PREPARING MILITARY LEADERS: A NARRATIVE INQUIRY EXPLORING HOW SENIOR ENLISTED LEADERS UNDERSTAND THEIR LEARNING AS THEY TRANSITION FROM A TECHNICAL ROLE TO A MORE STRATEGIC LEADER ROLE

A thesis presented
by
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This thesis is dedicated to

the Service men and women who serve their country

and the families who sacrifice to support them

so that all may know the joy of freedom.
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Abstract

This narrative inquiry explored how Senior Enlisted Leaders approached learning while they attended an education-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role. Participants were military students averaging 18 years of service with varied educational backgrounds. The study used Bandura’s (1986) social cognitive theory and Illeris’s (2003) three dimensions of learning to examine the comparative nature of the participants’ learning in training (how to do) and in educational (how to think) situations. Semi-structured interviews with 15 volunteers in individual and in small-group settings allowed the participants to express how they understood their learning in both training and in educational situations. Their stories were transcribed and subsequently analyzed using NVivo 10 software. Inductive analysis revealed six themes which, when taken together, can be used to model learning in both training and educational situations. Key findings highlight commonalities and differences between training and education, the role of discipline in education, and the central role of emotion in human learning. The study concludes with a proposed model that can comprehensively examine training and educational forms of human learning.

Keywords: NVivo, leader development, study groups, training, education, narrative inquiry, qualitative study, inductive analysis, triune brain theory, social cognitive theory, cognition, emotion, schema, information processing theory, adult learning, learning and behavior theory.
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CHAPTER 1 INTRODUCTION AND CONTEXT

This doctoral thesis centers on preparing military leaders for their futures. Specifically, it focuses on Navy Senior Enlisted Leaders (SELs) who are transitioning from a narrow technical role to a broader leadership and strategically-oriented role, and the learning challenges associated with making this transition. This chapter begins with a brief overview of the research context, discusses the research problem, identifies the guiding research questions, sketches the theoretical framework that will inform the inquiry, and overviews the research plan. The chapter concludes by highlighting the significance of this study and identifying a list of key terms.

Context Overview

This study is about preparing SELs for future success in both the fleet and in the field. Generally speaking, there are two types of people in the U.S. military; officers and enlisted members. To join the military, officers must possess at least a Bachelor’s degree. Military officers are commissioned upon entering and serve until they either resign their commission or reach retirement. Their task is primarily supervisory in nature. Officer-ranks range from O-1 (e.g., an Ensign in the Navy or a Second Lieutenant in the Army) through O-10 (e.g., an Admiral in the Navy or a General in the Army) (Cutler, 2009).

In contrast, enlisted military members often possess only a high school diploma when they enter the military. Enlisted members typically sign 4 to 6 year enlistment contracts. When their contract term is over, enlisted members must either seek approval to reenlist or they must leave the military. Enlisted ranks are subordinate to officer-ranks. The role of the enlisted member is mainly physical or technical in nature, analogous to the shop floor worker in a factory for example. Enlisted-ranks range from E-1 (e.g., a Seaman Recruit in the Navy or a Private in
the Army) through E-9 (e.g. a Master Chief Petty Officer in the Navy or a Sergeant Major in the Army) (Cutler, 2009). See Appendix A for a listing of U.S. enlisted military ranks by Service.

Though they entered the military with a focus on a particular task or function, as enlisted members become more senior their roles become more supervisory in nature, often blurring the lines between officer and enlisted responsibilities. The question then becomes, is the military adequately preparing its senior enlisted members to make this transition? Becoming a competent supervisor in a large, complex organization with global reach should involve more than simply assigning someone to a position of increased responsibility. How does one transition from being a technical expert to becoming a more strategic leader? Equally important, how does one go about learning new material necessary to be a competent strategic leader? One option is by attending the Navy Senior Enlisted Academy.

Senior Enlisted Leaders from all military Services come to the Navy Senior Enlisted Academy in Newport, RI, to refine their existing leadership skills and to learn new ones. The Senior Enlisted Academy (SEA) is the pinnacle of Navy education offered to these Soldiers, Sailors, Airmen, Marines, and Coast Guardsmen. The SEA 6-week course of instruction promotes personal development and provides a national strategic perspective to foster professional military development. In short, it helps them to become a more strategic leader. According to historical records, SEA students are mature adults averaging from 18 to 22 years of military service, and have risen to the highest three enlisted ranks (E-7, E-8, and E-9). When it comes to leading other military members, these Senior Enlisted Leaders are at the top of their game.

Navy students at the SEA come from all walks of Naval service; from Aviation Bosun’s Mates who launch and recover aircraft on Aircraft Carriers, to submarine Sonarmen who spend
much of their lives beneath the sea, to Hospital Corpsmen who serve in all naval forces including the Marine Corps (Cutler, 2009). But not only do these students possess a myriad of technical skills, the typical SEA class represents a wide background in formal education as well. Historical records taken from the last 2 years reveal that on average 68% of the students hold a high school diploma, 25% have completed undergraduate education, and the remaining 7% have masters (and occasionally doctoral) degrees.

The context of this study is the Navy Senior Enlisted Academy. This study seeks to explore the nature of the learning strategies Senior Enlisted Leaders (SELs) have used in the past as they learned their trade in the fleet and field, as well as the strategies they use to learn academic material while attending the Navy SEA.

**Statement of the Problem**

**Problem of Practice**

Where some see education as a golden opportunity, others see it as something short of a painful prison sentence. A recent News Service reported that “38.3 percent of working-age Americans (ages 25-64) held a two- or four-year college degree in 2010. That rate is up modestly from 2009, when the rate was 38.1 percent and 2008, when the rate was 37.9 percent” (Lumina Foundation for Education, 2012, para. 2). On the bright side, four-out-of-ten Americans pursue education as an opportunity. In contrast, six out of ten Americans for multiple reasons choose to enter the workforce soon if not immediately after high school rather than go to college. And for some of those, even waiting for high school graduation is a bridge too far. “Each year, more than a million kids will leave school without earning a high school diploma—that’s approximately 7,000 students every day of the academic year” (Furger, 2013, para. 1). Meanwhile at the national level, changes in the workforce are demanding new skills. Thus, more
and more adults in the civilian sector are returning to higher education, and many are there not-by-choice. And it is no different in the military.

Though they are well prepared for operations in the fleet and field, many SELs are challenged by the academics at the SEA. A few, typically one in every two or three classes, are overwhelmed to the point of academic failure. And the problem of academic failures is about to get worse. The Navy has taken steps to make graduation from the SEA mandatory for promotion to E-9. Therefore all E-8s will have to eventually attend the SEA in order to be eligible for E-9. This means the number of students attending the SEA will soon double. Sailors who currently choose to avoid the SEA will no longer have that option. But if the number of students attending the SEA doubles, one can reasonably expect that the number of student who fail the SEA would likely also double. Is the Navy setting up too many SELs for failure? And at least for now, why would some SELs want to avoid an educational opportunity in the first place? The root of this issue may be in a calculus made by millions of Americans each year; a calculus that to this day takes place upon high school graduation.

As mentioned earlier, there are two general paths to enter the U.S. military: via enlistment or via commissioning as an officer. Again, most enlisted members join the military right out of high school, in contrast to officers who enter the military only after completing at least four years of college. For some enlisted members, the calculus of “more school” versus “immediately entering the workforce” often favors the latter. However, as enlisted members rise to more senior ranks, their earlier calculus of escape from more formal schooling becomes an unavoidable reality.

The military in general has a very hands-on approach to learning. Thus, a career in the Navy can be thought of as a series of qualifications with increasing complexity and responsibility
as one becomes more senior. Qualification cards generally consist of two components; knowledge factors and practical factors. In other words, the Navy is an apprentice-based organization where much of the learning happens on the job standing the watch “under instruction.” Whether the job is to launch aircraft off the deck of an aircraft carrier or to steer a nuclear submarine safely through the ocean depths, in the Navy, learning happens primarily by “doing.”

In the fleet, the Navy has a training focus which emphasizes practical factors and immediate actions for casualty situations (i.e., how to do). However at the SEA, the educational focus is on understanding military operations at the national and international level where uncertainty and competing interests prevail. At the SEA, the emphasis is not on how to do but rather on how to think. In other words, whereas in the fleet the learning tends to emphasize the physical over the conceptual, at the SEA it is just the opposite. Yet, this should come as no surprise. Management texts frequently espouse that as people become more senior, their work in organizations becomes more conceptual (Hersey & Blanchard, 2008; Yukl, 2010). And students attending the SEA are at that point in their careers where they are transitioning from a technical role (i.e., doing) to a more strategic role (i.e., thinking towards the future and leading).

This shift from a “doing” role to a “thinking” role is a well-anticipated military transition. In describing military professional development, the Chairman of the Joint Chiefs of Staff states that “within our enlisted ranks, the focus of learning opportunities centers on individual training (how to do). As enlisted personnel grow in experience and assume greater responsibilities, individual training is enhanced with professional education (how to think) opportunities” (Gortney, 2010, p. A-2). Here the military clearly differentiates between “learning to do” and
“learning to think.” What the military does not do is to elaborate on just how those learning processes differ. So how do they?

From information processing theory on the topic of human problem solving, Simon (1978) posits that people learn via “a small set of elementary information processes organized into strategies or programs” (p. 279). Does learning how to do involve the same strategies as learning how to think, or do these strategies differ? To make matters worse, some if not most are not even aware of how they learn regardless of the learning content. Knowles (1975) pointed out, “it is a tragic fact that most of us only know how to be taught; we haven’t learned how to learn” (p. 14).

At the nexus of these two lines of thought (learning strategies and training versus education) lies this research topic. If learning strategies are those elementary information processes people use to learn new material, then what is the nature of those learning strategies, and how do they differ (as the Chairman of the Joint Chiefs of Staff acclaims) when one is learning how to do (with an emphasis on the physical) versus when one is learning how to think (with an emphasis on the conceptual)? For some, the answer to this inquiry might be the difference between opportunities to remain in the service and failing out at the (soon to be mandatory) Navy Senior Enlisted Academy.

Based on historical records, the Navy SEA typically drops five to seven students each year for academic reasons. That may not seem significant until one considers a few important factors. First, the typical SEA student has 18 to 22 years of military service. From a human capital investment perspective, at five to seven students per year, the dollars quickly accumulate. Second, up to now, attending the Navy SEA has been voluntary. However the Navy has taken steps to make graduation from the SEA a requirement for promotion to the highest enlisted rank
This new requirement will not only double the annual throughput of the SEA, it will also force attendance by those enlisted members who long ago favored the calculus never to return to school. In sum, making the SEA mandatory for promotion to E9 will likely more than double the number of academic drops per year.

Is examining the learning strategies used by students attending the Navy SEA a worthwhile endeavor? Along those lines, Mohrman and Lawler (2012) made the case that for research to be relevant, it must “generate knowledge that is useful for the organizations we study” (p. 42). They further argued that research should focus on both theory and practice (Mohrman & Lawler, 2012). By examining the learning strategies used by students attending the Navy SEA, the curriculum might be designed to better accommodate the learning strategies SEA students have already mastered. Similarly, assessments may be added to assure prospective students have the academic skills necessary to complete the curriculum. In short, the results of such research would have practical value by helping the SEA accomplish its mission to grow future leaders. But theory also stands to gain from this line of inquiry. Existing adult learning theory can be examined for its ability to model learning in both training and educational contexts. Such complexity has seldom, if ever, been explored.

Additionally, Alvesson and Sandberg (2011) state that good research should “challenge the assumptions that underlie existing literature” (p. 251). To date, most if not all of the theories on human learning do not differentiate between training (how to do) and education (how to think) (Gortney, 2010; Illeris, 2009; Merriam, Caffarella, & Baumgartner, 2007). Accordingly, this research was poised to examine the assumption that learning is primarily a cognitive event with no significant difference between learning focused on how to do versus learning focused on how to think (Illeris, 2007 [1999], 2009; Merriam et al., 2007).
Problem/Purpose Statement

In their article titled “The Future of Adult Education in the Military,” Zacharakis and Van Der Werff (1981) claimed that service members today must be educated for higher-order thinking. They pointed out that traditional military training follows a behaviorist approach; “a stimulus-response relationship [that] normally does not require higher-order thinking” (p. 90). Believing that “in today’s wars, everyone needs to think and make decisions” (p. 90), the authors posit that a cognitive approach that “emphasizes perception, insight, and meaning” (p. 90) is more suitable for today’s military member, especially senior enlisted leaders. They concluded, “a curriculum should . . . examine thinking skills, strategies, and the processes that occur within one’s mind when thinking occurs” (p. 94).

Simply put, Zacharakis and Van Der Werff (1981) argue for a curriculum experience that favors education (how to think) over training (how to do). Although training-versus-education will be discussed in greater detail under the Theoretical Framework section of this study, suffice it to say at this point that the Navy sees but fails to explain any difference between these two types of learning. One purpose of this doctoral thesis was to examine the learning strategies used by Senior Enlisted Leaders in training and in educational situations. These results provide practical value to the Navy Senior Enlisted Academy.

A second purpose of this doctoral thesis was to challenge a long-held assumption in human learning. Western thought on learning typically eschew the role of emotion in learning theories (Fambrough & Hart, 2008; Merriam et al., 2007). In the west, emotions are often “viewed negatively as signs of poor self-control or weakness” (Fambrough & Hart, 2008, p. 745). In the west, the dominant approach to learning is a cognitive approach (Merriam et al., 2007). Again, the roll of emotion will be discussed further in the Theoretical Framework.
section, but for now, Fambrough and Hart (2008) sum it up best: “Over the years, emotions have played an important role in organizational life, though they were seldom expressly included in theories” (p. 740). Therefore, a second purpose of this doctoral thesis was to challenge the long-held Western assumption that learning is primarily (if not exclusively) a cognitive endeavor.

In conclusion, some students attending the Navy Senior Enlisted Academy seem ill equipped to deal with the conceptual learning aspects typical of higher educational settings. Although successful in the fleet or field where training is the predominant learning model, some students struggle at the SEA where education is the predominant learning model. Therefore, the purpose of this study was to explore the nature of how Senior Enlisted Leaders (SELs) approach learning as they attend an education-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role. Lastly, a second purpose of the inquiry was to examine the role of emotion in human learning.

**Research Question**

The object of this study was to explore how Senior Enlisted Leaders understand their learning as they transition from a technical role to a more strategic leader role. This study explored how Senior Enlisted Leaders (SELs) approach learning when the learning situation could be described as training, or how to DO something. Training is the primary form of military learning in the fleet and field. The study also looked at the learning strategies SELs used where the learning situation can be described as educational, or how to THINK. This form of learning often takes place in the classroom and is frequently referred to as a formal learning context (Illeris, 2007 [1999]; Merriam et al., 2007).

A final area of inquiry in this study came from the theoretical framework (explained in the next section). That was to explore the nature of emotion in human learning. Merriam,
Caffarella, and Baumgartner (2007) highlight a Western bias toward the cognitive with respect to learning theories. Here, cognitive refers to “knowledge and motor learning, both of which are controlled by the central nervous system” (McCauley & Van Velsor, 2004, p. 18). Recent studies in brain research are now arguing for an emotional component of the learning process (Christie, Tett, Cree, Hounsell, & McCune, 2008; Illeris, 2007 [1999]; McCauley & Van Velsor, 2004; Merriam et al., 2007; Schyns, Tymon, Kiefer, & Kerschreiter, 2013). Thus, the study investigated the nature of emotion in learning.

In summary, the following research question was used to guide this study: *How do Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?* This question was designed to explore the how the participants possibly adapt the learning approaches they have used in the Fleet or Field where training is the predominant learning model to accommodate the more conceptual content typical in higher educational settings like the Navy Senior Enlisted Academy.

Having stated the research question used to guide this study, the next section overviews the theoretical framework that focused the literature on human learning (Chapter-2) and served as the study’s theoretical lens.

**Theoretical Framework**

According to Miles, Huberman, and Saldaña (2014), a theoretical framework “explains, either graphically or in narrative form, the main things to be studied . . . and the presumed relationships among them” (Miles et al., 2014, p. 20). As such, this study employed Illeris’s (2003) Three Dimensions of Learning combined with Bandura’s (1986) Social Cognitive Theory to produce a comprehensive framework that could examine both internal learning (how to think)
and external learning (how to do). A brief explanation on constructing this combined theoretical framework is in order. But first, pivotal to this study is the difference between training and education. Therefore, what follows next is a discussion on that important difference.

**Training versus Education**

Perhaps a consequence of taking the long view regarding personnel development, the military differentiates between training and education. The Chairman of the Joint Chiefs of Staff (CJCS) is the senior ranking officer in the military, reporting directly to the President of the United States (Pace, 2006). CJCS’s Instruction on Enlisted Professional Military Education Policy (Gortney, 2010) dictates that as enlisted members become more senior, the nature of their learning shifts from training-centric to education-centric. This is graphically illustrated in Figure 1.1.

![Figure 1.1](image)

*Figure 1.1. How training versus education varies with enlisted military rank.*

In that same document, CJCS (Gortney, 2010) further differentiates training from education.

... *Education* [emphasis added] is largely defined through the cognitive domain and fosters breadth of view, diverse perspectives, critical analysis, abstract reasoning, comfort with ambiguity and uncertainty, and innovative thinking, particularly with respect to complex, non-linear problems. This contrasts with *training* [emphasis added] that focuses largely through the psychomotor domain on the instruction of personnel to enhance their capacity to perform specific functions and tasks. (p. A-2)
In other words, as enlisted members transition from a junior, technical role to a more senior leadership role, the \textit{content} of their learning (the “things” they are learning about) shifts from training-centric to education-centric. Therefore, to examine the learning strategies used by senior enlisted military members, a theoretical framework that distinguishes training from education was required.

Though there are many learning models to choose from (Illeris, 2009; Merriam et al., 2007), few seem suitable to examine both training and educational learning situations. On the contrary, researchers tend to look at either the cognitive aspects of learning or the behavioral aspects of learning. However, a combination of theoretical frameworks should yield the desired effect. To that end, the works of Bandura (1986) and Illeris (2003) were chosen for their simplicity and compatibility. An explanation of the work by these two scholars follows, beginning with Bandura.

\textbf{Bandura’s Social Cognitive Theory}

A prominent Western scholar, Albert Bandura (1986) is a social psychologist from Stanford University. His book \textit{Social Foundations of Thought & Action: A Social Cognitive Theory} highlighted the importance of the environment in human learning (Bandura, 1986). True to his Western roots, Bandura focused primarily on \textit{cognition} as influenced by external interaction with the environment (Bandura, 1986; Merriam et al., 2007).

Bandura’s (1986) social cognitive theory considers the reciprocal interaction of three elements; personal factors, behavior, and the environment. \textit{Personal factors} are a person’s characteristics including cognitive capacity and “motivational forces within the individual” (p.
Behavior refers to actions in the environment; what people do (Bandura, 1986). Bandura claimed that these three elements “operate interactively as determinants of each other” (p. 23). Consequently, Bandura uses the term “triadic reciprocity” (p. 23) to illustrate this form of reciprocal determinism. Thus, Bandura was keenly aware of the influence of the environment (or the context) on the individual’s learning process.

Since training focuses largely on “how to do,” and given that training can be considered behavior in the external world, Bandura’s (1986) social cognitive theory provided a good foundation for understanding learning strategies related to training situations in this study. However, it appears to fall short when it comes to examining the educational (how to think) component of learning. Fortunately a more recent theory inspired by developments in brain research was available to fill this void; the work of Illeris, a Danish scholar whose work was recently translated into English.

**Illeris’s Three Dimensions of Learning**

In his 2003 article, Knud Illeris identified COGNITION, EMOTION, and ENVIRONMENT as the three dimensions of learning. Additionally, whereas Bandura (1986) looked at interactive influences, Illeris looked at interactive processes. Specifically, Illeris modeled learning as the interaction of two processes; the internal knowledge *acquisition process* and the external *interaction process* (Illeris, 2003, 2007 [1999], 2009). Beginning with the internal acquisition process, Illeris defined the COGNITION dimension as managing the process of what is being learned (Illeris, 2003, 2007 [1999], 2009). In other words, this is where the learner manages the learning content to construct meaning and gain the ability to deal with

As Illeris (Illeris, 2003, 2007 [1999]) explained, the COGNITION and EMOTION dimensions of learning feed off of each other. The COGNITION function is always obsessed with the incentives at stake, and the EMOTION dimension is always influenced by the COGNITION dimension (Illeris, 2009).


Finally, Illeris used double arrows with both the internal acquisition process and the external interaction process. Similar to Bandura’s (1986) reciprocal interaction, Illeris (2009) argued that the three dimensions of learning “are usually involved in an integrated way” (p. 9).

With its greater detail regarding the internal acquisition process, Illeris’s (2003) three dimensions of learning provided a good framework to examine educational (how to think) learning strategies. Having discussed each of Bandura’s (1986) and Illeris’s (2003) models individually, the next section describes how to combine these two approaches into a single, comprehensive framework.
A Combined Model to Examine Training and Education

Fortunately, Bandura’s (1986) social cognitive theory and Illeris’s (2003) three dimensions of learning share a common element—a reciprocal interaction with the external environment. The strength of Illeris’s model was its elaboration of the internal acquisition process. Replacing Bandura’s broadly defined personal factors with Illeris’s internal acquisition process resulted in the combined model (Figure 1.4). Note that Illeris’s label regarding the interaction between the individual and the environment was also retained.

In this combined model, education (how to think) is represented by the COGNITION dimension whereas training (how to do) is represented by what now might be called the BEHAVIOR dimension. Though these models are discussed in further detail in the next chapter, this overview leading to the combined model to examine training and education was provided as a foundation for moving forward.

Theoretical Framework Conclusion

The quest for a theoretical framework that could be used to explore the nature of learning strategies used by participants in both training and educational settings led to the combination of Bandura’s (1986) seminal work on social cognitive theory with Illeris’s (Illeris, 2002, 2003, 2007 [1999], 2009) contemporary approach inspired by recent developments in brain research. One beneficial consequence of this combination was the inclusion of EMOTION in the theoretical framework. Merriam et al (2007) identified a strong bias toward the cognitive in Western learning theories. Consequently, Merriam (2008) argued for the inclusion of emotion in
contemporary research on adult learning. Whereas both the researcher and Bandura are products of Western culture, Illeris (2002, 2007 [1999]) is a Danish scholar whose work has only recently been translated into English. Thus, as suggested by Merriam, this study was also poised to investigate the nature of emotion in learning.

Having overviewed the theoretical framework that was used to guide this study, the next section broadly discusses the research process.

**Overview of Research Plan**

As the primary purpose of this study was to understand the nature of how the participants learn in both training and educational settings, it followed that qualitative research was best suited for this study. A qualitative design allows the researcher to understand how make meaning out of the experiences of others (Merriam, 2009). This approach is most appropriate when the aim of the research “is to describe the ways people in particular settings come to understand, account for, take action, and otherwise manage their day-to-day situations” (Miles et al., 2014, p. 9). Though discussed further in the next chapter, this section provides a brief overview of the research plan.

**Research Setting**

This research was conducted at the Navy Senior Enlisted Academy in Newport, RI. This setting afforded the researcher opportunity to observe students, and to arrange and conduct interviews.

**Research Events**

First, the researcher conducted a document review to determine the goals of leader development at the SEA, expected competencies, and aspects of students that may make them more suitable participants for this study. Additionally, students were observed during the first
week of class to gain familiarity with the researcher and thus increase the likelihood of participation in the study.

Next, selected students were interviewed using a semi-structured interview format to ascertain the learning strategies they used in both training and educational situations. The researcher used the combined model (discussed earlier) as a guide to formulate interview questions. The interviews were professionally transcribed for subsequent analysis. Finally, the researcher followed-up with participants as needed to gain additional insight, verify data and findings, and to collect participant thoughts that may have come-to-mind post-interview.

**Research Analysis**

In qualitative research, data analysis is an ongoing effort once the research begins. Generally speaking, the data was analyzed following traditional qualitative processes of data collection, organization, and analysis. Using the inductive approach of Miles et al., (2014), the data was examined in “three concurrent flows of activity: (1) data condensation, (2) data display, and (3) conclusion drawing/verification” (p. 12). The details of this approach are the subject of Chapter-3.

Having overviewed the effort involved with the research plan, the next section provides justification for expending the effort to conduct this study.

**Significance of Study**

Former U.S. Secretary of Defense Donald Rumsfeld once made the analogy that the military is like a barrel of water with the spigot only one-third down from the top of the barrel (United States Department of Defense, 2004). His point was that he believed the military was too large given the relatively small number of people who were actually doing the fighting in the Iraq War. Although Secretary Rumsfeld was using the water barrel analogy to make a point
about military end strength, his analogy also applies to the untapped leadership capital represented by Senior Enlisted Leaders. Though heavily trained in *how to do*, enlisted military members get very few educational (*how to think*) opportunities (Gortney, 2010).

Toner (1998) once stated that “experience without knowledge is blind” (Sec. IV). He was making the point that hiring or promoting people based on experience alone was not enough; that people who possessed both experience and education reflected a higher human capital than those with only experience. Educating Senior Enlisted Leaders leverages their accumulated military experiences and, through education, improves their ability to lead by providing the meaning behind the experience. Using Secretary Rumsfeld’s analogy, it moves the spigot further down the military water barrel. Therefore, from a national security point of view, getting the most out of limited funding to produce maximum educational results reflects good stewardship of national resources. The findings in this research accomplished just that.

And there is more than simply a military benefit to this study. A recent report from the Council of Graduate Schools Advisory Committee on Graduate Education and American Competitiveness noted that a better educated workforce “contributes directly to our sustained economic growth and prosperity” (Council of Graduate Schools, 2007, p. 1). Historical records show that over 80% of students attending the Navy SEA intend to pursue further formal education after leaving the SEA. Given that many of these students will one day retire from the military and enter the job market, teaching these individuals how best to learn (as Knowles (1975) lamented earlier) is an investment in America’s future.

At the local level, recall that roughly 50 percent of the students in each SEA class hold only a high school diploma, and that they graduated from high school some 15 to 20 years ago. Having insight into their learning strategies can be used to design curriculum that can better
reach those students who have been out of academia for nearly 20 years. Pre-course assessments and in-course workshops based on the findings in this study, for example, may make the difference between graduation and failure. Also, findings from this study provide training and educational insights for organizations whose population resembles non-traditional students.

As for contributions to theory, this combined model for examining both training (how to do) and education (how to think) adds new elements to the discourse on how people learn. Additionally, the inclusion of emotion challenges the Western bias of learning as a cognitive endeavor and results in a more accurate model of human learning.

Beyond contributions to practice and theory, the combined model provides opportunity for future research by pointing out gaps in previous studies. Further, its inclusion of emotion based on advances in brain research can spark fresh insight into old findings.

