogy was largely based on personal experience, not on theories of how students learn best. Because my work environment offered limited opportunities for collaboration, it was my return to college that eventually provided ways to reconnect my teaching with theory through guided, pertinent activities that culminated in a new disposition towards praxis. In the next section I will bring together the cumulative discussion about my learning, Society X, and the gap between theory and practice using a conceptual framework designed to explain processes for teacher learning.

**Bridging the Gap**

Thus far, I have explained how the gap between theory and practice forms for many new teaching professionals, how it is prolonged through their careers, and how a
return to theory-integrated praxis might be facilitated by bolstering effective means of teacher learning. Along the way I have also reflected on my experience as a teacher so that I might better understand how my autobiography, education, career, and work environment have influenced the design of Society X. In this section, I will suggest a model for teacher learning that reconciles the theory-practice divide and details a plan for how it can be bridged.

Many models of teacher development exist (e.g., Leithwood's multidimensional model, 1990; Berliner's model of instructional expertise, 2004; Fuller's model of teacher concerns, 1969). Most were developed to depict characteristics of the stages teachers typically pass through as they increase their learning and expertise. These models can serve as guides to diagnose where a teacher might be in the typical career cycle but they lack an explanation of how movement from stage to stage occurs. They also do not explain how all teachers develop. Additionally, some models may simply showcase a flawed ideology of teacher learning played out over decades (Korthagen, 2001). If this is the case, using these models to guide teacher learning may perpetuate problems caused by this way of thinking. More importantly, none of these models explain how teachers can advance their understanding of practice should they wish to do so. For this, a learning model is needed that can assist teachers to deepen their practice in ways the brain naturally constructs knowledge, in harmony with personal learning preferences, and sympathetic to unique contextual circumstances.

Korthagen and Lagerwerf (2001) developed a teacher learning model that includes the above prerequisites. The synthesized model draws on theories from Gestalt
psychology and Van Heile’s (1986) guided reinvention model. Korthagen and Lagerwerf’s Gestalt model was originally intended for pre-service teachers and thus much of the research on the legitimacy of the model has been conducted on this population. More research is needed in the application of this model for in-service teachers (Korthagen & Lagerwerf, 2001), which the present study aimed to address. The model is comprised of three levels of learning: (1) gestalt, (2) schema, and (3) theory. Transition from one level to the next requires an intermediary, facilitative process called reflection that results in a cumulative understanding called level reduction.

I will first discuss the theories underpinning the model by briefly explaining the nature of human behavior and cognition, specifically: (a) what drives our actions, (b) how our mind interprets our actions in various situations, and (c) how our mind organizes our perceptions to help us make sense of our existence. Human behavior originates with an individual’s compulsion to attain his or her personal needs (Maslow, 1970). These needs are often depicted hierarchically in a pyramid structure with essential survival needs forming the foundation and emotional, cognitive, and self-fulfilling needs stacked in succession to a pinnacle. Each collection (level) of needs must be obtained consecutively from the bottom of the pyramid to the top; thus, higher level needs cannot be obtained without subsequent level attainment. Needs at the bottom of the pyramid are primarily physiological and instinctually based.

As one moves up the pyramid, needs become more cognitively oriented and controlled. Emotional stability lies between the behavioral and cognitive levels; therefore, emotional needs can sometimes take on reflexive and logical qualities. Hoekstra and
Korthagen (2011) argue the instinctual, affective, and cognitive domains are inseparably linked to decision-making and must be treated holistically to scaffold one’s learning. From a needs perspective, psychological and emotional needs must be satisfied before cognition can be refined. Therefore, teachers must first have their physiological needs met and their emotions under control before they can be optimally ready to entertain higher cognitive function. In other words, if teachers have not satisfied lower and mid level needs, then the quality of their professional learning will be affected, or in extreme cases, arrested.

According to the cognitivist perspective of learning, once we are physically, emotionally, and cognitively ready to learn, our brain makes sense of the world around us in the following way. The sum of perceptual input (i.e., seeing, hearing, feeling, and/or tasting) received during one or more fixed episodes in time forms a holistic cognitive representation called an experience. The constructivist viewpoint maintains, “an individual constructs his own understanding of the world he lives in by reflecting on his experiences … [and] generates his own mental models, which he uses to make sense of his experience” (Brown & Green, 2011, p. 27). It is through our attempts to make sense of our experiences that knowledge is constructed (Driscoll, 2004). This suggests that knowledge is highly personalized and contextual, or situated (Borko & Putnam, 1996; Brown, Collins, & Duguid, 1989; Vygotsky, 1978).

Argyris and Schön (1974) called the mental models used to structure our experience theories-in-use. These theories have to do with “procedural knowledge … learned and developed in the day-to-day work of the professional” (Zwozdiak-Myers,
2012, p. 68). Kessels and Korthagen (2001) call this type of knowledge *phronesis* from the early western philosophical foundations of Plato and Aristotle. Phronesis is contextually bound knowledge that is perceptually based and associated with practice (Korthagen & Kessels, 2001). The needs of novice teachers are centered on survival, which is a physiological need. In order to satisfy this type of need, teachers elicit theories-in-use, or phronetic knowledge, to help them gain control in the here and now. It makes sense that teachers operating at the level of survival, or who have certain emotional needs that have not been met, use these theories-in-use more than teachers who have their basic needs met. While not wholly problematic, theories-in-use can contribute to the very problems we wish to address when they remain tacit and unexamined (e.g., stagnation of practice, inappropriate choice of methods for student learning).

The type of theory associated with the gap is a different type of theory called *espoused theory*. Espoused theories are “explicit knowledge … [that] guide action and encompass the formal philosophy of the profession” (Argyris & Schön, 1974, Zwozdiak-Myers, 2012, p. 68). Korthagen and Kessels (2001) refer to espoused theories as *episteme*, again drawn from the teachings of Plato and Aristotle. Epistemic knowledge is conceptual, abstract, and broad in nature, generally not helpful to teachers who need immediate solutions. As posited above, only when lower level needs are met can advanced cognition take place. Most teachers I know are simply trying to make it through the day. Most do not have time to entertain discussions about big picture educational theory and world order. Yet, for the most part, such theories effectively explain the
events that occur in classrooms and could be useful to teachers if they had time to connect with theory in a meaningful and integrative way.

It now makes sense why I embarked on a study to deepen my understanding of teaching at the time I did: I was ready to do so. My physiological and emotional needs had been met. My work environment was conducive to my learning preferences. Any lack of collaboration at the high school was compensated by my involvement at the university, which in turn, introduced me to the world of theory and research. The door was open. I needed only to walk through it.

Korthagen and Kessels provide considerable evidence and logical arguments to support the following statement: “the gap between theory and practice is not a problem inherent to the teaching situation. It is only inherent to our conception of knowledge as episteme” (2001, p. 289). According to their three-level model, phronetic theories are just as important as epistemic theories when constructing knowledge. Central to the three-level model is the belief that teachers need to first work through periods in which they utilize theories-in-use before they can assimilate espoused theories into their practice. It would seem the gap between theory and practice is created and perpetuated because teachers are simply not ready to assimilate this knowledge into their practice at the time in which they are asked to do so. At the time theory is introduced, it simply does not click with most teachers’ knowledge structures and experiences; so, they abandon it.

The three-level model for teacher learning. Korthagen and Lagerwerf’s (2001) three-level teacher learning model is illustrated in Figure 2.1. Within this section I will begin describing my understanding of Society X within each stage of the model. Then I
will explain the criteria necessary to take my understanding further in order to fill the
gaps within my teaching practice.

Figure 2.1. The three level model for teacher learning. Linking practice and theory: the
pedagogy of realistic teacher education by KORTHAGEN, FRED A.J. Reproduced with
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**Gestalt level.** Before explaining how one begins the learning progression outlined
above, it will be helpful to return to our discussion of how our mind makes sense of
experiences. As mentioned above, the mind is said to gather perceptual input into a
holistic grouping called an experience. As we try to make sense of our experiences,
inseparable collections of “needs, concerns, values, meanings, preferences, feelings, and
behavioral tendencies” called **gestalts** are triggered (Korthagen, 2001, p. 49). These
reflexive actions guide appropriate behavior in various situations. Korthagen and
Lagerwerf (2001) explain gestalt formation in the following way:

Through the various experiences of life, gestalts are elicited in people. These
gestalts are closely tied to the concrete situations through which they are
triggered. In similar situations, these gestalts are recreated and help us to find our
place in the here-and-now. (p. 179)
The concrete example that informed the creation of Society X was Esquith’s (2003) classroom economic system. As mentioned in Chapter 1, my decision to recreate it in my classroom was largely tacit. The methods he used to teach math overlapped with how I believed learning should take place. After a quick needs assessment, I realized it would be possible to design and establish a similar learning model within my classroom. But in order to move Society X into existence I had to adapt Esquith’s system for implementation within my context. To do so would require deliberate thinking, a process Korthagen and Lagerwerf (2001) call schematizing.

**Schematizing.** Schematizing is guided by *reflection*. Reflection is defined as “the mental process of trying to structure or restructure an experience, a problem, or existing knowledge or insights” (Korthagen, 2001, p. 58). Much of Society X’s design process was spent reflecting on questions such as: What jobs will transfer from Esquith’s system to my classroom? Are there new jobs I can invent? What types of responsibilities will students have for their jobs? How much and how often will students get paid? How will students be paid? What will students use their money to buy? What will my role be in the society? In the beginning, the goal was to create a management system that allowed the system to function properly, which meant keeping Society X working as a framework for learning and not a distraction to learning. Over time, system refinements were made to improve efficiency of the system by further dispersing the work among students, and updating procedures while preserving real-world practice.

I remained in the schematizing phase until I began work on my dissertation. Prior to this self-study, the structures within Society X remained implicit; only when I started
work on my dissertation did I wish to understand what was guiding revisions to Society X. Within the past year, as I have reflected upon and analyzed the creation of Society X, my motives have become explicit. Korthagen and Lagerwerf (2001) state that only at that point, when I wanted to explain what I was doing and why, did I meet a critical prerequisite for level transition. Only when I began collecting and analyzing data was I able to begin answering those types of questions.

When we do not feel the need to make our understanding explicit, we remain at the gestalt level indefinitely (Korthagen & Lagerwerf, 2001). It is possible that I would have remained at the gestalt level, cycling through refinements toward a more efficient framework instead of better understanding the purpose and impact Society X had on helping students learn personal finance. Had I not been invited to the university, it is possible my Society X gestalt would have evolved into an understanding of an optimally efficient system and I would have prematurely moved on to a different endeavor, thinking that flawless routine was the goal of teaching and learning.

**Schema level.** When schematizing is complete, concepts and relations are identified in the original gestalt and level reduction takes place (Korthagen & Lagerwerf, 2001). This means the original gestalt has now been clarified and restructured; new information has been assimilated into one’s understanding and accessibility to this new information has become automatic. It is at this level that I find myself writing these words today. The reflection I have undergone throughout my PhD course of study and in writing this proposal has given me new insight into the nature of Society X. Much of what I have learned has transpired through writing this document as I reflected on my
identity as a teacher. Through explicating my experience, I realized my interests in making Society X fun, engaging, authentic, and interactive were tied to my ideology of learning. They were not simply artifacts that randomly surfaced within my curriculum. Rather, they were informed by my disposition towards, and experience with, learning. Furthermore, they were tacit; I could not identify them until I began looking for them. My learning to this point was mostly aligned with phronesis. It has been contextual and subjectively structured based on my understanding of the situation. As data collection and analysis transpires, I will move more toward epistemic knowledge and the schemata will undergo level reduction.

**Theory formation.** Theory formation, as with schematizing, is a reflection-guided process ending in a level reduction at the theory level. Korthagen and Lagerwerf (2001) state:

> Theory building originates in a need for order in and verification of the schemata constructed. It involves the logical structuring of schemata. Essential is the formulation of starting points, definitions, and logically derived propositions: now everything must be expressed in words, which may lead to a reassessment of the content of the concepts and relations within the schemata. (p. 184)

Theory formation will occur during data collection and analysis. In Chapter 3, I will describe the research methodology including validity measures mentioned above, along with the method of reflection.

**Theory level.** Three characteristics define knowledge at the level of theory: (1) prominent characteristics are defined, (2) holistically organized, and (3) and aligned with
existing scientific or espoused theory (Korthagen & Lagerwerf, 2001). Theory level reduction will transpire in Chapters 4 and 5. Within this last section I have condensed my understanding of Society X, reconciled the gap between theory and practice, and outlined a plan to close my gap using Korthagen and Lagerwerf’s three-level model. In Chapter 3 I will describe the methodology, which will operationalize reflection and detail methods for data collection and analysis.

**Summary**

In Chapter 2 I examined the gap between theory and practice from both personal and academic perspectives by juxtaposing personal experience with the existing body of literature. Four extant professional development literature sources were reviewed. Three sections comprised the chapter. In the first section, origins of the gap, I explored what is known about how teachers learn to teach. Through recollections from my early years teaching, I discussed how current teacher educational practices perpetuate the gap between theory and practice. In the second section, setting the stage for change, I discussed enhancing and inhibiting factors to narrowing the gap between theory and practice. I also cited those factors present within my teacher learning experience. In the third section, bridging the gap, I presented Korthagen and Lagerwerf’s (2001) three-level model of teacher learning and behavior as the conceptual framework of the self-study, which will be used to bridge the theory gaps in my own practice.
Chapter 3: Methodology

In the last chapter I examined literature related to the gap between theory and practice together with my personal experience of teacher learning during my formative years. I also introduced a conceptual framework by Korthagen and Lagerwerf (2001), which will guide my teacher learning experience. In this chapter I will discuss how I will utilize reflection to deepen my understanding of my financial literacy curriculum, Society X, from a schema level to the theory level of three-level model. Reflection will be operationalized through a phenomenological study nested within an overarching self-study research framework.

Self-study is especially appropriate to guide my learning experience because it is grounded in “critically constructive self-reflection and considered response” (Zwozdiak-Myers, 2012, p. 35) aimed at the promotion of teacher self-examination to deepen pedagogical understanding (LaBoskey, 2004, Pinnegar & Hamilton, 2009). As discussed in the previous chapter, reflection is the vehicle by which level reduction is accomplished (Korthagen & Lagerwerf, 2001). Self-study can facilitate theory level reduction, as it “requires evidence for the reframed thinking and transformed practice” (LaBoskey, 2004, p. 859).

The process for engaging in self-study often begins with “living contradictions,” those moments of dissonance when one realizes that his or her beliefs are not consistent with his or her actions (Pinnegar & Hamilton, 2009, p. 5). My implicit belief that Society X was sound instructional practice was my living contradiction because I lacked explicit theoretical justification for my assumption. Self-study can reconcile conflicts such as
these by assisting the researcher to explicate implicit knowledge through a rigorous, 
purposive and transformative research process, which results in a better understanding of 
one’s practice.

According to LaBoskey (2004), self-study research is: (1) self-initiated and 
focused, (2) aimed at improvement, (3) interactive, (4) comprised of multiple methods of 
data collection (mostly qualitative), and (5) designed using exemplar-based validity (p. 
842-855). The first two components of self-study (initiated by researcher and focused on 
 improvement of practice) have been clearly established in the first and second chapters. 
Suffice it to say, the study began of my own volition to better understand and improve 
my teaching practice. Regarding the interactive nature of self-study, the research process 
has been interactive on many levels. Informal dialogue about Society X took place with 
students, colleagues, administrators, and parents as documented in previous chapters. 
Conversations with my co-researchers and dissertation committee members generated 
and concretized questions, methods, and conceptual frameworks. Further interaction and 
credibility techniques (the latter characteristics of self-study) took place during data 
collection and analysis.

The self-study learning experience I outlined in Chapter 2 using Korthagen and 
Lagerwerf’s (2001) three-level model necessitates a rigorous learning process for theory 
level reduction to transpire. Therefore, a second nested, phenomenological study was 
utilized for the purpose of attaining a theory level understanding of Society X. A 
phenomenological approach to inquiry was sought because the three criteria for theory 
level reduction are ideologically aligned with the explication of experience (Patton,
2002). The three criteria are: (1) what are the characteristics of Society X? (2) How are these characteristics related? (3) How is this understanding significant for student learning? To reiterate, this dissertation utilizes two modes of inquiry: a self-study whose purpose addresses my teacher learning processes as a result of my analysis of Society X and a second nested (i.e., one form of inquiry embedded inside the other) phenomenological study whose purpose is to facilitate theory level reduction bringing closure to my teacher learning experience. Throughout this dissertation I will bounce back and forth between the two studies but will clarify which of the two studies is being addressed at any one time.

This approach to inquiry has been constructed to serve these two purposes. First, the phenomenological study will help me to better understand and explain why Society X is such an engaging and cognitively stimulating learning environment for both teacher and students. Second, the self-study will explicate the process I used to deepen my understanding of Society X to address the primary research question: How can an analysis of one’s self-authored curriculum inform teacher learning processes that facilitate connections between theory and practice? Four sections will comprise this chapter. The first section will provide a rationale for the research design. The second section will describe the research methods including participants, data collection, and data analysis procedures. The third section will include a discussion of validity measures. The fourth section will cite limitations of the study.
Rationale

While conducting my literature review for my dissertation I came across an ongoing problem within teacher education called the gap between theory and practice. The literature asserted teachers did not use pedagogical theory to guide their teaching practice and instead teachers chose their methods for instruction based on their own personal preferences as learners. I then realized I was one of those teachers and that my inability to explain what Society X was, how it worked, or why it supported student learning stemmed from this issue. The literature provided no real solutions to bring teachers in the classroom closer to utilizing theory in their practice. Apart from redesigning pre-service teacher education programs, little had been written specifically about how experienced teachers could mend the gap in their practice. I decided an exploratory study was appropriate to inform experienced teacher learning towards this end (Johnson & Christensen, 2012).

I chose self-study as the overarching framework because it supported my personal interest to learn more about Society X and provided a vehicle to address the larger issue of the gap. Implicit with self-study is the researcher as single-case participant-observer (Pinnegar & Hamilton, 2009), which I considered an appropriate match for this study. I was a suitable sample because I was a teacher who had actually incorporated theory into his practice and this transition occurred during the three years I conducted my dissertation research. Because little was known about how this process took place, few samples would have been available as research subjects. Although teachers may have existed who had incorporated theory into their practice, most would have used this new
knowledge to become university faculty. Since these former teachers would no longer teach in the K12 setting, they would no longer be samples of the target population.

So, I decided to study myself, learning in action, researching and writing this dissertation, in which I engaged in an elaborate learning experience to fill the gaps within my own practice in order to inform teacher learning processes in other contexts. I set up my dissertation so that I would be able to exemplify each stage of my Society X learning experience through Korthagen and Lagerwerf’s (2001) three-level model of teacher behavior and learning as a conceptual framework. However, because my Society X learning experience had begun years before my decision to study it, I needed a way to bring those experiences back to fill out and exemplify the levels of learning within the model. I did this by recalling my experience in parallel with the presentation of literature in Chapter 2. Therefore, multiple self-study research questions have already been answered. I will summarize these questions below. It is also important to note, data collection and analysis were not necessary to answer these questions.

**How do teachers learn about teaching?** This question is answered in the first section of Chapter 2. To summarize, the ways teachers learn in their pre-service teacher education programs and in-service PD do not instill a theory-integrative approach in their teaching practice. Most teachers remain unaware of how they choose their teaching methods and without a need to question them, do not think to seek out this understanding. If teachers are not assisted to question their practice, they may never determine whether their methods are appropriate for student learning.
How did I learn about teaching before my dissertation research? This question has been answered within the first section of Chapter 2. The second part of this question (How did I learn about teaching through this dissertation study?) will be addressed later in this chapter in the self-study data analysis section. In summary, I passed through my pre-service teacher education and most in-service PDs gaining few, if any, insights into how theory might assist me with teaching. I mostly learned how to be a teacher by emulating my past teachers and by trial and error in my classroom. I was heavily reliant on phronetic knowledge to direct my practice before my dissertation research and PhD studies, in general.

What factors enhance/inhibit the quality of teacher learning? This question is answered in the second section of Chapter 2. To summarize according to Day (1999), the quality of professional learning is dependent upon: (1) the teacher’s biography of professional learning, (2) the teacher’s learning values, preferences, attitudes, and teaching practices, and (3) the caliber of the teacher’s previous professional learning experiences.

What enhancing/inhibiting factors shaped the quality of my teacher learning experiences before my dissertation research? This question has been answered within the second section of Chapter 2. The second part of this question (What enhancing/inhibiting factors shaped the quality of my teacher learning experience within this dissertation?) will be addressed later in this chapter in the self-study data analysis section. In summary, before my PhD studies, the quality of my teacher learning was enhanced by: the autonomy my administrators gave me to try different ideas in my
classroom; the monetary support the district provided whenever I wanted to attend a conference, workshop, or college class; and my work environment was friendly. The quality of my teacher learning was inhibited by: poor communication among staff, an absence of collaboration among staff which further reinforced my isolationist learning, and little input in policies governing my school work environment.