In summary, much stands to be gained as a result of this line of inquiry. Having discussed the benefits from this research, what follows is a brief review of assumptions and limitations.

**Assumptions/Delimiters/Limitation**

All research involves interpretation. However when researchers view and interpret meaning, they also (perhaps unconsciously) shape the results through their own “lens” of how they understand the world to be (Maxwell, 2005). Accordingly, this next section discusses the assumptions, delimiters, and limitations that could have impacted the results of the study, beginning first with the researcher’s paradigm.

**Worldview Assumptions**

The researcher uses the term worldview as a system of ideas which form “a basic set of beliefs that guide action, whether of the everyday garden variety or action taken in connection
with a disciplined inquiry” (Knowles, 1975, p. 17). A worldview represents “a set of very general philosophical assumptions about the nature of the world (ontology) and how we can understand it (epistemology)” (Maxwell, 2005, p. 36). Creswell noted that the terms worldview and paradigm are often used interchangeably (2007).

This study was primarily concerned with two different worldviews; the postpositivist worldview and the constructivist worldview. In the postpositivist worldview, researchers “hold a deterministic philosophy in which causes probability determine effects or outcomes” (Creswell, 2009, p. 7). This is commonly known as the scientific approach where researchers are cause-and-effect oriented (Creswell, 2007, 2009). Using the postpositivist worldview, researchers search for the one set of strategies that apply to all learners (Creswell, 2009). The CJCS (2010) approach to professional military development reflects the postpositive worldview typical of training situations; the one, right way to do something. In a postpositivist worldview, there is one reality (Creswell, 2009), as is often the case in military training situations.

In contrast, a constructivist worldview holds that there are multiple truths and multiple realities (Creswell, 2009). In the constructivist worldview “individuals develop subjective meanings of their experiences . . . [which are] varied and multiple” (Creswell, 2009, p. 8). Here, reality is highly personalized as “the experience a person has includes the way in which the experience was interpreted” (Merriam, 2009, p. 9). Since learning strategies are essentially one’s personal approach to organizing one’s learning, a constructivist worldview is most appropriate when examining the internal acquisition process.

In sum, this research will employ two worldviews; training (how to do) situations more closely follow a postpositivist worldview, whereas educational situations involving the learner’s
internal acquisition process are best associated with a social constructivist worldview. With this in mind, what follows is an overview of the research process.

**Delimiters and Limitations**

Although helpful in sorting through the complexities of reality, worldviews come at a price. Worldviews are both enabling and constraining (Lincoln & Guba, 1985). On the one hand, they help the researcher make sense of the world and all its complexities via a system of beliefs (Creswell, 2009; Knowles, 1975). On the other hand, one’s worldview is “also normative, telling the practitioner what to do without the necessity of long existential or epistemological consideration . . . [via its] unquestioned assumptions” (Guba, 1990, p. 203). Thus, one’s worldview can unconsciously limit the research findings.

In this study the researcher followed a social constructivist worldview in the quest to uncover how the participants understand their how they learn. The “social” in social constructivist stems from the fact that “subjective meanings are negotiated socially and historically” (Creswell, 2007, pp. 20-21). In following a social constructivist paradigm, the researcher strives to understand “how people interpret their experiences, how they construct their worlds, and what meaning they attribute to their experiences” (Merriam, 2009, p. 5). Thus, any interpretations of the research data will necessarily be limited by the researcher’s experience and understanding.

Next, to narrow the scope of the study, the research was conducted at the Navy SEA in Newport, RI. Since the SEA is an educational environment, data collected on training situations was limited to what the participants could recall. This method was likely not as robust as if the data were collected in the fleet or field where the actual training took place. However based on actual participant recall, this did not appear to be a factor.
Additionally, the research sample size was limited to keep the total data corpus at a manageable level. Since each interview was expected to last from 45 minutes to an hour, sorting through and coding interviews for over 70 students did not seem practical. Rather, the sample size was limited to 15 participants which proved sufficient. The sampling strategy and its implications are further discussed in Chapter-3.

Finally, all data was collected over two consecutive SEA classes. This helped to bind the research in space and time, maximizing the variation between participants while making the data more manageable. The specific class used to begin data collection was determined after the research proposal was approved by the Institutional Review Board and the Naval War College Provost had granted authority to proceed.

Because of the aforementioned assumptions, delimiters, and limitations, the findings from this study are not generalizable to the larger population of all enlisted members in the military. The data collected and the results implied are limited to the participants in this study and the Navy Senior Enlisted Academy. It is not the nature of qualitative research to be generalizable to a larger population (Creswell, 2009; Maxwell, 2005). Instead, the results from qualitative inquiry seek to explain meaning from the participants’ perspectives (Creswell, 2007; Lincoln & Guba, 1985; Merriam, 2009).

**Chapter 1 Summary**

To sum up, this doctoral thesis was centered on preparing enlisted military leaders as they grow into more senior leadership positions. Specifically, it focused on leaders who were transitioning from a junior, follower/technical role to a more senior, leadership and strategically-oriented role. The military expects these leaders to grasp the differences between *how to do* and
how to think learning situations (Gortney, 2010). What was unclear was exactly what those differences, if any, were.

This chapter began with a brief overview of the research context, discussed the research problem, identified the guiding research questions, sketched the theoretical framework that informed the inquiry, and overviewed the research plan. The chapter then highlighted the significance of this study. The next chapter presents a comprehensive critique of the scholarly literature on learning and learning strategies. But first, this chapter concludes with a list of key terms, military and educational, associated with this study.

**Key Terms and Definitions**

**Key Terms (Military-related)**

**Advancement**: The process of advancing to the next higher military rank (e.g., E-4 to E-5).

**End Strength**: The size of the military as reflected by its total number of people.

**Enlisted**: Enlisted military members must possess at least a High School diploma to enter the military. These members sign 4 to 6 year enlistment contracts. Their role is primarily task-oriented or technical in nature, analogous to shop-floor workers in a factory for example. Enlisted ranks range from E-1 through E-9. As enlisted members become more senior, their roles become more supervisory in nature. Enlisted ranks are subordinate to officer ranks.

**Leadership track**: Defined by the researcher as training and education events military members attend en route assignments to more senior leadership positions. Some are required while others are optional. For example, an E-9 en route to a Command Master Chief assignment is required to complete the Command Master Chief course. An E-8 en route to an assignment as a Department Senior Enlisted Leader may or may not attend the Navy Senior Enlisted Academy.
Military Career: Defined by the researcher as a collection of experiences as a military member progresses through the military.

Navy Senior Enlisted Academy: The Navy Senior Enlisted Academy (SEA) is a 6-week curriculum on leadership, fitness, and professional military topics for Senior Enlisted Leaders, primarily E-8s.

Officer: Officers must possess at least a Bachelor’s Degree to enter the military. They are commissioned upon entering and serve until they either resign their commission or reach retirement. Their task is supervisory. Officer ranks range from O-1 through O-10.

Senior Enlisted Leader: Enlisted members who have risen to the E-7, E-8, and E-9 ranks. It generally takes 10 to 12 years to make E-7.

Key Terms (Educational)

Adult learning theory: A learning theory that incorporates adult experiences and characteristics in the learning process.

Andragogy: The art and science of teaching adults (Knowles, 1990).

Cognition: “knowledge and motor learning, both of which are controlled by the central nervous system” (McCauley & Van Velsor, 2004, p. 18).

General Inductive Analysis: an inductive analysis that allows “research findings to emerge from the frequent, dominant, or significant themes inherent in raw data, without the restraints imposed by structured methodologies” (Thomas, 2006, p. 238).

Higher Education: Undergraduate and graduate education.

Maturation of needs: As people develop, their interests become more sophisticated (Vygotsky, 1978).
**Metacognition**: Reflection on one’s cognition. As the seminal author, Flavell (1979) defined metacognition as “knowledge and cognition about cognitive phenomena” (p. 906).

**Metacognitive model**: A model for monitoring cognition proposed by Flavell in 1979 comprised of the following four phenomena: metacognitive knowledge, metacognitive experiences, goals, and strategies to achieve those goals.

**Pedagogy**: “The art and science of teaching children” (Knowles, 1990, p. 56).

**Scaffolding**: a social learning process, often in the form of conversation, whereby a learner is supported in their knowledge construction by a more experienced teacher (Holton & Clarke, 2006).

**Schema**: Related and interconnecting bits of knowledge about a topic; a mental map that reflects an individual’s understanding about some facet of life (Hackman & Johnson, 2009)

**Semi-structured interviews**: An interview technique whereby the researcher uses a mix of predetermined and spontaneous interview questions (Merriam, 2009).

**Sociocultural theory**: A cognitive development theory that includes both an individual’s actual development level and a potential development level based on assistance from a more capable peer or teacher (Vygotsky, 1978).

**Social cognitive theory**: A learning theory that focuses on the reciprocal interaction of three elements; personal factors, behavior, and the environment (Bandura, 1986).

**Triadic reciprocality**: A term used to illustrate a form of reciprocal determinism between learners, their behavior, and their environment (Bandura, 1986).

**Three dimensions of learning**: A learning theory that focuses on the learner’s internal Cognition and Emotion, as well as his or her external Environment (Illeris, 2003).
CHAPTER 2 LITERATURE REVIEW

This chapter examines the scholarly literature on learning and learning strategies, including leader development as an element in the learning process. It begins with a review of the foundational literature on adult learning. The purpose of this broader view is to summarize the state of the field and to highlight the current thinking regarding the human learning process. It begins with the seminal work of Malcolm Knowles and then moves to other theories in adult learning. Since learning is often a matter of perspective, the review next considers just that; learning from the cognitive perspective, learning from the knowledge acquisition perspective, learning from the interaction perspective, and finally learning from the learning content perspective.

Next, since learning takes place in the human brain, the review considers how recent developments in brain research influence scholarly thoughts on the learning process; specifically to include an emotional dimension in learning. The review then illustrates how the foundational literature on the learning process is represented in the combined model discussed in the previous chapter.

The final section of this review looks at research in the field of learning to include leader development as an element of the learning process. In each case, the study is considered using the combined model as a theoretical lens. This review includes quantitative and qualitative studies as well as scholarly articles written on the human learning process. In quantitative studies, researchers follow the scientific method, collect data that is either in numerical form or is converted into numerical form, and then analyze that data (Springer, 2010). In qualitative studies, researchers primarily follow an inductive approach, focus on peoples’ perceptions, and emphasize narrative over numbers (Maxwell, 2005). Quantitative research tends to focus on the
relationships between parts while qualitative research tends to focus on holistic descriptions (Fraenkel, Wallen, & Hyun, 2011). In short, this review seeks to illustrate the “state of the art” regarding the field of human learning and learning strategies, beginning with the topic of adult learning.

**Adult Learning**

Perhaps any doctoral thesis on adult learning would be remiss if it did not review the work of the late Malcolm Knowles (Knowles, 1974; Knowles, Holton, & Swanson, 2011; O'Connor, 2013). Often referred to as the “Father of Andragogy” (Knowles et al., 2011, p. v), Knowles was one of the first to differentiate between child and adult learning. Knowles’s work eventually produced six assumptions in adult learning which set the stage for research in that field (Knowles et al., 2011).

**Andragogy**

In his book *The Adult Learner: A Neglected Species*, Knowles (1990) described the difference between pedagogy (teaching children) and andragogy (teaching adults). The heart of Knowles’s adult learning theory is his six assumptions of the adult learner. These six assumptions are unique to adult learners, bringing teaching opportunities that typically do not exist in lower level educational settings. Knowles stated, “The andragogical model is a system of assumptions which includes the pedagogical assumptions” (p. 64). In other words, the andragogical model builds on the pedagogical one.

According to Knowles (1990), the first assumption in adult learning theory is that “adults need to know why they need to learn something before undertaking to learn it” (p. 57). Specifically, adults need to be convinced of the value of something (or the consequences of not learning it) before they will invest any energy into learning new material (Knowles, 1990).
Teachers need to show the adult learner how this new learning can be used in real life (Knowles, 1990).

Knowles’s (1990) second assumption is that adult learners move from being a student dependent on the teacher for instruction to being a self-directed learner. Adults are responsible for their own lives and want to make their own decisions. Accordingly, teachers need to create learning experiences where adult students can “make the transition from dependent to self-directed learners” (p. 59).

The third assumption of adult learning theory takes advantage of the adult learner’s experience. As Knowles (1990) pointed out, “adults come into an educational activity with both a greater volume and a different quality of experience from youths” (p. 59). This breadth of accumulated experiences becomes a significant advantage for the adult learner when it comes to connecting new knowledge to prior learning. In this regard, adults have an opportunity to learn better and faster than adolescents.

Although it has significant advantages, the learner’s prior experience has double-edged sword implications for the classroom. Knowles (1990) cautioned, “as we accumulate experience, we tend to develop mental habits, biases, and presuppositions that tend to cause us to close our minds to new ideas, fresh perceptions, and alternative ways of thinking” (p. 59). Teachers should be aware of these potentially negative cognitive barriers to learning.

Additionally, the adult’s identity is often wrapped up in his or her work (Knowles, 1990). People self-identify based on their experiences. “Any situation in which the adults’ experience is ignored or devalued, they perceive this as not only rejecting their experience, but as rejecting them as persons” (Knowles, 1990, p. 60). In sum, teachers do well when they incorporate student prior experiences into the learning process.
The fourth assumption of adult learning theory deals what Knowles (1990) described as “readiness to learn” (p. 60). Here, Knowles connects adult learning with the timing of developmental stages in life. As people mature, they “become ready to learn those things they need to know and do in order to cope effectively with their real-life situations” (p. 60). Take reading for example. Although good reading skills are important for all enlisted ranks, junior enlisted have fewer reading-intensive experiences. For example, they may go to a formal training-school only twice in their first 10 years in the Navy. However, the more senior enlisted members become, the more they move away from their familiar technical areas into new environments. And with greater seniority comes greater responsibility. Thus, one can argue that the ability to consume new information quickly becomes more important as enlisted members develop into more senior positions in the military.

Knowles (1990) labeled his fifth assumption “orientation to learning” (p. 61). Whereas readiness to learn is a function of developmental stage, orientation to learning centers specifically on the task at hand. “Adults are motivated to devote energy to learn something to the extent that they perceive that it will help them perform tasks or deal with problems that they confront in their life situations” (p. 61). This particular assumption has significance for the Senior Enlisted Academy (SEA) student. Since many of the SEA students have limited experience with higher education, they display trepidation in dealing with the curriculum, often wondering if they will make it to graduation. Hence, they will likely have an exceptionally high readiness to acquire new learning strategies that might help them accomplish what likely seems an insurmountable task.

Knowles’s (1990) final assumption deals with the topic of motivation. He points out that the most potent motivators for adults are internal drivers like “the desire for increased job
satisfaction, self-esteem, [or] quality of life” (p. 63). However, Knowles further notes that these motivators are often blocked by a number of factors including “negative self-concept as a student” (p. 63). Students who self-describe as a slow reader might certainly fall into this category. Helping students overcome reading challenges can become enablers for powerful internal adult motivators.

In sum, Knowles’s (1990) six assumptions about the adult learner boil down to two overarching concepts. First, educators should involve adult learners in as many aspects of the learning process as possible (Merriam, 2001). Second, educators should create classroom environments that promote learning by leveraging those unique aspects the adult learner brings to the classroom (Merriam, 2001).

**Other Adult Learning Theories**

As Knowles (1990) pointed out, “it is often helpful to look at what we mean by ‘adult’” (p. 57). The term has biological, legal, social, and psychological definitions (Knowles, 1990). For this study, adults are biologically mature, over the legal age of 21, are filling adult roles in society, and have psychologically moved through childhood and adolescence, and have achieved a sense of independence marked by individual responsibility (Knowles, 1990). Thus in an educational context, these types of adult learners are often referred to as non-traditional students.

In looking at adults as non-traditional college students, Kenner and Weinerman (2011) define adult learners as entry-level students “between the ages of 25 and 50, have a high school diploma or a GED, are financially independent, and have one semester or less of college-level coursework” (p. 88). Coincidentally, this definition also applies to the entire student population at the SEA.
Furthermore, Kenner and Weinerman (2011) note that adult learners frequently have characteristics typically not found in the traditional college student. These non-traditional students are often financially independent, they are already employed full-time, they often have dependents, and they are not enrolled in school full-time (Kenner & Weinerman, 2011). These non-traditional factors not only apply to the typical SEA student, but they also pave the way for the andragogical dynamic that stems from Knowles’s (1990) six assumptions of the adult learner mentioned earlier.

However Knowles’s (1990) andragogy is not the only learning theory for adults. From the author’s perspective, it is in its essence a practical approach to teaching adults. Other adult learning theories are more theoretical. For example, Schraw and Moshman (1995) take a metacognitive approach to adult learning. The term metacognition comes from the seminal work of John Flavell (1979). Whereas cognition refers to conscious reasoning, metacognition refers to efforts that monitor the cognitive process (Papaleontiou-Louca, 2003). With an eye toward metacognition, in a review that includes both children and adults, Schraw and Moshman begin by defining three types of knowledge. “Declarative knowledge refers to knowing ‘about’ things. Procedural knowledge refers to knowing ‘how’ to do things. Conditional knowledge refers to the ‘why’ and ‘when’ aspects of cognition” (p. 352).

Next, with this theoretical perspective of knowledge, Schraw and Moshman (1995) look at three types of metacognitive theories adults hold that are derived from this knowledge. Tacit theories refer to metacognitive skills that “adult learners acquire . . . from peers, teachers, and the local culture” (Kenner & Weinerman, 2011, p. 89). Simply stated, adults acquire a sense of how to do things based on their experiences, without explicitly linking these strategies to any
particular framework (Schraw & Moshman, 1995). In other words, these tacit strategies lack conditional knowledge.

Moving up in sophistication, with *informal theories* “individuals are aware of some of their beliefs and assumptions regarding a phenomenon, but have not yet constructed an explicit theoretical structure that integrates and justifies these beliefs” (Schraw & Moshman, 1995, p. 359). A key difference between tacit theories and informal theories is that the latter involves “some degree of explicit metacognition” (Schraw & Moshman, 1995, p. 359).

Finally, *formal theories* “provide an explicit framework for understanding and regulating one’s cognition” (Schraw & Moshman, 1995, p. 362). Formal theories allow individuals “to make informed choices about self-regulatory behavior” (Schraw & Moshman, 1995, p. 361). In other words, being aware of the “why” and the “when” of conditional knowledge gives adult students options regarding their learning. In sum, the progression from tacit theories to informal theories to formal theories reflects a trend of increasing metacognitive awareness.

Beyond the metacognitive perspective, Schraw and Moshman’s (1995) discussion of *sources* of metacognitive theories also have an environmental interaction component that reflects Illeris’s (2003) external interaction process from Chapter-1. In this case, Schraw and Moshman consider three *sources* of metacognitive theories. First, they consider cultural learning. Here, “socially shared conceptions about the nature of cognition are transmitted to children via informal experience and formal education” (p. 362). Second, they considered individuals as a source of metacognitive models as learners reflect on their experiences to make meaning out of life (Schraw & Moshman, 1995). And third, people gain metacognitive theories from peer interaction (Schraw & Moshman, 1995).
Peer interaction is also significant for the SEA. Schraw and Moshman (1995) define peers as “individuals who are roughly at the same cognitive level in relevant aspects so that none can be considered an expert” (p. 364). In this regard, problems are solved through “collective and socially shared reasoning processes” (p. 364). For example when group members disagree, conflict resolution among peers often produces learning. Specifically, “discussion of one’s metacognitive conceptions with others may help clarify those conceptions and improve complex problem solving” (p. 364). Unlike children who were the subjects in Vygotsky’s (1978) social cognitive theory, adult learners do not always require a more knowledgeable teacher.

Perhaps one of the most theoretical frameworks for adult learning parallels what researchers refer to today as one’s worldview or paradigm. In his article *A Critical Theory of Adult Learning and Education*, Mezirow (1981) posited three domains of adult learning. In the technical domain, adults learn to control and manipulate their environment (Mezirow, 1981). As Mezirow stated, “the criteria of *effective control* of reality direct what is or is not appropriate” (p. 4). Hence, the cause-and-effect aspect of technical domain parallels what researchers today consider the postpositivist paradigm (Creswell, 2009; Maxwell, 2005; Ponterotto, 2005).

Mezirow (1981) refers to the second domain of adult learning as the practical domain. This is a social domain “...governed by binding *consensual* norms... and secured by the general recognition of obligations” (p. 4). The aim of the practical domain of adult learning is “the clarification of conditions for communication and *intersubjectivity* [emphasis added]” (p. 5). This aim espouses the multiple realities of what researchers refer to as the social constructivist paradigm (Creswell, 2009; Maxwell, 2005; Ponterotto, 2005).

Mezirow (1981) labeled the third domain of adult learning as emancipatory. Central to this domain is the concept of ideology, defined as “a belief system and attendant attitudes held as
true and valid which shape a group’s interpretation of reality and behavior and are used to justify or legitimate actions” (pp. 5-6). More importantly, learning in this domain provides insight and critical self-awareness regarding the meanings adults attach to reality, and to their roles and relationships regarding others in particular (Mezirow, 1981).

Along the lines of critical self-awareness, Mezirow’s (1981) emancipatory domain of adult learning closely parallels what researchers today call the critical theory paradigm (Creswell, 2009; Maxwell, 2005; Ponterotto, 2005). Creswell (2007) defined critical theory as perspectives “concerned with empowering human beings to transcend the constraints placed on them by race, class, and gender” (p. 27). With critical theory research, the goal is not only to uncover the truth, but also to critique and challenge its meaning in ways that transform and empower others (Merriam, 2009). Whether teaching adults or conducting research, the goals of the emancipatory domain and critical theory are quite similar.

The emancipatory domain also parallels the concepts of modernism and postmodernism. Modernism considers that universal truths can be discovered through reason, and that “science and the scientific method are superior means for arriving at truth and reality” (Bloland, 1995, p. 523). The aim of modernism is “the emancipation of men and women from the bonds of ignorance associated with stagnant tradition, narrow religions, and meager educations” (Bloland, 1995, p. 523). Similarly, postmodernism extends this perspective to question “the major assumptions and assertions of our modern culture” (Bloland, 1995, p. 525). Postmodernism takes a particularly critical view toward hierarchies, arguing they are non-natural and exist as “a means for generating power and control” (Bloland, 1995, p. 525) over others. Thus, modernism and postmodernism combine to achieve the same goal as Mezirow’s (1981) emancipatory domain of adult learning.
One of the more important aspects of Mezirow’s (1981) paper is how he closes. Mezirow concludes with a plea that the ultimate goal of adult education is to enhance the adult learner’s capability to become a self-directed learner. (Recall Knowles’s (1990) second assumption is that adult learners move from being a student dependent on the teacher for instruction to being a self-directed learner.) It would seem that helping adults overcome their learning challenges would be a good first step toward achieving this goal.

Another recent article summarizes the literature on adult learning theories. Kiely, Sandmann, and Truluck (2004) start by noting the recent substantial growth in part time enrollment of adult students, implying significance for the need to review adult learning theories. Noting how the field is both diverse and complex, Kiely et al. proposed a “four-lens model” (p. 19) to categorize all theories relating to adult education. They argued that “the four-lens model . . . offers a useful device to navigate the vast territory of adult learning, including theoretical perspectives and their practical applications” (p. 19).

The learner lens includes theories that focus on the learner, emphasizing individual characteristics, developmental tasks, and factors that either enhance or impede their educational progress (Kiely et al., 2004). Authors in this category include Knowles (1974, 1990), Tough (1971), and Merriam, Caffarella, and Baumgartner (2007), with the most prominent work being Knowles’s six assumption of the adult learner (Kiely et al., 2004). The learner lens is the dominant lens in adult learning literature (Kiely et al., 2004).

Though less dominant than the learner lens, the process lens has been receiving increased attention in recent years (Kiely et al., 2004). Rather than focusing on the learner, “the process lens focuses on how adults learn” (Kiely et al., 2004, p. 22). Authors in this category include Mezirow (1981), and Merriam, Caffarella, and Baumgartner (2007), with Mezirow’s
emancipatory goal of helping the adult to become a self-directed learner being the most prominent (Kiely et al., 2004).

Rather than looking at the learner or the learning process, the context lens focuses on the context-bound nature of adult learning (Kiely et al., 2004). In this lens, adult learning is more of a social process that has both interactive and structural dimensions (Kiely et al., 2004). For the interactive dimension, learning occurs while reflecting in context, also referred to as situated cognition (Wilson, 1993). The structural dimension, on the other hand, considers how “socioeconomic, cultural, and political structures of domination determine the nature of relationships, interactions, participation, and practices within educational contexts” (Kiely et al., 2004, p. 25).

Finally, the educator lens considers how the teacher’s “beliefs, values, and assumptions regarding the purpose of adult education, the roles of the adult learner and educators, and the most effective strategies to foster adult learning” (Kiely et al., 2004, p. 26) influence the educator’s actions in the classroom. By examining the philosophical assumptions that guide the educator’s beliefs and practices, the educator lens “has led some practitioners to undergo a significant revision regarding the purpose of adult education and their role in facilitating that purpose” (Kiely et al., 2004, p. 27).

Kiely et al. (2004) conclude that the four lenses in their model should not be taken individually but rather considered as a whole. In this fashion, the four-lens model represents a holistic view of the broader field of both theory and practice in adult education (Kiely et al., 2004).
Adult Learning Conclusion

One thing that is clear from this brief overview of adult learning theories is the strong connection between paradigm and the focus of any particular learning theory. The discussion on Mezirow (1981) directly illustrated this correlation. As for the four lens model by Kiely et al. (2004), the first two lenses of learner and process have a distinct cause-and-effect perspective that could be considered a postpositive paradigm. On the other hand, the context lens and the educator lens might be interpreted as the social constructivist paradigm and the critical theory paradigm respectively. (See Chapter-1 for a more detailed discussion on paradigms.)

In sum, the foundation of any theory on adult learning is likely built upon the worldview the researcher (and learner) assumes. Moving from the general theoretical to a more detailed focus, the study next considers the learning process that takes place within the mind of the learner.

Learning: A Cognition Perspective

As mentioned, although the components of a person is often considered as mind, body, and spirit, Merriam et al. (2007) highlight a Western bias toward the cognitive (i.e., the mind) when dealing with human learning.

Our Western heritage has defined learning as a mental process that takes place in the mind. . . . This focus on the mind is partly due to Western science’s investigation of learning as a mechanistic process . . . to construct knowledge largely through reflection. (p. 189)

This cognition-based cause-and-effect approach to decoding the learning process dates back to the “eighteenth-century Enlightenment philosophers who believed that knowledge could be obtained through reason alone” (p. 189). In sum, the Western bias towards learning is to focus
on the cognitive at the expense of the emotional. Accordingly, this study examines the cognitive aspects of learning before considering the emotional dimension of learning, beginning with the aforementioned concept of metacognition.

As a construct, metacognition highlights the difference between thinking (cognition) and monitoring one’s thinking (metacognition) (Flavell, 1979). In this regard, metacognition occurs just below the conscious level of thought. In simple terms, metacognition supports the learning effort. What follows next is a more detailed discussion of metacognition.

**Flavell: Metacognition**

Flavell’s (1979) concept for metacognition likely stemmed from his earlier work as a psychologist interested in memory. Flavell has long been interested in how children develop their memory skills as they mature. His work centered on data retrieval, and how younger children had fewer strategies to deal with mnemonic problems than older children (Flavell, 1971). In 1971 he coined the term metamemory, “broadly defined as the individual’s potentially verbalized knowledge and awareness concerning any aspect of information storage and retrieval” (Kreutzer, Leonard, & Flavell, 1975, p. 1). At some point Flavell’s investigation into metamemory led to the construct of metacognition. Flavell published his paper on metacognition in 1979.

In his seminal work, Flavell (1979) made the distinction between cognition and metacognition. As Flavell noted, cognition refers to thinking or conscious reasoning. Cognitive strategies are used to increase perception, awareness, and understanding, whereas metacognitive strategies are used to monitor cognitive progress (Papaleontiou-Louca, 2003). For example, “a cognitive goal might be to read and understand a particular chapter, a metacognitive goal to
monitor that process to estimate its success” (Brown, 1984, p. 214). In other words, metacognition is about monitoring one’s cognition (Flavell, 1979).

Flavell’s (1979) model for metacognition original included four elements; knowledge, experiences, goals, and actions. These elements are considered again during the discussion on the combined model. However in continuing with the theme of learning as a cognitive process, the next section looks at a theory on “how individuals acquire, store, retrieve, and use information” (Hackman & Johnson, 2009, p. 61).

**Information Processing Theory**

In reviewing the cognitive processes that determine human behavior, Hackman and Johnson (2009) identify three key concepts behind information processing theory. First, *symbols* and *categories of symbols* become the fundamental building blocks of all knowledge. “These symbols (generally words) are stored in long-term memory and allow us to engage in conceptual thinking” (pp. 61-62). Second, these “bits of knowledge form interconnected networks called *schemas or schemata*” (p. 62). Paralleling the concept of paradigms, Hackman and Johnson argue that schemas “assist us in interpreting and making sense of the world around us” (p. 62). And finally, schemas are similar to large computer programs in that (a) they must be activated if they are to influence one’s perception, and (b) because of the limited capacity of working memory “only a small subset of schemas can be activated at a given time” (p. 62).

By providing an understanding of how the world works, schemas become the drivers of human behavior (Hackman & Johnson, 2009). In their discussion on leaders and leadership styles, Hackman and Johnson (2009) make the point that “not surprisingly, leaders can’t utilize an alternative [leadership] style unless they have established a schemata for the beliefs, attitudes,
and behaviors of that style” (p. 62). Since learning is also a human behavior, how people learn is also impacted by what they already know (i.e., their pre-established schemas).

Recall from Chapter-1 that people learn via “a small set of elementary information processes organized into strategies or programs” (Simon, 1978, p. 279). The researcher posits that many of these learning strategies are implicit. Furthermore, to Hackman and Johnson’s (2009) point, it would be nearly impossible for people to learn by using a learning strategy they did not already know. However, it appears that not knowing a learning strategy is not the only challenge with behavior response. Since knowledge acquired is tied to a particular schema and schema is context-dependent, then inter-schema transfer can also become an issue.

In a discussion on situated learning, Illeris (2007 [1999]) noted that “all learning takes place in a certain outer context and that this context is part of learning and influences both the learning process and its result” (p. 214). The “outer context” is the environment in which the learning occurs, and this environment becomes a foundational part of the schema (Illeris, 2007 [1999]). Illeris highlighted this challenge with inter-schema transfer when he remarked that what students learn in school (one schema) requires “a demanding re-structuring both emotionally and in terms of content before it can be applied outside the institutional context” (p. 220). In other words, learning something in school does not guarantee its use outside of school (e.g., the workplace).

The concept of schemas from information processing theory is a crucial first step in decoding the learning process. But how does new content from the learner’s environment get integrated into an existing schema? This next section answers that question by looking at the knowledge acquisition process—how new knowledge becomes part of a particular schema.
Learning: An Internal Acquisition Perspective

Not surprisingly, the worldview one assumes sharply influences how he or she makes sense of human learning. A postpositivist researcher will zero in on the cause-and-effect aspects of learning. The social constructivist will likewise look at how the uniqueness of the individual influences the learning that is taking place. However, this next section will show that both worldviews are necessary if one is to acquire a more complete understanding of the human learning process.

Types of Learning

Perhaps one of the more renowned scholars to conduct research in the field of learning was Swiss biologist, psychologist, and epistemologist Jean Piaget (Illeris, 2007 [1999]). Piaget was “almost exclusively concerned with the cognitive aspect of learning” (Illeris, 2007 [1999], p. 35). From the cognitive perspective, “learning something means linking something new with what is already there” (Illeris, 2007 [1999], p. 38). From a schema perspective, this implies that learning is inherently personal and individual. As Illeris (2007 [1999]) explained, “even though a group of people is exposed to the same impulses . . . each of them will learn something different because the . . . [schemas] each has already developed are different” (p. 38). So, on the one hand, learning seems to fit best in the social constructionist worldview. Yet on the other hand, much about how learning occurs can be considered cause-and-effect oriented.

In his book *How We Learn*, Illeris (2007 [1999]) identified four types of learning: cumulative, assimilation, accommodation, and transformation. Schemas, mentioned earlier, are pivotal to understanding each of the learning types and how they differ. With cumulative learning, the learner does not already possess a schema for the material encountered, so there is nothing (cognitively) to link the new information to (Illeris, 2007 [1999]). Cumulative learning
is characterized by rigidity and rigor (Illeris, 2007 [1999]). In cumulative learning, the learner is attempting to build the initial structure of a new schema (Illeris, 2007 [1999]). Cumulative learning occurs early in life but can also occur later in life when learners encounter something with which they have no previous knowledge (Illeris, 2007 [1999]). Learning something by rote, repeating it over and over until it burns into one’s memory, is cumulative learning (Illeris, 2007 [1999]). However memorizing something by creating a mnemonic—linking it to something already known—is assimilative learning.

As Illeris (2007 [1999]) explained, assimilative learning “is the ordinary form of learning that we all practice in the many contexts of everyday life” (p. 40). In this type of learning “the learner adapts and incorporates impressions from his or her surroundings as an extension and differentiation of mental energy schemes built up through earlier learning” (p. 40). The greater bulk of human training and education can be characterized as assimilative learning (Illeris, 2007 [1999]). In assimilative learning, the schemas that already exist are grown with new knowledge to reflect a deeper understanding. In simple terms, assimilative learning is simply adding to an existing knowledge structure.

With accommodative learning, an existing knowledge structure itself is either partially or wholly modified (Illeris, 2007 [1999]). According to Illeris (2007 [1999]), accommodative learning occurs “when we are in situations in which impulses from the environment cannot immediately be linked to the existing schemes due to some inconsistency or other, something that does not fit” (p. 41). Thus, with accommodative learning, existing schemas are restructured to accommodate this new information or situation as the learner struggles to make sense of it all.

Accommodative learning has significant implications for the social constructivist worldview. Since learners each have unique schemas, it follows that these “accommodative
restructurings are [also] characterized to a high degree by individual understandings and particular forms of comprehension” (Illeris, 2007 [1999], p. 41). Illeris (2007 [1999]) reasoned that the dynamics of accommodative learning are behind Piaget’s concept of “individuation—the differences that make us develop into separate and distinct individuals even under uniform external conditions” (p. 41). The reason why students who are given the same instruction in the same classroom at the same time so often come away with different understandings can be traced back to the accommodative learning process (Illeris, 2007 [1999]).

Before moving on to transformational learning, one final point should be emphasized regarding accommodative learning. That is, “accommodation in general is a considerably more demanding process than assimilation” (Illeris, 2007 [1999], p. 43). Creating schemas reflects a significant investment in cognitive energy (Illeris, 2007 [1999]). As Illeris (2007 [1999]) pointed out, “we do not simply give up positions we have struggled to gain and which we at any rate have become accustomed to building on” (p. 43). On the contrary, “the actual accommodative learning process is a strain for the individual, characterized by anxiety, bewilderment and confusion, and requires a certain amount of strength” (Nissen, 1970, as cited in Illeris 2007 [1999], p. 43).

As it therefore requires far more mental energy, learners will frequently avoid accommodative learning unless compelled to do so otherwise (Illeris, 2007 [1999]). Yet repeated accommodative learning has its rewards. Illeris (2007 [1999]) pointed out that the hallmarks of accommodative learning are reflection and critical thinking. Furthermore, he hypothesized that gaining skill with the accommodative learning process leads to competence in different and unpredictable situations.
Illeris’s (2007 [1999]) final learning type is transformational learning. Whereas accommodative learning takes place when a mental schema is restructured, transformational learning occurs “when a large number of schemes are reorganized at the same time” (p. 44). Initiated in the field of psychotherapy, transformational learning was characterized as the mental breakthrough that results from successful psychoanalytical treatment (Illeris, 2007 [1999]). Transformational learning is characterized as a painful process that involves a reorganization of the whole self (Illeris, 2007 [1999]).

Of the authors who have written on the concept of transformational learning, American adult educator Jack Mezirow is perhaps the most thoroughly documented and referenced (Illeris, 2007 [1999]). Using the term “transformative learning,” Mezirow (2000) defined transformational learning as follows:

Transformative leaning refers to the process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make them more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action. Transformative leaning involves participation in constructive discourse to use the experience of others to assess reasons justifying these assumptions, and making an action decision based on the resulting insight. (pp. 7-8)

As one can readily see, Mezirow’s definition includes the concepts of schemas (frames of reference), emotions, and environmental interaction; elements of the theoretical framework used in this study.

In summary, this section on learning as an internal acquisition process reviewed four types of learning: cumulative, associative, accommodative, and transformational. Each of these
learning types reflects a progression in both effort and change in the learner’s capacity. Additionally, each of the learning types is characterized by its relation to the learner’s mental schemes (Illeris, 2007 [1999]). Generally, these four learning types have a strong emphasis on the internal, cognitive dimension of learning—what goes on in the mind of the learner. The most difficult form of learning, transformational learning, includes an emphasis on environmental interaction with its “participation in constructive discourse” phrase. Accordingly, what follows next is a look at learning from the environmental interaction perspective.

**Learning: An Environmental Interaction Perspective**

Up to this point, learning has been viewed primarily from the *internal* perspective of the learner—inside the learner’s mind. What follows is a review of literature that has a stronger *external* focus—the environment in which the learner gathers content with the hope of internalizing such. This next section addresses two general questions from this environmental perspective: *where* and *how* learning takes place.

**Types of Education**

With respect to the different types of external environments, adults learn in many places. In a discussion on *where* learning occurs, Merriam et al. (2007) identified four general situations: formal, nonformal, informal, and online settings. The first three settings reflect varying degrees of institutional support whereas online learning reflects a medium other than face-to-face.

As Merriam et al. (2007) stated, most people consider formal education as the typical classroom setting. Institutionalized, bureaucratic, and curriculum driven, the hallmarks of formal education include face-to-face classroom settings and globally recognized grades, certificates, diplomas, and degrees (Merriam et al., 2007). Formal education reflects a prescribed curriculum delivered by certified teachers (Merriam et al., 2007). Here, “we envision adults sitting in a
classroom, with an instructor, learning in a variety of ways, from formal lectures to small-group interactions” (p. 30). Formal education is the brick-and-mortar college or university that most adults associate with formal adult learning (Merriam et al., 2007).

In contrast, “the term nonformal education has been used most often to describe organized learning opportunities outside the formal education system” (Merriam et al., 2007, p. 30). These venues include libraries, community centers, churches, and other civic organizations (Merriam et al., 2007). There may or may not be a formal curriculum, and there may or may not be a qualified instructor or facilitator (Merriam et al., 2007). A commonality with formal education is that informal education is supported by some form of local or community-based institution. However, unlike the large format lecture halls of formal education, the needs and interests of the student participants in a typical nonformal setting (a home improvement store workshop for example) are more of a primary concern to the instructor (Merriam et al., 2007).

Informal learning, on the other hand, represents the unstructured, spontaneous, day-to-day learning that occurs through life, be it in the workplace, the home, or in the local pool hall (Merriam et al., 2007). It is the learning that comes from everyday activities (vice sponsored by a formal institution) (Merriam et al., 2007). Furthermore, Merriam et al. (2007) identified three types of informal learning: self-directed learning, incidental learning, and tacit learning. Self-directed learning is individually driven and intentional, incidental learning is the unintentional byproduct of some other event or activity, and “tacit learning is neither intentional nor conscious” (Merriam et al., 2007, p. 36).

The forth type of educational venue identified by Merriam et al. (2007) is the relatively new setting of online learning. This type of learning is enabled by technology, be it the computer, mobile devices, or interactive teleconferences (Merriam et al., 2007). Presenting both
opportunities and challenges, online learning is pervasive in that it “occurs in formal, nonformal, and informal settings” (Merriam et al., 2007, p. 42). For many, online learning is an opportunity in that it virtually mitigates or eliminates barriers of time and distance regarding brick-and-mortar institutions. One no longer has to commute to attend class, and asynchronous work can be completed when convenient to the learner. On the other hand, online learning represents a barrier to those potential students on the wrong side of the digital divide. From a global perspective, approximately 34% of the world’s 7 billion people have Internet access (Internet World Stats, 2012). Though a significant increase from the 2005 data in which only 14.6% had internet access (Merriam et al., 2007), the statistics still reflect a majority of people for whom online learning is not an option.

The point behind the “Types of Learning” discussion was to broadly define the adult learning environment—where people learn. With this as a background, the next section examines a more detailed look at the learner’s interaction with the environment, or more specifically, how learning occurs via interaction with the learner’s environment. This next section begins with one of the more notable names in learning with respect to environmental interaction, Lev Vygotsky.

Vygotsky’s Sociocultural Theory

Sociocultural theory was pioneered by Soviet psychologist Lev Vygotsky (Miller, 2011). Vygotsky (1978), whose contribution to the field occurred between 1924 and 1934, sought to eliminate illiteracy in Soviet Russia (Miller, 2011). Vygotsky further believed that “humans are embedded in a sociocultural matrix and human behavior cannot be understood independently of this ever-present matrix” (Miller, 2011, p. 166). Vygotsky was interested in the transfer of cultural knowledge through the context of how children learn. Vygotsky examined multiple
learning activities, mostly dyadic, such as learning from parents, siblings, peers, or other adults (Miller, 2011). Consequently, human interaction and activity play a significant role in Vygotsky’s sociocultural theory. This social focus led Vygotsky to a significant breakthrough in understanding cognitive development.

Until then, most people viewed cognitive development as a single entity: they focused exclusively on what individuals could do by themselves (Vygotsky, 1978). However Vygotsky’s (1978) insight was to view cognitive development in terms of two levels. The first cognitive level he called the actual developmental level; the capability the student has regarding independent problem solving (Vygotsky, 1978). The second cognitive level he called the zone of proximal development (ZPD); “the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). Although Vygotsky’s framework is much about cognitive development, its ZPD aspect has significant implications for the environmental interaction component of learning.

Another important distinction in Vygotsky’s (1978) ZPD is the separation of the learning process from the cognitive developmental process. Vygotsky argued “that developmental processes do not coincide with learning processes. Rather the developmental process lags behind the learning process” (p. 90). In other words, a collaborative learning process was necessary for students to attain a higher cognitive level. The ZPD reflected the potential developmental difference, and collaboration was how the teacher impacted the young student’s developmental level (Vygotsky, 1978).

Collaboration was an important element in Vygotsky’s (1978) construct. He saw collaboration as the conduit of intellectual transfer, and ZPD as its driving force (Vygotsky, 1978). Sociocultural psychologists today frequently refer to Vygotsky’s collaborative approach
as scaffolding (Miller, 2011). In construction work, external scaffolding is often used to support the workers as they create the building’s internal structure (or frame). As that internal structure takes shape, it begins to assume a share of the load and the scaffolding is slowly removed. Similarly, Vygotsky’s collaboration is characterized by the teacher initially bearing the brunt of the teaching responsibility (Miller, 2011). As the student becomes more comfortable with the concept, he or she takes on more responsibility for the concept’s application (Miller, 2011).

**Sociocultural Theory Conclusion**

To conclude this brief review of sociocultural theory, Kozulin (2003) argued that many educational challenges in the modern classroom are not so much related to poor classroom material but rather the contemporary student’s “lack of necessary cognitive strategies and metacognitive skills” (p. 6). Vygotsky’s (1978) ZPD construct with its notion of scaffolding reflects an excellent beginning to understand the importance of the environmental interaction component in learning. Bandura (1986) furthers that line of thought by considering the nature of the interaction between learners, their behavior, and their environment. That discussion follows.

**Bandura and Behavior**

Bandura’s (1986) social cognitive theory considers the nature in which individuals, their behavior, and the environment all influence each other. Central to Bandura’s theory are a number of human capabilities. First, symbolizing capability refers to use symbols to understand the environment and guide further action (Bandura, 1986). “Through symbols [people] give meaning, form, and continuance to the experiences they have lived through” (p. 18). Second, rather than being simple victims forced to react to environmental events, people have forethought capability (Bandura, 1986). Using the images from their symbolizing capability, humans create images of a desirable future and regulate their behavior to bring about that future (Bandura,
As Bandura stated, “forethought is the product of generative and reflective ideation” (p. 19). In other words, people will visualize their future and adjust their behavior to realize that visualization. This concept has important implications for learning strategies in training (how to do) situations.

Third, Bandura (1986) argued for vicarious capability. Rather than learning only through action, Bandura noted that people also learn by observing others. A preferred method of learning, “the capacity to learn by observation enables people to acquire rules for generating and regulating behavior patterns without having to form them gradually by tedious trial and error” (p. 19). Paralleling Vygotsky’s (1978) argument for scaffolding mentioned earlier, Bandura noted that “the acquisition process can be considerably shortened through modeling” (p. 20).

Fourth, Bandura (1986) pointed out that humans have a self-regulatory capability. Although people are indeed influenced by their environment, “much of their behavior is motivated and regulated by internal standards and self-evaluative reactions to their own actions” (p. 20). And finally, Bandura noted that people have a self-reflective capability. “This enables people to analyze their experiences and to think about their own thought processes” (p. 21). This self-reflective capability leads to the capacity to build schemas. In Bandura’s words, “people not only gain understanding through reflection, they evaluate and alter their own thinking” (p. 21).

Bandura’s (1986) five capabilities make possible a concise understanding of his earlier concept of self-efficacy. In his seminal work Self-efficacy: Toward a Unifying Theory of Behavioral Change, Bandura (1977) described efficacy as “the conviction that one can successfully execute the behavior required to produce the outcomes” (p. 193). In describing self-reflective capability, Bandura (1986) noted that “the self-knowledge which underlies the exercise
of many facets of personal agency is largely the product of . . . reflective self-appraisal” (p. 21). Simply stated, self-efficacy is the product of a self-reflective action.

In sum, Bandura’s (1986) social cognitive theory focused on the reciprocal determinism between the individual, his or her behavior, and the environment. All three entities influence each other in triadic reciprocality (Bandura, 1986). Additionally, humans have a number of unique capabilities (personal factors) that further influence their behavior, not the least of which is self-efficacy (Bandura, 1977, 1986).

To date, much research has been completed on the individual learner, his or her behavior, and environmental influences on the learning process (Cantrell, Almasi, Carter, Rintamaa, & Madden, 2010; Clandinin, 2007; Cumming-Potvin, 2007; Paris & Jacobs, 1984; Schyns, Kiefer, Kerschreiter, & Tymon, 2011; Schyns et al., 2013; Zhang & Wu, 2009). Surprisingly, however, little has been done on how the nature of the content influences the learning process. This next section explores how the content itself may influence the learning strategy used by the learner.

**Learning: A Content Perspective**

Another factor that could influence the strategies learners use when learning something new is the nature of the content; the object of what the learner is trying to understand. The content perspective is intended to account for how the nature of the content might impact the learning process. For example, if one were learning to hit a baseball, a likely strategy would be to repeatedly swing a bat at a baseball until one achieved a level of comfort with the task. This type of learning would fall into the training (how to do) category. In contrast, if one were learning the multiplication tables, a likely strategy might also be described as repetition, only this time the effort would be more cognitive than physical. Thus, the nature of the content likely influences the learning strategy used by the learner.
What follows is a discussion on learning from a content perspective. The discussion begins by reiterating the difference between training and education, and then looks at how paradigms also affect the nature of the learning content.

**Training versus Education**

Recall from Chapter-1 that training content focused largely on the psychomotor domain with an emphasis on how to do whereas educational content involved primarily the cognitive domain (Gortney, 2010). Another way to look at these differences might be that training (how to do) centers on practical content whereas education (how to think) centers on content that is more conceptual in nature. Applying this line of thought to the military context, training might involve learning how to operate a 5-inch deck gun for example, whereas education might involve a class on understanding ballistics.

It should be noted that often there is no clear distinction between courses that are training and courses that are educational. Most, it would seem, have both training and educational components within the same course. The real question however becomes what is the nature of the learning strategies used by learners when the content varies along the lines practical versus conceptual. Such was the object of this study.

But practical versus conceptual are not the only complicating factors with military content. The next section considers how paradigms also influence the learning content.

**Paradigm Influences on Learning: Natural versus Social Sciences**

Chapter-1 considered two paradigms or worldviews; the postpositivist and the social constructivist. It is perhaps an oversimplification, but one could associate the postpositivist paradigm with content involving the natural sciences, and social constructivist paradigm with content that involves the social sciences. Again, these distinctions are not so clear cut. However
for the purposes of this study it was believed that this simplification would allow the author to gain some initial insight into the nature of the learning strategies used by the participants when the content being learned is impacted by whether there is a single truth to be learned or if there are multiple truths involved.

To illustrate, the previous section considered practical versus conceptual content surrounding the operation of a 5-inch deck gun, a weapon system that can be found on many Navy combatants. This is an example of content that falls within the natural sciences category. In contrast, learning to lead and motivate others is content that falls within the social sciences category.

For example, a practical, how-to-do lesson of this social sciences category might focus on mastering the art of dealing with difficult people. The word “art” is used to reflect that there is now one truth, no one way to deal with all people in all cases. In contrast to the practical lesson, a conceptual how-to-think lesson might involve understanding of the five types of power in leadership. Just as there is no single approach to deal with all difficult people in all circumstance, similarly there is no one type of power that would be effective to lead and motivate all types of people in any given situation.

In both practical and conceptual examples, the correct answer (i.e., the “truth”) will vary with each situation. At a recent Senior Enlisted Academy graduation dinner the guest speaker, former Force Master Chief Mike Baker, stated to his audience, “When you deal with your Sailors, nothing happens in black and white” (personal communication, December 12, 2013). In scholarly terms, Baker was referring to the multiple truths of the social constructivist paradigm.

In conclusion, this study considers that content varies along the lines of practical versus conceptual, and also along the lines of natural science versus social science. This assumption
produces a 2x2 matrix that can be used to describe the nature of the content which the learner would be attempting to internalize. This discussion of training-versus-education and natural-versus-social science is summarized in Table 2.1.

Table 2.1

Content Nature

<table>
<thead>
<tr>
<th>Practical Content (How to do)</th>
<th>Natural Sciences</th>
<th>Social Sciences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learn how to operate a 5-inch deck gun</td>
<td>Learn how to deal with difficult people</td>
<td></td>
</tr>
<tr>
<td>Conceptual Content (How to think)</td>
<td>Learn about ballistics</td>
<td>Learn the five types of power used in leadership</td>
</tr>
</tbody>
</table>

Learning Perspectives Summary

Thus far the study has considered the learning process defined by different researchers from several perspectives. The most prominent body of research considers learning as a cognitive endeavor focusing primarily on the internal acquisition process; converting external content into internal knowledge. Next, the study examined the learning process from an environmental interaction perspective. Though still primarily a cognitive focus, these scholars looked at how the environmental elements the learning process.

Finally, the study identified how the nature of the content can also vary in different learning situations. This final perspective—how-to-do versus how-to-think situations and natural-versus-social sciences content differences—represents an area where little, if any, research has been completed.

These three perspectives of the learning process represent an almost unfathomable breath of literature. Still, all of these studies have one thing in common—the human brain. If the object of human learning is to make sense of the surrounding world, then it is in the brain where
this task is executed (MacLean, 1978). All human perceptions “ranging from the firm pavement underfoot, to the cold, hard facts of science are all derivatives of a soft brain” (MacLean, 1978, p. 311). It is the brain that “makes us aware of our environment and gives directions to all of our activities” (MacLean, 1978, p. 312). Accordingly, the study now considers the role of the human brain in the learning process.

**Learning and Brain Research**

As might be expected, researchers will define the term *learning* according to their research aims. For example, Bandura (1986) argued that “it is sometimes claimed that controversy over the locus of learning cannot be satisfactorily resolved because learning must be inferred from performance” (p. 64). This approach allowed Bandura (2008) to explore performance as the “continuous reciprocal interaction between behavioral, cognitive, and environmental influences” (p. 345). Bandura was particularly interested in how children learn to become functioning members of society. On the other hand, Illeris (2007 [1999]) defined learning as “any process that in living organisms leads to permanent capacity change and which is not solely due to biological maturation or aging” (p. 3). Since his research was inspired by developments in brain research, Illeris purposely excluded biological development influences on learning to narrow the scope of his studies.

Illeris (2007 [1999]) noted that “the brain and central nervous system is . . . [where] the individual’s learning processes take place, whether they are conscious or unconscious” (p. 12). Additionally, Illeris (2007 [1999]) argues that one of the most significant discoveries in recent brain research regarding learning is “than in a normally, healthy brain, what we usually term ‘reason’ cannot function independently of what we call ‘emotions’” (p. 13). This finding may have led Illeris to include emotion in his model for learning (see Chapter-1). To better
understand the influence of brain research on Illeris’s theory of learning, a brief overview of the human brain would be in order.