**What is known about teacher learning processes?** This question is answered in the third section of Chapter 2. To summarize, not much is known about teacher learning processes. To summarize, little is known about how teachers adopt learning processes that engender a theory-integrative teaching practice. Korthagen and Lagerwerf (2001) have developed a learning process model for pre-service teacher learning as a part of their research on “realistic teacher education” which instills a theory-based approach to practice as part of its main tenets. Many models for teacher PD are available but none explicitly guide the learner to a theory level of understanding. The three-level model is comprised of the three stages connected by two processes. The learning experience begins with concrete examples then: (1) gestalt stage (1st level), (2) schematizing (reflective process), (3) schema stage (2nd level), (4) theory formation (reflective process), and (5) theory stage (3rd level).

**By what process did I deepen my understanding of Society X before my dissertation research?** This question has been answered within the third section of Chapter 2. The second part of this question (By what process did I deepen my understanding of Society X through my dissertation research?) will be addressed later in this chapter in the self-study data analysis section. After I created Society X, I mostly
worked toward making the system more realistic and efficient. Before my dissertation research, my understanding was at the schema stage of the three-level model. However, my schemas were mostly associated with how the system could be made more realistic and efficient not associated with pedagogical theory or epistemic knowledge. At this point I could not explain Society X’s prominent characteristics, their relationship to each other, or how Society X supported student learning.

According to Korthagen and Lagerwerf (2001), my understanding of Society X would only reach a theory level when I could (a) define the prominent characteristics of Society X, (b) organize the prominent characteristics of Society X as a holistic relation, and (c) align the characteristics and their holistic relation with existing scientific theory. These three criteria closely resemble the definition of experience, which Patton (2002) describes as a (a) phenomenon’s dominant features, (b) the structure(s) in which these features reside, and (c) the meaning drawn from these findings. Thus, a nested, phenomenological study was sought to accomplish theory level reduction. Reflection, the process necessary for theory building ending in theory level reduction, was then operationalized through phenomenological data collection and analysis methods.

**Research Methods**

Research followed an emergent design path (Patton, 2002); therefore, research methods were not entirely explicated at the commencement of research. Although the overarching framework for this dissertation was self-study, data collection and analysis began with the phenomenological study and then during data analysis of the phenomenological study, a self-study design was added to frame the research in context
of the problem. Therefore, research methods, data collection, data analysis, and results will be presented in this order: (1) phenomenological study and (2) self-study.

Phenomenological inquiry methods followed recommendations by van Manen (1990), Smith, Flowers, and Larkin (2009) and self-study methods followed recommendations by Pinnegar and Hamilton (2009). Consistent with Onwuegbuzie and Leech (2007), during the research design phase, careful consideration was given to sample size, data methods, and validity measures to ensure data saturation or information redundancy. The maximum variation sample size according to Creswell (1998), Morse (1994), and Smith and colleagues (2012) was sufficient to ascertain detailed descriptions of experience using phenomenologically oriented interviews. In addition, the sample size in conjunction with recommended protocols for conducting focus groups was appropriate according to Johnson & Christensen (2012), Langford, Schoenfeld, and Izzo (2002), and Stewart, Shamdasani, & Rook (2007).

The corpus of data included: student journals containing weekly reflections for 10 participants; two sets of 12 semi-structured interviews lasting 15 to 45 minutes each; one focus group with 11 participants lasting 45 minutes; researcher reflexive journals (audio and written), data analysis memos, and normative classroom data (e.g., participant job logs, discussion notes, attendance rates, grades). The selection of multiple, overlapping data collection methods were intended to “cast a wide net” in capturing the essence of the phenomenon following recommendations by Smith and colleagues (2012) and van Manen (1990). The following validity measures were employed during data collection and analysis: reflexive journaling, negative case sampling, persistent observation and
prolonged engagement, first and second level member checks, data triangulation, methodological triangulation, investigator triangulation, peer debriefing, audit trail, thick description (Johnson & Christensen, 2012; Lincoln & Guba, 1985).

Both the phenomenological study and the self-study utilized the same sample and data set; however, data analyses diverged and will be discussed separately. The research methods are presented in four sections: participants/sample, data collection, phenomenological data analysis, and self-study data analysis.

**Participants/Sample.** Research participants were 48 junior and senior students between the ages of 16 and 18 attending a rural high school in southeastern Ohio (population ≈ 750) during the second semester of the 2011-2012 school year. The school serves a rural population with a high unemployment rate and a low socioeconomic (SES) demographic. Forty-eight (48) participants enrolled in one of three personal finance courses taught by the primary investigator (n$_1$ = 20, n$_2$ = 12, n$_3$ = 16). Three (3) students left the study (one student per class) before data collection was complete, yielding an attrition rate of 6%. Although the personal finance class was offered as an elective course, students received a core math class credit applicable towards graduation. Students were of mixed ability levels in each of the three classes. Ohio Graduation Test (OGT) scores were used to measure student ability (in order of ascending ability): (proficient = 25, accelerated = 11, advanced = 11). One student had not taken the OGT test and therefore, his measure is not included. In general, students who had not passed the OGT were not permitted to take the class therefore the basic and limited ability levels were not included above.
Data were collected from two samples, one nested within the other. This nested description is in addition and independent of the study nesting described above. All students enrolled in my personal finance classes (i.e., Society X) were considered a homogeneous, comprehensive sample. Homogeneous sampling is a purposive sampling strategy recommended for investigating populations with a set of common characteristics (Onweugbuzie & Leech, 2007; Patton, 2002). Participants were considered homogeneous in the respect that they were taking the same personal finance class. This population was selected because they had experience with the phenomenon and were best positioned to reveal its characteristics. The comprehensive sample consisted of 29 males and 19 females (N = 48). Each student within the comprehensive sample had been placed similarly into, as his or her schedule permitted, one of three personal finance class sections. From these participants, normative classroom data were collected (e.g., tests, quizzes, projects, attendance rates, standardized tests scores).

From within the comprehensive sample, a nested, maximum variation sample (n = 12; male = 4 and female = 8) was drawn to provide focus group, interview, and journaling data. According to Patton (2002), a maximum variation sample “aims at capturing central themes that cut across a great deal of variation” (pp. 234-5). The variations in this study consisted of gender, age, grade, aptitude, job position, period in the day, and SES. Aptitude was quantified using Ohio Graduation Test scores and SES was determined based on free or reduced lunch status. A variety of categories within each variable comprise the sample, and nearly all categories within each variable were represented in the sample. In cases when certain categories could not be represented, the
cause was beyond the researcher’s control (e.g., withdrawal from the class, failure to return the consent form promptly, schedule conflicts).

**Data collection.** Data were collected by the primary researcher (me) and a secondary researcher who used a portion of the data set for her masters research project. The secondary researcher assisted with conducting interviews, transcribing data, and performing interim analysis. Primary and secondary researcher roles are indicated in the sections that follow. Collection methods were both qualitative and quantitative.

**Participant journaling.** Within the first week of the study the secondary researcher and I asked for volunteers to keep a “Society X Journal” consisting of descriptions of events in Society X, reflections on these descriptions, and perceptions of learning in Society X (see Appendix B for journal prompts). Eight (8) participants were each given a composition book (i.e., journal) to keep for the duration of the class and the primary researcher told students they could write in the notebooks whenever they saw fit. Journals were collected for interim data analysis each Friday and returned to students on Monday. Two journals were also left on the student mailboxes (an easily accessible classroom location) at all times for students to write anything regarding the class without having to identify themselves.

**Interviews.** Two rounds of semi-structured interviews were conducted with the maximum variation sample (see Appendix B for interview schedule), one in the third week of the course and another at midterm. Smith and colleagues (2012) assert less structured interviewing techniques allow participants to open up and speak freely, thus providing more opportunity to capture the richness of their experiences. Each interview
lasted approximately 20 – 40 minutes and was audio recorded. Most interviews were conducted one-on-one (investigator and participant), although some involved the primary and secondary researchers. The first interviews focused on participants’ initial reactions to Society X: why participants signed up for the class, what they had heard about the class previously, and how they described the first few weeks of the course.

The second interview focused on students’ perceptions of learning in Society X. At first, this line of questioning proved difficult for eliciting answers from students. Long silences often followed questions such as, “What does learning look like in Society X?” or “what learning takes place in Society X?” It was clear the researcher’s presuppositions of “learning” were projected upon interviewees in a way that restricted dialogue and could be construed as (mis)leading. Therefore, it was necessary to reformulate the question into a series of more detailed questions based on respondents’ own accounts of a learning experience. A method of restructuring the interview protocol called “bracketing,” was utilized to achieve this end. According to Johnson and Christensen, bracketing is a suspension of one’s preconceptions towards the phenomenon under investigation (2012). After the protocol had been changed to eliminate the word “learning,” questioning then concentrated on a particular learning event that students experienced outside Society X. After describing this experience, students were then asked to compare it to a similar experience in Society X.

Focus groups. One focus group was convened to simultaneously solicit multiple perspectives through social interplay (Patton, 2002). Eleven participants drawn from the maximum variation sample took part in the focus group, which lasted approximately 40
minutes (see Appendix B for questions). As recommended by Stewart, Shamdasani, and Rook (2007), the primary investigator acted as moderator while the secondary investigator observed and recorded the session. Focus group questions centered on such topics as: job responsibilities, routines, and fines, which had been identified as areas of interest in the interim data analysis from the first round of interviews.

**Normative classroom data.** Student tests, quizzes, projects, assignments, grades, attendance reports, and achievement test results were collected to perform a cross-case analysis among the three personal finance classes. A specific explanation of the cross-case analysis procedures is provided in the data analysis section.

**Researcher Reflexive Journal.** The primary researcher kept a reflexive journal to record reflections on data collection sources, field notes, and potential researcher biases. Also, descriptions of and reflections on informal dialogue with students were included in the journal as well.

**Memos.** Memos are useful to see how one’s thinking has or has not evolved over time. Memos were written to capture in-the-moment personal insights during data analysis.

**Phenomenological Study Data Analysis.** Data analysis for the phenomenological study will be arranged by the following research questions:

1. What are the prominent characteristics of Society X?
2. How are these characteristics holistically related and logically organized?
3. How is this understanding significant for student learning?
What are the prominent characteristics of Society X? All raw data collected from journals, interviews, the focus group, researcher reflexive journals, memos, and regular classroom data provided context for the analysis. The primary and secondary researcher transcribed sound recordings (e.g., audio reflexive journal, focus group, interviews). Raw data were segmented, coded, and themed using several methods described below, including a qualitative data analysis program called MAXQDA. All codes were compiled in a master list within the program, which included the code, code name, and explanation of the code’s meaning. Data analysis procedures are explained in further detail below.

Data analysis was conducted before the research proposal was written. Access to the data set was limited, so the study had to proceed before a formal proposal was written. Clearance was given from the committee chair and institutional review board to conduct a study to explicate the shared experience of learning in Society X which was operationalized by the phenomenological questions delineated at the beginning of this section. Initial data collection was not designed to explore teacher learning processes aimed at addressing the gap between theory and practice which is why it has remained a separate part of the overall study. Through the process of data analysis, the purpose of the study was eventually established as a teacher learning study and this phenomenological study was later repurposed to foster level reduction to the theory level of the three-level model of teacher learning. This unfolding emergent design (Patton, 2002) was recorded in three data analysis journals: one online and two written journals. Qualitative data analysis procedures followed recommendations by Johnson and Christensen (2012).
Data analysis commenced with interim analysis in the spring of 2012. I commented on each document to establish initial points of interest. Documents were uploaded to Google Drive, an online password-protected storage repository. Initially, only analysis of the first interviews was completed. Peer debriefing was conducted with the phenomenological methods committee member to create questions for the next round of interviews and the focus group. At the end of data collection, the entire data set was read and memos were written to comment on recurring themes. I segmented all responses from the first interviews by student answer and themed the responses per question.

Periodically, I skipped back and forth between documents to determine if commonalities were present between participants. During the second pass through the data set, I began to enumerate common words students used to describe Society X because I could not manage to yet delineate a code set. I identified words of interest: “real-life” and “fun” and began trying to determine the way students were using these words to describe Society X. I looked up meanings of various words in the dictionary to establish an etymological meaning for each word. I also determined a temporal and spatial element seemed present in the data.

I conducted data analysis for about four months following the close of the data collection phase. In the beginning of the study, I believed the study would be about the students’ learning but as the study evolved during data analysis, I began to think the study was more about my development as a teacher. I began to organize the data around my temporal development as a teacher. Viewing Society X as a temporal unfolding of events reinforced my initial assertion that Society X was a complex system. I reorganized data
around my stages of teacher development and began to recognize the influence my past had on my curriculum. I left the data for about two years to work on my dissertation proposal.

When I returned to data analysis in 2014, I transferred the dataset to MAXQDA, a data analysis program. MAXQDA was used to code data, record memos, and perform word/phrase frequency searches. I utilized MAXQDA for the remainder of data analysis. I now had a relatively succinct research question and a research design that helped me to focus on relevant data. I enumerated common words using its word frequency counter. I expanded words into similar phrases and then conducted global searches on the dataset. I created about four sets of coding themes. Each time I could not get my themes to be mutually exclusive nor jointly exhaustive. Still, each time I recoded my data I got closer to finding the actual themes. Here are some examples of early theme sets: (1) relevant, motivating, interactive, chaotic, and organized, (2) beneficial, enjoyable, engaging, and interactive. I noted engaging seemed significant.

I put all the words that described Society X on small pieces of paper. I moved them around into different arrangements to see how they might relate to each other. I did this at least 5 times, taking pictures to refer back later. I then went back and looked at my themes from the previous summer. I continued to reflect on how I could not stop viewing Society X through a design lens and students perception of that design. I noticed there seemed to exist a “real-life” past, present, nascent, and future temporal aspect. I saw descriptions of Society X as a-priori, or resulting from my design or emergent, a product
of my design. I recognized students working together were an efficiency aspect in my design. I considered “ownership” and “responsibility” important elements.

Theming was proving difficult, so I started to read about theories of learning from cognitive science, motivational science, and neuroscience. I knew I wanted to eventually connect what happened in my classroom with theoretical justification to support student learning; so I thought reading some theory might help to draw some division lines in the data. It did. I re-themed my data according to similar theoretical topic: authentic immersion; differentiation; safe and cooperative learning environment; novelty, drama, and extrinsic motivation; and learner autonomy. I then re-themed the data because existing themes were, again, neither jointly exhaustive nor mutually exclusive. Here are the new themes: authentic, immersion; differentiation; positive communication and cooperative community; autonomy and accountability. These themes suffered from the same affliction as the previous so, I abandoned those themes as well.

I went back to my word and phrase frequency counts and chose five words that students used most to describe Society X: “real-life,” “fun,” “hands-on,” “working together/helping others.” I later added “complex.” All the data seemed to code into these categories. Still, I had trouble relating them. I began drawing process-oriented relation charts that depicted Society X from a design perspective: life experiences are brought to the classroom, which in turn interact with student experiences through the curriculum, which combines with motivation and creates an immersive and complex learning experience. I noticed when students interacted with the teacher and with subject matter their interaction could be viewed as overlapping regions of a Venn diagram. I simplified
the experience of learning as the interaction between three variables: subject matter, teacher, and students. In each overlapping region I wrote the applicable design description: the teacher and the subject matter overlapped in the curriculum; the teacher and student overlapped in engagement; the student and subject matter overlapped in knowledge; the center overlapping area was complexity.

I realized when students described Society X, they were essentially referring to these design elements: curriculum is “real-life,” engagement is “hands-on,” knowledge is “useful,” and playing life [complex interaction] is “fun.” By looking at the Venn diagram, I continued to have difficulties separating these themes and eventually ran into the same problem as before: mutual exclusivity. Then I remembered van Manen’s (1990) lifeworld existentials from the research design phase. Each existential fit with an overlapping area in my model: spatial = curriculum; relational = engagement; corporeal = knowledge; and temporal = complex. The existentials provided a rationale for overlapping themes, which often happens when explicating experience:

These four existentials of lived body, lived space, lived time, and lived relation to the other can be differentiated but not separated. They all form an intricate unity which we call the lifeworld—our lived world. But in a research study we can temporarily study the existentials in their differentiated aspects, while realizing that one existential always calls forth the other aspects. (1990, p. 105)

**How are these characteristics holistically related and logically organized?**

Society X is a teacher facilitated learning experience, which means the teacher (me) plays an integral part in how student learning transpires. In this particular educational
paradigm, three minimum requirements are necessary for an instructional experience to occur: a topic of study (subject matter), someone to provide guided instruction (teacher), and at least one person to engage with the instruction presented (students). Figure 3.1 shows the teacher facilitated learning experience as the confluence of three variables: subject, teacher, and student(s). The intersection of each variable or overlapping region can be thought of as lifeworld existentials (van Manen, 1990). Four existentials are fundamental to any phenomenological experience: spatiality, corporeality, relationality, and temporality (ibid, p. 101).

Figure 3.1. Existential experience model: teacher facilitated learning experience with lifeworld existentials as an aggregate of subject matter, teacher, and student(s)

Spatiality is the intersection between teacher and subject matter variables. Spatiality refers to the “lived space” in which a phenomenon exists. In the classroom, the educational lived space or learning environment is largely determined by the curriculum (i.e., enacted curriculum), a planned scope and sequence of learning events synthesized by the teacher’s expertise and subject matter. The curriculum is the schedule of
educational activities with which students will engage over the course of a semester.

Consequently, it is the ubiquitous framework that drives nearly all instruction and establishes the context, or space in which students learn. The data coded into the spatiality category were those student descriptions of educational context directly manifested through the curriculum, or the planned elements of Society X. Students described the learning context as “real-life.” They said Society X was “like real-life” because they had a job, did work, got paid and took responsibility like in “real-life.” This characteristic of Society X was named using both teacher and students’ perspectives of the spatiality lifeworld existential: *the curriculum is real-life.*

*Relationality* is the intersection between the teacher and student(s) variables. Relationality is “the lived relation we maintain with others in the interpersonal space that we share with them” (*ibid*, p. 104). In the teacher-facilitated instructional experience, *engagement* in learning occurs in relation to three variables: teacher, students, and subject matter. Relationality describes the instructional delivery process of the subject matter as a reciprocating, cooperative communication between teacher and students. Therefore, relationality includes how students or teacher engage with subject matter (via the curriculum) and with whom they engage. Engagement in learning can transpire through teacher-student or student-student pairs, small group, or large group arrangements. Data coded into relationality were those student descriptions that described what students and teacher actually did, and with whom and/or with what they did it, to learn the subject matter. Students described these interactions as “hands-on,” “a lot of group work,” and “a lot of helping.” This characteristic of Society X was named using both teacher and
student perspectives of the relationality lifeworld existential: *engagement is hands-on and cooperative.*

*Corporeality* is the intersection between the student(s) and subject matter variables. Corporeality is the “lived body” or embodied experience of the phenomenon (*ibid*). Students understanding or familiarity with the subject matter is what they “know” about the topic of study or their *knowledge* of financial literacy. In the classroom, students learn new material and connect it with their prior knowledge of subject matter, as well as, utilize their prior knowledge to create new knowledge. The data coded into the corporeality existential were those student descriptions of their knowledge of the subject matter. Students used words and phrases such as “useful,” “helpful,” and “need to know” to describe their knowledge of subject matter. Knowledge was divided into perceived knowledge (i.e., what students thought they knew about subject matter), process knowledge (i.e., knowledge students were in the process of forming), applied knowledge (i.e., knowledge students had applied in and out of class), and connective knowledge (knowledge students had connected from class to the outside world and from the outside world to class). This characteristic of Society X was named using both teacher and student perspectives of the corporeality lifeworld existential: *knowledge is useful.*

*Temporality* is the intersection of spatiality, relationality, and corporeality. Temporality is the participants’ subjective perception of passing time for the duration of the phenomenon (*ibid*). Within this existential, all tenses (past, present, and future) are brought together to provide a holistic view of the historical past, the continually developing present contingent upon the historical past, and an evolving future dependent
upon the perceptions of the present. This existential describes the complex evolving nature of playing life in Society X. It is the story of how applied knowledge and interactive engagement unfolds within the educational context. Data coded into temporality were those student descriptions that characterized Society X as a complex system and students’ evaluation of their experience living within the complex system.