**Triune Brain Theory**

Dr. Paul MacLean (1978), then head of the Laboratory for Brain Evolution and Behavior at the National Institute for Mental Health, developed what he called the triune brain theory (Reardon, 1998). According to MacLean, the human brain can be thought of as three brains operating simultaneously (MacLean, 1978; Nummela & Rosengren, 1986; Reardon, 1998). MacLean’s overall model is “a triune intelligence comprised of a primal mind, an emotional mind, and a rational mind” (p. 310). He used the terms reptilian, mammalian, and neo-cortex in describing the three brains (MacLean, 1978; Reardon, 1998). However for simplicity, this study refers to these three areas as the lower, middle, and upper brain respectively.

The lower brain is comprised of the brainstem (the upper portion of the spinal cord) and the hindbrain (Illeris, 2007 [1999]). The lower brain is responsible for basic functions “such as breathing, heartbeat, and the maintenance of the chemical balance of bodily fluids” (Illeris, 2007 [1999], p. 16). The lower brain largely corresponds to the brains found in reptiles (Illeris, 2007 [1999]; Nummela & Rosengren, 1986). Hence, it is often called the reptilian or sensory motor brain (Illeris, 2007 [1999]; Reardon, 1998). It is the lower brain that “keeps us in touch with our basic instincts and our surrounding physical world” (Reardon, 1998, Triune Brain Theory section, para. 3).

MacLean (1978) argued that the lower brain is also “implicated in the organized expression of [non-verbal] behavior of a ritualistic nature” (p. 319). Considered the source of primal behavior, research on reptiles shows that they are predisposed “to routine, precedent, and ritual . . . [as] such conformance behavior often has survival value” (pp. 321-322). The primal
mind of the lower brain, though without language, can have a forceful influence on human behavior. As MacLean pointed out, “there is hardly anything more sure to upset the emotional and rational minds than the alteration of a long established routine. It was as though the whole sky would fall” (p. 322).

On the other hand, MacLean (1978) pointed out that activities which preserve or reinforce a routine tend to have a calming effect. Rituals, routines, and conformance to past behavior are driven by the primal mind of the lower brain (MacLean, 1978). As the saying goes, old habits are hard to break. The question for this study becomes what learning habits (or strategies) have the participants in this study adopted?

With its primal focus on routine and precedent, the lower brain is poorly suited for coping with and exploring new situations (MacLean, 1978). Thus, real learning was made possible by the evolution of the middle brain (MacLean, 1978). Moving up in complexity, the middle brain has two main functions; processing emotions and housing long-term memory (Illeris, 2007 [1999]). The emotional mind of the middle brain is “has the capacity to generate the strong feelings of conviction that we attach to our beliefs, regardless of whether they are true or false” (MacLean, 1978, p. 331). This brain “supervises emotions, relationships, and learning . . . especially knowledge and comprehension” (Reardon, 1998, Triune Brain Theory section, para. 4), giving it a metacognitive responsibility. Beyond processing emotions, Illeris (2007 [1999]) highlights that “the operative centers of the long-term memory are situated in this part of the brain” (p. 16). Hence, the middle brain’s long-term memory serves as a massive storage location for the schemas mentioned earlier (Illeris, 2007 [1999]).

The importance of the middle brain’s impact on learning cannot be understated. “Brain research suggests that all incoming information is monitored by this system” (Nummela &
Rosengren, 1986, p. 99). Correspondingly, Nummela and Rosengren (1986) argued that since all new information passes through the middle brain, then all learning involves emotional content or is associated with some emotional context. When educators want someone to learn something, that person’s feelings about the teacher, the school, and the subject area interact with the person’s ability to process new information. A student who interprets the environment as unsafe or hostile, instead of exciting and challenging, will experience emotional interference in attempting to learn. (p. 100)

It is this centrality of emotion in human learning that may have led Illeris (2007 [1999]) to include the emotional dimension in his theory.

Another important aspect of the middle brain deals with memory and personal identity. MacLean (1978) noted that “extensive damage to parts of the [middle brain] interfere with the recording of memories” (p. 331). Both memory and personal identity depend on the middle brain’s “ability to combine internal experience with external experience” (p. 331). In this regard, it would seem that Bandura’s (1977) self-efficacy is likely a product of the middle brain’s emotional mind.

One final point before moving to the upper brain is the significant activity that goes on in the middle brain. To translate experience into memory and personal identity, MacLean (1978) noted that the middle brain constantly uses and combines “messages pouring in from both the inside and outside world” (p. 332). In contrast, the rational mind of the upper brain is “primarily occupied with events in the outside world” (p. 332).

The third brain in the triune brain theory is the neo-cortex or the upper brain (Illeris, 2007 [1999]; MacLean, 1978; Nummela & Rosengren, 1986). This upper brain is the largest of the three and “is only fully developed in humans” (Illeris, 2007 [1999], p. 16). Sometimes called
the intellectual-creative brain, the rational mind of the upper brain is responsible for higher order thinking skills such as analysis, evaluation, and synthesis (Nummela & Rosengren, 1986; Reardon, 1998). The cells of the upper brain “are devoted to the production of symbolic language and the associated functions of reading, writing, and arithmetic” (MacLean, 1978, p. 332). In short, the upper brain is dedicated to “the preservation and procreation of ideas” (MacLean, 1978, p. 332).

Consciousness and reason are products of the upper brain, which also houses shorter-term, working memory (Illeris, 2007 [1999]). As Illeris (2007 [1999]) summarized, the upper brain enables “human beings to react to their environment in far more advanced ways than all other creatures, and, to a certain extent, to know and manage what they do” (p. 16).

Unlike the lower and middle brains, the upper brain is symmetrical with two distinct hemispheres connected by white matter called the corpus callosum (MacLean, 1978). Each half of the upper brain is specialized; the left half being the realm of symbols including language and math, and the right half being the center for nonverbal spatial tasks and musical expression (MacLean, 1978).

Perhaps the most recent event in brain evolution would be represented by the upper brain’s prefrontal cortex (MacLean, 1978). By itself, the upper brain has the capacity to operate “like a coldly reasoning, heartless computer” (MacLean, 1978, p. 339). Add the prefrontal cortex, however, and the upper brain becomes capable of altruism and empathy (MacLean, 1978). Whereas the rest of the upper brain is focused on the outside world, the prefrontal cortex is the only part of the logical mind that is focused on the inside world (MacLean, 1978). Clinical evidence suggests that looking inward allows the upper brain to obtain the gut feeling needed to
identify with others, thus providing the foresight needed to alleviate their suffering (MacLean, 1978).

Research into the prefrontal cortex’s executive functions continues. To date, many researchers agree that these executive functions include planning, response inhibition, working memory, organizational skills, reasoning, problem-solving, and abstract thinking” (Alvarez & Emory, 2006). Working memory is the ability to hold several pieces of information in mind simultaneously while trying to solve a problem (Yeager & Yeager, 2013). Response inhibition is the ability to stay on task in the face of distractors (Yeager & Yeager, 2013). But what is perhaps most fascinating about the prefrontal cortex is its multiple connections to all three brains, giving it the ability to receive simultaneous input from all three minds (Alvarez & Emory, 2006; MacLean, 1978).

Yeager and Yeager (2013) specifically argue for cognitive flexibility and self-monitoring as executive functions. Cognitive flexibility is the ability to generate alternative methods in problem solving, and self-monitoring is the ability to check “one’s own cognitions and actions to ensure that they are in line with one’s intentions” (p. 8). The latter puts Flavell’s (1979) metacognition construct in the upper brain’s prefrontal cortex.

Lastly, as stated earlier, the lower, middle, and upper brains operate simultaneously. Hart (1981) suggested that situations will often dictate which brain is dominant. In normal circumstances, the upper brain is dominant (Hart, 1981). However when a threat arises, the middle brain suddenly takes over (Hart, 1981). “All of us have experienced a sudden shock, insult, or scare, resulting in momentary loss of the power of speech—speech being purely a function of the [upper brain]” (p. 505). One may be so overcome by fear and hence so absorbed by the middle brain as to not be able to decide on any course of action leading to safety (Hart,
1981). In extreme situations, soldiers in battle for example, “the [lower] brain may take charge, leading to flight, to panic, to the desire to ‘hole up’ somewhere” (p. 505). Hart (1981) fittingly summarized triune brain theory’s implications for educators when he stated that “for the [upper brain] to function well, threat must be minimal” (Hart, 1981, p. 505).

Having discussed the brain’s role in human learning, the study now revisits the combined model with this fresh insight before examining research in the field of learning and leader development.

**A Combined Model Revisited**

Chapter-1 briefly described the derivation of the combined model to examine training and education strategies. For convenience, this model is depicted again in Figure 2.1. It is the combination of Bandura’s (1986) social cognitive theory and Illeris’s (2003) three dimensions of learning. Before applying the model to research, this study first uses the combined model to interpret the foundational literature on human learning.

Recall Illeris (2003) argued that the EMOTION dimension provided the mental energy (feelings, motivation, and volition) needed for learning to take place. Of Knowles’s (1990) six assumptions, four deal specifically with the EMOTION dimension: need to know, readiness to learn, orientation to learning, and internal drivers to learning. The assumption that adults bring a greater degree of experience reflects a greater schema to assist in acquiring new knowledge (i.e., COGNITION). Finally, the assumption that teachers need to move adults from being teacher-dependent to self-directed learning reflects a greater acquisition process capacity to deal with the
ENVIRONMENT. Although the environment is a factor to some extent, Knowles’s six assumptions of the adult learner appear to have a primary focus on the learner’s internal acquisition process.

Next the study considered tacit, informal, and formal learning theories. Tacit theories of how to do things based on experience without explicitly linking these strategies to any particular framework reflect a combination of all of the elements in the combined model, with the exception of connecting that behavior to an explicit schema. Informal theories show the beginnings of a schema formation, whereas formal theories reflect an established schema for understanding how the world works in a particular context. In sum, the combined model can be used to explain tacit, informal, and formal theories of learning.

Next, the study considered the Four Lens model consisting of the learner lens, the process lens, the context lens, and the educator lens. The learner lens considered theories that focused on the learner, emphasizing individual characteristics, developmental tasks, and factors that either enhance or impede their educational progress (Kiely et al., 2004). Beyond focusing on the learner, the process lens looked specifically at “how adults learn” (Kiely et al., 2004, p. 22). Both of these lenses can be represented by the internal acquisition process of the combined model. The educator lens considered the philosophical assumptions that guide educators’ actions. Being philosophical in nature, the educator lens simply changes to focus from the internal world (i.e., cognition plus emotion) of the learner to the internal world of the educator. In sum, the combined model can be used to explain the concepts in the Four Lens model of learning.

Moving to learning from a cognition perspective, Flavell’s (1979) metacognition and the information processing theory as explained by Hackman and Johnson (2002) are wholly
represented by the COGNITION dimension. Similarly, the four types of learning (cumulative, assimilative, accommodative, and transformational) are also elements of the COGNITION dimension with a heavy emphasis on schema building. And so too are paradigms are schemas, with the exception that schemas are stored in the emotional brain which holds the learner’s long term memory. (Recall working memory can only hold a limited number of schemas, likely a factor in inter-schema transfer issues discussed earlier.)

Next, the environmental interactive perspective with Bandura’s (1986) social cognitive theory and Vygotsky’s (1978) concepts of ZPD and scaffolding reflect a dual focus; one on the COGNITION dimension and the other on interaction with the external world, all of which is included in the combined model. Finally, the literature on the types of education (formal, nonformal, and informal) has an almost dedicated focus on the ENVIRONMENT dimension as it considers the social context of where people learn.

Though a commonality with Bandura (1986) and Illeris (2002, 2007 [1999]), the definition of the ENVIRONMENT differs somewhat between the two seminal authors. Bandura (2008) primarily considers the learner’s immediate surroundings or situation. In his words, “exponents of environmental determinism study and theorize about how behavior is controlled by situational influences” (p. 344). Bandura (1986) was focused with how the environment shapes the learner and vice versa.

Illeris (2002, 2007 [1999]), on the other hand, was much more specific regarding his definition of the ENVIRONMENT dimension. Like Bandura (2008), Illeris (2007 [1999]) considers the ENVIRONMENT as the setting where learning takes place. But Illeris goes on to argue that “the learning situation not only influences, but is also a part of, the learning” (p. 97). This includes all social aspects of the situation. For Illeris, the ENVIRONMENT reflects a
continuum from “the immediate social situation [to] the underlying general societal situation” (p. 97). In any event, the literature on the types of education reflecting where people learn can be included in the combined model.

Lastly, the discussion on triune brain theory can be modeled by the internal world of the learner. Here, the EMOTION dimension represents the middle brain’s emotional mind whereas the COGNITION dimension represents the upper brain’s rational mind. Though biologically there may not be such a cut-and-dry distinction, there is nevertheless the ability to make that distinction with the combined model. Of note, the model does not represent the primal mind of the lower brain. This reflects a limitation of the model with respect to the triune brain theory.

Having considered the foundational literature that forms the basis for the combined model, the next section uses the combined model as a theoretical lens to interpret recent research in on learning and leader development.

**Recent Research in Learning and Leader Development**

In 2005, Xu looked at workplace training in urban China. Using the State of Life Chances in Urban China survey sponsored by the National Science Foundation administered to over 4,000 families, Xu compared workers who received on-the-job training with those who received off-the-job education. Xu found that education has “persistent positive effects on earnings throughout an individual’s working life as compared with on-the-job training, whose earnings effect is far less transportable across jobs” (p. 1372). In other words, education builds a more general human capital capacity than does training which tends to be more job-specific.

Still, Xu (2005) found the training had distinct benefits. “Workers who received training have higher wages, more education, more experience, and fewer children. Trained workers are more likely to be CCP members and to work in larger firms” (p. 1379). Xu concluded that
training was “found to have a positive effect on private earnings . . . [and education], embodying more general human capital, is more portable and flexible than on-the-job training” (pp. 1387-1389).

Reflecting on the combined model, one way to interpret Xu’s (2005) findings is that, from the interaction perspective, education can be applied to behavior in multiple environments whereas training is more focused on a particular environment. Similarly, from the acquisition perspective, it could be argued that education may be assimilated in multiple schemas whereas training affects fewer schemas. If so, then perhaps the learning strategies used in training and educational situations may differ.

Finally, since Senior Enlisted Leaders are expected to perform well across more varied contexts than junior enlisted, Xu’s (2005) findings support the Chairman of the Joint Chiefs of Staff’s (CJCS) decision to shift the focus from training to education as enlisted members become more senior (Gortney, 2010). Again in Xu’s words, education “is more portable and flexible” (p. 1389), providing a higher return on investment as Senior Enlisted Leaders rise to higher levels of responsibility and authority.

Next, recall from Chapter-1 that, on average, 68% of SEA students hold only a high school diploma. Gorard and Selwyn (2005) conducted a quantitative study in the United Kingdom to explore the determinants of lifelong learning; who continues with formal education “after reaching compulsory school-leaving age” (p. 1193) and who does not. Their goal was to investigate “the mechanisms through which educational participation is affected by place (or time)” (p. 1195). Their long term goal is “to reduce the current inequalities in participation among those groups traditionally underrepresented in adult education (p. 1196) such as minorities and those from a lower socioeconomic status.
Using a structured-interview instrument, Gorard and Selwyn (2005) surveyed 1001 adults over 21 years of age. Their four dependent variables were nonparticipants, traditional learners, delayed learners, and lifelong learners (Gorard & Selwyn, 2005). Independent variables included age, sex, residence, family background, and nature of schooling (Gorard & Selwyn, 2005).

Gorard and Selwyn’s (2005) study showed that “only 38% continued with any form of formal learning directly after reaching compulsory school-leaving age” (p. 1198). (This is consistent with the U.S. statistics mentioned in Chapter-1.) Furthermore, their data indicates that participation in further education “is strongly related to geographic mobility. In general, participation increases with the distance between current area of residence and area of birth” (p. 1201).

Additionally, the findings in Gorard and Selwyn’s (2005) study reinforced French sociologist Pierre Bourdieu’s (1979) concept of habitus. The term “habitus” refers to “distinctive outlooks and forms of self-expression that arise out of recurring social circumstances” (Brint, 2006, p. 194). In simpler terms, habitus reflects the “recurring patterns of social class outlook and expression” (Brint, 2006, p. 194). The results from Gorard and Selwyn’s study show that “there is considerable reproduction over generations in terms of both learning experiences and qualifications . . . [and that] family background is one of the most important predictors of participation” (p. 1202). Furthermore, as might be expected, “the age at which parents finished initial education is a key determinant” (p. 1207) of participation or nonparticipation in further education.

Beyond the habitus indicators, Gorard and Selwyn’s (2005) study uncovered a significant emotional component of learning. Gorard and Selwyn were curious as to how breakthroughs in
information technology might influence participants to seek further education since information technology is supposed to mitigate time and distance barriers associated with traditional education. Their study revealed that participation was not a function of physical distance, “but rather [a] lack of interest” (p. 1211). Gorard and Selwyn concluded that “nonparticipation is largely a product of the fact that individuals do not see education and training as appropriate for them, and these views, in turn, are structured by factors that occur relatively early in life” (p. 1214).

This last conclusion by Gorard and Selwyn (2005) is consistent with Knowles’s (1990) assumptions mentioned in Chapter-1. Knowles’s sixth assumption of andragogy regarded motivation. Specifically Knowles et al. (2011) argued that the most potent motivators in adults are internal motivators such as “the desire for increased job satisfaction, self-esteem, quality of life, and the like” (p. 67). However, Knowles et al. also cautioned that this motivation to keep learning “is frequently blocked by such barriers as negative self-concept as a student, inaccessibility of opportunities or resources, time constraints, and programs that violate principles of adult learning” (p. 67). In other words, an individual’s self-efficacy as a learner can thwart his or her motivation to learn a new way of living. If one assumes that, as argued earlier, self-efficacy is a product of the emotional mind, then perhaps the seeds of habitus also lie in the middle, emotional brain.

Next, in a 3-year action research quantitative study involving 11 Veterans Affairs (VA) hospitals, Yorks (2008) used practitioner-based collaborative action inquiry as a strategy for facilitating adult learning. His goal was to reduce stress and aggression in the workplace (Bush, 2008). Yorks noted, “there is reciprocity between the inner and outer worlds of learners as growing consciousness of their actions (or inactions) in various settings provides tensions that
lead to exploration of their own contradictory feelings and belief systems” (p. 1225). This quote speaks to Bandura’s (1986) triadic reciprocality. Additionally, Yorks’s most ambitious goal was “transformative and emancipatory through practitioners’ reformulating reified structures of meaning and reconstructing dominant narratives that have shaped their practice” (p. 1219). This goal has implications for associative, accommodative, and transformational learning as schemas are built, readjusted, or completely overhauled.

Using control and treatment groups, learning coaches were assigned to treatment groups “with the intention of helping participants reflect on their difficulties and explicitly draw learning from their experiences” (p. 1230). Yorks’s results showed “significant reductions in stress and in all forms of aggression” (p. 1227) in all treatment groups, with no change in any of the control groups. Equally important, his intervention generally had greater impact at smaller sites (33-260 employees) than larger sites (630-2,797 employees), making the case for considering ZPD and scaffolding as elements in the learning process (i.e., the interaction dimension of learning) (Bush, 2008).

From the content perspective, Yorks’s (2008) study deals with both training and education efforts in the social sciences realm. His stated purpose was to reduce stress and aggression in the workplace (Bush, 2008). As these are ultimately individually unique factors, a social constructivist worldview is appropriate.

Finally, Yorks’s (2008) study also makes a strong case for reflection in learning, but cautions that “creating a space for reflection . . . is especially challenging in the American culture with its bias toward action” (p. 1223). This may be significant as SEA students come with a heavy bias toward training (how to do). Reflection might not be a strategy of choice with SEA participants.
In sum, Yorks’s (2008) study makes a point for ZPD and scaffolding by virtue of the "learning coach" being more effective in smaller organizations where more frequent contact is possible. It explicitly covers the internal world of the learner by focusing on the COGNITION dimension, but is void of discussion on the EMOTION dimension. In other words, Yorks follows the Western bias of learning as primarily a cognitive endeavor. Yorks’s study is strongly oriented toward the interaction process including elements of both the BEHAVIOR dimension and the ENVIRONMENT dimension.

Next, a qualitative study in the United Kingdom by Christie, Tett, Cree, Hounsell, and McCune (2008) examined theoretical and empirical issues surrounding the emotional component of learning amongst higher education students. As part of a project focused on the teaching and learning experiences of nontraditional students, Christie et al. interviewed 79 freshmen at a UK university. Their goal was “to enhance the learning experiences of the cohort of students who had entered direct from further education colleges” (Christie et al., 2008, p. 569). In the UK, further educational colleges are more vocationally oriented whereas universities reflect the more traditional higher educational institutions (British Council, 2014).

Themes that emerged from the interviews included lack of knowledge about student expectation at the university, insecurity about academic standards, developing new ways of learning, and gaining a sense of membership and belonging (Christie et al., 2008). Christie et al. (2008) concluded that “the social and collaborative aspects of students’ learning experiences . . . are also important determinants of graduate outcomes, and should be included in efforts to enhance the quality of student learning” (p. 579). In other words, it supports using the combined model as a theoretical lens to get a more comprehensive view of human learning.
In sum, the study conducted by Christie et al. (2008) covered all aspects of the combined model. It could be summarized as a study oriented toward building a schema of understanding how things work in a university setting. Although schema is a cognitive construct, the learning process involves much more than simple cognition. As Christie et al. stated, “. . . learning does not take place within the realm of individual cognition. The entire person, group or even organization is part of the learning process” (p. 567).

Following a similar line of thought, Daniels (2008) conducted a narrative inquiry of 12 women in a Vocational Education and Training (VET) program in Australia. Her purpose was to explore “how mature women understood their learning, what values they placed on their experience, and specifically how they negotiated that learning within the contexts of their everyday lives” (p. 94). As with Christie et al.’s (2008) study, Daniels included context as an important element of the learning process. Furthermore, Daniels argued that women are relational learners, and that “it is through connections and relationships that women build a sense of achievement, self-esteem and success” (p. 95).

Daniels (2008) concluded that narrative inquiry provides insights into the learning process that “are not possible using methods that preclude individual experience as a starting point” (p. 104). In other words, the ENVIRONMENT dimension is a significant component in the learning process. She further concluded that “learning is a contextualized and relational experience” (p. 104), and that learning “is dependent on and informed by many other events, memories and experiences” (p. 101). Assuming that long term memory and relationships are a product of the middle brain (MacLean, 1978), Daniels’s conclusion has implications for the EMOTION dimension of learning as well (Illeris, 2002). To sum up, the combined model is an appropriate theoretical lens for interpreting Daniels’s study.
Looking at learning and leadership, Gibson (2008) asked, “What are developmental relationships like for women leaders in career transition?” (p. 655). This phenomenological inquiry involved interviewing 12 women leaders in career transition (i.e., between jobs where they were not part of any particular organization) with the participants ranging from 39 to 53 years of age (Gibson, 2008). Themes that emerged included an often emotional process of leaving a job, and identity formation (Gibson, 2008). Gibson concluded that collaboration and partnership may be important aspects of leader development. She argued for future research to include the role of relationships in leader development (Gibson, 2008).

Although it includes a cursory discussion of emotion, Gibson’s (2008) study is primarily focused on the cognitive dimension. She looks at developmental relationships as a socio-emotional construct where mentors provide career advice and emotional support to protégés (Gibson, 2008). Yet, a telling quote from one of her participants reads, “Transition is, without question, one of the single most difficult things I have ever done, because you really have to go to the core of who you are” (p. 652). Considering MacLean’s (1978) stance that the middle “emotional” brain deals with memory and personal identity, it would appear that the EMOTION dimension might play a more prominent role in Gibson’s research.

In an educational leadership study, Collay and Cooper (2008) explored the nature of transformational learning and role of self-authorship in developing women leaders. The authors define self-authorship as the ability to make meaning out of experience in a way that involves interaction with others but retaining the ability for independent thought (Collay & Cooper, 2008). They consider transformational learning as “learning that leads to some type of fundamental change in the learners’ sense of themselves, their worldviews, their understanding of their pasts, and their orientation to the future” (Brooks, 2000, p. 140). In other words, this
qualitative, dual case study conducted in the U.S. retains the Western bias of learning as a cognitive endeavor.

The participants in this study were female veteran teachers in “master’s programs aimed at the development of teacher leadership in two states, California and Hawaii” (Collay & Cooper, 2008, p. 5). Data consisted of student reflection journals, the program’s final assignment, and participant observations. Data was coded and categorized for themes. Themes that emerged included critical reflection on experience, gaining an inner reflective voice on one’s experiences, seeing one’s self as a leader, and the power of collaboration. Of these themes, Collay and Cooper (2008) placed a prominent emphasis on reflection in leader development. “The focus on reflection in these graduate programs provides opportunities for making meaning of both past and present experiences” (p. 16).

In conclusion, Collay and Cooper’s (2008) research looked at learning as cognition and making sense out of past and present experiences. Here again, reflection is emphasized as the primary tool for schema building. In addition, the authors consider the interaction process as an important component of learning. From the content perspective, the nature of what was being learned would likely be a mix of all four quadrants (training, education, natural science, and social science topics). However that detail was not discernable from the article.

Looking more specifically at human learning, in a quantitative study Nordell (2009) assessed the impact of a learning strategies workshop at a major U.S. university. His quasi-experimental study involving freshmen in a majors-level biology course (N=343, n=68) included control and treatment groups with pre and post-tests. Students were offered a 1-hour learning strategies workshop after their first exam. A t-test was then used to compare the performance difference between their first and second exam.
Nordell’s (2009) study noted several interesting results. First, students who scored higher on the first exam were more likely to sign up for the learning strategies workshop than those who scored a C+ or lower (Nordell, 2009). Second, students who attended the workshop “performed significantly better on the second lecture exam than students who did not” (p. 40). Third, low-achieving students tended to have poor metacognitive skills (Nordell, 2009). Nordell defined metacognition as “the ability to self-monitor your current level of knowledge and understanding and diagnose when it is or is not adequate” (p. 41). He argued that low-achieving “students who come to me for class performance advice often self report that they felt like they had ‘done well’ on an exam only to be startled by their actual exam score” (p. 41).

In Nordell’s (2009) study, the learning strategy that proved most effective for the participants was preparing for lectures by “looking for key words or concepts in the textbook or in PowerPoint” (p. 41). Similarly, this represents what Adler and Van Doren (1972) called “coming to terms with an author” (p. 96). Adler and Van Doren’s main point was that “unless the reader comes to terms with the author, the communication of knowledge from one to the other does not take place” (p. 96). Pointing out that the same word can have different meanings to different people, the authors use the word term to indicate when “two parties use the same words with the same meanings” (p. 97). As such, Adler and Van Doren’s proposed strategy of coming to terms with the author was to “spot the important words in a [reading] and figure out how the author is using them” (p. 98).