Following Axelrod and Cohen (2000) and Johnson (2007), elements of a complex system include: autonomous agents, interaction patterns, iteration and adaptation, ebb and flow of agent actions, and emergent events. Students said that choice and accountability were present in Society X, which was coded as fostering autonomy. Students said they engaged in their work according to classroom and student established protocols; this was coded as interaction patterns. Students said they got faster at their work and developed routines; this was coded into iteration and adaptation. Additionally, a cross-case analysis of each class’s average grade percentage ($n_1 = 77\%$, $n_2 = 81\%$, $n_3 = 84\%$), attendance rate ($n_1 = 91\%$, $n_2 = 92\%$, $n_3 = 91\%$), and homework completion rate ($n_1 = 66\%$, $n_2 = 69\%$, $n_3 = 78\%$) was conducted and presented within the iteration and adaptation section as to show how each class had evolved differently. Students said Society X was sometimes “chaotic,” and “hectic;” this was coded into ebb and flow of work. Students said they had influence to change the system by providing feedback to the teacher; this was coded as emergent events. Students described their experience as mostly positive using words such as “fun,” “interesting,” and “challenging.” This characteristic of Society X was named using both teacher and student perspectives of the temporality lifeworld existential:

*playing life is fun.*
How is this understanding significant for student learning? Once the characteristics were defined and arranged into a holistic relation, data analysis for the final research question transpired. This was also the third criterion for theory level reduction and would signal the end of the phenomenological study. According to Korthagen and Lagerwerf (2001), a thorough understanding of a phenomenon requires the learner to align his or her understanding with scientific research. I decided to first limit myself only to neuroscience, cognitive science and motivational science. I found many pedagogical theories from these areas of research could provide evidence that Society X facilitated student learning; however, many theories existed from which to choose. I eventually focused on neuroscience and motivational science because all the other theories I read about seemed to stem from these two scientific fields. I explained the high level of engagement in Society X was a result of symbiotic reciprocal motivation, a supposition I underpinned using Maslow’s Hierarchy of Needs (Maslow, 1970). I then asserted, according to theories from neuroscience, Society X was an educational environment that optimized memory creation, storage, and recall through brain-based learning strategies according to Willis (2006).

Self-Study Data Analysis. The self-study pertaining to teacher learning processes which resulted from the phenomenological study were guided by the following questions:

1. How did I learn about teaching?
2. What inhibiting/enhancing factors were present during my teacher learning experience?
3. By what process did I deepen my understanding of Society X?
4. How did my analysis of Society X inform my own teacher learning processes?

The same data analysis was used to answer all four questions. Data analysis for the self-study commenced with data analysis for the phenomenological study. Both studies drew insight from the other. However, once the phenomenological study had finished, the self-study continued through reflection on my teacher learning. In general, the self-study was a means to monitor my learning processes over the course of conducting my research and writing the dissertation. Specific data analysis processes begin during interim analysis of the phenomenological study:

I moved from fieldwork to my journals to discussion with the secondary researcher then back to data collection, reflecting on the data in cycles. After data collection ended, during the first and second data analysis pass, I wrote memos, reflections, and reflexive audio and written journal entries. I did the same process again one year after the close of data collection. During these analysis passes I noticed while reading the interviews that I was trying to make sense of what was happening in Society X from a teaching perspective and I would talk about this during the interviews with students.

This is how I eventually came to idea of self-study: I realized my research was gravitating to my understanding of teaching, to my understanding of self. Data analysis continued for two years following the end of data collection. Throughout the study I engaged in dialogue with my dissertation committee as well as internal conversations as to how best to present my reflections and explain my findings. In the second year of data analysis, I continued to write reflection memos as I connected new understanding of
myself as a learner through writing the dissertation proposal. This technique proved useful in explicating my learning process in Chapters 4 and 5 of the dissertation.

Descriptions of my teaching history and explicaded personal dispositions to learning were later built upon in the findings aided to the significance of understanding my learning processes and aiding with transferability of my findings to other contexts.

After the close of the phenomenological study, I pored over my reflexive journals and memos. Within the data and my recollections from my past, I began to see the emergence of my learning profile. As I analyzed my life history and Society X, certain preferences seemed to pop out. Within my reflexive journal I said multiple times, “well, we’ll just try it out and see what happens…” which made me realize I had a preference for trial and error. Society X was a real-life learning simulation but it wasn’t my first, from planning talent shows to music concerts, to designing and managing sets for the play and the points system, all of these learning experiences were holistic and required active, imitative participation. All of these learning experiences were grounded in practice leading up to doing the real thing.

I noticed Society X seemed to fit my personality and I said I felt at home there. I made comments in my journal that my students seemed to be like my colleagues at times and that “sometimes I wish[ed] they really were.” I talked a lot about fairness, influence, challenge, and belongingness. I thought those values were important and that they should be in Society X. I finally found out why when I realized they were basic human needs after reading Maslow (1970). I then arranged my learner profile my thinking processes, personal learning preferences, personality traits, and basic needs. The prominent
characteristics of Society X and how they worked together all originated from my learner profile. I could not believe the impact I had on my students learning. I also validated the research that claimed teachers teach like they prefer to learn. After explicating my learner profile, it appears Society X is my ideal learning environment and that this impacts students’ motivation and cognition.

Managing Threats to Validity

**Researcher bias and reactivity.** Maxwell (2013) cites two major threats to validity in qualitative research: researcher bias and reactivity. Researcher bias occurs when the researcher preconsciously selects results consistent with what he or she wants to find (Johnson and Christensen, 2012, p. 264). While it is impossible to eliminate all researcher bias, Johnson and Christensen (2012) suggest two techniques that can be used to reduce its effect: *reflexivity* and *negative case sampling*. Reflexivity is “self-reflection by the researcher on his or her biases and predispositions” *(ibid*, p. 265). I engaged in reflexivity through the use of both audio and written reflexive journals, which have been shared in the above data analysis and will be further described below. At the onset of data collection, maximum variation sampling was used for the specific purpose of gathering multiple perspectives. Also, during data analysis I actively sought out viewpoints contrary to my own, as made explicit in my reflexive journals. Additionally, alternative perspectives were labeled accordingly and presented in the results.

Negative-case sampling (i.e., disconfirming evidence, negative-case analysis) consists of “selecting cases that are expected to disconfirm the researcher’s expectation and generalizations” *(ibid*, p. 265). Negative case sampling transpired throughout data
analysis. One negative case surfaced. One participant found Society X to be a negative experience. This participant did not engage with the learning experiences, as did the others in the class. He did not appear to enjoy the class; he interacted with others infrequently, and he refused to engage with the teacher and daily lessons. It was known that this participant had fallen into trouble with the law. It is likely his thoughts were consumed by his impending arraignment. It is possible that students exhibiting these behaviors may warrant a look into “at risk” status or an examination of whether their basic needs are being met.

Reactivity occurs when the researcher influences participants or settings within the research contexts (Maxwell, 2013). As with researcher bias, reactivity cannot be eliminated. As the instructor of the class and the primary investigator, my own reactivity is bound to be present. For instance, since I conducted most interviews, students may have felt obligated to speak favorably about the class despite the disclosure on the consent form that truthful responses are encouraged and will not affect their grade in any way. “Bracketing” was used to limit reactivity in the second interview. Additionally, the secondary investigator conducted about half of the interviews in an effort to reduce reactivity. However, participants might feel more comfortable with the primary investigator (me) asking questions as compared to a stranger since I was their instructor for another class the first half of the school year. As part of my philosophy of education, I actively encourage students to disagree with me by having them write notes to me or meet to discuss their concerns to work towards mutual resolution.
The constructivist disposition frames knowledge as personally constructed and situated, and thus inherently intersubjective. The threats to validity mentioned above not viewed to be problematic since I believe the actual collective reality of participants’ perception of Society X has been accurately constructed. Society X was examined from multiple perspectives, using techniques that elicited a broad, grounded, and factual base. I am vested in discerning the most objective reality I can find, otherwise future revisions contingent upon this study’s findings will fail to improve my students’ learning. This validity claim is inherent to self-study research (Pinnegar & Hamilton, 2009).

**Other credibility techniques.** *Prolonged engagement and persistent observation* are two methods that enhance credibility (Lincoln & Guba, 1985) by lengthening and deepening of the researcher’s involvement with participants. My five years of experience with designing and teaching Society X suggests deep familiarity with the model. My frequent revisions of specific situations resulted in a deep understanding of the foundational elements. Nearly all participants were enrolled in a semester course with me during the first half of the year. During that time I made efforts to get to know students on a personal basis (i.e., became acquainted with their interests and abilities) so that I could better assign their job positions in Society X.

As recommended by Lincoln and Guba (1985), I recorded any potential research biases (in addition to field notes) in my *reflexive journal* (written and audio) during data collection and analysis. According to Larrivee (2000), “Journal writing is a reflective process that allows teachers to chart their development and become more aware of their contribution to the experiences they encounter” (p. 296). Nearly every day, immediately
following the last personal finance class, I recorded my impressions of what happened in class in order to better recall critical incidents of the day (Chien, 2012).

First level member checks (Brantlinger, Jimenez, Klingner, Pugach, & Richardson, 2005; Lincoln & Guba, 1985) were employed during and/or immediately following interviews, the focus group, participant journaling, and during normal classroom interaction and dialogue. During interviews I used probes such as, “What do you mean by that?” or “Can you give an example” in order to allow participants to expand upon initially vague responses. Second level member checks were attempted. Each participant was contacted and was emailed a copy of the final characteristics and how they relate. After reading the findings, participants evaluated the following question according to a 5-point rating scale (SA = Strongly Agree, A = Agree, N = Neutral, D = Disagree, SD = Strongly Disagree):

- The description I just read accurately represents my experience of Society X.

SA  A  N  D  SD  comments: ____________

It was hypothesized responses to this last question could draw out any disconfirming evidence, which could then be synthesized into findings. Only one participant replied to the survey: strongly agree.

At least three forms of triangulation (Lincoln & Guba, 1985) were utilized in the study: data, methodological, and investigator. Multiple data sources were obtained (e.g., multiple participant interviews and journals) from numerous data collection methods (e.g., interviews, focus group, participant journaling, researcher reflexive journaling) and collected by multiple investigators. Additionally, an effort was made to include methods
with “nonoverlapping weaknesses and strengths” (Johnson & Christensen, 2012, p. 269). Since data collection from the maximum variation sample could not capture all students’ experiences, alternative opportunities for participants to share their perceptions of Society X were provided. For example, participants could contribute to the end-of-year discussion or mention certain insights in class that could have been recorded in the researcher’s reflexive journal. In addition, participants could engage in these opportunities anonymously. Last, cross-case analyses were performed.

During data analysis peer debriefing (Lincoln & Guba, 1985) was exercised. Peer debriefing is feedback the researcher gains regarding “descriptions, analyses, and interpretations or a study’s results” (Brantlinger et al., 2005, p. 201) from a colleague who is familiar with the phenomenon of interest. Because a dissertation requires the interaction of a committee, peer debriefing occurred with committee members as part of the dissertation writing and defense process. In addition, should someone wish to re-examine the data for accuracy or possible replication, an audit trail exists (Lincoln & Guba, 1985).

In qualitative research, the onus is on the reader to determine the degree to which findings apply in a given setting or how well they transfer to other contexts (i.e., naturalistic generalization, Stake, 1997; particularizability, Brantlinger et al., 2005). Therefore, I was mindful and explicit when communicating procedures, events, and conclusions. Especially in this type of research, the subjectivity of interpretation necessitates a clear and thick description (Lincoln & Guba, 1985) because I may not realize how my pre-existing experiences and hermeneutic processes color my assertions.
Limitations

The primary and secondary investigators were both teachers at the high school where the data were collected. The primary investigator was the teacher of the personal finance classes under study. It is possible students’ responded in ways that were meant to please the investigators despite clear indication that participation in the study would not affect participants’ grades in any way. The attrition rate for the study was 6%. These three students did not affect the composition of the sample substantially. Two of the three were research participants in the maximum variation sample. Their responses in the first interview yielded no new data that was not already present on other participants’ interviews.

Summary

This dissertation study utilized a nested, self-study approach to inquiry. Self-study was used to explicate the primary research question: How can an analysis of one’s self-authored curriculum inform teacher learning processes that facilitate connections between theory and practice? A nested phenomenological study was used for the analysis of the self-authored curriculum. Both studies used the same data set. The following data were collected to explicate characteristics of the Society X learning model and provided the context for thematic analysis: student journals containing weekly reflections for 10 participants; two sets of 12 semi-structured interviews lasting 15 to 45 minutes each; one focus group with 11 participants lasting 45 minutes; researcher reflexive journals (audio and written), data analysis memos, and normative classroom data (e.g., participant job
logs, discussion notes, attendance rates, grades). A data collection timeline can be found in the appendix to Chapter 3.

Data analysis for the phenomenological study included interim analysis, coding and thematic analysis into van Manen’s (1990) four lifeworld existentials: spatiality, relationality, corporeality, and temporality. A model depicting the existentials relationship within the context of the self-authored curriculum (Society X) is provided. Data analysis for the self-study consisted of reflection on the phenomenological study results and on researcher reflexive journals. Validity techniques exercised include: reflexive journaling; negative case sampling; prolonged engagement; persistent observation; first and second level member checks; data, methodological, and investigator triangulation; peer debriefing; audit trail; and thick description. Limitations include researcher as participant-observer and an attrition rate of 6%.
Chapter 4: Results

The purpose of this chapter is to present evidence that the three criteria for theory level reduction have been met. The three criteria are aligned with the following three research questions: (1) What are the prominent characteristics of Society X? (2) How are these characteristics holistically related and logically organized? (3) How is the researcher’s understanding of shared experience significant for student learning? As suggested within the three-level model, answering the following questions will signal level reduction at the theory level, drawing closure to my Society X learning experience.

The chapter will be organized according to the three questions or criteria mentioned above. An exposition of findings for the nested, phenomenological portion of the study will be presented within each section. In addition, reflections on teacher and student learning will be presented in section two as part of the self-study findings. In the first section I will answer the first question by providing data to support the first three of four prominent characteristics of Society X arranged in van Manen’s lifeworld existentials. This section describes each theme as an interaction among subject matter, teacher, and students. In the second section, I will answer the second question by presenting data on the fourth characteristic, which is an intersection of the previous three characteristics. In this section I will explain how the previous three characteristics work together to create a complex perception of “fun.” Within this section I also provide reflections on teacher and student learning. In the third section, I will answer the third question by connecting my understanding of Society X with motivational theory and
neuroscience. The purpose of this last section is to provide an example of how one teacher connected practice to theory.

**Prominent Characteristics of Society X**

This section will satisfy the first criterion of theory level reduction by defining each of Society X’s characteristics. The findings are organized according to three emergent, interdependent characteristics or lifeworld existentials: (1) **spatiality**: the curriculum is real-life, (2) **relationality**: engagement is hands-on and cooperative, and (3) **corporeal**: knowledge is useful. Since lived experience is viewed differently between teacher and students, each characteristic was named by juxtaposition of both teacher and students’ perspectives of each characteristic. Figure 4.1 shows each characteristic overlaid on the existential experience model to provide context for the findings. Each section will contain a description from the teacher perspective and a description from the students’ perspective.

*Figure 4.1. Characteristics in context of the existential experience model*
Spatiality: The Curriculum is “Real-Life.” Spatiality is primarily an interaction between teacher and subject matter resulting in a teacher knowledge artifact called the curriculum (i.e., the planned scope and sequence of learning activities for a course of study). The curriculum is a ubiquitous framework that drives nearly all course instruction and establishes the context, or lived space in which students learn. The data from this study represents the lived experience of spatiality (the curriculum) for teacher and students.

From the teacher’s perspective, the viewpoint of an instructional designer, Society X is a simulation, role-play learning environment that preserves the complexity of how financial matters transpire in real world contexts. From the students’ perspective, Society X is “like real-life.” Figure 4.2 shows the curriculum as a synthesis of teacher expertise and subject matter, perceived by students as “real-life” through their engagement in learning activities and their understanding of subject matter. Students used the phrase, real-life, and similar phrases such as real world, real, life, in life, like life, life-like and reality to describe their knowledge of real world financial reality. Student engagement in learning activities reinforced their vision of reality. So they said Society X was like real-life, referring to the learning environment set up by the curriculum. According to teacher and students, real-life is having a job, doing work, getting paid, and taking responsibility.
Figure 4.2. Curriculum (Spatiality) as an aggregate of teacher and subject matter variables

*Society X is like “real-life.”*

I feel like I am in another world in this class, like I am older and starting my life. The class is like our own little town, a little community. It’s like real life. People have different roles, like their own niche to fulfill. You have a job. You have to do this or else you’re not going to get a paycheck. When you don’t do your homework, you get fined. You get a bonus check for doing extra homework. It’s kind of like you’re an adult now. You have some responsibility. I kinda thought it was gonna be a drag at first, … but it actually turned out to be pretty cool, ‘cause it, I don’t know, you’re playin’ life. We sort of help each other out instead of just like doing it all by ourselves. We use a lot of math to do a lot of stuff, like, budgeting and taxes. Mr. Xenos kind of relates it to the society as we’re going through the chapters. Like today we did opening our checking accounts and he taught us how to write checks yesterday.
know that your notes are going to be applied later so you want to pay attention. []

The things we are learning in this class are … applicable to your life.

Although Society X is a simulation of *real-life*, it does have some real world connections. For example, students’ salaries are based on similar entry-level job salaries in the area. Additionally, students pick *real-life* cell phone plans, cars, places to live, and places to eat and then use these true costs of living to estimate their bills. They also fill out actual tax documents based on their personal salary reported on their individual W2.

**The job.** Each student in Society X received a job. Here a student describes the division of labor:

So, I’ve seen the people who do like, you know, who do the labor jobs and the cops and everyone else making their different amounts of money and you can see that the other people make different amounts of money but it’s OK because everybody wants different kind of work.

Here students’ give their opinion of job appropriation:

You can just tell by the way they’re acting in class that the job description is like the right thing that they need to be doing. [] I think it worked out perfectly fine. Everybody got the right jobs that they were supposed to.

Below various job positions have been paired with a personal aspect that the student shares with his or her job:

- Prefect: I’m going to the army to be a military police officer.
- Banker: I balance my parents’ checkbook, and then when I worked with my dad’s boss, I did payroll, the check booking and all that stuff with him.
Teaching Assistant (indirect comment): [she] helped me with my tax papers at one point. I think she’d be a good teacher… If she’s workin’ on somethin’ and you ask her for help she’ll just put it aside to help you get through it… She’s just a selfless person. That’s the perfect job for her.

Assistant Treasurer to the Minister (indirect comment): [she’s] really good at her job. I can’t imagine how … many hours she’s put into the paychecks, getting payroll out is really a—like, never ceases to amaze me just how much she’s put into it. I think she’s really good.

Students take their jobs seriously. Below a prefect describes what it is like to lay down the law:

There's a set protocol and you have to follow that. I mean, you can't show favoritism if someone's got a pop. You can't just be like, oh, I'm not gonna call them on that, but I'm gonna call the other guy. It- it- it feels like it's a real job.

**Work.** The planned curriculum included many opportunities for students to practice financial literacy concepts. Here students described what practice or what “work” was like:

Constant working. [] We take the class time and [] we work a lot. [] If someone doesn’t get it, there’s always time to, you know, talk to people. [] Between paperwork and going through and trying to figure your job out, really, there’s a lot of practice involved there. [] You have to practice making checks, writing them, making sure everything’s OK; the deposit slip, everything that’s written out that goes to other people. [] It’s a different kind of work. Like, yeah, there’s work
outside, but it’s not like the tedious, you know, like, calculus, like grinding down, like, problem after problem it’s more often this, I don’t know, it’s just like a different kind of work. But, it’s kind of enjoyable to do more than anything.

Here a student describes a typical workday in Society X:

You’d come in and you would always see someone doing their job, like, the assistant treasurer would be writing something out or the banker would be filing more checks that people had been writing for fines

Money. Like real-life, Society X runs on a monetary system that draws on capitalistic ideology to encourage desired behavior and discourage undesired behavior.

This student describes her thoughts on motivation and money:

It’s all motivated by money. Like in real life, you go to work because you need the money, you follow the rules because you don’t have the money to pay the consequences. And in class when you don’t do your homework, you get fined… You know I’m going to stay awake because I don’t want that 20 bucks taken away from me, you know. It does kind of motivate you that money, even though it’s not real life, you just don’t want to be the person struggling to make ends meet in a fictionary class.

Another student echoes similar sentiments about money’s ability to motivate:

You know you, you care more about it because you have a paycheck. You don’t want to go broke, be on welfare, you want to have a car. You want to have everything that you aspire for in reality in this class. So, it makes kids care more
about, you know, about what they’re doing cuz you know they want to succeed.

They don’t want to be the bum guy.

**Responsibility.** Society X is a place where teamwork and responsibility are necessary elements of the learning experience. Below, students describe teamwork and responsibility as the ingredients their community:

I mean, this class kinda brings people together, closer together, ‘cause you have to work as a team. You have to work as a class to accomplish everything.

…
It’s almost crucial that you’re here as much as possible, and you know, not being here, not being at school is almost like missing a day of work; and it just kind of throws everything off.

Here is an exchange I had with a clerk regarding responsibility:

Student: A lot of people just kind of display their- what they’ve learned, just, throughout their actions day-to-day. Like, a couple of my friends have kind of matured a little bit, it seems like, in here. Like, like, Allen, he’s matured a lot. Or, I guess he hasn’t really matured permanently, but, in here, he kinda steps up and does what he has to do.

Teacher: In what way? Like, does he take responsibility, or anything…?

Student: Yeah, he just, he takes responsibility and, you know, he’s held accountable for things that he does and doesn’t do. And otherwise, he would lie about it. Like, “Hey man, did you break my pencil?” “No, I
didn’t break your pen” you know, just stuff like that. I don’t know. It- it kinda forces people to grow up a little bit. Otherwise, they fail.

Here a student refers to Society X as a community based on the above characteristics:

Teacher: Do we have a community in Society X?
Student: Yeah. Yeah.
Teacher: What parts of a community do we have? Or do you see?
Student: Um, just how everyone works together and uh, I know how people come to me if they need help or if they need their binders organized, they come to me, they come to Debbie, they come to Shannon. Um, when I need help on, like, bills or somethin’, all I gotta do is go to one of them high-up people that deals with money… and they help me. That’s what community is, pretty much, helping people, and coming together, and responsibility, and I think we have that in here.

**Relationality: Engagement is “Hands-On” and Cooperative.** Relationality is primarily an interaction between teacher and students resulting in an active, cooperative engagement in classroom learning processes. The presence of relationality is created through teacher-student or student-student pairs, small group, or large group arrangements and results in engagement with the subject matter. The data from this study represents the lived experience of relationality (engagement) for teacher and students.

From the teacher’s perspective, he or she facilitates active, cooperative student engagement in learning via the curriculum and his or her interpersonal expertise by directing practice with subject matter to mimic actual skill performance in real world
settings. From the student perspective, Society X is “hands-on learning,” “a lot of group work,” and “a lot of helping.” Figure 4.3 shows engagement as a cooperative and experience building, teacher-student and student-student interaction perceived by students as “hands-on” through their knowledge of financial literacy. *Hands-on* is the phrase students used most to describe engagement or what they *actually did* to learn about personal finance and in many cases, “learning by doing” took place in cooperation with others. Students used alternative phrasing to further describe *hands-on* learning such as: “more involved,” “actively participating,” “do it yourself,” “real-life experience,” and “discover things yourself.” Both teacher and students perceived *hands-on* to mean student-centered, direct participation in learning that is meaningful and non-traditional, which transpires through student-initiated or teacher prescribed individual or cooperative interactions.

![Figure 4.3. Engagement (Relationality) as an aggregate of teacher and student(s) variables](image-url)
**Society X is “hands-on.”** Hands-on learning is engagement “through doing.”

Here is how students described hands-on engagement with content in Society X:

You actually get to interact with [and] do the stuff you’re learning about [] instead of just you taking notes about it and then you have to find out about it in real life later. [] It’s almost job training. [] At first you don’t know what you’re doing but you learn the ropes.

Here a student equates hands-on learning as frequent practice with subject matter:

I think this class is better because it’s more hands-on. You learn so much better when you’re in here than just by books- by bookwork. Where you’re doing it hands-on, that’s how people learn faster and more. And they learn by- they have to do it over and over again. Like whenever I had to take that test? Over and over again? I learned it cause I had to take it over and over again. You have to do the same stuff in here, like every week, do the same steps over and over again and you learn it better each time.

Hands-on learning was difficult for students to describe. Many times students would describe hands-on learning by comparing it to what it was NOT. Below students assert hands-on learning is the opposite of these classroom instructional scenarios:

You’re gonna take these notes [] straight out of the book, [] crank out these… long tedious math problems, [] then, the next day, we’re gonna do the same thing. A week later we have a test. [] You don’t go over it; you don’t talk about it [] You don’t really put it to use. [] You just have to learn it. [] We’re not gonna need it,
like, algebra, [] geometry, and [] calculus. [] What will we ever use that for in real life?

**Working together.** Students had many opportunities to work with other students. Teaching assistants met with their learning communities before every test to review. Many learning activities such as getting a cell phone plan, determining food costs, getting a car, and doing taxes included times students could work together. Also, paydays were times students could work together. When asked about working in groups, students claimed group work was beneficial to their learning:

I think it helps out a lot. Like, ‘cause when you’re in class, like, everybody’s asking questions to the teacher and you really don’t have time to get to everybody who has questions. And when you’re in separate groups, there’s like five people and everybody can ask a question and everyone can get help on what they need help on. [] Cause I think it’s- it’s from another student’s point of view and another student may understand it and explain it better than a teacher that’s known it for a while trying to explain it… because they haven’t known it for very long and they just learned it too, so they can help the other kids understand it better.

**Helping others.**

This class is more open and you’re allowed to talk … out things with other people and the teacher. Other classes are just like, “OK, you’re gonna do it this way and this is how you gotta do it. You’re not allowed to do it no other way.” And you’re usually- you have to go to the teacher for the help, and you’re not allowed to ask other students.
Everyone helped each other in Society X. One student remarked, “Society X is a good way to help people, when they want it,” indicating help was made available but not forced. Ironically, I tended to take a hands-off approach to encourage more learning (or helping) among students. Here is how students described how I helped them to learn:

We kind of do most the stuff ourselves but he’s there for guidance when we need it. [] You’re more of like the glue that holds us together. [] You interact with us. You help us when we have questions. You help us answer them; you don’t give us the answer. [] I think it’s that you encourage the students to do better. The teachers, they encourage but it’s not like backing, it’s more of like a do this, so you can get a good grade. [] You try to actually make your students understand instead of just saying, “this is it. This is how you do it.” You actually go through and make sure every single individual understands.

Students helped each other out all the time, according to them, more than in other classes. The examples below indicate helping often meant moving around:

I’d be like, “Kari, I don’t know how to do this.” She’d be like, “oh, yeah?” And if she didn’t know, we’d go ask someone, go find out together, so be like, figure it out together. And Connor, like when Paige didn’t know that thing on the banking, whatever, he was like this is what you gotta do. So, everybody helps each other out. Which is better, cuz in most classes you’re all on your own or you work in partners and one of the partner’s the workhorse and the other one’s just dead weight

…
We all go get around and talk to each other… get help from other people if we don’t understand it. Other people come to you for help if they don’t understand it … [and] they don’t just rely on the teacher to give them answers. They know they can go to other places to get answers, if they need them.

The TAs felt assisting others was not always helpful for student learning:

I know there’s a lot of kids out there helping others, but I don’t’ think they actually understand how to help them and not give them the answer.

... People just kind of pass answers around. Like that’s the one thing I’ve seen as a downfall far as they’re just handing answers around. They’re not really learning. I’ll step in every now and again and be like, you need to know how to do it, this is how you do it. That’s how you got your answer. So, you know, do this one I’ll help walk you through it type thing.

On one occasion, a group of students in the early morning class used the monetary system to help their classmate, Jordan, with his problem staying awake in class. Because Jordan slept most days, he had amassed over one month’s pay in sleeping fines within a couple of weeks. Consequently, his bank account was nearly empty from paying the fines, which doubled with each occurrence. One day, during a particularly sleepy day for him, someone in the class suggested a personal challenge: if Jordan could stay awake for two weeks, various students volunteered to pay him individually pledged amounts written and signed in a contract. He agreed. The assistant treasurer kept the contract and the class enforced it to the letter. The class was unforgiving in some respects: for any day he was
absent during the contractual period, they added a day to the end of the contract. Yet, the class also tried to keep him awake when they felt he was slipping. In the end he met the challenge. Below, a student recounts the incident:

The kid stays up all night… can’t just buckle down and decide to go to sleep at, like, ten o’clock so he can stay awake during school. And you know, Society X changed his— you know, changed him a little bit. Well, ‘cause I asked him. I asked him, you know, “I know you sleep in every class. Did that stop because of this class?” And he was like, “yeah, for the most part. I’ve been staying awake and all my grades have came up. And it’s good that this program has that big of an impact. Not just in this class, but, you know, the kid’s overall GPA. That’s pretty good… I’d say that’s probably out- well, out of our class, that’s probably the biggest… success story—just because he went from the sleeping kid to money in the bank.

The secondary researcher for this study, who also had Jordan in her science class, corroborates this student’s recollection. She recalled he “was indeed awake more often toward the end of the semester.” The secondary researcher and I also noticed he socialized more with his peers during class time for the remainder of the year. It was like having a new student in class.

Students helped each other in and out of class in many ways. Students often covered for each other if someone was sick. For instance, at least four bankers and one bill collector came to classes, other than their own, to fill in for a student who was absent for an extended period of time because of illness. Another student assisted three peers in
her class with their taxes before she even started on her own. One teaching assistant reminded a student in her learning community daily to remember to do his homework when she saw him in the school hallways. One student wrote a chronic offender of the law a $100 check because he felt bad the student was getting fined so much that he was nearly broke.

**Corporeality: Knowledge is “Useful.”** Corporeality is primarily an interaction between student(s) and subject matter, which manifests as each student’s knowledge of financial literacy. Students’ financial literacy knowledge provides the context for the teacher to scaffold existing understanding or introduce new material. The data presented in this section represents the lived experience of corporeality (student knowledge) for teacher and students.

From my perspective, students perceive subject matter as relevant and when students connect their understanding of subject matter with the realistic, hands-on practical experience they receive in class, relevancy strengthens. Students said this about financial literacy subject matter: “you can use it; use the information, everyday, in the future.” Phrased in another way: “learning you know you’re going to use later.” Figure 4.4 shows student(s) knowledge of subject matter as a result of personal experience and classroom engagement and indirectly observed by the teacher through engagement with students and the through the curriculum. Students used the word *useful*, as well as similar words and phrases such as *use, help, helpful, need to know, will use, will help* to indicate Society X assisted them to learn important, useful knowledge that will better prepare them for real world application. According to teacher and students, financial management
knowledge was utilized as perceived knowledge, process knowledge, applied knowledge, and connective knowledge.

![Figure 4.4](image)

**Figure 4.4.** Knowledge (Corporeality) as an aggregate of student(s) and subject matter variables

**“Useful” Knowledge.** In general, students believed subject matter was pertinent to living in the real world. Here are a few passages that explain why they believe this:

This class I can actually see myself doing this stuff. The other class you’re like, why do I need to know how many watermelons this person can fit in the back of a truck?

... 

In the future it would directly relate because you learn how, you learn a lot of necessary skills, you know? Balancing checkbooks, the stock market part of it... and without it a lot of graduating seniors would probably just go out in the world with, you know, a blindfold over their eyes.
…

Before I was thinking about personal finance: I don’t need this. I’ll just have a job and put back my money my own way and but now I have a job and I see how actually how hard it is to manage all your money, keep track of it, and buy your own things and still have money left over.

…

Each and every day we learn stuff that we will actually need to know how to do in the real world after we graduate

Students also spoke about numerous interactions they had with parents, family members, friends who’d taken the class, friends who’d graduated, and co-workers who attested to the relevance of having financial literacy knowledge in the real world.

Perceived Knowledge. Perceived knowledge is what students think they know about subject matter. Since many students did not have an opportunity to apply their knowledge in the real world during the class and the focus of this study did not focus on aptitude, students could only speculate about what they knew and how they would make financial decisions in the future. This student talks about what he learned from the final project for the semester, which was a condensed version of the class:

From this project I learned that there [sic] a lot of things to pay for when you live alone. It makes me not want to ever move out of my parent’s house… I learned there are many things to consider when buying houses, cars, and insurance. I have learned great websites and places to find the best deals and I think this project is really going to help me when I go to actually move out. Being a senior and
graduating in a week this project seems pretty real to me. I definitely plan on using this in a few months when I start paying for things on my own. I have learned a lot and really enjoyed this project.

After the course was complete students said they had learned about job specifics related to their career interests, salary, benefits, education level requirements, and location. Students also spoke of the importance of planning and organizing when budgeting, saving money, renting or buying a house, taking on family responsibilities, managing bills, and weighing needs versus wants. The concepts with which they felt most confident were using a checking account, getting a car, and filing taxes. They said dealing with finances is difficult and will take time to develop proficiency. Some students felt apprehensive about moving out on their own; others felt ready to meet the new challenges ahead now that they had experienced real-life in Society X.

**Process Knowledge.** Process knowledge is knowledge construction in process. As part of real-life, hands-on learning students were able to problem-solve in ways that closely resembled adult life. Here a student describes his process for choosing a car:

I was sittin’ here and tryin’ to figure out, ‘cause my budget was off, so I’m tryin’ to figure out how I can get enough money to put into transportation without havin’ to take away from stuff that I need. Like, I couldn’t take anything away from food. So now I have $8 in my savings account, ‘cause I have to transfer all the money from savings into transportation… It’s a lot harder than I thought it would be. Plus, insurance was a hassle… So, I got a Stratus, which, I mean the insurance wasn’t bad on. Full coverage was like 170 bucks.
**Applied Knowledge.** Applied knowledge is knowledge put to real-life use. Some students had the opportunity to apply their knowledge outside of class. One particular student had put considerable thought into college planning and was piecing together a financial management plan using what she learned in Society X as a guiding framework. Here she discusses how she was trying to decide what kind of car she should buy. She can’t have a car in college but she may like to have one when she comes home…

I can’t just find a decent car that I don’t have to have credit for. And what I’m strugglin’ with now is trying’ to find a decent spot to start working on credit, especially with – when I go down to Baltimore State, I work a maximum of ten hours per week, and that’s- that- we get paid lower than minimum wage ‘cause some of it goes towards our education, so what we get back is actually, like, I think 43% of what we actually work, is what we get back. And, uh, so, I’m just- I don’t want to get something that I have to make constant payments on. Like, you know, $250 a month, ‘cause I don’t know, if I’ll be making that much. So that’s when the bargaining come in ‘cause I have to be able to see, well, I can spend this much here, and still be able to put this much into savings, kinda budget my money. And that pie chart and that budget paper? I’ve been kind of thinkin’ about using it, so I know how much- after I get a little while- after I start working at Baltimore State how much I can put away into savings and how much I put away for food, and stuff like that, and that’s how I’m gonna have to look at it.

She continues explaining her future plans for about two more pages of data. She uses her real-life job paycheck and how she budgets her own life now to get an idea of what it will
be like at college. She also talks about how Society X helped her begin saving more in real-life by utilizing a personal budget template from Society X. She says Society X has “made me more conscious of my financial position.”

Students not only applied their knowledge outside of class, they also applied it in class to help others learn course content. Here a student explains how she helped another student with his taxes:

I took mine, and I got theirs, and I based it on mine, of what I put down on mine. Like, the zeros that I put on mine was pretty much the same on theirs. And, I just showed them, like, on the W2s how to pull things in, and then, how to add them and subtract them.

**Connective Knowledge.** Connective knowledge is knowledge formed when students connect the real world with what they do in Society X. Students often imported their real world experiences into the classroom and exported what they learned in class to the real world. Here a couple of students suggested I implement electronic banking in the following year’s class because of its real-life relevance:

Student 1: I think the whole banker thing would be easier on the computer.

Student 2: Use Microsoft Excel or something.

Student 1: But really every job. It’d be easier.

Student 2: Also it prepares us, like if you would do it on a computer, like all our jobs. It prepares us for the real work because that’s what most other jobs are now: computers.
Some students had real jobs outside Society X and found the class had immediate relevance to their lives:

I’ve been working for a while, so I can see how that relates to me that I didn’t know I really needed that ‘til then, um especially with taxes, stuff like that. I’ve learned a lot about my taxes that I hadn’t known before and stuff about my W4 that we had to fill out at work again. Um, calculating from where I’m a manager, I calculate other people’s hours and you have to deal with their salaries and their hours, their payroll occasionally, its stuff like that. So, it really relates to real life.

Students also learned what the real world was like on an emotional level through classroom activities. Here a student talks about what she thinks taxes will be like when she does them for real:

It feels, uh, just the class made it feel real. Like, this is actually what I’m gonna have to do. It’s kind of a head start on it, but the taxes are really stressful.

**Holistic Relation among Prominent Characteristics**

This section will satisfy the second criterion of theory level reduction by organizing Society X’s characteristics into an explanatory holistic relation. The findings are organized according to the fourth emergent characteristic or lifeworld existential: *playing life is fun* (temporality). Temporality is a complex interaction between all other existentials: *spatiality: the curriculum is real-life, relationality: engagement in hands-on and cooperative, and corporeal: knowledge is useful* as they unfold through time. Figure 4.5 shows temporality as the intersection of these existentials.
Figure 4.5. Temporality as an aggregate of corporeality, spatiality, and relationality existentials

The data within the temporal existential represents the lived experience of teacher and students over time. From the teacher perspective the interaction among the first three existentials results in an evolutionary process that includes the following elements: fostering autonomy, interaction patterns, iteration and adaptation, the ebb and flow of work, and emergent events. This description of the teacher perspective is explained in depth and followed with an example in the next two sections. The students’ perspective will be explained in the final section. From the students perspective, playing life is simply “fun.”

Society X is complex. It is difficult to describe Society X as the sum of parts because learning is a complex interaction among students, teacher, and subject matter. Each citizen (i.e., teacher or student) is given a measure of respect and responsibility to act within the laws of the society in a self-regulatory or autonomous way. As citizens
carry out their work they do so according to scripted and unscripted interaction patterns based on job specific duties and personal needs. Society X has a sort of living quality that evolves over time as students and teacher adapt to new circumstances in response to past events and iterating work patterns. Each citizen learns to work more efficiently as he or she gains experience doing his or her work. However, workflow has an unpredictable ebb and flow since interactions are not always explicit. Occasionally, spontaneous events occur in response to culminating circumstances, dialogue, feedback, and/or out-of-system influence. These events are unplanned and can be extreme. Sometimes these emergent events modify how the system behaves as a whole.

**Fostering Autonomy.** The student is the foundational element on which system functionality rests. Students must complete their job-specific duties and follow the rules of the class to receive their full pay and avoid fines. They can also take on additional duties to receive extra pay. Students know their responsibilities, they choose their own actions, and they are held accountable by consistent enforcement of the rules. Students’ freedom to choose to (re)act the way they wish, in a space that respects their right to do so, is called autonomy. I encourage autonomy. I want students to live a little; I want them to see their actions play out into consequences so they can learn from their mistakes. Here is how students perceive autonomy in Society X:

In Society X, it’s just- you don’t HAVE to really do a whole lot of anything, but you, kind of, WANT to do more.

…
I think you do have a choice to work because if you don’t work, then you just won’t get, really, any money for your job and your grade will go down …

You’re given the responsibility, the decision to choose whether or not you’re gonna do your work or screw around and that solely affects you.

Below, a student illustrates how I encouraged autonomy during an episode of conflict:

If somebody has an issue with somebody, or if somebody has an issue with somethin’ that happened, you [the teacher] don’t step in. You let them take care of it and you might end up havin’ to step in but you let them take care of it with time, and you’re not like, “Oh, well, this isn’t gonna happen. You’re gonna do it this way and this person’s right and this person’s wrong.”

Autonomy also extends to respecting the student’s right to carry out their job duties in the way they find appropriate. Here a prefect discusses how he enforces the no drink policy:

If you’re pullin’ it out [the drink], I think it’s a good idea to let one of us know, and you’re just pullin’ it out to get your book out. Um, I guess if you don’t think to tell us, but I can clearly see that you’re not takin’ a drink, you’re just pullin’ somethin’ out, I won’t say nothin’. But, if you pull it out and leave it on your desk for a couple of minutes, I’m sure assuming that you’re not plannin’ on puttin’ it back, and I’ll write a ticket for that. Pull it out, take a drink, I’ll give you a ticket for that. But, uh, I mean, I- I try to be more relaxed about it than I should ‘cause, I mean, accidents happen, slip of the mind, and, uh, leave it by your bag or somethin’. So, if you’re not touchin’ it, I- I don’t tend to do anything about it. I
mean, I’ll let you know to put it away, but I’m not gonna write you a ticket if you’re not drinkin’ out of it; it just happens to be sitting by your bag.

**Interaction patterns.** Autonomy creates variability in workflow. In Society X, workflow occurs according to scripted and unscripted interaction patterns. Writing and depositing checks are the two main scripted processes that drive workflow in Society X:

**Writing a check:** (1) write check → (2) record in checking register → (3) give to payee → (4) payee records check, initials or signs back, forwards check to the bank → (5) bank processes check, puts back in client’s mailbox → (6) client files the check in receipts folder

…

**Depositing a check:** (1) endorse check → (2) fill out deposit slip and add any other checks to be deposited → (3) record amounts separately in checking register → (4) staple with deposit slip on top and forward to the bank → (5) bank processes the transaction, records in bank account, fills out receipt for deposit, keeps deposit and returns receipt to client → (6) client files receipt in receipts folder

Unscripted interaction patterns include talking with someone in class as a job related duty (e.g., paying a fine, asking questions about a paycheck, reconciling with the bank) or choosing an option from an open agenda. On workdays and paydays, an agenda is written on the board from which students may choose their work tasks based on personal preference. Here are some examples of what might be on the payday agenda: deposit paychecks/bonus checks, prefect logs due, attendance monitor log due, pay bills,
custodian overtime, bankers reconcile with clients, organize notebooks (TAs check),
complete makeup work, work on job duties, pay fines, do assigned work, study for test.
In the beginning, I did the Society X payroll. I also wrote bonus checks, wrote fines, and
compiled job descriptions, forms, and protocols for students. Over time, I wrote more
detailed job instructions and gave students more hands-on practice with their jobs before
they actually started performing their duties. I eventually handed the responsibility of
doing payroll and writing bonus checks to a new employee called the assistant treasurer
to the minister.