From an acquisition process perspective, Nordell’s (2009) most effective learning strategy of identifying key words or concepts in advance of a lecture and Adler and Van Doren’s (1972) strategy of coming to terms with the author are strikingly similar. Perhaps not surprisingly since they are all Westerners, both strategies are focused on COGNITION and both
approaches ignore the EMOTION dimension. From an interaction process perspective, Nordell’s study can be interpreted to reflect elements of Vygotsky’s (1978) ZPD and scaffolding and Bandura’s (1986) triadic reciprocality. As for types of learning, Nordell’s workshop seems to be largely focused on building initial schemas and thus centered on cumulative and associative learning (Illeris, 2007 [1999]).

Although most studies were focused on how individuals learn, some studies looked at how groups learn. Such was the more recent qualitative study by Westfall-Rudd (2011). Here, she examined the nature of teacher participation in planning their continuing professional education. This case study was a purposeful sample group of eight agricultural teachers who were also leaders in their U.S. state-level professional educational program (Westfall-Rudd, 2011). Collected data included a document review, observations of meetings, interviews, and a focus group session (Westfall-Rudd, 2011).

Westfall-Rudd’s (2011) study yielded some interesting results. According to her findings, the first step for the group was to develop a sense of "we"; to establish a cooperative “feeling of ownership” (p. 156) among the group. Otherwise, the overall task was too hard for one person to do it all (Westfall-Rudd, 2011). Beyond establishing a sense of “we,” Westfall-Rudd posited that it was establishing long-term relationships with their teacher-customers that led to the group’s eventual success with the continuing professional education program (Westfall-Rudd, 2011). Westfall-Rudd concluded that the social objectives of networking and connecting to like-minded others were equally as important as the technical “knowledge” objectives of the continuing professional education program. In other words, a successful teacher development program involves more than just transmitting knowledge: it includes developing relationships with others.
From the triune brain perspective, Westfall-Rudd’s (2011) study centered on planning which is an executive function of the upper brain (Alvarez & Emory, 2006; MacLean, 1978; Yeager & Yeager, 2013). However, one of her key findings was that establishing good relationships were prerequisite for eventual success (Westfall-Rudd, 2011), and relationships are a function of the middle emotional brain (MacLean, 1978; Reardon, 1998; Yeager & Yeager, 2013). Thus it would appear that the combined model could also be used to interpret Westfall-Rudd’s findings. Additionally, Bandura’s (1986) triadic reciprocality can also be used to illustrate the interaction between the planning group and the teacher organization as a whole.

Furthermore, Westfall-Rudd’s (2011) study classically illustrated Knowles (1990) labeled his fifth assumption “orientation to learning” (p. 61). Recall this assumption states that adults will “devote energy to learn something to the extent that they perceive that it will help them perform tasks or deal with problems that they confront in their life situations” (p. 61). As a center for professional development program planning, establishing a relationship with their teacher-customers led to updating the center’s approach to account for the needs of the wider community of local, school district, and community agricultural education (Westfall-Rudd, 2011).

In brief, although it concerned a group of leaders, Westfall-Rudd’s (2011) study can also be viewed through the lens of the combined model. Her study showed that having a sense of ownership for a task and establishing relationships with clients were important elements for success in leading others. It would seem that “ownership” and “relationship” are constructs that would have significant EMOTION dimension components.

Continuing on with recent leadership studies, Carroll and Simpson (2012) looked at leadership development among 20 senior managers in a non-Western public utility company.
The group, all of whom reported directly to the executive level of management in the company, comprised six women and 14 men from various technical backgrounds, and located across geographically distributed sites. The programme was commissioned shortly after a period of restructuring that had brought disparate units into new configurations. (p. 1289)

The leadership development program was a blended solution with six 3-day face-to-face workshops separated by five 3-month periods of distance learning (Carroll & Simpson, 2012). The online postings were coded and categorized for themes. The authors concluded that “online learning appears to offer a platform upon which the social capital required to build leadership may, at least in part, be developed” (p. 1287).

Carroll and Simpson’s (2012) study is particularly since it represents one of the newer branches in leadership studies; relational leadership which follows a social constructivist worldview. “Rather than placing primacy on the individual, constructionist theories begin with the social. Constructionist scholars approach leadership not as a phenomenon embodied in persons but as an organizing process grounded in task accomplishment” (Uhl-Bien, Maslyn, & Ospina, 2012, p. 307). In the relational leadership perspective, “actors both construct, and are constructed by, their social interactions” (Carroll & Simpson, 2012, p. 1287).

Carroll and Simpson (2012) use the construct of frames as the fundamental building blocks of understanding. They define frames as “significant symbols in the practice of relational meaning-making. . . . The meanings attached to specific frames are never permanently fixed. Rather they mutate as relational meanings shift over time” (p. 1288). Their study identified three ways in which frames are developed and matured into shared meanings.
Looking at the combined model, Carroll and Simpson’s (2012) study is heavily focused on the COGNITION dimension as well as the interaction process. Their concept of “frames” is similar to that of schemas but emphasizes a “shared meaning” social component. Of note: “frames” is also similar to “shared mental models” in Cannon-Bowers’s (1993) work. Both constructs are cognitive phenomenon formed by continual social interaction to ensure consistency and accuracy (Cannon-Bowers et al., 1993; Carroll & Simpson, 2012). They can also be viewed as a resulting product of Bandura’s (1986) triadic reciprocality. Overall, Carroll and Simpson’s (2012) study highlights social interaction as a learning strategy.

Another recent study that looked at learning and technology was Ghost Bear’s (2012) quantitative analysis of learning strategies used by adults while engaged in the eBay auction process. Keying off of the Knowles’s work on self-directed learners (1975) and andragogy (1990), Ghost Bear posited that “learning-how-to-learn happens in everyday lives, yet little research about learning-how-to-learn outside of formal educational or organizational settings exists” (p. 29). Ghost Bear defined learning strategies as the methods and behaviors learners use to internalize information when trying to learn something new.

Ghost Bear (2012) used an online questionnaire with an imbedded instrument to collect data from 380 eBay users. The imbedded “Assessing The Learning Strategies of AdultS” (ATLAS) instrument is designed to identify learning strategy preferences identified as Navigator, Problem Solver, or Engager (Ghost Bear, 2012). Among Ghost Bear’s conclusions were that “informal learning on eBay exemplifies the six assumptions upon which Knowles’ andragogical model is based” (p. 31), and that different learning strategies could be used to accomplish the same learning task.
Using the combined model as a theoretical lens, Ghost Bear’s (2012) analysis takes a distinctive external focus on what the participants do to learn how to get what they want (e.g., navigator, problem solver, engager). This view of learning strategies as defined by external behavior is markedly different than the view discussed earlier: learning strategies as “a small set of elementary information processes organized into strategies or programs” (Simon, 1978, p. 279). In addition to the interaction perspective, the latter has a sharper focus on the acquisition perspective to include schema formation via a type of learning (e.g., cumulative, assimilative, accommodative, and transformational).

Looking at leadership development as learning, Schyns, Tymon, Kiefer, and Kerschreiter (2013) conducted a study that used a drawing exercise to expose participants’ implicit notions of leaders and leadership. Their goal was to show that “implicit leadership theories can provide a valuable starting point for leadership development” (p. 11). “The core idea [was] to connect leadership learning and development to the images of leaders and leadership which followers and leaders have in their minds” (p. 12).

After reflecting on their personal images of leaders, students form groups, discuss their ideas about leaders, and then draw their group image of a leader (Schyns et al., 2011). Schyns et al. (2013) collected 138 drawings of leaders from undergraduate, postgraduate, and executive students. Their results ranged from actual to generic people with some groups including combinations of traits, symbols, and metaphors with their drawings, and some groups including followers in their drawings (Schyns et al., 2013). Schyns et al. concluded that “ultimately, every group will be different in terms of what they consider leadership to be and the degree to which they agree/disagree about leadership (development)” (p. 22).
The study by Schyns et al. (2013) shows how preexisting schemas impact leadership development (and hence learning). Recognizing that assimilative learning is the most common form of everyday learning (Illeris, 2007 [1999]), having an awareness of the schema to which new information will be attached should be important to the learner, particularly if there are biases involved that may be incompatible with the content being assimilated. Such incompatibilities would likely hinder the acquisition process. Questioning those biases might facilitate an opportunity for either accommodative or transformational learning, depending on the situation.

From the interaction perspective, the study by Schyns et al. (2013) can be a boost for teachers to better understand where their students are coming from in terms of preconceived notions of leaders and leadership. At the SEA, each class often leaves a legacy gift, and frequently those gifts will include a few words of leadership advice for following classes. The gift left by SEA Class 101 included the advice that “The only limitations are the ones you bring with you.” Perhaps this advice reflects an intuitive acknowledgement that preexisting schemas can detract from or even inhibit new learning.

Additionally, Schyns et al.’s (2013) study illustrates how the social constructivist paradigm applies to learning in leadership development courses. Their claim that ultimately every group will produce different images of leaders is testament to the multiple truths of the social constructivist worldview (Creswell, 2009; Schyns et al., 2013). Finally, although Schyns et al. (2013) included a discussion of emotion in their literature review, emotion was not an element of their analysis. Assuming that the emotional brain holds both long term memory as well as the sense of identity, one might conclude that exploring the nature of emotion in this
drawing exercise might produce additional insight. In short, the combined model can be used to understand research in relational leadership studies.

**Literature Review Summary and Conclusion**

This chapter covered the foundational literature on adult learning and looked at current research in both learning and leader development as learning. The foundational literature identified elements of human learning including Knowles’s (1990) assumptions of the adult learner, adult learning theories, metacognition, and learning strategies as defined by information processing theory. Moving beyond the foundational literature, the study considered acquisition perspective in reviewing the four types of learning and how they relate to worldviews.

Next, the study considered the literature from the environmental perspective on learning, looking first at where learning occurs before moving onto the foundational works of Vygotsky’s (1978) ZPD and scaffolding, as well as Bandura’s (1986) social cognitive theory with its triadic reciprocality. The study then examined the content perspective, highlighting the difference between training and education, before discussing recent breakthrough in brain research and MacLean’s (1978) triune brain theory. Finally, after reviewing how this foundational literature informed the combined model, the study considered how the combined model can be used to view current research in the field of adult learning and leader development.

In conclusion, the combined model provided a comprehensive framework for examining the adult learning process. Having reviewed the literature and current research on adult learning, the next chapter reviews the methods used to explore the nature of the learning strategies employed by selected Senior Enlisted Leaders while they attended an educational-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role.
CHAPTER 3 A QUALITATIVE INQUIRY

This section discusses the study’s research methodology and associated research paradigm, reviews the research questions, and identifies the role of the researcher.

Overall Plan

The purpose of this study was to explore the nature of the learning strategies used by successful Senior Enlisted Leaders while they attend an educational-based curriculum designed to help them transition from a focused, technical (how to do) role to a broader, leader/manager (how to think) role. In discussing qualitative research design, Maxwell (2005) stated that intellectual goals “are focused on understanding something” (p. 21). Consequently, the major intellectual goal of this inquiry was to understand how the participants’ approach learning in both training and in educational situations. Thus, the fundamental nature of this line of inquiry was largely to explore an unknown.

Along these lines, many would agree that a qualitative research approach is best used when a problem of practice is less understood and the researcher’s intent is to uncover the meanings others make of their experiences (Creswell, 2007; Lincoln & Guba, 1985; Maxwell, 2005; Merriam, 2009). Consequently, a qualitative research methodology was best suited for this line of inquiry.

Research Methodology and Paradigm

Qualitative inquiry follows a social constructivist worldview which holds that the meanings individuals make of their lives and work are both varied and multiple (Creswell, 2007). This worldview leads to multiple realities as each person interprets a single event differently (Merriam, 2009). In this worldview, both the experience and how it is interpreted are central to the meaning an individual holds for an event (Merriam, 2009). To uncover these meanings,
researchers and participants interact so researchers may inductively develop patterns of meaning (Creswell, 2007). Ponterotto (2005) posited that “only through this interaction can deeper meaning be uncovered” (p. 129). As with any worldview, the social constructivist perspective can be viewed as a series of assumptions.

Assumptions

In their discussion about the nature of social science, Burrell and Morgan (1979) identified four sets of assumptions. First, ontological assumptions concern the phenomenon being studied; “whether the ‘reality’ to be investigated is external to the individual . . . or the product of individual consciousness” (p. 1). Second, epistemological assumptions “are predicated upon a view of the nature of knowledge itself” (p. 1), whether knowledge is hard, objective, and real, or whether it is soft, subjective, and more of a personal nature. In short, is this knowledge “something which can be acquired . . . or is something which has to be personally experienced” (p. 2)? For this study, the researcher assumed that the phenomenon under investigation was a product of the participant’s consciousness, and that the learning process was unique to each individual and therefor could “only be understood from the point of view of the individuals . . . directly involved in the activities . . . to be studied” (p. 5).

Burrell and Morgan’s (1979) third set of assumptions about the nature of social science concerned “the relationship between human beings and their environment” (p. 2). The determinist view sees people as products of their environment, fashioned “by the situations encountered in their external world” (p. 2). The voluntarist view, on the other hand, sees people as “completely autonomous and free-willed” (p. 6). For this study, the researcher assumed the latter view.
Together, these first three sets of assumptions have direct implications for the methods used during an inquiry (Burrell & Morgan, 1979). In discussing research methods, Burrell and Morgan (1979) labeled the ideographic approach when researchers assume “that one can only understand the social world by obtaining firsthand knowledge of the subject under investigation” (p. 6). This approach “emphasizes the analysis of the subjective accounts which one generates by 'getting inside' situations and involving oneself in the everyday flow of life” (p. 6). On the other hand, the nomothetic approach refers to researchers who emphasize “systematic protocol and technique” (p. 6) more commonly found in research associated with the natural sciences. The nomothetic approach focuses on “the process of testing hypotheses in accordance with the canons of scientific rigor” (p. 6). For this study, the researcher assumed the subjective, ideographic approach.

To sum up, qualitative researchers primarily seek to understand how people make sense of their world through their experiences (Merriam, 2009). That being the case, this study employed a social constructivist worldview and a qualitative research methodology. Additionally, this study also adopted the postpositivist worldview when considering the nature of the content the learner was attempting to master (Creswell, 2009). (See Chapter- 2 discussion on “Learning: A Content Perspective” for additional detail.)

Finally, this study was conducted at the Navy Senior Enlisted Academy in Newport, RI, using a sampling of students from two consecutive classes to achieve maximum variation and data saturation. Sample design details are included in the later section in this chapter.

Research Questions and Researcher’s Role

Chapter-1 reviewed the purpose of this study: to explore the nature of how Senior Enlisted Leaders (SELS) approach learning as they attend an education-based curriculum
designed to help them transition from a focused, technical (how to do) role to a broader, leader/manager (how to think) role. Accordingly, the following research question was used to guide this study: How do Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?

With a qualitative research methodology, the researcher’s role becomes very significant. Creswell (2007) noted, “the key idea behind qualitative research is to learn about the problem or issue from participants and to address the research to obtain that information” (p. 39). Accordingly, qualitative inquiry focuses on discovering the meaning participants hold within a given context. This task “requires a data collection instrument that is sensitive to underlying meaning when gathering and interpreting data. Humans are best suited for this task” (Merriam, 2009, p. 2). Thus, unlike other research methodologies, the researcher becomes the primary data collection instrument in a qualitative inquiry (Lincoln & Guba, 1985).

In this study, the researcher’s goal was to uncover the learning strategies used by the participants in both training and educational scenarios, as well as to understand the nature of emotion in the learning process. However, being the primary data collection instrument presents challenges for the researcher. Perhaps Creswell (2007) summed it up best in describing the researcher as the key collection instrument. In his words,

The qualitative researchers collect data themselves through examining documents, observing behavior, and interviewing participants. They may use a protocol—an instrument for collecting data—but the researchers are the ones who actually gather the information. They do not tend to use or rely on questionnaires or instruments developed by other researchers. (p. 38)
This role as the primary data gatherer generates both challenges and opportunities. Paralleling Creswell, Lincoln and Guba (1985) noted, “the human instrument operating in an indeterminate (not knowing what is not known) falls back on techniques such as interview, observation, unobtrusive measures, document and records analysis, and nonverbal cues” (p. 240). One of the greatest challenges is to prevent the researcher’s biases, dispositions, and assumptions from influencing the research results (Merriam, 2009). Thus, the challenges associated with this unique role of the researcher as the primary collection instrument must be factored into the research design. That discussion follows, beginning with a general design overview.

**Overarching Research Design**

The purpose of this study was to explore the nature of the learning strategies used by successful Senior Enlisted Leaders while they attend an educational-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role. Qualitative research was best suited for this study as it allowed the researcher to understand how the participants made meaning out of their experiences (Merriam, 2009). Therefore, the overarching research design for this study followed a narrative research design to allow the participants to tell their stories about how they learn.

Maxwell (2005) determined four main components of qualitative research design. The first component is to conceptualize the relationship between researcher and participant. “In qualitative studies, the researcher is the instrument of the research, and the research relationships are the means by which the research gets done” (p. 83). In qualitative studies, researcher and participants are partners in producing useful results (Maxwell, 2005).

Maxwell’s (2005) second component deals with the research site and participant selection. Here, Maxwell emphasized that researchers “are not only sampling people, but also
settings, events, and processes” (p. 87). The ultimate goal of site and participant selection is to provide useful information that might not be available otherwise (Maxwell, 2005). Since the SEA is quite possibly the one time in their careers that Senior Enlisted Leaders are required to learn exclusively conceptual material, the SEA offered an excellent location to conduct this study.

The third qualitative research design component deals with data collection: how the researcher gathers the information (Maxwell, 2005). Maxwell (2005) emphasized that in qualitative inquiry, the research methods do not flow from the specific research questions. Rather, in qualitative research, the methods are the means by which research questions are answered (Maxwell, 2005). In other words, rather than the mechanical conversion of research questions into an interview guide, qualitative researchers rely on good interview questions and good observational skills to find their answers (Maxwell, 2005). Additionally, qualitative researchers collect information from a variety of sources to allow for subsequent triangulation of findings (Maxwell, 2005). (Note: triangulation is discussed below under Trustworthiness.)

Finally, Maxwell’s (2005) fourth qualitative research design component deals with data analysis: how the researcher makes sense of the data. Here Maxwell suggested regularly writing memos during data analysis to facilitate analytical thinking, capture analytical thoughts about the data, and stimulate insight. Furthermore, the research design should include categorizing strategies to sort the data into broader themes, and connecting strategies that “connect statements and events within a context into a coherent whole” (p. 98).

Together, these four components constitute a good framework for a qualitative inquiry. These components will be discussed in further detail later. But first, the following section introduces the research tradition used in this study.
An Inductive Research Approach

Miles et al. (2014) posited that qualitative research is actually more a craft (and sometimes, an art) than a slavish adherence to methodological rules. No [qualitative] study conforms exactly to a standard methodology; each one calls for the researcher to bend the method to the uniqueness of the setting or case. (p. 7)

Rather than a rigid, step-by-step process, Miles et al. argue for an inductive approach to data analysis stemming from “three concurrent flows of activity: (1) data condensation, (2) data display, and (3) conclusion drawing/verification” (p. 12). This study followed an inductive research approach along these lines.

Moreover, the researcher uses detailed readings of raw data to inductively derive concepts, themes, or a model that can be used to interpret that data (Thomas, 2006). Hatch (2002) further elaborated,

To argue inductively is to begin with particular pieces of evidence, then pull them together into a meaningful whole. Inductive data analysis is a search for patterns of meaning in data so that general statements about phenomena under investigation can be made. (p. 161)

Thus, unhampered by structured methodologies found in other research traditions, the inductive approach in qualitative research promotes “the identification of any significant unplanned or unanticipated effects” (Thomas, 2006, p. 238) that may arise from the study. Since human learning is such a broad topic, using an inductive approach allowed for a greater flexibility of research discovery.
Hatch (2002) also explained that inductive analysis “provides a systematic approach to processing large amounts of data in ways that allow researchers to feel confident that what they report is indeed representative of . . . the participants they are studying” (p. 179). In short, the purpose of the inductive analysis approach is to condense raw data into summary format, establish clear links between the findings and the raw data, and develop some conclusions about the findings (Thomas, 2003).

Strategies for using an inductive approach to data analysis include multiple readings of the raw research data, inductively developing themes or categories from the data, assigning codes or labels to those themes, and following a research design to ensure trustworthiness of the findings (Thomas, 2006). Lastly, Hatch (2002) noted that the primary outcome of this approach is “a master outline that captures the domains discovered in the data and the relationships of those domains to each other and to the whole” (p. 231). This outcome would seem valuable for a follow-on step to this research; creating a program to address students with limited learning strategies at the SEA.

In conclusion, the inductive approach to data analysis was appropriate for this study. It provided a concise, open-ended data collection and analysis format to explore the nature of the learning strategies used by Senior Enlisted Leaders as they transition from a technical role to a more strategic leader role. With this approach in mind, the study now turns to the more detailed aspects of qualitative research design, beginning with a description of the population and the intended sample criteria.

**Sample Design**

In qualitative research, the goals of the study inform the sample design (Springer, 2010). Since qualitative studies generally are focused on individuals or smaller groups of people, “there
is . . . less emphasis on random assignment and other approaches intended to create representative samples” (Springer, 2010, p. 109). Instead, the aim of the researcher was to spend enough time with the participants to uncover findings that are representative of their beliefs, behaviors, or experiences (Springer, 2010). Accordingly, this section begins by describing the research participants and follows with the sample design used to conduct this inquiry.

**Participants**

The population studied comprises Senior Enlisted Leaders (SELs) in the U.S. military who attend the Navy Senior Enlisted Academy. This is a subset of the broader population of all military E-7s, E-8s, and E-9s, and is made up mostly of SELs from the U.S. Navy.

Enlisted ranks range from E-1 (most junior) through E-9 (most senior). Navy organizational structure follows a traditional bureaucratic pyramid with a larger population of more junior positions and fewer billets available for more senior positions. As a point of reference, recent discussions with the Navy Bureau of Personnel revealed that for a force size of 312K active duty Navy Enlisted members, there were approximately 25,000 E-7s, 8,000 E-8s, and 2,500 E-9s (J. E. Wallis, Director Navy Senior Enlisted Academy, personal communication, January 10, 2013). Though this represents a total Navy population of over 35,000 SELs, not all of these members will attend the Navy SEA.

The curriculum at the SEA is designed for E-8s. However, the school accepts up to 10% E-7s and 10% E-9s in each class. Although some individuals will promote faster than others, rank is generally related to time-in-service. As such, enlisted rank was a primary selection criterion.

In addition to rank, enlisted members are assigned an enlisted rating based on their specific occupational skill. Whereas rank frequently reflects seniority and positional authority,
an enlisted member’s rating reflects the type of job he or she does in the Navy. For example, an Aviation Machinist Mate specializes in maintaining aircraft, a Gunner’s Mate specializes in operating Navy deck guns and missiles, and a Hospital Corpsman specializes in health care (Cutler, 2009). There are over 50 rating classifications in use today, each reflecting different job-related requirements to advance in rank (Cutler, 2009).

Rating reflects a particularly important diversity factor at the SEA. For many, the SEA context represents the first time in their military careers that students are in a classroom with ratings other than their own. Just as ratings represent a wide range of experience to fuel discussions on leadership, so too do they represent a wide range of diversity in the amount and breadth of learning required to perform in a particular rating. Thus, enlisted ratings of either technical or non-technical were also identified with the participants’ characteristics.

Merriam (2009) noted that there are two types of sampling: probability and nonprobability. With probability sampling, the researcher uses randomizing techniques to ensure the sample results are generalizable to the larger population (Merriam, 2009). Probability sampling is used in quantitative research (Creswell, 2009). However in nonprobability sampling the researcher purposefully selects participants who might offer the greatest amount of information central to the purpose of the inquiry (Merriam, 2009). This latter form of sampling, also called purposeful sampling, is used in qualitative research (Creswell, 2007).

In purposeful sampling, researchers use techniques “to select a sample from which the most can be learned” (Merriam, 2009, p. 77). Of the techniques used in purposeful sampling, the most popular approach is to ensure maximum variation (Creswell, 2007). Here, researchers determine in advance some criteria to differentiate participants, and then select participants so that the sample represents a wide range based on that criteria (Creswell, 2007). By maximizing
differences between participants, the researcher “increases the likelihood that the findings will reflect differences or different perspectives—an ideal in qualitative research” (Creswell, 2007, p. 126). In this light, participants were selected across two separate SEA classes to further achieve maximum variation.

To sum up, this study used rank as participant selection criteria. Also, participants were stratified across their amount of formal education level to promote maximum variation. This approach captured a wide range of experiences from Senior Enlisted Leaders who have successfully navigated their military careers yet were still reflective of the typical SEA class demographics.

Having described the participants and the purposeful sampling criteria, the next section describes the process the researcher used to solicit volunteers for this study.

**Recruitment and Access**

At the end of the first day of each SEA class, students complete an online Registration Survey. In addition to demographics, the survey asks students to indicate their reading speed (choice of three: fast, average, or slow) and to describe themselves as a reader (open-ended essay response). Participants were considered for selection based on responses from the SEA Registration Survey.

The researcher is a member of the SEA faculty with daily access to all students and all classrooms. At an appropriate point in the curriculum the researcher addressed the class in an auditorium setting and explained the purpose of the study using the Recruitment Script in Appendix B. The researcher emphasized measures in place to protect confidentiality and explained how study results could be used to help future SEA students. Volunteers were requested to contact the researcher directly or via e-mail for consideration to be in the study.
Profile of Participants

Using the criteria mentioned earlier, the researcher used purposeful sampling techniques (Merriam, 2009) to identify a pool of candidates for interviewing. From this pool, eight candidates were selected for individual interviews and seven were selected for small group interviews.

To maximize the variation among participants, the candidates were selected based on their rank, rating (technical or non-technical), and level of formal schooling. As the majority of SEA students are E-8s, they also made up the majority of the sample population. However the distribution based on formal education was decided based on the pool of volunteers. The ideal participant profile is summarized in Table 3.1.

Table 3.1

Participant Profile

<table>
<thead>
<tr>
<th>Rank</th>
<th>Technical Rating</th>
<th>Non-Technical Rating</th>
<th>HS Education Level</th>
<th>College Education Level</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-7</td>
<td>1</td>
<td>1</td>
<td>TBD</td>
<td>TBD</td>
<td>2</td>
</tr>
<tr>
<td>E-8</td>
<td>4</td>
<td>4</td>
<td>TBD</td>
<td>TBD</td>
<td>8</td>
</tr>
<tr>
<td>E-9</td>
<td>1</td>
<td>1</td>
<td>TBD</td>
<td>TBD</td>
<td>2</td>
</tr>
</tbody>
</table>

Having described the researcher’s access, participant recruitment, and the ideal participant profile, the next section delineates the data collection scheme used in this study.