*Iteration and adaptation.* The variability created by student autonomy in
conjunction with iterative and adaptive interaction patterns caused workflow to take on
an almost living quality with each class having its own dynamic. For instance, first period
worked hard and utilized their time well in class but they did not do much (if anything)
outside of class. This class had the most students of the three classes. Second period was
dysfunctional. This class never really managed to gain the critical mass necessary to
jumpstart their community. Most of the semester was dominated by daily bickering about
fines, which in the other two classes mostly subsided within the first month of the course.
In order to make the society work in second period, most of the students who could take
on two jobs did, since the class was small and attendance was poor. The other side to
doubling up jobs was marginalization of those who were absent frequently, which meant
a good portion of the class never really bought in to the community aspect. Third period
seemed the most functional of the three societies. Students had the highest combined
aptitude of the three classes and were also more responsible. Many students took their
jobs seriously and did a lot of work outside of class. Homework completion and test scores were the highest in this class. The population of this class was between that of the other two classes.

The workflow personality of each class evolved partly in response to students’ increased familiarity in performing their job duties. Through iterative practice and the development of routines students improved their work efficiency. Here is a discussion about the iterative and adaptive development of routines from the students’ perspective:

Aiden: It’s more of a routine, in a- in a sense. Like, you know, you kind of build these things up. It is more routined, I think. You’d come in and you would always see someone doing their job, like, the assistant treasurer would be writing something out or the banker would be filing more checks that people had been writing for fines… Yeah, there’s a routine to it.

Daisy: And the deity of chance comes in every day first thing and does the…

Chloe: Determines fates.

Daisy: Yeah, there you go.

Chloe: … Back to the routine thing, um, I think as we’re both- we’re all learning more and more about our jobs, we’re getting that routine in a little bit better. It’s- we’re slowly expanding our routines, but still keeping the same idea going
Paige: And what I like about, um, Society X is, um, when we’re in there, at first we do our jobs, like, first time being when we get in there, but then we also have lessons about our job so we learn more about it.

Teacher: … Through the practice

Paige: Yes, through the practice.

Amelia: And it ties in with real life again, like, with the whole routine thing.

When you actually have a real job and you’re going to it every day, you need that routine

Chloe: … I think it keeps us organized. It keeps, like, it keeps everybody set on what they have to do and what they need to do to get their job done.

Teacher: How did that routine develop? Where did it originate? Did I set that up, or…

Aiden: I think we’ve just kind of set it up on our own. Like, as you kind of get this, OK I need to do this here, I need to do this now, and it just kind of develops like a personal thing

Paige: I mean, you sort of gave us guidelines at first…

Aiden: Yeah

Paige: … and then we made it our own.

Chloe: I think it started when we got our jobs. When most of us got the jobs we applied for, we knew what we needed to do. We kind of knew our preset responsibilities as we got the job, so we knew how to start it and then the lessons that we learn just help further our knowledge on our job
Teacher: Have you detected a routine Ken?

Ken: Yeah… First thing I always do is check my mailbox and depending on what’s in there… like, let’s say I have checks or something. If I have checks, then I have to go put it in my little whatever it’s called- bank registry and I go from there, I guess

Teacher: So you say you have to. Do you have to?

Ken: Well, I don’t have to, but it helps me out

To summarize, I gave students a structured set of procedures for their jobs, provided students with practice with these procedures, and then through students’ iterative practice they adapted my original procedures into personalized routines.

Workflow patterns would also adapt as a result of rule changes instituted in response to student-teacher dialogue or feedback. I discovered, within this study, that most adjustments I made to Society X were to obtain increased realism and efficiency within the system. Realism and efficiency were tacit design assumptions and I updated Society X when increased realism could be implemented efficiently. Here is an excerpt from my field notes describing my idea of efficiency:

EVERYONE is working. It’s amazing. I’ve been trying to find the right mixture of coursework and engagement and I think I might have figured it out. Let’s take last payday, for instance. The kids ran through payday first: sign check, put it in the checking register, fill out the deposit slip, and take it to the bank. Once they were finished they could do their Society X job (custodians, TAs), pay their bills, organize their notebook (their filing system), reconcile with the bank, or work on
extra practice/credit. I realized when I looked around the room everybody had something to do. Also, if there were questions, I wasn’t the only one answering them. The kids were helping each other. That was nice. When we’re working at this type of efficiency level, we can cover more ground and each kid gets individual attention with his or her specific needs.

Efficiency and realism was often a topic of discussion between my students and I. In order to make Society X increasingly realistic and efficient, I needed student feedback and suggestions. Here are some examples of our feedback exchanges:

Student: I just got to thinking about this, maybe next year, like for the custodian, maybe you could make a list and just like, get someone to do it. Cuz like, I was just thinking, some people might not want to come out and say it.

Teacher: I was wondering what to do with that.

Student: I did [it] a few times, you know, but like no one else did. Maybe if you just made us, everyone, at least once. Maybe that could be a grade.

Teacher: I like that too because, I think when everybody cleans they get a better idea of what’s it’s like … on the ground. Someone has to clean this up.

Student: Or maybe like, they won’t make messes, you know, hopefully.

Here a clerk turned prefect suggests giving students a chance to try out other people’s jobs to help them to understand what it’s like:

Student: You should go through shifts, I think, where everybody gets to at least try out a couple different job areas. That way they understand, you
know? They understand the responsibilities of bein’ a prefect, or what ever other job. ‘Cause if you’re the clerk and you’re always gettin’ fined, you’re gonna be like, “Man, those prefects are a bunch of chumps. You know, they don’t do anything but cost me money.” But whenever you become a prefect, and you see your duties you have, you kind of understand, and suck it up whenever you get fined.

Teacher: It’s about tryin’ to get other people to understand what you’re goin’ through.

Student: Yeah. Yeah, and just understand, you know, take a walk in somebody else’s shoes.

Students began to suggest ways to make the society more realistic and efficient, I, in turn, believed these ideals enriched learning, so I encouraged their feedback and made curriculum revisions when I felt it necessary. This brought students in as co-designers of their learning environment. What has emerged over the years is an evolving curriculum reflecting an increasingly intricate realism.

**The ebb and flow of work.** Since interaction in Society X is never an explicit process, uncertainty existed in how events unfolded. Workflow fluctuated between tame and chaotic with some days or weeks busier than others. On days when few students were present, the work environment might have been uneventful; other days it resembled my description of an efficient, buzzing work space. Times were most chaotic when new concepts were introduced and students had to assimilate them as part of their work. The
beginning and end of Society X were particularly “hectic.” At times workflow reached frantic extremes. Here are some students’ quotes from these chaotic times:

Oh my god, it’s been so hectic! It’s been drivin’ me nuts… a lot of things done at one time. [] It was confusing. [] Like you’re getting hit with all the stuff at once. [] I think a lot of people was lost … people was just like, “huh?” [] Craziness. [] I thought I was going to lose my mind [] You have to rush to get everything put in [your checking account] and then it’s like time to actually figure out what you’re doing: … I’m supposed to be helping him; I’m supposed to be doing this…

From my perspective:

Today was incredibly taxing. I had to get payroll ready for the ATMs in order for them to finish them by Monday… Today was payday. Students were primarily working on taxes. Many of them had questions for me. I had a hard time focusing on pre-payroll because there were so many questions and they weren’t all the same… I made sure to only answer the questions only I could answer. I think that is why it was so taxing; my mind was just worn out from decision fatigue. I like it when I get to work along side the students. It’s nice to have that empathy going around: “I know what you mean, I’m working hard too.”

**Emergent events.** Occasionally circumstances converged to produce emergent events that had the potential to holistically reshape Society X’s functionality and caused the system to evolve into something new. For instance, students believed the prefects were overstepping their authority and watching certain students more than others.
Students began to think the prefects were corrupt. Below a clerk describes what he saw happening:

   Student: I mean he [the prefect] is pretty biased.

   Teacher: In what way?

   Student: Well, like Todd, they’re pretty good buddies. Todd can get away with whatever he wants and Brad as you’ve noticed, by his substantial amount of fines can’t get away with anything… Like, I know Allen made a couple deals with some people, you know, like, here, I won’t fine you if… you know, stuff like that.

Here is the perspective from the assistant treasurer to the minister (ATM):

   I’ve gotten complaints about the prefects, like fining people then doing the same thing … like especially with cursing… The other kids [prefects] be like cursing at them as they’re writing the fines out… They get the basic jobs done, but I think they tend to look at more people, um, I saw Brad the other day and they were like staring him down like waiting for him to speak and something like that, to try and catch him chewing gum or something and I look over at Erica and she’s sitting there chomping away on gum but I can’t really say anything because I don’t have the power to fine anybody unless Mr. Xenos says I can.

The drama surrounding the alleged corruption was starting to consume more and more of class time. So, I allowed the ATM to police the prefects and write fines as needed when they broke the rules. The action seemed to remedy the situation. At the end of the year students felt “the consistency of the prefect job is a lot better.”
Smaller emergent events took place that also had an impact on the society. A few students in second period created a business called Programs X that adapted simple financial formulas into programs for their class calculator, which students could use on tests. TAs brought up in a TA meeting that the pace of instruction was too fast and I needed to slow down. So I did and the TAs monitored my behavior in case I got carried away again. The semester time constraint in Society X was always a chronic issue and the class had always felt rushed. I was reflecting on this with a student during an interview and he suggested I make Society X a yearlong class. The math department at the time was restructuring classes for the next year, so I suggested this and my request was granted: Society X became a yearlong class.

**Complexity in action.** Next, I will provide an example of how Society X dealt with a problematic issue outside of the class (harassment) and how this defining event unfolded as a complex, shared experience between teacher and students.

**History of harassment.** From the students’ perspective, harassment within the school district was not handled properly. Below students share their thoughts:

I don’t remember what grade I was in. It was a few years ago. A kid was bothering me and he just drove me so crazy that I asked the teacher for a restraining order… and then I ended up throwing a chair at him… and I’m not a violent person at all, but when someone bugs you every day, I just can’t take it anymore. And the teachers don’t do anything usually, so it’s like, what are you supposed to do?

…
The school’s just like, oh, somebody did somethin’. Well, put them in ISS and call it a day. But, it doesn’t change what they do or what they think, ‘cause, I mean if they don’t know exactly what they did was wrong, who’s to stop them from doin’ it again?

_Emergent event._ On “harassment Wednesday,” three separate incidents of harassment occurred, one in each of my classes. We had a physical assault in first period, catcalling in second, and destruction of property in third. Here one of the victims describes the incident in third period:

When he cut my book bag I just got that book bag not that long ago! I was like, “Why did you cut my book bag?” I don’t understand why somebody would mess with somebody else’s stuff. I wouldn’t go and cut somebody else’s book bag! I’m just a nice person and it just made me mad. I don’t know why he cut my book bag; it made me sad. I was seriously—I was really mad at him. I didn’t talk to him for a while.

At that point we did not have a class rule for assault, catcalling, and destruction of property. The school principals enforced those rules. Like the students, I felt referring the students to the principal would not fix the problem in class.

_Taking action (autonomy)._ I felt action was needed to assign consequences to the current offenders and to also prevent this issue from happening in the future. So the next day during the school play I went and talked with the school counselor and the vice principal to get their thoughts on how I might resolve the conflict. They said they would not be able to get someone to my class to do an intervention until at least the next week.
That would not work so, I decided to have a discussion with all classes the next day to see if we could write a policy together in which we all could abide.

*Working together to find a solution (iteration).* I brought the issue to the class the next day in a pseudo-town hall meeting. I did not really know how to facilitate a meeting of this type but I gave it a go anyway. First period thought the rule should be “no hitting girls.” I expanded it to “no hitting anyone.” A tiered fining procedure against hitting each other was suggested, we voted on it as a class, and instituted the new class policy. In second period the issue was different and centered more around actual harassment. So, I looked up the definition of harassment and made it part of the policy. We discussed what harassment was in second period and why catcalling was inappropriate behavior. In third period, the policy was mostly in place but a student indicted that everyone should get a copy of the policy and it should be posted in the room. She said she would write it up:
Moving forward. Once the policy was instituted students had to bring their offenders up on charges if they felt the issue had not been resolved by the class discussions. The student who had her book bag destroyed had continual issues with two students throughout the semester. The policy empowered her to address the issue she had been having with them:

Teacher: It was really hard for you to bring him up on charges too

Student: Yeah, it was. ‘Cause they’ve been my friends for a while

Teacher: What made you do it?

Student: Pressure. Sarah’s like, “You need to do it. You need to do it. You need to do it,” and Amy’s like, “Yeah, do it!” I’m just like, “Ugh, whatever. I don’t care.” ‘Cause I know—it was harassment, but I—in the real world,
when somebody’s like, “OK, this person just beat you up, but they’re your best friends. You gonna let ‘em keep beatin’ you up, or you gonna press harassment charges against them? I’m not gonna let them keep beating me up no matter if they’re my best friends. It’s just gonna hurt you more in the long run

Here two students give their evaluation of the harassment policy:

I think it was needed. It made ‘em stop doin’ that stuff… just knowing that there is a law, they won’t do it. ‘Cause they don’t want to get in trouble for it … With the school’s policy, like, you really can’t get in trouble for asking someone what they’re doing on the weekend. Even though it’s annoying, and stuff, but, in this class, you can… I like it ‘cause you just tell ‘em that you’re gonna take their money and it’ll stop ‘em. I didn’t really say anything and they actually came up and said sorry to me… well, Cameron did.

…

I think that the harassment policy in this class is much better ‘cause… kids do it— I mean you get punished for something. [Outside of class], nobody tells you, or nobody explains to you why it was bad, so you’re not gonna know not to do it anymore. Like, with Aaron sayin’ somethin’ rude to somebody, Aaron does that all the time. But, because you guys talked about it, did it happen again? It didn’t happen again ‘cause I think he understood that it was somethin’ hurtful. I think sitting down to talk to him about it… probably prevented the next one from happening ‘cause if not, he would have just kept doin’ it.
The harassment episode occurred at a time when I was exploring democratic education. Since it was difficult to get assistance outside of my class when I needed help, I realized I would be better off working through issues in class with the aid of the students as long as we had some type of structure to work within. The next year I introduced a constitution and bylaws with all the class rules and gave students explicit, protected rights, enforced by the class. Within the document I included a conflict resolution procedure and protocols for conducting class meetings using an abridged version of *Roberts Rules of Order*. I also made sure students were able to amend the constitution as circumstances within our classroom changed.

**Society X is “fun.”** Throughout the course, students frequently commented that Society X was “fun.” The specific usage of the word *fun* varied among students. For some, *fun* described previously mentioned characteristics such as how learning was *real-life*, how they learned in a *hands-on* way, and how these two elements of curriculum together with support from others were *useful* in preparing them for the future. The word *fun* generally indicated something pleasurable, enjoyable, amusing, or playful. Students used words with similar meaning to describe Society X, such as: exhilarating, awesome, great, and happiness. Words such as interesting and challenging also accompanied descriptions of Society X as *fun*. Given the frequency of *fun* in the dataset, together with its diverse usage, students believed, overall, Society X was a positive learning experience. Here are contexts in which students used the word *fun* or similar sentimental variations when referring to Society X:
Society X is fun.

I just like how it’s more real that other classes. Hands-on. And the other ones are, like, write notes and, ugh. It’s boring. And this one’s not. You get to get up and do stuff. I just like that part of it. And you get to learn real stuff! Sorry. I got excited. Like, I can put money into different things and… earn more money. I don’t know, I just didn’t know things like that. Like, CDs, and stuff like that.

…

It’s not as stressful as other classes… I really like the low stress of it. Um, I’ve really enjoyed takin’ the class. Like, it’s just a- been… more fun, more laid-back, it feels… laid back, but you’re still learning. And, that’s really the kind of class that I’ve grown to enjoy, and most people that I’ve talked to have learned to enjoy… They really like this more laid-back, you know, more fun, more of a fun-focused sort of learning, instead of, like, uh, the stresses of additional homework and cranking out, like, 40 problems a night…

Using knowledge in real-life is fun.

When we were doing the 10 percent thing, where you move the decimal over. I can do that… When we go out to eat, I can always tell my dad how much to leave for [the] tip… It’s just fun to do.
Helping others is fun.

We sort of help each other out instead of just like doing it all by ourselves. That, that is so much fun

Playing life is fun.

It’s fun, cause you get to learn how to make sure you manage everything, and it’s kind of a challenge making sure all of the numbers add up to what they have and what you have, and keeping track of everything, making sure you don’t lose anything.

…

It’s a lot of work but I love it. This is my favorite class.

…

From an excerpt in a student’s journal:

On Friday we looked up cell phone bills, and gave them to the banker. On monday we had a work day and finished all our assignments. We learned how to fill out bank reconciliation forms. They were confusing and first but not to bad after you figure it out. I have been filling out checks all week. It takes a while and I mess up a lot but its getting easier. The class prefect wrote countless fines for different things the students were doing. Society X was pretty busy this week but it was really fun.

…

It’s actually fun… ‘cause it’s like real-life and I get a car. I get to pick it out myself and buy it
…

I like the job. I think it’s fun and I don’t know, I feel like a teacher.

…

Working on getting’ the deposits in and getting’ everybody’s accounts right and doin’ our taxes, making sure our taxes are right, and buyin’ a car, all that fun stuff.

…

When we started the first couple of paychecks and everything and then we started getting like, loans and cars and stuff. It got complicated, but it was fun.

…

Why do I do this? Why did I spend hundreds of hours putting this together? Why did I do that? Some of it’s just an element of fun. Like we get to play life. I think that’s kind of fun. [I wrote this in my reflexive journal]

**Significance of Shared Experience for Teacher and Student Learning**

This section will satisfy the third criterion of theory level reduction by explaining how my understanding of Society X is consistent with existing scientific theory. This section provides a rationale for how my understanding of self and of Society X assisted me to bridge my gap between theory and practice. In the first section I will reflect on my experience analyzing Society X through each lifeworld existential and provide a look at my cumulative understanding of self as a product of this dissertation study. These findings are associated with the self-study portion of this dissertation. In the second and third sections I will utilize my current understanding of Society X to substantiate it as a
motivational and cognitively rich learning environment supported by theories from motivational science and neuroscience. I will first briefly explain the reflective process by which I moved from the schema stage to the final theory stage of the three-level model.

I spent three years engaged in an intense analysis of my personal finance curriculum Society X, which began during my pre-dissertation PhD studies when I realized I could not succinctly explain the main features of Society X, how they worked together, why I had chosen to teach personal finance in this way, or what learning benefits Society X provided students. In the early stages of research I was enrolled as a full time doctoral student attending classes, teaching college classes, and teaching personal finance classes at my high school. From this intense learning experience I became reacquainted with the teaching theories of my undergraduate education, but this time found theory to be fascinating and useful. Applying theoretical approaches in my classrooms transpired seamlessly because teaching dominated all aspects of my life and I continually wanted to improve my practice.

At that time, I was working at the schema level of understanding Society X. I had begun to identify scattered groupings of educational concepts and theories that started to explain how learning transpired in Society X but a clear and concise explanation of characteristics, their holistic organization, and theoretical alignment was missing. As my dissertation research progressed I focused my research to fill these “gaps” within my practice. Data collection, data analysis, and writing the dissertation report necessitated a more cerebral introspection beyond tinkering with pedagogical methods through trial and
error in my classroom. It was necessary I engaged in a continual inner dialogue that pushed my investigative capabilities beyond my comfort zone and challenged my understanding of pedagogy, my practice, and myself. Learning was not a solitary experience. Throughout my journey, members of my dissertation committee, my co-researcher, and even my students mentored me through this transformative process. My strong interest to explain how Society X worked and to discover this knowledge for myself, in my own way, sustained my effort to stay the course.

The final criterion for level reduction is to establish consistency with the current understanding of Society X and scientific theory. However, the resulting empirically accurate description of Society X, together with an explanation of the holistic, functional operation of Society X does not itself provided evidence that Society X supports students’ learning. Therefore, I will use my knowledge of Society X to bridge the gap between my classroom practices and the theories that support students’ learning to explain why Society X is a beneficial learning environment for students. From what is known about the prominent characteristics of Society X and how they work together, Society X is a motivational, cognitively engaging learning space for both students and teacher.

Reflections.

Reflection (Spatiality). My main objective in designing Society X was to create a curriculum that would adequately prepare students for their financial future. I knew the road ahead for students would be tough because of my own money management experiences over the years. I wanted to pass on helpful information I had learned in hopes
that students would not make the same poor decisions I had made. In order for students to make sound financial decisions they needed a holistic perspective on the financial world. I believed students needed to feel the emotions behind real world work by experiencing realistic work themselves in a realistic environment, without the real world consequences so they would feel free to try things out. My preference to learn by elaborate imitation naturally gravitated to playing life because that was the context in which financial management was practiced.

Since I am a systems thinker, I designed Society X to work like a system and I revised the system to make instruction to run more efficiently. Once I figured out how something worked, I automated it: I gave it to a student who could handle the task and had them do it, so I could focus on something more interesting. I dispersed the workload among students to free me up from the repetitive, time-consuming tasks I had already mastered which allowed me to refocus on what I enjoyed most: planning curriculum and teaching. It seems rather self-serving but I believe that was my true (albeit selfish) motivation. The positive side for students is that as more work was dispersed to them, it resulted in more opportunities for financial practice and engagement in Society X. Before this study, designing a curriculum in this way for this purpose just seemed like the right thing to do. By making the tacit explicit, I now see the tremendous influence I have had over how students engaged with content and consequently how they form knowledge.

_Reflection (Relationality)._ Helping others is an important value I bring to the classroom. However, it has been difficult for me to determine how much help I, personally, should provide to students, and in what ways I should provide it. It has been
difficult to determine how far I should allow classroom situations to go on before intervening. It has been difficult watching students struggle with a problem while I purposely withhold the answer because I know they have the ability to solve it themselves. It has been difficult enduring statements like, “well, you’re the teacher; aren’t you supposed to be helping me?” as I turn students back to their notes or peers instead of giving them the answer.

Understanding my role and students’ roles within the classroom was a discovery I made through conducting this study. This study has shown me that the expertise I possess is far more complex than simply giving answers. That became clear when my TAs noticed many students wanted to help but some just did not know how. My two degrees in education and the experience of a mid-career teacher brought that insight. Still, high school students are able to do more than I once thought possible; yet, limits exist to the learning assistance they can provide to others. I have spent the last eight years trying to find the right balance between what students can and cannot do to facilitate their own and others’ learning. I believe the key is getting to know each student and to provide them with appropriate opportunities for enrichment that leverages their interests, preferences, and abilities.

Reflection (Corporeality). This study has provided opportunities to not only reflect on my learning but to also reflect on what I have learned about my students’ learning. For instance, I knew the subject matter was relevant to students after the first six months of teaching the class and before that, I knew students would find purpose in learning this material from my own experience. What I did not realize was how many of
my students were already managing finances for themselves and others. I was surprised by how much knowledge of personal finance they brought with them to class and I was happy they were able to use what they knew in the class. For some, the content was being used in their real lives before the personal finance class even began. The real-world experience students brought with them to class reinforced other students’ interest and perceptions of relevance. Before this study, I took for granted how helpful it was to have so many sources of content reinforcement (e.g., parents, family members, friends, coworkers). I never once had to entertain the question, “When will we ever use this in real-life?”

Reflection (temporality). When I first designed Society X, I did not know whether high school students would buy-in to playing life or whether it would be possible for me to manage a system with so many variables. Despite the possibility of potential disaster, I proceeded in the way I do with most of my new innovations: I told students we would just try it out and when we encountered problems we would solve them together as we went. I realized this ideology is consistent with my preference to learn with my students and to figure out things on my own. Since enlisting the help of other professionals within my school was unlikely, my students facilitated my professional development. I think Society X’s ability to manage and ameliorate its own problems is a defining aspect.

This study has deepened my understanding of responsibility. I knew I wanted to teach students about responsibility in Society X but I am not sure I really knew what that meant. I now believe true responsibility is expectations, respect for how students meet those expectations, and consequences that hold students accountable to those
expectations. Students can only learn from their mistakes if they are given the opportunity to see their choices play out. Only then can they see what behavior they should continue and what behavior they should adjust. Many times, a teacher will stop a student if the choice he or she is making will end in a “wrong” answer or “wrong behavior.” It is true that Society X has many intrinsic and extrinsic motivators embedded within it to persuade students to choose more “constructive” behavior but respect for choices off the beaten path exist as well; students just have to live with the consequences of those decisions. I believe, allowing students to discover these consequences through their own choices or autonomously is the essence of responsibility.

Through the explication of my implicit self, I have realized Society X is an extension of my being: my ideological learning space. Before this discovery, I did not realize I had implicitly embedded personally meaningful characteristics such interest, challenge, choice, ownership, fairness, relevance, and relationship subconsciously believing these intrinsic values would strengthen students’ engagement and learning. These unsubstantiated, implicit pedagogical values then manifested within my systems-based instructional design through four lifeworld existentials: *spatiality: the curriculum is real-life, relationality: engagement is hands-on and cooperative, corporeality: knowledge is useful, and temporality: playing life is fun.*

Thus far, I have explained Society X’s origins through an intense analysis of self, explicated the prominent characteristics of Society X and logically explained their relation as a complex system satisfying the first two criteria for theory level reduction. I will now take this understanding and compare what I know about Society X with existing
pedagogical theory to formatively assess its influence on student learning, bringing
closure to my learning experience by bridging the gap between my practice and theory.

Theory. In this section two major theoretical frameworks will be explored to support Society X as a beneficial financial literacy student learning model. In the first, theoretical support from Maslow’s Hierarchy of needs (1970) will be provided to substantiate teacher and student motivation to engage in learning in Society X is heightened because both teacher and students are able to meet many of their basic needs through the complexity of playing life. Engagement is the result of teacher and students’ reinforcing needs-dependent interaction or *symbiotic reciprocal motivation*. In the second, theoretical support from neuroscience will be provided to suggest Society X is a cognitively rich learning space. Although this study does not provide empirical evidence of cognitive change as a result of learning in Society X, it does establish Society X as a form of experiential learning, which according to neuroscience is a beneficial learning context that optimizes brain functionality.

*Symbiotic reciprocal motivation.* According to evidence provided in the previous section, Society X is a highly engaging, shared learning experience for both students and teacher. I posit the high level of engagement is a result of symbiotic reciprocal motivation: a teacher-student motivational feedback loop that leverages numerous, basic needs and iterative human interaction to form a powerful motivational synergy. Engagement is initiated through teacher and student’s pursuit to satisfy his or her personal needs which are readily attainable through teacher-student and student-student engagement. All individuals (teacher and students) are compelled to oblige the other’s
request to engage based on the compelling force to satisfy their own personal needs. The interplay of needs pursuit and satisfaction creates perpetual, dependent, and inertial engagement between teacher and students.

At the core of symbiotic reciprocal motivation is Maslow’s Hierarchy of Needs, the motivational theory that explains why we do what we do (see Chapter 2 for a general overview). Maslow asserted certain conditions were necessary for needs attainment to occur (1970); they are:


I will assume these “preconditions” apply to both teacher and students. The teacher’s work environment largely determines whether these preconditions are met for the teacher. The classroom learning environment established by the teacher almost exclusively determines whether these preconditions are met for the students since “freedom” is regulated by the teacher. The teacher has the opportunity to have his or her preconditions met by both the school and classroom environments. Students do not have this luxury. Therefore, it is important for teachers to recognize the power they wield in establishing a “needs-friendly” learning environment. In turn, the teacher’s ability to create a “needs-friendly” environment for his or her students is dependent upon whether preconditions in his or her work environment have been similarly set up by the district and school administration.
In Chapter 2, I identified the classroom, school, and district level conditions that had been met in my school from Leithwood and McAdie’s list of work conditions that promote teacher self-efficacy (2007). These work conditions closely resemble Maslow’s preconditions for needs satisfaction and will serve as evidence to support those teacher preconditional aspects, which have been met for me. To review and extrapolate, classroom level preconditions were met, school and district level preconditions were mostly met, but each lacked effective communication, collaboration, teacher input in school policies, and administrator follow-through. Since influence and affiliation preconditions were not met, I believe, I sought to establish them in my classroom where I enjoyed almost full autonomy over my instructional design and delivery.

Within Society X, most preconditions for needs assessment were met for many students; they definitely were for me. First, both teacher and students frequently spoke with each other about learning content and working conditions. This helped me revise the curriculum and present a better learning experience for students. Students’ feedback through my implementation sometimes influenced students’ personal work, interaction with others, or rules within the entire society (precondition 1). Second, students and teacher had autonomy: the freedom to make decisions, (re)act (2, 3, 5), apply personal preferences to learning, and follow their interests in the way they felt comfortable (4). For me, that meant freedom to design an elaborate systems-based learning environment, which required constant problem solving and revisions toward increased realism and efficiency. For students, this meant creating personal routines, working with others, and exploring personal interests such as planning for college. Third, Society X’s economic
system provided a structure within which the teacher and class could promote honesty, fairness, and justice through consistent enforcement of classroom rules (9, 8, 7, 6). This precondition was met through student-teacher mutual cooperation or by working as members of a responsible community.

Now that I have shown preconditions for needs satisfaction were established reciprocally between teacher and students in Society X, I will now focus on the basic needs students and teacher had the opportunity to meet within Society X. Maslow (1970) delineated five levels of needs, comprised of over 40 composite needs. Some of these needs were nearly identical to the recently discussed needs preconditions. Maslow explained his reasoning this way: “These conditions are not ends in themselves but they are almost since they are so closely related to the basic needs, which are apparently the only ends in themselves.” For example, the need for law and order could not be met where justice and structure do not exist to be experienced. Therefore, I will not repeat the discussion of preconditions that closely relate to the basic needs, but I will instead assume I have provided evidence that the corresponding basic needs have been met for students and teacher. These are the need for “structure, order, law, limits, … independence and freedom” (ibid, pp. 39, 45). Next, I will choose from the remaining basic needs most pertinent to the learning context: challenge and affiliation.

Challenge is the need to learn for the sake of learning itself (cf. achievement; Maslow, 1970). The need for challenge could be met in Society X in multiple ways. I certainly am challenged to orchestrate and manage Society X. Students could find appropriate challenge through teacher facilitated activities or through their own means as
provided within the learning space. For instance, I appropriately challenged students by assigning them a job they could perform or in which they were at least partially interested. I worked very hard problem solving which job positions fit which students best. In addition, I allowed students to choose the manner in which they engaged with learning activities: according to their personal preferences for learning. Students were also encouraged to explore personally challenging projects such as Programs X, the entrepreneurial venture initiated by three students in second period.

Affiliation or belongingness (Maslow, 1970) is the need to be accepted by others, to be cared for by others, and to provide care for others. Students and teacher meet this need through the numerous cooperation and collaboration opportunities offered within the class. Students and teacher are dependent upon each other to meet this need. Students could work together on projects, help each other with their jobs and course content; they could engage with each other as a result of their job duties or to simply lend assistance when needed. Students could also interact with the teacher to receive help with course content or to provide feedback or suggestions.

Many opportunities exist for students and teacher to meet their basic needs in Society X. I postulate that student motivation to learn in Society X is optimized because both teacher and students are able to meet numerous basic needs within the learning context. I also postulate basic needs are satisfied as a product of teacher and students symbiotic reciprocal motivation, a synergistic energized state of engagement that provides new, self-populating opportunities for needs satisfaction to occur. Said simply, I need students to play life so I can facilitate their learning within an efficient, realistic, and
rich learning environment; students need me to keep the system running so they can have fun playing life and learning personal finance.

**Experiential learning.** The purpose of this section is to briefly provide theoretical evidence to support student learning in Society X. Although there is no universal agreement on an exact definition of experiential learning, there are common phrases that invoke its presence; for instance, “learning by doing” or “hands-on” learning (Roberts, 2012). Society X is an experiential, simulation, and/or community-based learning environment. Learning contexts such as these stimulate students’ multiple senses, which in turn, create multiple memory pathways and linkages to information storage locations within the brain (Willis, 2006). When information is stored in multiple locations, multiple pathways exist which lead to more efficient memory recall (*ibid*). In addition, student problem solving within complex, real-world contexts promotes information retention (*ibid*). Consequently, experiential learning has been linked to higher student achievement scores (Wenglinsky, 2002).

Cumulative and frequent practice with concepts in Society X shortens memory recall time (Willis, 2006). The more information is retrieved, the more efficient learning pathways become making information easier to activate and access. In fact, practice is key to maintaining connections to information because prior knowledge needs to be reactivated and periodically accessed if it is to remain connected with working memory (i.e., “use it or lose it”). When students make emotional connections, personalize, or tie information to previous experience, information is stored into long-term memory more quickly.
Summary

In this chapter I have explicated the shared learning experience in Society X between students and teacher. This evidence satisfies all three criteria necessary for level reduction at the theory level of the three-level model. I have identified the prominent characteristics of Society X and organized them holistically within a relational model which expresses teacher and students’ shared experience as four coexisting lifeworld existentials: spatiality: the curriculum is real-life, relationality: engagement is hands-on and cooperative, corporeality: knowledge is useful, and temporality: playing life is fun. These characteristics function as a complex system that maximizes student-teacher motivational engagement and promotes student learning through brain-based educational strategies supported by neuroscience. In Chapter 5, I will summarize my entire learning experience within the context of the three-level teacher learning model, present conclusions based on an assessment of my professional development, and provide implications for future research.
Chapter 5: Summary, Conclusions, and Implications

Three sections comprise Chapter 5. In the first section, summary of the study, I will provide a brief statement of the problem, explain study procedures, and present specific findings. In the second section, conclusions, I will offer suggestions for professional development derived from my study’s findings that can assist teachers to integrate theory with their practice. The third section, implications, will include a three-step gap-bridging process for teachers, recommendations for educational stakeholders, and suggestions for future research.

Summary of the Study

Statement of the problem. Most teachers utilize little, if any, pedagogical theory in their practice (Korthagen & Lagerwerf, 2001; Zeichner & Liston, 1996). Instead, teachers prefer to select instructional methods based on their personal preferences and past experiences as learners (Argyris, 1990; Brookfield, 1995; Korthagen & Lagerwerf, 2001; Stofflett & Stoddart, 1994). This gap between theory and practice inhibits teachers from discovering whether their instructional methods benefit or hinder their students’ learning. Existing PD literature provides few solutions that specifically target this problem and consequently has had little impact on teachers’ practice in the classroom. Since little is known about how experienced teachers can integrate theory into their practice, I decided to engage in a professional learning experience to fill the gaps within my own practice using a nested phenomenological study within a self-study approach to inquiry in order to inform teacher learning in other contexts.
Procedures for the phenomenological study. The phenomenological study was invoked to satisfy the three criteria for theory level reduction in Korthagen and Lagerwerf’s (2001) three-level model for teacher learning. The following research questions guided inquiry: (1) What are the prominent characteristics of Society X? (2) How are these characteristics holistically related and logically organized? and (3) How is this understanding significant for student learning? Each question was aligned with the three criteria necessary for theory level reduction. I collected normative classroom data from a homogeneous sample of 51 11th and 12th grade students taking my personal finance class in a rural Appalachian high school. From a nested, maximum variation sample (n = 12), I also collected data from student journals, semi-structured interviews, and a focus group. I kept a researcher reflexive journal and created memos during data analysis which included segmenting, coding, enumerating, and theming data into four phenomenological lifeworld existentials: spatiality, relationality, corporeality, and temporality as suggested by van Manen (1990). The fourth existential, temporality, explained how the other three worked together as a holistic relation. These characteristics and their relationship were used to match learning processes in Society X with pedagogical theory supporting student learning according to these processes.

Findings of the phenomenological study. The shared experience of learning in Society X between teacher and students was themed into the four existential characteristics: (1) spatiality: the curriculum is real-life, (2) relationality: engagement is hands-on and cooperative, (3) corporeality: knowledge is useful, (4) and temporality: playing life is fun. The fourth characteristic, temporality, explained how the other three,
spatiality, relationality, and corporeality worked together as a complex system to provide engaging and rich opportunities for student learning. Explicating the prominent characteristics of Society X and their holistic relation satisfied the first two criteria for level reduction at the theory level of understanding. Connecting Society X’s characteristics and holistic relationship with existing pedagogical theory provided support for student learning using the Society X financial literacy educational model and satisfied the final criterion necessary for level reduction. Specific findings are arranged by criterion below.

Prominent Characteristics of Society X.

Spatiality: The curriculum is real-life. Society X is a simulation-role-play learning environment that allows students to authentically explore how financial matters transpire in real world contexts. Students experienced what it was like to have a job, get a paycheck, pay bills, and manage their finances through interaction within a classroom economic community. Each student’s job was carefully fitted to his or her interest and ability and most students took their job seriously, developing emotional attachments and dispositions towards their work as adults might in real-life. Work was frequent, productive, and cumulative. Students spent considerable time in class practicing financial concepts by performing their job duties and by helping each other as a team. Students took responsibility for their own actions and were held accountable by the class monetary system, which motivated students to pine for lifestyles that encouraged living within their means and discouraged unproductive behavior through the issuance of fines for unfinished work or breaking class rules.
Relationality: Engagement is hands-on and cooperative. Via the Society X curriculum or through interpersonal pedagogical expertise, the teacher facilitated student-centered, active, and cooperative engagement with subject matter. The learning activities in which students engaged were non-traditional and meaningful. Students had multiple opportunities to work together in class and helping others was encouraged. Students often moved around the classroom working together, performing their jobs, and scaffolding each other’s learning. Peer-to-peer assistance was not always productive but help was always available in alternative forms including assistance from the teacher. Students helped each other in extraordinary and compassionate ways that enabled others to change their behavior (sometimes radically) to enrich their learning.

Corporeality: Knowledge is useful. The topic of study in Society X, personal finance, is relevant to students’ lives. Students recognized what they were learning was useful to them in the present and/or would be useful in their future. The relevance of financial literacy was reinforced through multiple aspects both in and out of the class. Outside of class, students’ family members, coworkers, and friends attested to the real-world application of subject matter. Relevance was further reinforced as students gained useful knowledge of subject matter in class by problem solving through financial issues independently and with others, by applying their knowledge to their present or future lives outside of class, and through helping others to better understand financial literacy content.
Holistic Relation among Prominent Characteristics.

Temporality: Playing life is fun. Society X is a positive, pleasurable learning space for both teacher and students, but students and teacher have different ideas of what each finds fun. For the teacher, managing and problem-solving the complex learning environment was challenging and gratifying (i.e., fun). Students found the role-play simulation, hands-on learning, helping others, and learning relevant content intriguing, enjoyable, and fun.

From the teacher perspective, the prominent characteristics of Society X worked together as a complex system. The real-life, hands-on, cooperative, and fun aspects of learning were the result of complicated interaction between subject matter, students, and teacher. Teacher and students respected each other’s right to self-regulate their behavior and to act responsibly within the laws of Society X. Students completed their work according to job-specific, scripted protocols and unscripted interaction patterns based on students’ needs and preferences. Over time Society X evolved as teacher and students adapted to changing, iterating circumstances within their work environment. These changes may have resulted from suggestions students made about Society X that the teacher decided to implement or as students developed more efficient work routines. The uncertain, ebb and flow of the learning environment sometimes culminated in an emergent event, which changed how Society X functioned as a whole (e.g., harassment policy). Simply put, Society X is an evolving community of learners that adapts to learner and teacher needs as the course unfolds.
From the students’ perspective, students enjoyed managing their personal finances in Society X despite the amount of work needed to succeed in the class. Students also liked the personalized aspect of learning in Society X. Students could pick out their cell phone plan, choose their own car, plan their own meals, manage their finances their way, work with their choice of peers often, and could become another person for 40 minutes a day.

Significance of Shared Experience for Teacher and Student Learning. By understanding what characteristics defined Society X and how they were holistically related and logically organized, I could then connect the prominent characteristics of Society X with existing theory to determine how Society X supported student learning. In doing so, my understanding of Society X moved to the theory level of the three-level learning model, filling my theory gaps in my practice. Two major theories support learning in Society X. First, Society X is a highly engaging learning environment because both teacher and students have numerous opportunities to meet their basic needs (viz. Maslow, 1970). Students and teacher needs are satisfied through a synergistic engagement state called symbiotic reciprocal motivation, which self-populates new opportunities for needs satisfaction to occur as students and teacher interact. Second, Society X is an experiential learning environment, which maximizes student learning through brain-based educational strategies supported by neuroscience. Since Society X is a multisensory learning environment that incorporates frequent practice and opportunities for students to personalize their learning, student knowledge is created more efficiently, retained longer, and retrieved faster (Willis, 2006).
**Procedures for self-study.** I reflected and chronicled an analysis of my self-authored, personal finance curriculum, Society X using a three-level model of teacher learning and behavior developed by Korthagen and Lagerwerf (2001). I used a nested, self-study research design that incorporated self-reflection and the phenomenological study previously discussed. I utilized the structure of the dissertation to exemplify my learning through each unfolding level of understanding in the three-level model. Each section below is organized by the research questions guiding the self-study inquiry process. Following these questions, I will provide my entire experience learning within each stage of the three-level model.

**Findings for self-study.** In this study I addressed the gap between theory and practice by engaging in a reflective self-study whose purpose was to explicate the theoretical underpinnings of Society X through a purposeful learning experience that resulted in theory-informed practice. Since I had successfully incorporated theory into my practice, I reflected on my professional development history and my learning through the phenomenological study to suggest how teachers in other contexts may bridge their own gaps in their practices. Four questions guided the explication of my learning processes. They are answered below.

**How did I learn about teaching?** Early in my teaching career, I mostly learned about teaching by emulating my past teachers and by trial and error. Later, through my PhD studies and dissertation research, my understanding was informed by pedagogical theory applied in praxis, together with ongoing metacognitive reflection on myself as a learner. My early teacher learning was concentrated on phronetic knowledge about
practice or theories-in-use. My later and most recent experiences with teacher learning still incorporate phronetic knowledge but they also connect with episteme or espoused theories that explain the broader academic knowledge base. I am still a very independent learner. I continue to seek out and initiate my own learning experiences as I did before this study, but now my experiences are increasingly in conjunction with mentors, colleagues, and pedagogical literature.