Data Collection

Qualitative data generally comes from three sources: interviews, observations, and documents (Merriam, 2009). The researcher interviews participants to determine their knowledge, experiences, and feelings about issues or events (Merriam, 2009). Researchers also
record their observations about participant behaviors, activities, and actions to gain additional insight (Merriam, 2009). What follows is a description how the data was collected, stored, and analyzed in this study.

**Pilot**

First, the interview questions were pilot tested with two volunteers from the Navy Senior Enlisted Academy (SEA) faculty. This pilot provided data necessary to determine the time required to conduct an interview, test the recording devices, test the interview location for adequacy, allow for initial transcription and coding with NVivo software, and provide feedback on interview questions. All pilot interviews were conducted as face-to-face, individual interviews. Additionally, other than mentioning that this was a pilot, the interview protocol followed the same process as the actual research interviews.

The pilot interviews confirmed the interview protocol and no changes were made as a result of these pilots. Furthermore, the researcher gained valuable interviewing experience during these two pilot sessions.

**Overview**

Data was collected from 15 SEA students while they attended school in residence. Since the combined model considered the internal acquisition process as well as the external interaction process, the interviews were structured so that about half were one-on-one interviews and half were with small groups of two-to-three participants. This was done to highlight the strength each individual component model (Bandura (1986) and Illeris (2003)) that made up the combined model.

The typical SEA schedule runs from 7:30 a.m. to 4:30 p.m., with a 1-hour break for lunch. To afford minimal impact on their limited time for studying, all interviews were
conducted during the lunch hour, evenings, or on the weekends when SEA students were not in class. The SEA curriculum is 6-weeks long. By the end of Week-2, students have normally adjusted to the academic pace and settled into a routine that fits their particular style. Students take their final exams on Wednesday of Week-6 and depart the area on Friday of Week-6, so this final week presented limited opportunities for interviews. Accordingly, interviews were conducted during Weeks 3 through 5.

While conducting studies, researchers document their participant observation in the form of field notes (Saldaña, 2009). Field notes help guard against biases and distortions stemming from researchers relying on their memories (Springer, 2010). Field notes are either handwritten or audio recorded, and they are created “during observation, or as soon after the observation as possible” (Springer, 2010, p. 390). These notes include the researcher’s “personal and subjective responses to and interpretations of social action encountered” (Saldaña, 2009, p. 33). They also may include factual, objective descriptions of the context (Saldaña, 2009). During individual and small group interviews, the researcher maintained field notes.

Another source of data deals with reflexivity. To guard against their biases influencing the results, qualitative researchers maintain reflexive journals that document “conscious reflection on the effects of the researcher’s own assumptions and biases on the [research] process” (Springer, 2010, p. 394). Reflexive journals include self-reflections regarding “assumptions, worldview biases, theoretical orientation, and relationship to the study that may affect the investigation” (Merriam, 2009, p. 229). Thus, the researcher maintained a research journal in NVivo during the data collection and analysis phases of this study.

As suggested by Lincoln and Guba (1985), the research journal consisted of a reflexive diary and a methodological log. Furthermore, the researcher maintained logs in NVivo to
capture potential research conclusions, lessons learned, and thoughts on future research throughout the data collection and analysis phases of this study. In this regard, NVivo proved to be a very useful research tool.

**Individual Interviews**

Merriam (2009) noted that “interviewing is necessary when [researchers] cannot observe behavior, feelings, or how people interpret the world around them” (p. 88). She defined a continuum of interviewing with highly structured interviews at one end and unstructured interviews at the other (Merriam, 2009). In highly structured interviewing, the wording and order for the questions are predetermined with little (if any) room for the respondents to deviate from predetermined answers (Merriam, 2009). Surveys that collect demographic data are good examples of highly structured interviews (Merriam, 2009).

On the other hand, unstructured interviews are used when the researcher does not know enough about the situation or issue to ask good questions (Merriam, 2009). Thus, unstructured interview questions are open-ended and are formulated on the spot based on the interviewee’s responses (Merriam, 2009).

Finally, Merriam (2009) proposed that somewhere between highly structured and unstructured interviews lies the semi-structured interview. Here the researcher uses “a mix of more and less structured questions” (p. 90). In semi-structured interviewing, “the largest part of the interview is guided by a list of questions or issues to be explored, and neither the exact wording nor the order of the questions is determined ahead of time” (p. 90). Ryan, Coughlan, and Cronin (2009) pointed out that this flexible form of interviewing allows for “unanticipated responses and issues to emerge through the use of open-ended questioning . . . [and] permits the exploration of spontaneous issues raised by the [participant] to be explored” (p. 310). In short,
semi-structured interviewing allows the participant to tell his or her own story (Ryan et al., 2009).

One particular style of semi-structured interviewing is called responsive interviewing. Rubin and Rubin (2012) defined responsive interviewing as “picking people who are knowledgeable, listening to what they have to say, and asking new questions based on the answers they provide” (p. 5). During responsive interviews, qualitative researchers ask three types of questions.

Main questions assure that each of the separate parts of a research question are [sic] answered. Probes are standard questions that encourage interviewees to keep talking on the subject, providing examples and details. Follow-up questions ask the interviewees to elaborate on key concepts, themes, ideas, or events they have mentioned to provide the researcher with more depth. (p. 6)

Through responsive interviewing, qualitative researchers examine “how people make meaning out of their experiences, how they interpret them, and how they share their experiences with others” (p. 29). Through responsive interviewing, the researcher was able to keep the participants talking and allow their stories to further unfold.

However, interviewing is not simply a matter of asking questions and recording the answers. Interviewing requires some degree of skill. Seidman (2006) suggested that interviewers listen to their participants on three different levels. The first is the level of content; the interviewer listens to what the participant is saying, making sure the interviewer understands the content and that it is detailed enough for their purposes (Seidman, 2006). On the second level, the interviewer listens for which “voice” the participant is using: the “inner voice” represents the participant’s true feelings whereas the “outer voice” represents a more guarded,
public voice holding back on details in an effort to be, perhaps, more politically correct (Seidman, 2006). This is where probes come in. “Probing is used when you sense that something has been left out, that the [participant] could give a more complete answer” (Yow, 2005, p. 102). For example, probes can be used to keep the participant talking on a subject (Rubin & Rubin, 2012) or to give “the meaning of a word when the interviewer suspects it has a special meaning” (Yow, 2005, p. 103) for the participant.

On the third level, Seidman (2006) cautioned the interviewer to remain aware of the interviewing process; remaining conscious of the time spent, the time remaining, the goals of the interview, and the participant’s energy level. “Interviewers must listen hard to assess the progress of the interview and to stay alert for cues about how to move the interview forward as necessary” (p. 79). In sum, by listening on three levels, researchers can best encourage participants to share their perspectives about the phenomenon in question. Seidman’s three-level approach proved very effective in this study.

Finally, Ryan et al. (2009) argue that the interviewer’s demeanor is especially important during the interview. To encourage participants to tell their stories, the interviewer should remain relaxed, confident, and attentive (Ryan et al., 2009). Ryan et al. advised that “the role of the interviewer is to ensure that the [participant] is at ease and not threatened” (p. 311). Referring back to triune brain theory in Chapter-2, it could be argued that emotions are an important element of interviewing as well as in learning.

Accordingly, this study employed semi-structured interviewing techniques as discussed above. These interviews on average lasted between 40 and 45 minutes. All interviews took place in the third floor conference room in Tomich Hall, the same building as the SEA auditorium. The same setting was used for individual and small group interviews as well.
(Small group interviews are addressed in the next section.) Appendix C shows how the semi-structured interview questions relate to the research questions. Appendix D shows the scripts the researcher used to initiate each type of interview. Lastly, interviews were recorded using two digital audio recorders: a Sony DVR and an iPhone 5S using the Rev app.

The Tomich Hall conference room featured a large table with comfortable office style chairs. The researcher sat with his back to the door. This put the participants on the opposite side of the table with their backs to a window and facing the researcher. The recorders were positioned on the table off to the side so that the microphones could be angled more toward the participant than the researcher. This technique favored capturing the participants’ voices, facilitating the transcription process.

The Rev app proved exceptionally useful and easy to use. It features an elapsed time display and audio wave images with the wave height proportional to the speaker’s volume. This display reaffirmed that the recorded was indeed working and receiving input, and provided a time indicator to help improve the researcher’s awareness. Additionally, by selecting “Yes” for “Prevent auto-lock” under the Rev app settings, the iPhone’s power-saver feature is overridden, keeping the Rev recording display (with elapsed time indicator) available throughout the interview. Finally, a 1-hour interview did not significantly drain the iPhone battery.

Once the interviews were completed, the researcher used the “File Upload” feature in the Rev app to save the MP4 audio file to the researcher’s password-protected Dropbox. Then, the researcher used Rev’s “Transcribe” feature to upload the audio file to the Rev server for transcription. In most cases the transcription service was completed within 12 hours.

This interview recording and transcription procedure was also used with the small group interviews. These interviews are the subject of the next section.
Small Group Interviews

Merriam (2009) noted that similar to the personal interview, a focus group is an interview with a group of people who are knowledgeable about the topic or event. Unlike the personal interview which is often private, focus groups take place in a more social setting where participants can hear each other’s responses and respond with their own views (Merriam, 2009). This offers some advantages over private interviews. Focus group members “can provide prompts to talk, correcting or responding to others, and a plausible audience for that talk. . . . focus groups work best for topics people could talk about to each other in their everyday lives—but don’t” (Macnaghten & Myers, 2004, p. 65). Since learning situations often have a strong social connection (Vygotsky, 1978), the researcher initially believed that a focus group might provide significant data beyond that of the individual interviews.

With a traditional focus group, the researcher starts with a few, predetermined, open-ended questions and then “acts as a facilitator to move the conversation along” (Rubin & Rubin, 2012, p. 30). The researcher’s goal is to keep the conversation on the topic (Rubin & Rubin, 2012). Finally, as the time-limited session comes to an end, the researcher will often prompt the group to come to some kind of summary or conclusion (Rubin & Rubin, 2012).

Focus groups tend to be larger groups, ones that would not likely be available for this study. As Merriam (2009) pointed out, “although there are no hard and fast rules about how many to include in a [focus] group, most writers suggest somewhere between six and ten participants” (p. 94). In deference to this advice and based on the limited availability of student free time at the SEA, this study used small groups of two to three individuals instead of a more traditional (and larger) focus groups.
Each small group was comprised of volunteers who met the same criteria as those selected for individual interviews. The same questions used for the individual interviews were also used to guide the small group interviews. As with the individual interviews, the small group interviews were recorded and subsequently transcribed for analysis.

Although the same interview questions were used for both individual and small group interviews, the interview scripts were slightly different. As the researcher could not control what participants did outside of the interview, the small group interview script included words asking the participants to respect the anonymity of the interview.

Another difference between individual and small group interviews was the inclusion of name tents for the latter. It was relatively easy to conduct an individual interview without mentioning real names. However, the researcher found it very awkward to conduct the first small group interview without mentioning names of any kind. It was also very impersonal moving the responses from one person to the other. The best the researcher could say was, “And how about you?”

After the awkwardness of the first small group interview, the researcher decided to bring blank name tents and markers for subsequent small group interviews. During the interview preparations, the researcher asked the participants to choose a pseudonym and to annotate their name tents accordingly. This method proved very effective in facilitating the interview while preserving participant anonymity. This technique was captured as a lessons learned for future research. (See Chapter-5 for additional discussion.)

Data Collection Schedule

The data collection was centered on the SEA schedule to maximize the convenience of allowing students to participate in the interviews. Since the end of Week-1 included a field trip
on Saturday, the interviews did not begin until the end of Week-2 when students had settled into their academic routines.

During the first week, the researcher established a relationship with the SEA class. As part of the standard SEA schedule, the researcher delivers a 1-hour session on Thinking Strategically on Wednesday of Week-1. This was the first opportunity for students to meet the researcher. Beyond that, the researcher administers the SEA weekly feedback surveys using Verint EFM (online) software. By design, these are system-generated e-mails that use the researcher’s e-mail address in the “From” line and the student’s e-mail address in the “To” line. Though they are computer-generated, the students likely perceived a weekly e-mail connection with the researcher.

Next, the researcher delivered the recruitment script (Appendix B) to the entire SEA class in an auditorium setting at an appropriate point during the 6-week schedule. Two consecutive SEA classes were used to achieve the desired number of participants. In one case the Recruitment script was delivered in Week-4 before an auditorium session began and in the other case it was at the conclusion of an auditorium session in Week-3 that ended early. Once students volunteered, the researcher arranged mutually agreeable interview times.

Individual interviews and small group interviews began by obtaining informed consent (Appendices E and F). All interviews were professionally transcribed. The researcher then e-mailed the transcriptions to participants soliciting their feedback using the format in Appendix G. This process, known as member checking, was to ensure the trustworthiness of the results (Lincoln & Guba, 1985) as discussed later in this chapter.

One goal in conducting multiple interviews was to achieve saturation. In qualitative studies, researchers continue to collect data until they reach a point where additional interviews
yield no new codes or information (Suter, 2012). Further sampling beyond saturation only serves to confirm “the categories . . . themes, and conclusions already reached” (Suter, 2012, p. 350). As will be shown in the next chapter, this goal was achieved.

Table 3.2 below depicts a generic data collection plan for this study. To achieve maximum variation of participants, four individual interviews were conducted over two consecutive SEA class. Additionally, two small group interviews were conducted in one SEA class and one small group interview was conducted in the subsequent SEA class. The last interview conducted, an individual interview, confirmed saturation with no new codes generated.

Table 3.2

Generic Data Collection Schedule

<table>
<thead>
<tr>
<th>Pilot Interviews</th>
<th>Pilot interview questions with 2 SEA faculty members (E-8s). Revised questions were not needed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weeks 1 - 2</td>
<td>Review SEA Registration Survey results to identify student characteristics.</td>
</tr>
<tr>
<td>Week 3</td>
<td>Recruitment and selection. Obtain consent forms; interview participants. Transcribe and code interviews.</td>
</tr>
<tr>
<td>Weeks 4 - 6</td>
<td>Member check: Send follow-up email to earlier participants and incorporate responses to transcripts. Obtain consent forms; interview new participants. Transcribe and code interviews. Review first cycle coding and check for saturation.</td>
</tr>
</tbody>
</table>

Having described the general approach and contingencies of data collection, the next section reviews how the data was stored to ensure confidentiality.
Data Storage

By the very action of research, researchers collect data. Here, “the term ‘data’ refers to units of information” (Springer, 2010, p. 8). Creswell (2007) noted that there are basically four types of data: observations, interviews, documents, and recordings. How the researcher handles that data once it has been collected is very important. Here is why.

In qualitative studies, the data researchers collect often reflects the private views of their participants. In this regard, Stake (2005) argued that “qualitative researchers are guests in the private spaces of the world. Their manners should be good and their code of ethics strict” (p. 459). Thus, researchers incur an ethical obligation to protect their data from unauthorized disclosure (Creswell, 2007; Merriam, 2009). In sum, researchers must ensure there are measures in place to protect the confidentiality of their data.

In this study all interviews were recorded using the Rev app on the researcher’s iPhone. Additionally, the researcher recorded the interviews with a second Digital Voice Recorder (DVR) for backup purposes should the iPhone recording fail. After recording, the files were transferred via USB cable to the researcher’s password-protected laptop computer for secure storage. The researcher maintained a backup copy of all electronic data on a separate password-protected desktop computer. Once transferred, the original files on the DVR and iPhone were deleted.

In the end, the Rev app worked perfectly and the back-up Sony DVR recordings were never needed. However, the researcher intends to always include a back-up recorder in future research. It is the researcher’s opinion that too much effort goes into these events to risk a single point of failure.
All interviews were professionally transcribed by Rev.com. These and other electronic documents were maintained on password-protected computers as described above. All paper documents with personal information were immediately digitized and transferred to the researcher’s computer. Once transferred, all paper documents were destroyed.

Having discussed the details of data collection and storage, the next section reviews the approach used to analyze the data.

**Data Analysis: An Inductive Approach Using Deductive/Inductive Coding**

Once collected, the researcher analyzed all data using the inductive analysis method outlined earlier. Here, the primary effort was to code the data. In qualitative analysis, codes are words or short phrases that assign a “summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (Saldaña, 2009, p. 3). The purpose of a code is to trigger a deeper and more complex meaning with its associated data (Saldaña, 2009).

Codes are generated from two sources; the literature review (which includes previous research) and real-life data (such as filed notes or *in vivo* codes) (Marshall & Rossman, 2011). From the literature review, the researcher derived a list of likely themes to emerge from the data (Marshall & Rossman, 2011). Appendix H lists the initial set of literature-generated codes used in this study.

These initial codes proved a useful during the start of the coding process. Miles et al. (2014) refer to creating an initial list of codes from literature as “Deductive coding” (p. 81). “The list comes from the conceptual framework, list of research questions, hypotheses, problem areas, and/or key variables that the researcher brings to the study (p. 81). However other codes emerge during data collection and analysis, “that is, *Inductive coding*” (p. 81).
As expected, additional codes did emerge during the coding process. However one code in particular required the researcher to go back into the literature to resolve. That was the Beliefs code. Miles et al. (2014) defined beliefs as “a system that includes values and attitudes, plus personal knowledge, experiences, opinions, prejudices, morals, and other interpretive perceptions of the social world” (p. 75). In other words, Beliefs as a code is one part Emotion and another part Schema. The impact of this aspect is reconciled in Chapter-4 under the Knowledge/Schema-Building Theme discussion.

Continuing with data analysis, the data collected was coded using computer assisted qualitative data analysis software (CAQDAS). This software allowed the researcher to “organize evolving and potentially complex coding systems into such formats as hierarchies and networks for ‘at a glance’ user reference” (Saldaña, 2009, p. 24). Additionally, CAQDAS offers the advantage to search all collected data for key words or phrases (Saldaña, 2009). Finally, it allows the researcher to shift quickly between tasks such as coding, memo writing, and exploring emerging patterns (Saldaña, 2009). This last feature was particularly helpful as the coding process often triggered thoughts regarding research conclusions, lessons learned, and future research.

In this study the researcher used NVivo 10 software. As with other CAQDAS packages, NVivo software allowed the researcher to analyze multiple forms of data to find common themes (QSR International, 2012). Though there were many capable software products available, the researcher found NVivo software to be the most user-friendly with a plethora of YouTube videos available to teach how to use its features.

The purpose of inductive analysis is to condense raw data into summary format, establish clear links between the findings and the raw data, and develop some conclusions about the
findings (Thomas, 2006). To do this, the researcher employed a constant-comparative method. Described by Lichtman (2013), the constant-comparative method is a three-step process. In the first step (open coding), the raw data was analyzed and coded, with some categories beginning to form (Lichtman, 2013). In the second step (axial coding), the codes were purposefully related to one another with categories sometimes shifting as patterns began to emerge (Lichtman, 2013). Finally, in the third step (selective coding), the researcher developed a hierarchy of the most important codes and selected a few codes “to represent the key concepts drawn from the raw data” (p. 258).

Generally speaking, qualitative research can generate 80 to 100 codes that are then organized into 15 to 20 categories, which then produce five to seven key concepts (Lichtman, 2013). Lichtman (2013) calls this the three Cs of qualitative data analysis: codes, categories, and concepts. Lichtman’s (2013) three Cs approach dovetails nicely with Miles et al.’s (2014) inductive analysis of data reduction, data display, and conclusion drawing/verification. Thomas (2006) stated that the intended outcome of inductive analysis was,

To create a small number of summary categories (e.g., between three and eight categories) that in the evaluator’s view capture the key aspects of the themes identified in the raw data and are assessed to be the most important themes given the evaluation objectives. (p. 242)

For that reason, the constant-comparison method was a good approach for analyzing data in this inductive approach.

Finally, incorporating the researcher’s committee into the analysis process produced a three phased approach to data analysis. This approach is outlined in Table 3.3 below. (Note: the audit trail mentioned in Table 3.3 is described in the next section on Trustworthiness.)
Table 3.3

*Three Phase Data Analysis Process*

<table>
<thead>
<tr>
<th>Phase 1: First-cycle coding.</th>
<th>Phase 2: Second-cycle coding.</th>
<th>Phase 3: Quality check and final results</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Initial coding of field notes, reflexive journal, and transcripts.</td>
<td>• Review purpose and literature review.</td>
<td>• Reviewing process with committee.</td>
</tr>
<tr>
<td>• Integration of transcript coding and initial follow-up e-mails.</td>
<td>• Interpret data for themes or conceptual similarity.</td>
<td>• Review initial interpretations with committee.</td>
</tr>
<tr>
<td>• Integration of final e-mails.</td>
<td>• Interpret data as an inclusive summary.</td>
<td>• Develop final conclusions.</td>
</tr>
<tr>
<td>• Document audit trail.</td>
<td>• Document audit trail.</td>
<td>• Document audit trail.</td>
</tr>
</tbody>
</table>

Having reviewed how the data was analyzed, the next section discusses one of the most important aspects of all research; how to ensure the integrity of the data and the validity of the research results.

**Trustworthiness**

Good research includes steps to facilitate trustworthiness; measures to ensure that the research data is truthful and worth paying attention to (Lincoln & Guba, 1985). To this end, Lincoln and Guba (1985) established four conditions of trustworthiness for qualitative inquiry: *credibility* (that the findings reflect the truth), *transferability* (that the findings may have applicability in other contexts), *dependability* (that the findings may be reasonably replicated with similar subjects in similar contexts), and *confirmability* (that the findings can be independently verified to be products of the respondents and not the result of biases or motivations imposed by the researcher). These four measures are discussed below.
Credibility

Lincoln and Guba (1985) suggested five techniques to establish research credibility. First, the researcher should consider certain activities that will increase the likelihood that the findings are credible. These activities include “prolonged engagement, persistent observation, and triangulation” (p. 301). Prolonged engagement ensures the researcher has time to learn the culture of the context, establish some degree of trust with the participants, and be able to recognize when actions or responses are distorted (Lincoln & Guba, 1985). Thus, prolonged engagement allows the researcher to become aware of “the multiple influences—the mutual shapers and contextual factors—that impinge upon the phenomenon being studied” (p. 304).

Fortunately the researcher’s position as the NWC/SEA Liaison made him a very familiar face at the SEA. Having held this position for over 5 years, the researcher has been at the Navy SEA longer than any of the current faculty members. Also, the researcher routinely spends 3 days each week at the SEA, attending faculty meetings and providing academic support. Further, the researcher teaches two course modules in the SEA curriculum; a 1-hour session in Week-1 and a 3-hour session in Week-2. These sessions, both delivered in the whole-class, auditorium setting, afforded quality face time with each SEA class. Lastly, the researcher is responsible for weekly electronic surveys where students provide feedback on the curriculum. Though the surveys are system generated, from the students’ perspective they each receive a weekly e-mail from the researcher that contains the link for their survey. This constant presence in the students’ academic routine helped to fulfill the prolonged engagement aspect of credibility.

Next, Lincoln and Guba (1985) stated “the purpose of persistent observation is to identify those characteristics and elements in the situation that are most relevant to the problem or issue
being pursued and focusing on them in detail” (p. 304). Here, the researcher followed a daily routine that constantly compared data collected to establish codes and themes.

As for triangulation, Lincoln and Guba (1985) noted that once a finding has been confirmed by two or more sources, its credibility greatly increases. To support this effort, the researcher collected data from multiple sources. These included interview notes, interview recordings, transcripts, and the researcher’s journal. Additionally, the researcher maintained an audit trail within the NVivo program documenting the research process with sufficient detail so that reviewers might understand the methods, procedures, and decision points made as the study progressed (Merriam, 2009).

Lincoln and Guba (1985) were among the first to argue for audit trails in qualitative research. Similar to fiscal accounting, the audit trail provides an independent auditor with the raw data and information necessary to retrace the researcher’s steps, arriving at the final results (Cutcliffe & McKenna, 2004). For this study, the audit trail consisted of the raw data, data processing products, interview notes, and the researcher’s reflexive journal (Cutcliffe & McKenna, 2004). All documents and recordings were imported into the NVivo program and stored as a single password-protected NVivo file.

Saldaña (2009) explained, “field notes . . . are the researcher’s written documentation of participant observation, which may include the observer’s personal and subjective responses to and interpretations of social action encountered” (p. 33). Thus, field notes are the researcher’s notes regarding participants and the research context. Analytic memos, on the other hand, focus on data and data analysis.

Again, Saldaña (2009) explained, analytic memos “document and reflect on: [the] coding process and the code choices; how the process of inquiry is taking shape; and the emergent
patterns, categories and subcategories, themes, and concepts in [the] data” (p. 32). He further emphasized,

Memos should be suggestive; they needn’t be conclusive. I simply write what’s going through my mind. . . . Whenever anything related to and significant about the coding or analysis of the data comes to mind, stop whatever you’re doing and write a memo about it immediately. (p. 33)

For this study, field notes were comprised of notes taken during the interviews. As with other research-related documents, all field notes were immediately digitized into PDF format using a scanner and imported into the NVivo program. Analytic memos, on the other hand, were digital products from the start as they were created using the “Memos” feature in the NVivo program.

At first, the researcher maintained a methodological log in a Word document stored in the Dropbox for ease of accessibility. However as the capabilities of the NVivo software began to come to light, the methodological log was moved into NVivo as a “Memo.” The researcher eventually created other memos within NVivo to capture details in executing the study as well as thoughts during the coding and analysis process. In total, the researcher maintained the following memos within NVivo: Recruitment Script Info, Opportunity Cost, Methodological Log, Lessons Learned, Future Research, Conclusions, a folder of Analytic Memos, and a folder for Reflexive Journal entries.

Beyond the convenience of being able to document all research-related memos within a single, password-protected file, NVivo offered the opportunity to easily switch between “coding transcripts” and “creating new memos or adding to an existing memo.” This was particularly helpful during first cycle coding when a particular statement by a participant triggered a thought regarding research conclusions, lessons learned, future research, or anything research-related.
By being able to quickly switch between coding and documenting memos, not only could the researcher capture the thought in the moment, but he could also include the participant’s quote in the memo. This proved particularly helpful in crafting the final two chapters of this study.

As one final measure to ensure credibility, the researcher shared the transcripts with the participants. This technique is known as member checks (Lincoln & Guba, 1985). Lincoln and Guba (1985) argued that member checks were “the most crucial technique for establishing credibility” (p. 314). Member checks guard against researcher bias where the researcher sees only what he or she wants to see (Lincoln & Guba, 1985). Most of the participants had no additional comments regarding the member checks. Two participants included edits of the transcripts to correct grammatical errors in their speech. One participant failed to respond.