*What enhancing/inhibiting factors shaped the quality of my teacher learning experience?* The lack of theory-integrative classroom praxis during my formative pre-service education did not allow a tacit utilization of theory in my in-service practice. My in-service professional development perpetuated my exclusive reliance on phronetic knowledge. However, my work environment encouraged autonomy in designing my curriculum the way I felt appropriate, allowing me to tinker with my lessons through trial and error, my preferential methods for learning. Furthermore, I was no longer preoccupied with classroom management, had become more organized, and was able to pursue personally engaging professional development supported monetarily through my school district.

Although my work environment was generally friendly teachers did not collaborate often. This reinforced my isolationist learning and prevented me from gaining alternate insights from others. Additionally, school communication was poor; I had little input in district policy and little control over what happened outside my classroom. So, I focused on learning in my classroom. I was at a point of readiness in my practice to refine my understanding of Society X when I was asked to join a PhD program at a local
university. There, my education incorporated theory into every aspect of my program of study, which I helped to design. At the university, I was able to collaborate and learn with knowledgeable mentors in an environment surrounded by pedagogical research and theory that encouraged deep understanding of learning. I was also able to continue teaching in my classroom as well which allowed for theory-integrative praxis.

*By what processes did I deepen my understanding of Society X?* I have been informally and formally studying Society X for about seven years. In the early years I learned about Society X by trial-and-error and evaluated outcomes based on my personal criteria for how learning should transpire. This method for learning was limited to the knowledge base to which I was bound: my classroom. Before my PhD studies, little new information about student learning penetrated the classroom walls. Unfortunately, students could not recommend pedagogically informed learning techniques to enhance their learning and I never thought to search beyond their recommendations. Without a deeper understanding of learning provided within this dissertation, efficiency and realism would have become my instructional goals in Society X. Instead, through my PhD studies, I was able to evaluate Society X and suggest theory-based revisions that could improve student engagement and learning. Learning about myself has in turn uncovered the motives behind Society X’s design, further explicating my understanding of self. The three-level model and dissertation provided the structure and rigor necessary to help me understand my curriculum and justify my understanding of Society X at a theoretical level to my academic peers.
How has an analysis of Society X informed my teacher learning processes?

Through self-reflection, I have discovered Society X is a manifestation of my ideal learning environment inspired by my thinking processes, personal learning preferences, personality traits, and implicit needs. It is now absolutely apparent how tremendous an impact I have had on the shared experience of learning in Society X. My systems thinking approach to learning resulted in a curriculum that efficiently dispersed the workload appropriately such that each student (and myself) could handle the work, be inspired by the work, and remain busy doing the work. Society X embodied my belief that learning should be holistic, imitative, and active and should transpire through frequent trial and error and cumulative practice with transitioning to performance of the actual skill in context. My curious, extroverted, take-charge personality found its place in a curriculum that allowed me to continually discover new meaning in my work, socialize with others often, and position myself as the architect and coordinator of the learning community. My basic needs for fairness, influence, challenge, and affiliation surfaced through student respect, consistency in applying the rules, elaborate instructional design, and open communication with students. Below is a comprehensive chronicle of my Society X learning experience through each stage of the three-level model.

Experience with Concrete Examples. Society X emerged at a time when my readiness to design engaging curriculum converged with a need to make my personal finance class more experiential for my students. I read *There Are No Shortcuts* by Esquith (2003) in 2007 and decided to transform my classroom into a real-life economic community where students could learn personal finance by managing their own financial
lives within the class. At that time, I had no real justification for incorporating such a learning model into my personal finance class; it just seemed like the right thing to do at the time. I later came to understand that my personal preferences for learning by elaborate, holistic imitation through active participation influenced my choice to adopt Esquith’s system and to continually update Society X to reflect increasing realism and efficiency.

**Gestalt Stage.** I continued to teach personal finance using Society X for three more years when I returned to complete my master’s degree. I revised the lesson-based portion of the personal finance class to incorporate more hands-on, interactive activities but left Society X mostly intact, except to make routine updates. Students, colleagues, administrators, and parents spoke positively about the real-world relevance and constructive student engagement.

**Schematizing.** In preparation for my dissertation study, I reflected on Society X and realized I could not describe my learning model succinctly nor explain how it supported student learning. This became the focus of my dissertation research. During the dissertation proposal writing stage, I recognized my tacit assumptions, instead of theory, guided instruction in my classroom and that my gap between theory and practice was part of a bigger problem in academia. I learned about the potential negative consequences of uniformed practice and set to discover the underlying theoretical structure within Society X to improve my understanding of pedagogy which would in turn, enhance instruction for my students.
Schema Stage. Throughout this entire learning experience I remained teaching in my high school, which presented opportunities for me to try out my new knowledge in my classroom. At the university, I assisted with research, taught college classes, and discussed theoretical concepts with my professors. I did this almost daily, eventually culminating in a surge of relevance, building personal trust that theory and research explained how students learned best. I soon realized theoretical knowledge could help me to diagnose problems in Society X, allowing me to find quick solutions, and to predict the likelihood of future problems from occurring. Pedagogical research and literature started to illuminate why the events in my classroom were taking place. Still, I could not explain how all these positive aspects worked together to improve students’ understanding of financial literacy.

Theory Formation. According to Korthagen and Lagerwerf (2001), teachers exhibiting a theory level understanding of a field can (a) define and logically organize its characteristics, (b) describe each characteristics relationship within the whole, and (c) provide evidence consistent with scientific theory that supports the holistic depiction of characteristics. In order to fully understand Society X at a theoretical level, I designed the phenomenological study previously mentioned to explicate the shared experience of learning in Society X in order to meet each criteria mentioned above. Data analysis for the phenomenological study operationalized reflection, a theory building tool that assisted with transition from the schema level to the theory level of understanding.

Theory Stage. Society X is a teacher-facilitated simulation, role-play learning environment in which students gain useful financial literacy knowledge through
enjoyable, interactive, and hands-on engagement. In Society X, students play life to learn about personal finance. Life in Society X is a complex interaction among students, teacher, and subject matter. Each citizen (i.e., teacher or student) is provided a measure of respect and responsibility to act within the laws of the society in a self-regulatory way. As citizens carry out their work they choose to do so based on job specific duties, economic protocols (e.g., writing a check, cashing check, paying a fine), society rules, and personal priorities.

Society X has a sort of living quality that evolves over time as students and teacher adapt to new circumstances in response to past events and iterating work patterns. Each citizen gains experience doing his or her work and consequently learns to work more efficiently by developing personalized routines. The work environment in Society X has unpredictable ebb and flow since students choose with whom they interact and for what purpose. Occasionally, spontaneous events occur in response to culminating circumstances, dialogue among citizens, feedback from students to teacher, and/or out-of-class influences (e.g., talking with family members, friends, by working a real job). Sometimes these events could result in something small (e.g., Programs X) or sometimes these events can lead to something that changes life completely in Society X (e.g., the harassment policy). Students in Society X are highly motivated to engage in learning activities because the complex learning environment provides multiple opportunities for teacher and students’ to satisfy their basic needs. In addition, since students in Society X learn experientially, they build knowledge the way their brains naturally process, store, and recall information most efficiently.
The experience analyzing Society X has also brought to light better understanding of both the student and teacher roles in the classroom. I was surprised at the experiences students brought with them to the classroom, not just in the form of financial management knowledge but their personalities and interests. Students had talents that enhanced the learning environment and provided relevant personal connections that contributed to the uniqueness of the society. I realized students could do so much more than just follow directions but that limits existed to their ability to provide instructional guidance. Through the study, I also came to view myself as an educator. I was more than someone who simply shared information and evaluated right or wrong answers. I was a subject matter expert, instructional designer, and human relations expert. Furthermore, the expertise I offered was dynamic, adaptive, and evolving based on the personal characteristics of each student and the environment in which they learned.

Conclusions

This exploratory research offers insight into specific elements of professional development necessary to assist experienced teachers to incorporate theory into their practice. The central question to this study is: How can an analysis of one’s self-authored curriculum inform teacher learning processes that facilitate connections between theory and practice? In this section, I will identify the characteristics that were integral to closing the gap between theory in my practice from my professional learning experience analyzing Society X. I will identify from existing literature on professional development those elements present within my self-study that led to a connection of theory within my practice. These suggestions can inform teacher learning in other contexts. Findings
suggest that if teachers are to connect theory to their practice, their professional development experiences should include: (1) a theory-based learning structure with clearly established teacher expectations and accountability measures; (2) extended, intense learning, (3) autonomy and the explication of teacher self-as-learner; (4) mentoring by informed others; (5) theory-integrative praxis; and (6) access to theoretical research and literature.

Theory-based learning. Structure, expectations, and accountability inspire fairness and meet teacher’s need to have consistency and predictability in their learning environment (Maslow, 1970). Expectations help the teacher know with what to do; structure provides a way to do it; and accountability measures provide opportunities for teachers to take ownership of their learning. We know teachers will not gravitate to a theory-informed practice on their own (Hoekstra et al., 2009). I used the three-level teacher learning model developed by Korthagen and Lagerwerf (2001) together with my dissertation to provide structure, expectations, and accountability, but several other learning frameworks exist. In determining an appropriate model, make sure a connection to theory is imbedded within the construct. Self-study and action research are potential inquiry frameworks that center on teachers’ classroom practice.

Extended, intense development. Consistent with Avalos (2011), Postholm (2012), and Villegas-Reimers (2003), professional development should occur over an extended period of time. It is apparent that one-shot professional development opportunities do little to promote lasting changes in teach behavior. We also know it is difficult to change teachers’ practice (Joram & Gabriele, 1998). A paradigm shift such as
this will require learning over an extended period of time. My cumulative learning experience within this dissertation lasted 3 years. The study was intense and required me to wrestle with my own understanding of self, connect with literature outside my comfort zone, and think deeply about my students’ learning; however, not all teachers need to enroll in a PhD program to incorporate theory in their practice. The important take-away is to seek PD that provides ongoing, frequent reinforcement of theory-based instruction.

**Autonomy and the explication of self.** Experienced teachers have a better grasp of their needs in the classroom than pre-service teachers. Necessarily, providing teachers autonomy in choosing their learning activities is essential. The need for teachers to have appropriate challenge in their work is a basic need (Maslow, 1970). The freedom to choose my methods for learning in my classroom, as well as the choices I was given to explore my own learning in this dissertation, were integral for me to remain interested and stay the course. Teachers must first become aware of how they choose their instructional methods and the consequences their unconscious actions create. When teachers make their implicit knowledge explicit (as I discovered) they can become aware of their tacit behavior and realize how their implicit educational beliefs have tremendous effect on student learning in the classroom. Furthermore, they can use their strengths to build curriculum that aligns with their personal beliefs and preferences.

**Mentoring by informed others.** Again, literature suggests teachers do not learn on their own (Hoekstra et al., 2009) and the literature base available to them does not contribute to helping them develop a theory-based inclination in practice (Cochran-Smith & Zeichner, 2005). My program advisors assisted me to navigate the world of theory and
research; without them, I would have been completely lost. Just like my students in Society X needed to be taught how to help each other learn, I needed to be taught how to use theory in my teaching practice. I needed to know it existed, how to access it, how to understand it, and when to use it. Not everyone is qualified to provide that kind of support. Furthermore, my mentors understood my learning objectives and could subtly nudge me back on the path when I strayed too far from my program’s purpose. A colleague, professor, or administrator can provide mentoring support as long as they have mastered the skill or field the teacher would like to better understand.

**Theory-integrative praxis.** Integrating theory into practice takes practice. We know from neuroscience that if information is not utilized quickly, it will be forgotten (Willis, 2006). I achieved full integration of theory and practice through an intense, immersive learning experience in which I was simultaneously enrolled in a full time doctoral program, taught a college level course, and also taught three personal finance classes at my high school. In addition, I was personally invested in understanding Society X, which was the focus of my doctoral studies. Having a place to try out the theory I was learning in college, together with having a collegial environment to share and reflect on my experiences was incredibly beneficial to my learning. Korthagen (2001) endorsed this alternation of learning theory and applying it to practice and suggested it was the only way teachers could come to adopt a theory-based approach to instruction.

**Access to theoretical literature.** Most importantly teachers making the transition to a theory-based approach to instruction need to have access to the literature base. Journal articles assisted me to find specific and credible, information quickly. Also,
interlibrary loan privileges helped me to obtain sources quickly. However, my access was contingent upon my enrollment in college. Many teachers do not have this access. Yet, free online sources exist for teachers to gain access. Google Scholar (www.scholar.google.com) is a search engine that combs through academic books and articles. Some of these articles are provided free online, others require access through a library or by payment. The Institute of Education Sciences (ERIC; www.eric.ed.gov) also provides access to free full text articles as well as links to proprietary works for a cost.

**Implications**

**A three-step gap-bridging process for teachers.** This study presented one example of how teachers can connect their practice to theory, but my professional development (PD) experience may not be appropriate or feasible for other teachers. With this in mind, I will suggest a process using the experiential interaction model from my findings as a diagnostic tool to help teachers bridge their theory-practice divide in a way that considers their individual needs and professional circumstances. The process is comprised of three steps: (1) establishing a zone of focus, (2) choosing a PD mode of delivery, and (3) determining a level of mastery.

**Step 1: Establishing a zone of focus.** In the first step of the process, establishing a zone of focus, teachers examine their practice through the lens of the experiential engagement model. They do this by reflecting on questions regarding their expertise in four areas: curriculum, rapport, relevance, and complexity. The purpose of this exercise is to help teachers invoke a conscious awareness of practice. Currently, many teachers select their methods of instruction subconsciously, based on personal preference not

The experiential engagement model depicts the teacher-facilitated classroom as three interacting entities: the teacher, the students, and the subject matter. The confluence of these three entities forms four potential zones of focus: curriculum, rapport, relevance, and complexity (see Figure 5.1). Because teachers may not be familiar with the terminology used in theoretical literature they may not know where to look to learn more. Therefore, each zone of focus is coupled with a corresponding theoretical literature base: instructional design, classroom management, motivation, and differentiation.

Figure 5.1. Experiential interaction model

Curriculum. The first potential zone of focus, curriculum, is formed by the teacher and subject matter (see Figure 5.1). The curriculum is the scope and sequence of learning activities created by the teacher’s expertise and his or her knowledge of the
subject matter. In the study, students described the Society X curriculum as “real-life,” which meant, their classroom learning activities transpired the way subject matter was practiced in real-world contexts. My ability to create and successfully implement my curriculum was linked to an understanding of my learners’ experiences and abilities, my goals for student learning, the activities I chose to help students meet the learning goals, and the assessment methods I used to determine whether students had met the learning goals using my instructional methods. Teachers can gauge their expertise with curriculum design by reflecting on the following questions:

- Do you know the abilities, interests, and experiences your students bring to the classroom?
- Do you know the objectives for your course or do you know what you want your students to be able to do when the course has finished?
- Do you know what learning activities best scaffold student abilities, interests, and experiences so students can attain course objectives?
- Do you know how to assess whether your students have met the course objectives or whether your instruction was successful?

If teachers find the answers to the questions above interesting or difficult, they may want to further develop their understanding of curriculum design. The systematic, efficient approach to planning, implementing, and evaluating curricula outlined in the above questions is called *instructional design* (Brown & Green, 2011). The instructional design literature base can help teachers plan effective lessons for their students.
Rapport. The second potential zone of focus, rapport, is formed by teacher-student and student-student interaction (see Figure 5.1). Rapport is the relational connection a teacher has with his or her students, as well as, the social environment the teacher sets up for students to interact with each other and learn. In Society X, students said they learned the subject matter by engaging with it directly, in “hands-on” and cooperative ways. These interactions took place because of how I set the tone in the classroom, how I interacted with students to teach the curriculum, and how I facilitated student-student interactions. These classroom attributes are present in safe and positive learning environments (Arends & Kilcher, 2010). Teachers can determine their expertise in developing teacher-student and student-student rapport by reflecting on the questions below. Questions were derived following Arends and Kilcher’s (2010) recommendations for establishing a safe and positive learning environment.

- Do you know if your students feel safe in the classroom? Do you think your students feel they can answer questions in front of the class without ridicule? Do you know if your students feel like the pace of instruction is appropriate?
- Do you have rules in place that are clearly defined and consistently enforced? Do your students follow the rules you have established? Do your students feel that your classroom rules are fair?
- Do you encourage student suggestions? Do you discuss learning and behavior with students?
• Do students have opportunities to work together often with their peers? Do students know how to work cooperatively to both improve understanding of subject matter and to resolve conflict?

If teachers find the above questions interesting or difficult to answer, they may want to further develop rapport between themselves and their students and/or assist students to develop rapport between each other. The establishment of rapport and handling of classroom relations is largely related to classroom management (Emmer & Sabornie, 2014). The classroom management literature base can assist teachers to promote and manage classroom interpersonal relationships.

Relevance. The third potential zone of focus, relevance, is formed by students and subject matter (see Figure 5.1). Whether students find subject matter relevant is determined by their prior knowledge of the subject matter and the usefulness they perceive in knowing the subject matter. In Society X, students said they could readily apply classroom lessons outside of class and could also bring what they knew about subject matter into the classroom to learn more. Students were invested in classroom learning activities because they wanted to learn for the sake of learning, their learning sometimes took place with others, and their interests guided their learning. Teachers can judge their expertise with subject matter relevancy by reflecting on the following questions:

• Do students believe they need to know and understand what you are teaching them?
• Do students believe they are capable of learning subject matter? Do they believe they are appropriately challenged by the learning activities presented in class?
• Do students have opportunities to work with others as they learn?
• Do students receive emotional and social support from you and their peers?
• Do student experiences and interests drive instruction?

If teachers find the questions above interesting or difficult to answer, they may want to work on making subject matter more relevant to students. Students’ personal desire to learn, or reason for engaging in learning, is called their motivation to learn. Students’ motivation to learn is maximized when the answers to the above questions are mostly “yes” (Arends & Kilcher, 2010, Maslow, 1970). The educational motivation literature base can help teachers improve subject matter relevancy so students will engage more frequently with classroom learning activities.

*Complexity.* The fourth potential zone of focus, complexity, is formed when all previous zones (curriculum, rapport, and relevance) interact synergistically. A complex learning environment is student-centered. Students have a measure of freedom to choose what they learn, the way they learn, and with whom they learn. A complex learning environment adapts to meet individual student needs, incorporates students’ prior knowledge, and evolves based on student actions and achievement. Society X is an example of a complex learning environment. Students likened Society X to playing life and they described playing life as fun, interesting, and challenging. Students also explained playing life was a positive experience because the curriculum authentically
simulated real-life, students could explore subject matter in hands-on and cooperative ways, and students felt the knowledge they gained and shared was relevant to their lives.

If curriculum, rapport, and relevance were not well established, I would not have been able to successfully implement a complex, student-centered learning experience in my classroom. Therefore, if teachers have difficulties with curriculum, rapport, and/or relevance, they may not possess a fundamental understanding on which to build classroom complexity. If teachers are confident they have successfully implemented curriculum, developed interpersonal rapport, and provided relevant instruction to their students, they can assess the level of complexity in their classroom by reflecting on the following questions:

- Are students actively engaged in hands-on activities often?
- Is each student challenged at his or her ability level?
- Are students able to pursue their individual interests?
- Can students problem-solve using their own preferences?
- Do students have choice in how they learn subject matter?
- Do learning activities alternate among individual, pairs, small group, or large group arrangements?

If teachers are interested in answering the questions above, they may be ready to make their learning environment more complex. Differentiation is a teaching perspective that encourages student ownership of learning, supports instruction guided by student interest, promotes multiple student learning styles, and challenges students based on their
individual abilities (Arends & Kilcher, 2010). The differentiation literature base can help teachers create dynamic, rich, and motivating learning environments for their students.

**Step 2: Choosing a PD mode of delivery.** In the second step of the process, *choosing a PD mode of delivery*, teachers have selected their area of focus, discovered the corresponding literature base, and are now ready to explore PD options that are appropriate for their learning needs and circumstances. It is necessary to assist teachers with choosing a learning option because even if teachers know what to look for in the literature they may still need assistance integrating the literature into their practice in a way that adequately addresses their area of concern (Hoekstra & Korthagen, 2011; Hoekstra et al., 2009).

Teachers can engage in PD with or without others both formally and informally. If teachers prefer to work with others they may consider exploring their topic of interest informally with a colleague or by forming a professional learning community at their school. Teachers can practice new strategies and techniques and assess their progress by having colleagues observe their classes and give targeted feedback. Teachers can also formally explore their area of interest by attending a workshop or college class. If teachers find it difficult to collaborate with their peers or simply want to explore an area of literature on their own, they could attend a conference or simply read books or articles on their topic of interest. One important note with this option: academic publications necessitate advanced reading comprehension and some academic journals charge fees for access to their materials; however, these fees can be avoided if teachers have access to a university library through, for example, taking a college course.
Step 3: Determining a level of mastery. In the third step of the process, determining a level of mastery, teachers choose a degree of mastery they wish to attain. Teachers can select from three levels of understanding: (1) gestalt, (2) schema, and (3) theory, based on Korthagen and Lagerwerf’s (2001) stages of teacher learning and behavior. When teachers reflect on their own learning goals, they can further develop a conscious awareness of practice and guide their PD based on their own personal needs and values. Teachers may choose the gestalt level of understanding if they want to know how to (re)act appropriately in certain situations. Teachers whose goal is to attain a gestalt level of understanding might, for instance, be interested in a simple one-shot intervention to quickly fix an issue in their classroom. At this level teachers do not wish to understand why the particular intervention was successful. They just need a solution that works.

The schema level of understanding is an appropriate choice if teachers wish to describe what they are doing and why (Korthagen & Lagerwerf, 2001). At the schema level teachers frequently practice the methods they wish to implement in order to identify why the intervention works as it does. Teachers may benefit from reflecting on their experience with others, engaging in peer evaluation, or informally collecting data to gauge their success with the intervention.

When teachers are interested in pursuing a theory level of understanding they wish to formally structure their understanding of a certain concept or field (Korthagen & Lagerwerf, 2001). At this level of understanding teachers have extensive experience with their area of focus and want to internalize their knowledge in order to bring closure to
their learning event. Teachers can engage in academic research to attain a theory level of understanding. Self-study and action research are particularly well fitted for practitioners. Nearby university faculty are usually very willing to collaborate with teachers on these types of projects.

**Recommendations for educational stakeholders.** Closing the gap between theory and practice will require the coordination of many educational stakeholders including: teachers, K12 school districts, higher education learning institutions, state education agencies, and content providers. It is integral teachers undergo a pedagogical shift in their thinking to incorporate theory as a mainstay in their practice because teacher’s unexamined instructional preferences threaten to tarnish the integrity of the teaching profession. If teachers’ actions are not guided by the professional, scientific knowledgebase, teachers risk having their profession taken from them and replaced by the popular ideology of powerful and influential special interests. The previous section can help teachers connect with their professional knowledge base but teachers need help to do so.

Schools and school districts can support teachers’ learning needs by adjusting professional development to center more on teachers’ interests and concerns in the classroom. Schools can foster ongoing, structured PD collaboration sessions among staff and encourage teachers to provide input that can shape teachers’ work environment. It is unlikely districts will be able to provide the type of learning necessary to integrate theory at the level discussed in this paper; however, districts can monetarily support continuing education programs in partnership with universities.
Higher education institutions are well poised to address the theory-practice divide. Higher education faculties have considerable expertise with theory and research. Yet, universities do not always share their knowledge in a way that leads teachers to adopt their ideology. Faculty should be mindful of teacher’s motivational needs for engaging in teacher learning activities. They should provide structured learning experiences that connect teachers with theory in deep, practical ways while giving teachers ownership and autonomy in their learning. University faculty can also mentor teachers through co-research and share their individual perspectives for the benefits of understanding practice.

Educational agencies such departments of education have increasingly adopted a more “evidenced-based” approach to federal and state policy, which has had some effect on getting teachers to utilize theory in their practice. However, the way policy has been implemented has again been through short, one-shot professional developments that have little impact on teacher behavior. DOE’s know when teachers derive their educational methods from sound theories and research, it improves teaching practice and subsequently, student learning. This is a fact in which teachers need to believe because teachers want to teach their students in the best way possible. They would not want to hinder student learning, but that may, in fact, be doing just that. DOE’s have a responsibility to their students to impress upon teachers the importance of understanding their practice through a theoretical lens however, as with my suggestions for higher education, these agencies need to meet teachers where they are in their practice and support their needs accordingly.
Content and professional development providers should be qualified to provide dynamic and specialized theory integrative PD. Entities providing such interventions should possess extensive teaching experience in both the K12 and college setting as well as possess a terminal degree in education. Curriculum considerations should be drawn from the above recommendations in the conclusions section.

**Suggestions for future research.** This study explained the theoretical underpinnings of Society X; however, it did not examine aptitude change as a result of the Society X intervention. A full program evaluation could provide evidence to support Society X as a curriculum that could improve financial literacy understanding among high school students. Future research could also provide further insight into whether symbiotic reciprocal motivation is a teacher disposition or whether it can be facilitated through professional development. In summary, this research can serve as a springboard for the development of new metacognitive approaches for teacher learning, teacher diagnostic tools for addressing pedagogical expertise, financial literacy curriculum design, and motivational approaches to instruction that support both teacher and student learning.

**Study Summary**

The purpose of this research study was to provide an example of teacher learning “in action” that bridged the gap between theory and practice in order to inform processes for teacher learning in other contexts. Most teachers utilize little, if any, pedagogical theory in their practice. Instead, they select instructional methods based on unconscious personal preferences and their past experience as learners. The gap between theory and
practice is problematic because teachers’ unconscious preferences might be incongruous with the ways their students learn best. Insufficient research exists on how teachers’ unconscious preferences can be made explicit in order to foster a theory-integrative practice.

A nested, self-study research design using Korthagen and Lagerwerf’s (2001) three-level teacher learning and behavior model was used as a guiding framework to advance and capture a comprehensive teacher professional development episode to explicate the teacher’s unconscious instructional preferences and connect his teaching practice with pedagogical theory. The teacher-as-researcher reflected on his experience designing, teaching, and analyzing his personal finance curriculum, Society X. Self-study and a nested, phenomenological study provided data to completely explicate and exemplify the teacher’s learning experience. Findings suggest that if teachers are to connect theory to their practice, their professional development experiences should include: (1) a theory-based learning structure with clearly established teacher expectations and accountability measures; (2) extended, intense learning, (3) autonomy and the explication of teacher self-as-learner; (4) mentoring by informed others; (5) theory-integrative praxis; and (6) access to theoretical research and literature. Implications for future curriculum design, development, and implementation are provided.
References


Appendix A: Participant Consent Documents

1. Project Introduction Script
2. Adult Consent Form for participants of 18 years or older
3. Parent Consent Form for participants under the age of 18
4. Assent Form for Participants Under 18 Years Old
Project Introduction Script

Hello Everyone. Mrs. Swiatek and I would like to invite you to participate in a research study. We are interested in how you describe, conceptualize, and justify your perceptions of learning as you take this personal finance class and participate in Society X. We are asking for your help because we would like to know how you describe your learning experience as opposed to how it is measured by a test or homework assignment.

If you agree to participate in the study you may choose to do nothing above and beyond normal assigned classwork, homework, tests, quizzes, and projects. If you would like to be more involved with the study you may, in addition to the above activities, volunteer to be interviewed, participate in a focus group, or keep a personal journal reflecting your experiences regarding learning in Society X.

You can ask questions about the study whenever you want. Do you have any questions or concerns right now? If at anytime you do not wish to provide your information, you can ask us to stop. If you would like to withdraw from the study you may do so at anytime.

Choosing to participate in this study will not benefit your grade. Also, choosing not to participation in this study will not harm your grade. Being in this study (providing information about your perceptions of learning in Society X) is up to you, and no one will be upset if you choose not to participate.

You might be wondering if there are any risks involved by participating in this study. The answer is no. No risks or discomforts are anticipated.

You may also be wondering if there are any benefits associated with this study. It is possible that the nature of the study’s questions and your articulation of the answers will help you reflect on your learning experiences in a way that will prove beneficial to you. Additionally, the findings from the study may lead to improvements in student attitudes and motivation towards learning.

Do you have any questions or concerns about the study?

OK. We will now pass out the consent and assent forms. These are the forms you and perhaps your parent or guardian will need sign in order for you to participate in the study. However, Please do not sign any of these forms during this class period. Take the forms home with you, review them, and return them tomorrow signed or unsigned.

If you are 18 years or older please raise your hand. [pass out the adult consent form] If you are 18 years or older this will be the only form you need to sign should you choose to participate in the study. If you are willing to participate in this study, take this form with you, review it and sign it. Please bring the signed consent form back to class tomorrow.
Are there any questions?

If you are under the age of 18 please raise your hand. [pass out the parental consent and student assent forms]. If you are under the age of 18 you will receive a parental consent form and an assent form. Your parent or guardian will need to sign the parental consent form and you will need to sign the assent form in order to participate in the study. If you are willing to participate in this study, please give both forms to your parent(s)/guardian(s), and ask them to review and sign the parental consent form if they agree to allow your participation in this study. If you are willing to participate in the study, sign the assent form. Please return the signed consent and assent forms to class tomorrow.

Are there any other final questions?

OK. Thanks for listening. Mrs. Swiatek and I look forward to working with you in the months ahead.

**Ohio University Adult Consent Form**

**Title of Research:** Society X: The Experience of Learning in a Complex System  
**Researchers:** Anthony Xenos, Laura Swiatek

Dear Interested Participant:

You are being asked to participate in research. For you to be able to decide whether you want to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks of the study. It also explains how your personal information will be used and protected. Once you have read this form and your questions about the study are answered, you will be asked to sign it. This will allow your participation in this study. You should receive a copy of this document to take with you.

**Explanation of Study**

The purpose of this study is to discover how you describe, conceptualize, and justify your perceptions of learning while taking personal finance using the Society X curriculum. If you agree to participate you may choose the degree to which you would like to be involved in the study. You may choose to do nothing above and beyond normal assigned classwork, homework, tests, quizzes, and projects. If you would like to be more involved with the study you may, in addition to the above activities, volunteer to be interviewed, participate in a focus group, or keep a personal journal reflecting your experiences regarding learning in Society X.
Risks and Discomforts

No risks or discomforts are anticipated.

Benefits

It is possible that the nature of the study’s questions and your articulation of the answers will help you reflect on your learning experiences in a way that will prove beneficial to you. The findings from the study may lead to improvements in student attitudes and motivation towards learning. Choosing to participate in this study will not benefit your grade. Also, choosing to not participate in this study will not harm your grade.

Confidentiality and Records

Any identifiable data will be unavailable to anyone outside this research study. Data will be stored in a password protected private online storage location. Non-digital data will be stored in a locked cabinet, and only investigators will have access to the data. The data will be destroyed five years from the study start date: February 28, 2017.

Additionally, while every effort will be made to keep your study-related information confidential, there may be circumstances where this information must be shared with:
- Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
- Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU.

Contact Information

If you have any questions regarding this study, please contact Anthony Xenos at this email ax823092@ohio.edu or this telephone number: 740-596-5258 ext. 270. You may also contact Laura Swiatek at ls159110@ohio.edu, 740-596-5258 ext. 277. If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740) 593-0664.

By signing below, you are agreeing that:
- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered
- you have been informed of potential risks and they have been explained to your satisfaction.
- you understand Ohio University has no funds set aside for any injuries you might receive as a result of participating in this study
- you are 18 years of age or older
- your participation in this research is completely voluntary
• you may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to which you are otherwise entitled.

Signature________________________________________________________ Date________

Printed Name____________________________________________________

Version Date: 01/26/12

Ohio University Parental Consent Form

Title of Research: Society X: The Experience of Learning in a Complex System
Researchers: Anthony Xenos, Laura Swiatek

Dear Parent of Guardian:

Your child has been invited to participate in research. To help you decide whether you want your child to participate in this project, you should understand what the project is about, as well as the possible risks and benefits in order to make an informed decision. This process is known as informed consent. This form describes the purpose, procedures, possible benefits, and risks. It also explains how your child’s personal information will be used and protected. Should you have any questions, feel free to contact either Anthony or Laura, whose contact information is given at the end of this form. Once you have read this form and your questions about the study have been answered, you may decide whether to sign the form allowing your child to participate in the study. You should also receive a copy of this document to keep for your records.

Explanation of Study

The purpose of this study is to discover how your child describes, conceptualizes, and justifies his or her perceptions of learning while taking personal finance using the Society X curriculum. If you agree to allow your child to participate, s/he may choose the degree to which s/he would like to be involved in the study. S/he may choose to do nothing above and beyond normal assigned classwork, homework, tests, quizzes, and projects. If s/he would like to be more involved with the study s/he may, in addition to the above activities, volunteer to be interviewed, participate in a focus group, or keep a personal journal reflecting his/her experiences regarding learning in Society X.

Risks and Discomforts

No risks or discomforts are anticipated.
Benefits

It is possible that the nature of the study’s questions and his/her articulation of the answers will help him/her reflect on his/her learning experiences in a way that will prove beneficial to him/her. The findings from the study may lead to improvements in student attitudes and motivation towards learning. Choosing to allow your child to participate in this study will not benefit your child’s grade. Also, choosing to not participate in this study will not harm your child’s grade.

Confidentiality and Records

Any identifiable data will be unavailable to anyone outside this research study. Data will be stored in a password protected private online storage location. Non-digital data will be stored in a locked cabinet, and only investigators will have access to the data. The data will be destroyed five years from the study start date: February 28, 2017.

Additionally, while every effort will be made to keep your child’s study-related information confidential, there may be circumstances where this information must be shared with:

- Federal agencies, for example the Office of Human Research Protections, whose responsibility is to protect human subjects in research;
- Representatives of Ohio University (OU), including the Institutional Review Board, a committee that oversees the research at OU.

Contact Information

If you have any questions regarding this study, please contact Anthony Xenos at this email ax823092@ohio.edu or this telephone number: 740-596-5258 ext. 270. You may also contact Laura Swiatek at ls159110@ohio.edu, 740-596-5258 ext. 277.

If you have any questions regarding your rights as a research participant, please contact Jo Ellen Sherow, Director of Research Compliance, Ohio University, (740) 593-0664.

By signing below, you are agreeing that:

- you have read this consent form (or it has been read to you) and have been given the opportunity to ask questions and have them answered
- you have been informed of potential risks and they have been explained to your satisfaction.
- you understand Ohio University has no funds set aside for any injuries you might receive as a result of participating in this study
- you are 18 years of age or older
- your participation in this research is completely voluntary
- you may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you and you will not lose any benefits to
which you are otherwise entitled.

Child’s Name: ________________________________________

Signature of Parent or Guardian: ______________________ Date___________

Printed Name of Parent: ______________________ Relationship to Child: ___________

Version Date: 01/26/12

Ohio University Assent Form for Participants Under the Age of 18

We are interested in how you describe, conceptualize, and justify your perceptions of learning while taking this personal finance class and by participating in Society X. We are asking for your help because we would like to know how you describe your learning experience as opposed to how it is measured by a test or homework assignment.

If you agree to participate in the study you may choose to do nothing above and beyond normal assigned classwork, homework, tests, quizzes, and projects. If you would like to be more involved with the study you may, in addition to the above activities, volunteer to be interviewed, participate in a focus group, or keep a personal journal reflecting your experiences regarding learning in Society X.

You can ask questions about the study whenever you want. If at anytime you decide not to provide your information, you can ask us to stop. If you would like to withdraw from the study you may do so at anytime.

All the information we collect will be stored either in a password protected online storage location or in a locked cabinet. No one outside of the research team will have access to your information. All information collected for this study will be destroyed February 28, 2017.

If you sign this paper, it means that you have read this and that you want to be in the study. If you do not want to be in the study, do not sign this paper. Being in this study (providing information from your personal finance class about your perceptions of learning) is up to you, and no one will be upset if you choose not to participate. Choosing to participate in this study will not benefit your grade. Also, choosing to not participate in this study will not harm your grade.

Your Signature: ______________________ Date:____________

Your Printed Name: ______________________ Version Date: 01/26/12
Appendix B: Approval Letter of Consent

January 20, 2012

Dear Ohio University IRB Reviewers:

On behalf of Vinton County High School (VCHS), I would like to inform you that we have agreed to provide necessary support to conduct Anthony Xenos’s research study. We understand the study will investigate learning experiences in Anthony Xenos’s three personal finance classes. We have agreed to the following statements:

- Contingent upon the consent or parental consent (if under the age of 18) of the involved participants, Anthony Xenos and/or Laura Swiatek are allowed to collect data involving interview, focus group, participant observation, and
- Anthony Xenos and Laura Swiatek have permission to access student information such as ordinary classroom data (e.g., assignments, quiz grades, projects, etc.), standardized test scores, attendance reports, and discipline referrals as long as the identities of all students are kept confidential.
- The study will be conducted at VCHS during normal school hours.
- We reserve the right to terminate our support anytime when it is necessary.

Please feel free to contact me if you have any questions regarding this matter via phone at: (740) 596-5258 or via email: kevin.waddell@vinton.k12.oh.us

Sincerely,

Kevin Waddell
Principal
Vinton County High School
Appendix C: Institutional Review Board Documents

1. Approval of Research
2. Amendment Form
3. Periodic Review Form 2012
4. Period Review Form 2013
The following research study has been approved by the Institutional Review Board at Ohio University for the period listed below. This review was conducted through an expedited review procedure as defined in the federal regulations as Category(ies):

Project Title: Society X: The Experience of Learning a Complex System

Primary Investigator: Anthony John Xenos
Co-Investigator(s): Laura Swiatek

Faculty Advisor: John Henning

Department: Teacher Education

Rebecca Cale, AAB, CIP
Office of Research Compliance

01/27/12
Approval Date

01/26/13
Expiration Date

This approval is valid until expiration date listed above. If you wish to continue beyond expiration date, you must submit a periodic review application and obtain approval prior to continuation.

Adverse events must be reported to the IRB promptly, within 5 working days of the occurrence.

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.
The amendment, detailed below, and submitted for the following research study has been approved by the Institutional Review Board at Ohio University.

**Project:** Society X: The Experience of Learning a Complex System

**Amendment:** Waive consent for collection of normal educational activities

**Primary Investigator:** Anthony John Xenos

**Co-Investigator(s):** Laura Swiatek

**Advisor:** John Henning

**Department:** Teacher Education

__Rebecca G. Cale__
Rebecca G. Cale, AAB, CIP
Office of Research Compliance

**Protocol Expiration Date:** 1/26/2013

Date: 2/28/12
The following research study has been approved by the Institutional Review Board at Ohio University for the period listed below. This review was conducted through an expedited review procedure as defined in the federal regulations as Category(ies): 7

**Project Title:** Society X: The Experience of Learning a Complex System

**Primary Investigator:** Anthony John Xenos

**Co-Investigator(s):** Laura Swiatek

**Faculty Advisor:** John Henning

**Department:** Teacher Education

Rebecca Cale, AAB, CIP
Office of Research Compliance

11/26/12
Approval Date

11/25/13
Expiration Date

This approval is valid until expiration date listed above. If you wish to continue beyond expiration date, you must submit a periodic review application and obtain approval prior to continuation.

Adverse events must be reported to the IRB promptly, within 5 working days of the occurrence.

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.
The following research study has been approved by the Institutional Review Board at Ohio University for the period listed below. This review was conducted through an expedited review procedure as defined in the federal regulations as Category(ies): 7

Project Title: Society X: The Experience of Learning a Complex System

Primary Investigator: Anthony John Xenos
Co-Investigator(s): Laura Swiatek

Faculty Advisor: John Henning
Department: Teacher Education

Rebecca Cale, AAB, CIP
Office of Research Compliance

Approval Date 9/16/13
Expiration Date 9/15/14

This approval is valid until expiration date listed above. If you wish to continue beyond expiration date, you must submit a periodic review application and obtain approval prior to continuation.

Adverse events must be reported to the IRB promptly, within 5 working days of the occurrence.

The approval remains in effect provided the study is conducted exactly as described in your application for review. Any additions or modifications to the project must be approved by the IRB (as an amendment) prior to implementation.
Appendix D: Interview Schedules

1. Participant Journal Prompts
2. Interview Sample Questions
3. Focus Group Sample Questions
Participant Journal Content & Prompts:

• Participants will log their descriptions of events in Society X. What happened in Society X today?
• Participants will reflect on their learning and others’ learning in Society X. Did you learn anything or witness others learning in Society X today?

Interview Sample Questions

• *When did you first learn about Society X?
• *Why did you sign up for the class?
• *Do you talk about Society X outside of class? With whom? What do you talk about?
• *How do you describe learning? What does it look like? How do you know learning is taking place?
• How do you describe learning in Society X? What does it look like?
• Describe the first couple of weeks in Society X. What did it feel like?
• If you were to describe Society X to someone how would you describe it?
• What was your most memorable moment in Society X?

*Indicates questions for use in the first interview.

Focus Group Sample Questions

• *What is it like being a member of Society X? What is like being a [attendance monitor, banker, policeman] in Society X?
• *Describe a typical day in Society X?
Appendix E: Data Collection and Analysis Timeline for Chapter 3

- Data Collection (IRB Approval to begin research 1/27/12)
  - Researcher Reflexive Journaling (1/30/12 - 7/5/12)
  - Consent forms to participants (2/3/12)
  - Student Journaling (2/6/14 - 4/13/12)
    - 1st prompt (2/6/12 - 2/17/12)
    - 2nd prompt (2/21/12 - 4/13/12)
  - Interviews
    - 1st (2/10/14 and 2/17/12)
    - 2nd (4/16/12 - 4/23/12)
  - Focus Group (2/24/12)

- Data Analysis
  - Interim Analysis (2/10/12 - 2/24/12)
  - Data analysis after close of data collection (5/15/12 - 8/1/14)
    - Memoing during this period