Given the accuracy of the transcription service and the limited feedback from other member checks, this single non-response was not considered significant by the researcher. However in the interest of credibility, it needs to be mentioned.

In sum, to ensure credibility of the research findings, the researcher employed prolonged engagement, persistent observation, and triangulation. Additionally, the researcher maintained an audit trail with a reflexive journal, field notes, and analytic memos. Finally, the researcher shared the interview transcripts with the participants to guard against researcher bias.

**Transferability**

To make it possible that the findings may be transferred into another similar context, the researcher must provide sufficient descriptive data to make such a transfer possible (Lincoln & Guba, 1985). Lincoln and Guba (1985) stated the original investigator must provide “the thick description necessary to enable someone interested in making a transfer to reach a conclusion about whether transfer can be contemplated as a possibility” (p. 316). On thick descriptions,
Suter (2012) added, “attention is given to rich detail, meaningful social and historical contexts and experiences, and the significance of emotional content in an attempt to open up the word of whoever or whatever is being studied” (p. 344).

In sum, providing thick descriptions enables other researchers to make judgments about the appropriateness of a study’s findings in other contexts (Suter, 2012). To support this effort, the researcher provided a wide range of information on each participant including the criteria used to select participants for interviews, descriptive data for each participant, their backgrounds, and a description of the learning strategies the participants reported using in various learning situations.

Lastly, Merriam (2009) noted another strategy to enhance transferability; that of maximum variation. Similar to thick descriptions, maximum variation “allows for the possibility of a greater range of application by readers or consumers of research” (p. 227). Through purposeful sampling and giving careful attention to which participants are selected for interviews, this study provided a wide variation in participant characteristics.

**Dependability and Confirmability**

That the study’s results may be valid and reliable, and not the product of the researchers bias of motivation, Lincoln and Guba (1985) proposed an inquiry audit whereby the auditor performs two essential tasks. To ensure dependability, the auditor examined the research process to verify the findings are consistent with the methods used, and not the product of “creative accounting” (p. 317). To ensure confirmability, the auditor examines the research results to satisfy him- or herself that the claims can be justified (Lincoln & Guba, 1985).

The techniques used to support both dependability and confirmability audits are the same. They include the raw data, data processing products, field notes, analytic memos, and the
researcher’s reflexive journal. The researcher’s doctoral thesis committee conducted this inquiry audit, thus assuring the study’s dependability and confirmability.

**Human Participants and Ethical Precautions**

When research involves human participants, researchers are required to have their proposals reviewed by their colleges’ Institutional Review Board (IRB) (Creswell, 2009). The IRB looks to ensure measures are in place to protect participants from risk and that vulnerable populations are not exploited (Creswell, 2009). Since this study was conducted for a degree from one institution but involved participants from another, the researcher had the study approved by both Northeastern University’s IRB and the Naval War College’s IRB. (Note: the Navy Senior Enlisted Academy is part of the Naval War College, and the Naval War College uses the Naval Postgraduate School to adjudicate its IRB matters.)

To conclude, the study included measures to guarantee participant confidentiality, obtain informed consent (see Appendices D and E) before engaging in any research, and acknowledgement of the right to refusal or to withdraw from the study at any time (Creswell, 2009). This study took place within an academic context and provided minimal risk to participants. Participants were informed of the purpose of the study and measures to ensure confidentiality. Participants and all named persons in interviews were identified by pseudonyms.

**Positionality Statement**

Finally, as the primary data collection instrument, the researcher’s culture, assumptions, and biases can impact the research findings. In an effort of full disclosure, this section documents the researcher’s position relative to conducting research on the learning strategies used by Senior Enlisted Leaders at the Navy Senior Enlisted Academy.
The researcher grew up in a lower middle-class family in rural New Hampshire. In this family, academic learning was neither modeled nor encouraged. One parent graduated from high school while the other was a high school dropout. Two siblings graduated from high school and immediately entered the work force. Two other siblings dropped out of high school to do the same. To date, the researcher is the only immediate family member with a college education, and that does not appear likely to ever change.

Many of the participants in this study were expected to come from similar backgrounds, less the college experience. Such was the case, although several did have college experience. Additionally, the researcher retired after 30 years of service as Navy Captain (O-6), while the participants were expected to be primarily Senior Chief Petty Officers (E-8s). Although the researcher has spent the last 5 years working at the SEA and is very comfortable communicating with students on a first name basis, some students occasionally have difficulty overcoming years of military decorum that that creates a separation between officers and enlisted members. Thus, putting the participants at ease during the interview was a top priority. In the end, the officer-enlisted relationship did not appear to be an issue.

Chapter-3 Summary

This chapter detailed the methods used to collect and analyze the research data pursuant to conducting a narrative inquiry at the Naval War College’s Navy Senior Enlisted Academy. The purpose of this research was to explore the nature of the learning strategies used by successful Senior Enlisted Leaders as they attend an educational-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role.

The methods outlined in this chapter are consistent with a qualitative research design using a deductive analysis approach. To conduct this study the researcher interviewed 15
students over two consecutive SEA classes using both individual and small group formats.

Semi-structured interviews were used to engage participants to tell their stories about how they approached learning situations in the Fleet and in the Field, as well as at the Navy Senior Enlisted Academy. Those results of those interviews are the subject of Chapter-4.
CHAPTER 4 REPORT OF RESEARCH FINDINGS

This chapter reports the findings from research collected through interviews with 15 students attending the Navy Senior Enlisted Academy (SEA). In this study, participants were asked how they approach learning in both training (how to do) and educational (how to think) situations. Students were interviewed in both individual and small group settings. Their stories ranged the full spectrum from “rags-to-riches” where initially struggling learners blossomed into mature leaders who can successful deal with academic content, to “rags-to-rags” where initially struggling learners remain academically handicapped today despite their successful military accomplishments.

The interviews were transcribed and inductively analyzed using NVivo 10 qualitative analysis software for Windows. The interviews were conducted over an 8-week period involving two SEA classes. (Note: to protect the anonymity of the participants, these two consecutive classes are referred to as SEA Class-XXX and SEA Class-XXY.) This afforded the opportunity to analyze the results from one class before conducting interviews with the second. It also afforded the researcher with “lessons learned” for conducting future research.

This chapter begins with a brief overview of the context. (Note that key terms related to the study are defined at the end of Chapter-1.) The next section of the chapter describes the participant profiles beginning with a general overview before narrowing down to individual characteristics. The third section presents the results of the qualitative analysis, organizing participant narratives into themes. The final section of the chapter illustrates how the resulting themes address the research question and support a general theory for learning where human emotion becomes a critical component. The chapter then summarizes with general insights about the analysis process.
The Context

The Navy Senior Enlisted Academy is a 6-week course for senior enlisted leaders on leadership, communication, health and fitness, and professional military education. Students from all services, primarily E8s, travel to attend the SEA schoolhouse in Newport, RI. They stay in military lodging on base as they attend classes in small group, seminar format (of up to 17 students per seminar) and in large group, auditorium format (of up to 112 students per class). Classes generally start at 7:30 AM and run through 4:30 PM each day. This study occurred at the Navy SEA from May through July, 2014. Nine students were interviewed from SEA Class-XXX and six students were interviewed from SEA Class-XXY.

The approved recruitment script was delivered by the researcher after a normally scheduled auditorium session. Students were afforded several avenues to volunteer for the study including e-mail, phone, and face-to-face contact methods. About half of the students responded directly to the researcher, typically during a break between auditorium sessions, while the other half responded via e-mail. The former illustrated the importance of being visible to the students during break times. SEA student schedules are very busy, so being visible made it easier for them to volunteer.

The Interview Process

Once a student indicated interest in partaking in the study, the researcher scheduled a mutually agreeable time for the interview. As no spare classrooms were available in Tomich Hall at the time, the first few interviews were conducted in the Tomich Hall third floor conference room. (The first floor in Tomich Hall houses the SEA auditorium, three classrooms for the SEA Reserve Component course, and office spaces for the entire SEA staff. The remaining three floors in Tomich Hall provide berthing for up to 55 students in each class.) The
third floor conference room proved to be quiet, comfortable, and provided a greater degree of privacy that the originally intended spare classroom. For consistency, the third floor conference room was used for all subsequent interviews.

This study included two pilot interviews with SEA instructors, and eight individual interviews and three small group interviews with SEA students. All interviews were recorded using the iPhone Rev app. The app provides visual indication that recording is in progress (audio wave movement) and includes an elapsed time indicator. The app records in MP4 format, generating a file size of about 1/10th that of an MP3 recording. It also uploads directly to Rev.com for transcription. All transcriptions were completed within 24 hours, and most were completed within 12 hours.

As a backup precaution, interviews were also recorded with a Sony digital recorder that uses MP3 file-format. An audio comparison between the two formats by the researcher revealed no significant differences for this research purpose between the two recordings. The Sony MP3 recordings were deleted after the transcriptions were completed. Throughout the study there was never a need to use the Sony backup recording.

Rev recordings were saved to the researcher’s password-protected Dropbox. These recordings were used by the researcher to resolve transcription-related errors and phrases (often military-related terms) that were indecipherable by the transcriber. Additionally, the researcher found it very helpful to review the interview by simply re-playing the audio recording, especially when attempting to interpret signs of human emotion.

Finally, all transcripts were reformatted to take advantage of NVivo’s “auto-coding by structure” feature. This allowed the researcher to quickly consolidate all participant responses to each of the seven semi-structured interview questions, which in turn made the coding process
easier. In other words, the NVivo software organized the transcripts such that all of the participant responses were sorted by each interview question. In other words, all of the responses to question #1 were under question #1, all of the responses to question #2 were under question #2, etc. After each interview was initially coded, this NVivo auto-coding feature made it easier for the researcher to focus on emerging patterns as well as differences between respondents.

Once the interview process started, the researcher realized a need to track the status of each interview through the completion of member checking. Hence, the researcher created an interview tracking spreadsheet to track interview completed, transcript verified, sent to member, member-check completed, and (if needed) follow-up query sent. This tracking sheet proved to be very effective in keeping the many parts of the data collection process organized.

Having overviewed the research context and the interview process, this next section profiles the typical SEA class, the two SEA classes involved with this study, and the individual participants.

**The Participants**

One of the goals in this study was to select a pool of participants that were reflective of the typical SEA class. Accordingly, this section begins with examining historical records on the SEA student body, profiles the participants interviewed, and then introduces each participant using their own words.

**The Typical SEA Class**

Like most schools, the Navy Senior Enlisted Academy maintains general demographic records for each class. Items include education level, whether or not the student routinely reads books, and how the students view themselves as slow, average, or fast readers. Historical
records date back to November 2010. What follows are selected class records for SEA-XXX and XXY, as well as the historical record updated through SEA-XXY. They reflect the highest education level achieved by the student, whether or not they normally read books, and how they self-select as to their reading pace—a slow, average, or fast reader.

Table 4.1

*Comparison of SEA Class Rank with Historical*

<table>
<thead>
<tr>
<th>Student Rank</th>
<th>SEA-XXX</th>
<th>%</th>
<th>SEA-XXY</th>
<th>%</th>
<th>Historical</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-7s</td>
<td>12</td>
<td>14%</td>
<td>8</td>
<td>12%</td>
<td>288</td>
<td>17%</td>
</tr>
<tr>
<td>E-8s</td>
<td>69</td>
<td>81%</td>
<td>50</td>
<td>75%</td>
<td>1264</td>
<td>74%</td>
</tr>
<tr>
<td>E-9s</td>
<td>4</td>
<td>5%</td>
<td>9</td>
<td>13%</td>
<td>167</td>
<td>10%</td>
</tr>
<tr>
<td>n=</td>
<td>85</td>
<td></td>
<td>67</td>
<td></td>
<td>1719</td>
<td></td>
</tr>
</tbody>
</table>

Although there are swings between individual classes, the overall historical average has remained relatively steady. In other words, it can be generally expected that for any given SEA class, one out of four will be an E8. This percentage is likely to increase in the future as E9s will only be attending on a case-by-case basis, and E7s will only be allowed to attend on a space-available basis. The attendance priority shifts to E8s when completing the SEA becomes mandatory for promotion to E9 in 2016. For these reasons, this study focused primarily on E8 participants.

Beyond rank, the next participant selection criteria considered highest education level and reading speed. Again, specific class and historical records reveal that about 40% hold only a high school diploma (or equivalent), that one-in-four do not normally read books, and that nearly one-in-three will self-select as a slow reader. This data is reflected in the tables that follow.
In sum, the goal was to focus on E8s and to get a mix of slow, average, and fast readers. Of particular interest were those students who seem most at risk of failing academically; high school graduates who are slow readers who do not normally read books. Fortunately two such students volunteered, and their stories were simultaneously eye-opening and heart wrenching.

**Participant Profile Overview**

In this study, 13 E8s and two E9s were interviewed. The average participant had 18 years of military service. Seven participants listed high school as their highest education level, two of whom were slow readers who

<table>
<thead>
<tr>
<th>Education</th>
<th>SEA-XXX</th>
<th>%</th>
<th>SEA-XXY</th>
<th>%</th>
<th>Historical</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School</td>
<td>33</td>
<td>39%</td>
<td>30</td>
<td>45%</td>
<td>688</td>
<td>40%</td>
</tr>
<tr>
<td>Associates</td>
<td>29</td>
<td>34%</td>
<td>17</td>
<td>25%</td>
<td>497</td>
<td>29%</td>
</tr>
<tr>
<td>Bachelors</td>
<td>18</td>
<td>21%</td>
<td>18</td>
<td>27%</td>
<td>424</td>
<td>25%</td>
</tr>
<tr>
<td>Masters</td>
<td>5</td>
<td>6%</td>
<td>2</td>
<td>3%</td>
<td>105</td>
<td>6%</td>
</tr>
<tr>
<td>Doctorate</td>
<td>0</td>
<td>0%</td>
<td>0</td>
<td>0%</td>
<td>2</td>
<td>0%</td>
</tr>
<tr>
<td>n</td>
<td>85</td>
<td></td>
<td>67</td>
<td></td>
<td>1719</td>
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<table>
<thead>
<tr>
<th>Reads Books?</th>
<th>SEA-XXX</th>
<th>%</th>
<th>SEA-XXY</th>
<th>%</th>
<th>Historical</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A books</td>
<td>24</td>
<td>28%</td>
<td>16</td>
<td>24%</td>
<td>408</td>
<td>25%</td>
</tr>
<tr>
<td>n</td>
<td>85</td>
<td></td>
<td>67</td>
<td></td>
<td>1603</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Reading skill</th>
<th>SEA-XXX</th>
<th>%</th>
<th>SEA-XXY</th>
<th>%</th>
<th>Historical</th>
<th>%</th>
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</thead>
<tbody>
<tr>
<td>Slow reader</td>
<td>17</td>
<td>20%</td>
<td>20</td>
<td>30%</td>
<td>440</td>
<td>29%</td>
</tr>
<tr>
<td>Average reader</td>
<td>62</td>
<td>73%</td>
<td>43</td>
<td>64%</td>
<td>945</td>
<td>63%</td>
</tr>
<tr>
<td>Fast reader</td>
<td>6</td>
<td>7%</td>
<td>4</td>
<td>6%</td>
<td>47</td>
<td>3%</td>
</tr>
<tr>
<td>n</td>
<td>85</td>
<td></td>
<td>67</td>
<td></td>
<td>1493</td>
<td></td>
</tr>
</tbody>
</table>

Table 4.2

*Comparison of SEA Class Education Level with Historical*

Table 4.3

*Comparison of SEA Class Reading Level with Historical*
do not normally read books. Eight participants were interviewed individually and seven were interviewed in small groups. Their stories were all individually unique yet at the same time demonstrated common patterns regarding how they approach learning new material.

The 15 participants interviewed in this study are listed in Table 4.4. All names in this study are pseudonyms. The first ten participants listed were assigned pseudonyms by the researcher based on their stories. The first two participants to volunteer for a small group interview were also assigned pseudonyms by the researcher. The remaining five participants chose their own pseudonym as part of the small group interview process.

Table 4.4

<table>
<thead>
<tr>
<th>Participant</th>
<th>Name</th>
<th>Rank</th>
<th>Years of Service</th>
<th>Education Level</th>
<th>Reading Speed</th>
<th>Reads books</th>
</tr>
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<tr>
<td>Interview-01</td>
<td>Life Happens</td>
<td>E-8</td>
<td>18</td>
<td>High School</td>
<td>Average</td>
<td>No</td>
</tr>
<tr>
<td>Interview-02</td>
<td>Hot Rod</td>
<td>E-8</td>
<td>18</td>
<td>Associates</td>
<td>Average</td>
<td>Yes</td>
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<tr>
<td>Interview-03</td>
<td>Rocket</td>
<td>E-8</td>
<td>13</td>
<td>High School</td>
<td>Average</td>
<td>Yes</td>
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<tr>
<td>Interview-04</td>
<td>Boomer</td>
<td>E-8</td>
<td>22</td>
<td>Associates</td>
<td>Average</td>
<td>Yes</td>
</tr>
<tr>
<td>Interview-05</td>
<td>Chemist</td>
<td>E-9</td>
<td>16</td>
<td>Bachelors</td>
<td>Average</td>
<td>Yes</td>
</tr>
<tr>
<td>Interview-06</td>
<td>Handler</td>
<td>E-8</td>
<td>18</td>
<td>Associates</td>
<td>Average</td>
<td>Yes</td>
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<td>Interview-07</td>
<td>Cruiser</td>
<td>E-9</td>
<td>16</td>
<td>Bachelors</td>
<td>Fast</td>
<td>Yes</td>
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<tr>
<td>Interview-08</td>
<td>Kidnapped</td>
<td>E-8</td>
<td>14</td>
<td>High School</td>
<td>Average</td>
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<tr>
<td>SmallGp-01A</td>
<td>Numbers</td>
<td>E-8</td>
<td>21</td>
<td>High School</td>
<td>Average</td>
<td>Yes</td>
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<td>SmallGp-01B</td>
<td>Mortar Man</td>
<td>E-8</td>
<td>25</td>
<td>Masters</td>
<td>Average</td>
<td>Yes</td>
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<td>SmallGp-02A</td>
<td>T-Bone</td>
<td>E-8</td>
<td>24</td>
<td>High School</td>
<td>Average</td>
<td>Yes</td>
</tr>
<tr>
<td>SmallGp-02B</td>
<td>Boxkicker</td>
<td>E-8</td>
<td>20</td>
<td>Masters</td>
<td>Fast</td>
<td>Yes</td>
</tr>
<tr>
<td>SmallGp-02C</td>
<td>Smurf</td>
<td>E-8</td>
<td>17</td>
<td>Associates</td>
<td>Average</td>
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</tr>
<tr>
<td>SmallGp-03A</td>
<td>AB</td>
<td>E-8</td>
<td>17</td>
<td>High School</td>
<td>Slow</td>
<td>No</td>
</tr>
<tr>
<td>SmallGp-03B</td>
<td>Bruce</td>
<td>E-8</td>
<td>15</td>
<td>High School</td>
<td>Slow</td>
<td>No</td>
</tr>
</tbody>
</table>

This next section provides a brief background of the 15 participants in this study.
Meet the Participants

Some people enter the military not knowing what they want to do, so the Navy lists them as “undesignated.” The thought is that these undesignated Sailors spend a few years seeing the different parts of the Navy, and then take an advancement exam to join some particular rate. “Life Happens” entered the Navy as undesignated and was sent to work in Deck Division on an aircraft carrier. Deck Division on any ship is the consummate manual labor division. They are either Boson’s Mates or Aviation Boson’s Mates as in the case of an aircraft carrier. At one point Life Happens thought he wanted to be a Photographer’s Mate. However he never quite got around to studying for that particular rating exam. So when the time came for people to take the Boson’s Mate exam, Life Happens relates his story of how he ended up in that rate. “I went down to the mess decks and took it, and then I was an ABH3. It wasn't really like let me do research. I was already working in the rate. Time caught up with me, test is tomorrow, go take it.” Life happens.

“Hot Rod” was the first Air Force student to volunteer for the study. Growing up in a two-parent, middle class family home in the mid-West bread basket region of the United States, his fondest childhood memories are working with his dad. “Very young I was always with my dad helping him build street rods; him buying parts, me and him going to the junk yard, buying parts from these old cars, putting stuff together, stuff not working and him explaining to me how stuff worked, wiring cars, understanding this is the ground, this is the battery, in order to complete this circuit you have to have a ground, you have to have power going through, listening to him explain that to me. I learned all the way through high school doing that; helping him in the garage.” Not surprisingly, Hot Rod enlisted in the Air Force as an Aviation Mechanic.
“Rocket” also came from a steady, hard-working family background, only in the hot Mississippi Gulf region. “Home life was pretty normal. Parents been married my whole life, still married today. Mom, my early childhood, she was a secretary. . . . My mom was always there. My dad was gone before the sun came up, and was home after the sun came down, worked all the time, had his own air-conditioning business, side jobs on the weekends. He was always working. That's the home life.”

An early rising star, Rocket spent his early days in a Gifted and Talented grade school program. A natural with numbers and formulas, he entered the Navy as an Electronic Warfare technician. And he excelled. The youngest E8 in this study, Rocket has big plans for the future. “My goal is to advance into the Command Master Chief ranks, Fleet Master Chief, Force Master Chief, Master Chief Petty Officer of the Navy (MCPON); that's not out of my sights, being where I'm at now in 13 years. I can definitely see [this course] helping me in the future. I hope it does.” Rocket remains a rising star even today.

“Boomer” was the one participant heading off to a Chief of the Boat (COB) position. The COB is the senior enlisted position on a nuclear submarine, reporting directly to the Commanding Officer. Whereas some participants came from healthy family backgrounds, Boomer’s story was somewhat different. “My home-life was, my parents were divorced. My mom went through two other divorces, or one other divorce after my father. My ex-stepfather was a little abusive, so that made life a little bit tough at home. School was always a very much challenge growing up; diagnosed with a learning disability when I was, I think seventh or eighth grade. It made it that much harder.”

The kitchen table is often the place where children do their homework growing up. Not so with Boomer. “I wasn’t allowed to do homework downstairs growing up. My stepfather hated
a mess, he hated clutter, he hated anything. If I had things scattered all over the kitchen table, he didn't like seeing that. Definitely, so everything would be upstairs in my own room.”

Vygotsky (1978) would be horrified.

“Chemist” was one of two E9s to volunteer for the study, and both of those E9s were in the nuclear power field. Nukes are unique in that once they enter the nuclear program they are restricted from any Navy job that is not nuclear-related. Unlike Boomer who is going the Command route or Rocket who has his sights on MCPON (the most senior enlisted position in the U.S. Navy), nukes almost never get out of the engine room. The Navy invests heavily in training its nuclear personnel. To mitigate that expense, nuclear enlisted will typically always be in a nuclear billet.

Nukes are good at academics by definition. Their initiation into the Naval Nuclear Propulsion program includes 6 months of nuclear power school (theory) followed by 6 months of prototype training (hands-on qualifications). Exams are frequent and they can fail out of the program at any point along the way. So to reach E9 in the nuclear field, nukes have to be good at academics; especially with math and science.

Academically inclined people come from many backgrounds, even ones like Chemist. “We were lower middle class to poor poverty; right in that borderline. Both my parents don't have college degrees. Both worked muscle jobs; as many as three at a time. Family life was, I had two younger sisters, twins; 2 years younger and we kind of took care of ourselves in the teenage years because my parents were working a lot. So they put the food on the table, we did what we needed to do. I enlisted in the Navy because I thought my only other options were the steel mill or railroad.”
Chemist entered the nuclear field as an Engineering Laboratory Technician, the Navy’s version of a nuclear chemist. “I thought it would be cool. I don’t know. I knew that . . . you had to be good to do it. So I just thought it was more of a challenge. I just wanted to kind of see if I could get it. And it was free. At this point, I mean I was getting paid. I was able to survive. I was good.”

“Handler” was one of two female E8s in the study. Hailing from various small towns in the Pacific Northwest region of the United States, her background also presented its share of academic challenges. “I was raised by my mom and she divorced my dad at age year and a half. My stepdad came into the family when I was 6-years old. I have one sister who is 10 years older than me. She moved out when I was just about turning 7. In essence I was an only child. I moved around a lot. I probably attended 12 different schools from kindergarten all the way up to high school. Every year it seemed like I was starting over doing something.”

Her grandfather had served in the Navy during World War II. When Handler decided to enlist, she chose the Navy. Like Life Happens, Handler wasn’t sure just what she wanted to do at first. “I was selected into the undesignated program where I could go somewhere and do something and then pick any job in the Navy I wanted to do. . . . I went Airmen undesignated and then I went to Pensacola, Florida for my first duty station. In that process I had decided to be a Master-At-Arms, I wanted to be a dog handler and I applied into that job.”

“Cruiser” was the other E9 nuke. He too was headed back to the engine room following SEA graduation; only he was headed to an aircraft carrier. Cruiser was the only immigrant in the study. “I'm a naturalized citizen. I was born in the Philippines and raised there by my grandparents until I was 13 years old. My mom immigrated to the United States when I was still young, about 5 or 6 years old, in order to try to provide a better life for me and my older sister.”
She's 4 years older. . . . I immigrated when I was 13 years old. We moved to Louisiana and I went to school there, started seventh grade in junior high. It seemed like it was a lot easier compared to my schooling in the Philippines. I was immediately in the top five, ten percent of the class.”

Cruiser’s solid academic foundation and fast-reader ability carried him through high school. However he too was a victim of “life happens.” He explains, “When I was in senior year, I slacked off a little bit about going through college applications because I didn't know what I wanted to do. Another thing was my stepdad had to have surgery. That kind of drained the family funds, if you will. Then when I tried to apply for college they told me, ‘Oh, you're a little bit too late to go right after high school.’ I would have to wait another year. . . .” Rather than wait another year, Cruiser enlisted in the Navy and found a home in its nuclear program.

“Kidnapped” presented perhaps the most startling interview. It started off with a bang. “My home life was actually ... had great parents and I have three sisters. It was kind of crazy; all over the place. When I was really young, when I was six, me and two of my sisters were kidnapped. We were taken to London, England. I missed the whole first half of my first grade year because we were kidnapped and we were living in London, England.”

As another participant for whom academics came easy, Kidnapped gravitated toward math and science, but not English. “Sciences, social studies, I liked that, because it was factual information. I could care less about English. That wasn't my style.” These preferences would lead him toward the Aircrewman Operator rating in the Navy where he would be at home amid a myriad of intelligence electronics soaring high over enemy territory.

“Numbers” was one of two Marines interviewed. Growing up in a six-member family with both parents, he went to private school through 8th grade before switching to a public high
school. Again, academics came easy to Numbers; especially math. “The only homework I would ever do would be math homework, because it was actually fun.”

However Numbers was far from the model student in high school. “In class I was very attentive, but once I left the classroom I was not a student. I did very little homework. I did very little studying. I was a frustration to my teachers. [Except for math,] I didn’t do homework.”

Numbers left high school early to join the Marine Corps. Based on his test scores, the Marines made him an Artillery Fire Direction Controlman. And not surprisingly, they shaped him into a model student. “My first school was the Fire Direction Control School, which is highly technical. It’s very math based, logarithms; just a lot of computations. That was very interesting. I had no choice but to do homework in that. It was very much directed that I would participate in the homework; intensive class. It was extremely rigorous, but it was very directed. There wasn’t much wiggle room on how you’re going to do your activities.”

“Mortar Man” was the other Marine in this study. Growing up in a middle class family of five including mother and stepfather, Mortar Man was generally at ease but had no interest in academics. “In high school I was there. I did the work when I needed to do the work. . . . The only time I read a textbook is when we did it as a class. I followed along then when it was my turn to read a certain paragraph, I read it. Outside of that, I didn’t read it. The book stayed wherever they were supposed to stay. I just had no desire unless I needed to pass. . . . It’s safe to say that in high school all the work was done in the classroom.”

Unlike Numbers, Mortar Man prefers the physical (how to do) over the cognitive (how to think) approach to learning. “When I graduated boot camp, I went to my Marine Occupational Specialty (MOS) School, which is a basic Mortarman. It’s more practical application is how you
retain. You have your classroom time, but a lot of times that doesn’t make sense until you’re actually doing practical applications.”

In academic settings where the focus is on reading and understanding strategic concepts, Mortar Man quickly becomes a fish out of water. His description about reading the National Security Strategy illustrates. “I’ll read [the National Security Strategy] for probably in ten minute increments and I’ll take a break. I would have to ration it. I had to ration myself because if I kept reading, I won’t remember anything I read. Here I am five pages down the road and I have no idea what I just read, so I have to stop and somehow backtrack so I can tie in the next paragraph so it can make sense.” Unfortunately Mortar Man would not be the only participant to struggle with reading academic material.

The remaining five participants each chose their own pseudonym as part of the small group interview process. They are all Navy and they are all E8s. What follows is a brief description of their backgrounds and why they chose their particular rating.

“T-Bone” grew up in another hard-working family. Both his mother and stepfather worked in the automotive industry but in opposite shifts. No one really pushed education, so by junior high school T-Bone was left on his own accord to do well in school. By high school, sports became T-Bone’s focus along with producing the minimum academic effort required to stay on the team. “So that was really my driving force to do, I don’t want to say average, but maintain a GPA just to play sports.” Fortunately for T-Bone, basic academics came easy. “I don't think that I struggled, but . . . the minimum was okay for me, and then I'd just go at that pace.”

After high school, T-Bone entered the Navy. Any aspirations of college were squelched by his family’s financial status. “I didn’t want to be a burden on my family.” Like several others
in this study, T-Bone entered the Navy undesignated and, coincidentally, was also placed in the Deck Division of an aircraft carrier. At first he wasn’t quite sure what he wanted to do, but he knew Deck Division wasn’t it. “I was doing ordinance, and it was the same thing that I didn’t want to do ... painstaking, backbreaking work. I want to do something with my brain and challenge myself.” By the end of his first year in Deck Division, T-Bone found what he wanted. “I really took a liking to the aviation electrician's rate, and I had good mentorship, I think, from my chain of command, and then I went to school to be an aviation electrician.”

“Boxkicker” was the only New Englander in the study. “Family background, parents were divorced. I lived with my mother and stepfather for most of my ... except for when I was 16, I moved in with my father, and did my last 2 years of high school over there. I have two brothers with my father and two sisters with my mother. Five total in either house.”

With Boxkicker, grades became a motivator in high school. “Freshmen year of high school kind of just like totally took off, just didn't do much, and then that was a reality check for me, so I was like ... Hey, I'm not this dumb, and I started ramping it up after that. So, I dug my way out of a hole.” Boxkicker also found an early love for the Navy. “[Ever] since I was a little kid, I always wanted to join the Navy. I remember my grandfather had Life magazines, and I saw Battleship Bismarck, and I just thought that was real pretty, and then when I was in boy scouts, I spent overnight in Battleship Cove, and I thought this is a great deal.” And when high school ended and the Navy offered him money for college, Boxkicker took the deal. He wanted to be the first in his family to earn a college degree.

Boxkicker entered the Navy as a Storekeeper. “I came in as an SK because I was business for the most part ... business background, and I was trying to think of post-Navy because I was only going to do 4 years. Just like everybody else; learn some business skills and
“do something after that.” And like so many others, Boxkicker finds himself still in the military, now at the 20-year mark. He also holds a Master’s degree in Supply Chain Management from Penn State University.

“Smurf” was the only other female in this study. She describes her background as less than ideal. “I grew up with five people in the household; my mom, my dad, my two sisters. I'm a middle child. They were married, but I wouldn't say they were happily married. They're not a good example of what a marriage should be, if you ask me.” Smurf used school as an opportunity to get away from her home life, as well as impressment into her father’s landscaping business.

“My dad ... does landscaping and different things, his own company, so if I had to work with him sometimes after school, that's what I did, but that's the reason why I got into all the curricular activities and stuff like that, so I didn't necessarily have to work with him.”

Smurf was good at academics. “I was a pretty good student. I made good grades, took advanced classes like calculus and stuff like that, so—.” For Smurf, college might have been a natural progression following high school. However that would not be the case. “I wanted to go to college but I decided to enlist in the Navy because my dad wouldn't fill out my financial aid paper for college.”

Like several others in this study, she entered the Navy undesignated. “Being [an undesignated] Seaman, they want you to be a Bosun’s Mate. I didn't want to preserve the side of the ship for the rest of my career, so on my own time I had to go and figure out what else I wanted to do. At the time Radiomen were in the Navy, so I thought they had a cool job. They worked behind this door that nobody can really see in, and stuff like that. They've got [reenlistment bonuses], they seem like they got off work at 10 o'clock to go play basketball every day and just be chilling. . . . So I struck Radioman.”
The last two people included in this study had three things in common: their highest education level was high school, they self-select as slow readers, and they do not normally read books. Their stories are both very different and yet at the same time very much the same.

“AB” grew up in what he describes as a rural but small East Coast city. “My mom and dad were divorced. My dad's side of the family is mainly into painting, construction, so I was all raised working all the time, so painting. Sometimes it was like playing, going out there playing with your friends ... during the day I would go to work with my dad, because he had his own business.”

Although AB was a good worker, he was less so a good student. “In high school, I'd say from 9th to 10th grade, I was barely making. My last couple years, that’s when I decided ... I played sports, so playing sports from night to ... like when I really knew I could. I had to have ... my grades had to be up if I wanted to stay on the team. If my grades were down, I couldn't play. It really motivated me to study a little more because I wanted to play sports.”

And when it came to academics, AB had his own challenges. “Reading, English, history ... wasn’t my subjects. I didn’t like reading, doing a whole lot of reading. I guess at school, too, reading out loud ... I used to stutter a lot, and I used to get nervous, especially see somebody else, they don’t stutter. I'm like, ‘Man ...’ It just wasn’t my biggest thing.”

Seeing no future in academics, AB joined the Navy in the fall of his senior year in high school, right after football season was over. “I joined the Navy because I had a cousin that was in the Navy the first time when I saw the [USS VELA GULF] christening, and I went, ‘Man, I want to ride on one of those.’ Then he come back and ... He got a nice car, he worked, he always had money, but he was doing good for himself so I’m like, ‘Man, I want to join the Navy, too.”
AB entered the Navy as an undesignated Seaman. Initially he wanted to be a Radioman because his cousin was a Radioman. “However I ended up becoming a [Ship’s Serviceman] as I am now. I'm an SH. I did that because, when I first checked in on the [USS EISENHOWER], first got in, that’s the first place they put me. I never did anything as a deck seaman or anything, but all my friends were deck seamen that I went to boot camp with. I watched them work, and I'm like, ‘Man, I don’t want to do that.’ So they sent me to S3 [division], and it was history from there.”

Whereas AB came from the city, “Bruce” came from the country. “Up until I was 10 years I was raised by my mom. I had four sisters. The dad I have now is actually my stepdad, and he came into the picture about 10, 11 years old. Mom stressed the importance of school, but her focus was on raising five kids. It was all country life. At the age 12 I'm out in the fields baling hay, taking care of the livestock, things like that. The emphasis was put more on working. Same as AB says, you didn’t get a lot of time to play with your friends in the normal setting. You have a job to do to earn some money somewhere to help the house. That was pretty much my job.”

Bruce had a hard time with academics with one exception. “Numbers come natural to me. The only thing I can say about high school was … the math; I never studied. I didn’t have to. It just came natural. Everything else … the English, the history, all that … triple the work. That’s what I had to do.”

Like others in this study, Bruce’s focus in high school was not on academics. But neither was it on sports. When asked about college aspirations, Bruce replied, “I had no desire at all to do college. The education portion just wasn’t me. The studying, the learning, the reading … I hadn't done it throughout my middle school, high school. It did not appeal to me. I was brought up, ‘You're the man. You need to be working. You need to provide.’”
After high school, Bruce put his strong work-ethic and his ease-with-numbers talent into managing a warehouse for C&D Technologies. “The shops would come to us to get parts, and the people that worked there, they worked for me. They would have to issue the parts, count the parts, make sure we had a continuous inventory.” At some point Bruce saw the military as a means to chase the American dream. “I decided to enlist in the Navy because I knew the rough life my mom had had, and that was something I didn’t want to go through. I wanted something a little better for my kids, when I did decide to have kids; and hopefully to be able to take care of mom as she got a little bit older. That’s what I’m doing now. My choice then was to join some branch. I didn’t care which one.”

With his background in warehouse management, Bruce entered the Navy as a Storekeeper. It was a natural fit.

This completes the descriptions of the participants involved in this study. As a group, they are reasonable reflective of the typical SEA class given the sample size. It would have been better to have one or two additional slow readers in the mix, but only two had volunteered. Next, the research data is analyzed beginning first with an overview of the findings before discussing each research theme in detail.

**Overview of Research Findings**

This section reports the findings related to the following research question: *How do Navy Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?*

Using NVivo software to analyze this study, the researcher assigned 1,635 transcript segments into 63 different codes. These codes were then organized into six themes that fell into two general categories; the participant’s *internal acquisition process* and the *external interaction*
process between the learner and his or her environment. These two categories, their associated themes, and the number of references coded to each theme are listed in Table 4.5.

Table 4.5

Key Themes by Category

Internal Acquisition Process

- Emotion .................................................. (259 references)
- Cognitive Effort ........................................... (282 references)
- Knowledge/Schema-Building .......................... (629 references)

External Interaction Process

- Learner-Behavior-Environment Interactions ............ (198 references)
- External Enablers and Inhibitors ........................ (213 references)
- External Content Nature .................................. (54 references)

Having overviewed the research findings, the following section details the codes that make up each of the six themes. In this section, the themes are listed in the order they emerged during the first and second pass coding processes. In the Research Question Analysis section at the end of this chapter, the themes are generally listed based on the number of references coded to each theme.

Internal Acquisition Process

The focus of the Internal Acquisition Process is on the mental activity that occurs when learning something new; either acquiring new knowledge or acquiring an understanding of how to perform new behaviors. These activities occur inside the mind of the learner. Three major themes fell into the “internal acquisition process” category; emotion, cognitive effort, and knowledge/schema-building. Emotion was the first theme to emerge from the coding.
Emotion Theme

Initially the researcher attempted to code passages based on the specific type of emotion (e.g., fear, happiness, etc.). However that quickly became too cumbersome, so passages that contained an Emotion were coded into either positive or negative nodes. (Nodes and codes are synonymous in NVivo.) Only passages with Emotion associated with learning were coded. By the end of first pass coding, there were more passages in the Emotion node than in any other node.

Once simplified to either positive or negative, Emotion-related passages became easy to code. For example, Hot Rod displayed negative emotion when recalling high school geometry.

“I just remember that at that point where I was at in my mental state, I couldn’t get past the problems on the paper . . . . I was having trouble in the classroom and it wasn't leaving the classroom . . . . I think I just gave up right there and I was like, ‘This isn't for me.'”

Where some find math a troublesome subject, others like Rocket find it a joy. "In high school, I'd say my best course was math. I was always intrigued by more the theory of math, algebra. It always intrigued me. I was pretty good at it.” Here, Rocket displayed a positive emotion.

There were nearly an equal number of references coded to positive and negative emotions. Most of the negative emotions coded dealt with curriculum content where the participant reacted negatively toward a subject, as was the case mentioned earlier with Hot Rod. However occasionally negative emotions centered on people in the learning environment. Handler provided an excellent example. “I studied with a group yesterday and it was almost like it was a two hour waste of my time. I don’t mean that in a negative way. I just mean that I sat
there, I listened to people talk, tell their war stories, get off, divert, and I went home that night and I put another 4 hours of my own time going back through the information.”

**Emotion theme summary.** Even before the end of first pass coding, Emotion emerged as a dominant theme. All participants included some element of emotion, either positive or negative, in their interviews on how they understand their learning processes. Emotion codes included both content elements and environmental elements (e.g., study groups). In all the participants’ stories, Emotion either helped or hindered the learning process.

Emotion was the only theme to surface during initial coding. The remaining themes emerged only after the completion of second pass coding. These themes follow.

**Cognitive Effort Theme**

Emotion was the easiest theme to spot mostly because it seemed to outnumber any other node during the initial NVivo coding process. In NVivo, coding consists of selecting a word, phrase, or passage with the computer mouse, and then dragging that selection into a node (e.g., negative emotion). The selection becomes a “reference” and the node becomes a folder containing all of the references coded to that node.

Nodes in NVivo behave like folders in any computer file management system. Nodes can be created, organized, and re-organized just like file-folders to create a structure of main folders with multiple levels of subfolders. Furthermore, nodes can be promoted and demoted in the structure hierarchy just like folders in a computer file management system by dragging the node to the newly desired structure location.

Emotion quickly emerged as a main folder (or theme) with two subfolders; positive emotions and negative emotions. Cognitive Effort would not emerge as a theme until after
second pass coding. Once it did, there were slightly more references coded to Cognitive Effort than there were coded to Emotion.

There were seven codes associated with the Cognitive Effort theme. Each of these seven codes is discussed below beginning with Learning Strategies. Furthermore, each code is illustrated using narrative from selected participant interviews.

**Learning strategies.** The first code in the Cognitive Effort theme is Learning Strategies. The “Learning Strategies” code was used to collect references where learners describe how they approached learning new material. The focus for this code is on the internal, cognitive effort of the learner. There were 71 references assigned to Learning Strategies. Common strategies included flashcards, highlighting, and note taking; techniques used by learners to help them internalize external course content. Though many in the study used flashcards, both Life Happens and Numbers used this technique almost exclusively.

Numbers related his story about studying at Fire Direction Service School. “When it came to [studying], I learned what the objectives were, and for me, flashcards. I wrote whatever I could write on a flashcard and mixed them up or whatever the case may be and went through each flashcard repetitively until I figured it out. That’s what worked for me.” Life Happens had a similar approach for studying at the SEA. Going through a 5-inch stack of 3X5 cards he brought to the interview, he explained: “I'll pretend as if I'm writing the quiz and I'll read [a paragraph] and I'll break it down in full questions. So I think this is going to be a question [displays a 3X5 card]. I think this is going to be on the quiz, and then I'll put the answer from the reading on the back of the 3X5 card.”

Boxkicker, one of only two fast readers in the study, preferred highlighters. “As for notes, I actually like having a highlighter and highlight, and sometimes I just kill books . . . I
sometimes need a lot of highlighters . . . so highlighters were a godsend. You can never have enough of them.” Smurf, on the other hand, is a note taker. “I take notes like ... I would say as far as doing my job and stuff, coming up the ranks, I take notes and have a green wheel book and stuff like that.”

The focus of the Learning Strategies code is on the techniques beyond simple reading that the participants used to aid the cognitive effort of internalizing external course content. In most cases these were simple techniques like highlighting, reading aloud, or taking notes. Also in these cases, the content was typically in book or equivalent form. Learning strategies associated with book-related content often involve little, if any, interaction with the environment. Instead, the main effort behind Learning Strategies was to internalize some external course content.

However in cases where the content was a physical system, learners might use physical strategies to aid in the cognitive effort. Such was the case with the two nukes in the study. Chemist offered a good example in comparing Nuclear Power School (book-based learning) with Nuclear Prototype. “In Nuclear Power School, that's when I . . . [would] read it . . . write it in outline form . . . [and] then re-read it, and then that combined with the lectures and that's all I needed really. Nuclear Prototype was more about the procedures. Before it was all theory so that was the way I studied the theory. But with the procedures, once I understood, I had to learn the system. I would read the procedures and go down and walk through the system with the procedure. And that was good enough for me to reinforce the systems.”

Similarly, Cruiser not only uses this technique of “Learning by Walking Around,” but also encouraged others to do the same. “So when things are academically challenging I do more. I try to involve more physical activity by going down and looking through the propulsion plant. I remember having meetings with my junior Sailors and saying, ‘Hey, you may have different
styles of learning; you may be getting the entire system just by studying the books. Or you're maybe like me and you study the books and then you go, ‘Okay, let's go down to the propulsion plant and go operate something or learn about how it actually operates and see it in action.’ They get it. They take that advice and say, ‘Okay. These books, I'm reading over and over again. I'm not getting it. Let's go down to the plant. Let's go watch them operate.’"

In sum, Learning Strategies were techniques the participants used to assist the cognitive effort to internalize (create new knowledge from) external content. Seventy-one references were coded to Learning Strategies. They ranged from simple highlighting to hand-tracing piping systems in a propulsion plant. Although they may involve some physical activity such as reading aloud or vicarious learning by watching others start-up a turbine generator, the emphasis with the Learning Strategies code was always the internal cognitive effort to reach a new understanding. Excluded from this code were interactions with others such as asking a teacher questions or participating in a group study. These activities were coded separately as a Category-2 External Interaction Process code.

**Reading ability.** The second code in the Cognitive Effort theme is Reading Ability. The “Reading Ability” code started out as Reading Challenges because the first several participants had passages where they discussed their frustrations associated with reading. However other participants cited reading ability as a strength. Thus the node was eventually re-coded as Reading Ability to capture the wider range of comments.

The Reading Ability code was used to collect references where the participants discussed their reading speed or reading comprehension ability. Sixty-eight references were coded to this node. Reading Ability generally fell into one of three categories. For a few, reading was an easy, almost effortless activity; analogous to riding a bike. When it came to reading, these
participants displayed unconscious-competence. For example, Cruiser related his story of reading his grandfather’s encyclopedias as a child. At first he would look at the pictures, but soon he began to read and would subsequently always be found somewhere in a book. This is what he remembered about reading growing up. “Some of the family made fun of me because they thought I was a bookworm. So reading came very easily to me. I enjoy reading, even now.”

Although he self-selected as an average reader, Kidnapped was another example of an unconscious-competent reader. “I can say, honestly, even since I’ve been in the military, I haven’t studied for anything. I don’t study. I just … I read it and I get it, and then I move on. … When I was in … fifth grade, they put me … in the gifted and talented. My reading comprehension was off the charts. That’s always been something very easy for me. If I read it, I got it.”

Where some found reading an almost effortless activity, for most of the participants reading was simply a means to an end. Especially when reading academic material, most of the remaining participants could focus their cognitive energies and get the job done. Their Reading Ability could be described as a conscious-competent activity. Hot Rod provided an excellent example. He recalls describing his effort to read about the European Union and NATO. “The first time I read it, I just read through it because, okay, I got a test coming up and I just kind of read through it. I think with the second time I read through it, I read through it a little more slowly. If I stopped and I didn’t really get it, I’d read through it again. Just by doing that, I was able to fully understand the whole concept of [how] we went to war with NATO [as a partner].”

With Hot Rod, re-reading was enough to grasp what he needed from academic material. However with most others, re-reading alone was not enough. Instead, some type of dedicated effort beyond reading was required. For example, Life Happens transcribed important passages
to 3x5 cards. “I'd sit next to a guy ... He just reads it and then he scored 100 to all of the tests. That's not me, I can't, that's just not the way I remember stuff. It's through note cards.”

Others like Boomer had an even harder time reading academic material. “My biggest problem is comprehending what I'm reading . . . because I'd have to go back over it because I sometimes wouldn't understand what I was reading.” This realization led Boomer to become a note taker. “I'd go through pads of paper writing down notes so I could understand where, and keep the storyline going of what I read.”

Boomer takes notes, Chemist outlines the reading, Cruiser reads aloud, and most will slow down and re-read when the going gets tough. These are some of the techniques the participants used to supplement their reading ability. The one commonality is that they are relatively successful in completing the task. They display conscious-competence in reading academic material. Where the learning situation called for reading, these participants could get the job done. But not everyone in this study was so fortunate.

For a few of the participants, reading was a fair task at best assuming the content was simple. However when it came to academic material, reading became an almost unsurmountable task; to be avoided at all cost. To them, reading was not one of the tools in the learning toolkit, and they knew it. Their Reading Ability could be described as conscious-incompetence. There were two such participants who fell into this category, AB and Bruce. Coincidentally they both listed high school as their highest academic level, they both self-selected as slow readers, and they both do not normally read books.

For AB, reading just does not work. “I can sit here and remember everything you say. If I read and see it again, I'm good at that. But if you gave me, ‘You need to read all this right here. We'll have a test on it,’ I'll read it, but I just can't remember or understand it all more than
if somebody just told me.” AB described himself as a sequential reader: he starts with the first
word on the first page of the assignment and plows through the reading word-by-word until he
reaches the end. “I try to remember what I read. If you ask me a question . . . on everything you
read today, you start questioning me, you ain't going to get nothing from me. You might as well
just go ahead and tell me what you're trying to give me.”

Bruce had a similar story when it came to reading. “I have to continuously go back and
re-read again. Sometimes it takes me actually asking somebody, ‘Hey, explain to me your
perception of what this reading is trying to tell us.’ When they give me their perception of it, a
lot of times I can associate with it, and then I put it together.” And like AB, Bruce was fully
aware of his reading challenge. “I think it all boils down to the comprehension. I don’t
comprehend what I read, so therefore . . . it doesn’t sink in. . . . Through my 41 years ... this is
something I'm not proud of ... I've never read a book ... never ... just because the comprehension
piece is not there. I don’t comprehend what I read. It doesn’t stick. What's the point in reading
it if it don’t stick? That’s the way I've always looked at it.”

Reading ability is a gateway academic skill in that without the ability to read with
competence, other academic skills often fall by the wayside. Bruce highlighted this in his
interview. “Do I take notes? No, because if I go to take notes, I don’t know what to take notes
on. . . . The way I look at it is I can't write notes if I don’t understand it. Therefore, there's no
point in me writing notes.”

In a training context where the focus is on psycho-motor learning, Bruce is successful.
For those few things that do require cognitive learning, he turns to rote memorization. “I've got
two warfare devices and master training schedules qualification. . . . I've actually done the
instructor job for two years. . . . [For] the stuff . . . that I had to learn, it was cue cards. I had to
sit down with cue cards and just ... memorization. Show me the question 200 times, show me the answer 200 times, and I'll get you 200 times. I have to do it that way, to physically say, "What is this?" and then understand it."

Both Bruce’s and AB’s stories suggest that incompetent readers can still do well in training situations, but they become fish out of water when they find themselves in an educational context. In other words, students who are conscious-incompetent readers are educationally handicapped.

Finally, a note about the coding process may be worth mentioning here. During the initial coding process, Reading Ability was initially a theme all of its own. However since reading ability determines the level of cognitive effort required to internalize external content, it was demoted to a child node of Cognitive Effort theme during second-pass coding.

**Other children of cognitive effort.** Learning Strategies and Reading Ability accounted for half of the references coded to the Cognitive Effort theme. The five remaining codes subordinate to Cognitive Effort are listed in order of number-of-references assigned to that code.

Reading “Over and Over” was one of the first *in vivo* codes to develop. Consistent with qualitative analysis practices, quotes are used to indicate *in vivo* codes vice researcher-generated codes or codes from literature. Mortar Man provides the following example. “So for me, it all came down to reading over and over again until I understood what I was reading.” Thirty-three references were coded to Reading “Over and Over.” Nearly all participants mentioned some form of re-reading in their interviews.

The Reading Strategies code was used to collect references where the participants mentioned a reading approach that was anything beyond sequential reading; starting with the first word on the first page and reading sequentially until reaching the end. Thirty references
were coded to Reading Strategies. Techniques include skimming, periodic checks for understanding, and non-linear reading techniques. Smurf provided the following example. “I skim, and I’ve done that with probably the vast majority of this stuff, and then skim it, look for the speed reading stuff, read the first paragraph, last paragraph, boom, boom, boom, you know, go, look at the summary because it's ... hit that, alright, yeah, I'm kind of good.”

Cognitive Challenges was another code that fell under the Cognitive Effort theme. Similar to Reading Ability, the Cognitive Challenges code was used to collect the 23 references where the participant discussed cognitive elements that hinder learning. Some were disabilities associated with the learner. Boomer relates, “School was always a very much challenge growing up; diagnosed with a learning disability when I was, I think seventh or eighth grade. It made it that much harder.” Other Cognitive Challenges took the form of internal resistance when the content did not appeal to the learner, as in Cruiser’s description of his least favorite college course. “A lot of the case studies, it seems like they’re all the same. It seems to me that there's no variation. After a while, it seems like, ‘Okay, the thing I read in week 2 is the same that I'm reading in week 6, it just changed the company.’ That's what made it dry to me. It also made the reading a little bit tougher, but I still have to get through it.”

“Memorize” was another in vivo code under the Cognitive Effort theme. It came up in the first interview and in nearly every subsequent individual or small group interview. Life Happens related his standard approach to learning new material. “I'm going to break down the information and memorize it.” Kidnapped had a similar story. “I would write out important facts on a flash card. A key phrase and then actually what I needed to know about that on the back hand side. Just flip and go, until I burn it into my head. The vast majority of that, probably
ninety percent of that stuff, I still have memorized.” Overall, 22 references were assigned to the “Memorize” code.

The final code under the Cognitive Effort theme was Active Learner. It was reflected in only six of the 15 participants. The Active Learner code was used to collect references where the learner engaged the content with cognitive energy that went beyond simple reading. In describing her approach to learning at the Senior Enlisted Academy, Handler related the following. “Find some way that the information that’s being put out either can be put to a personal story or . . . see if I can [align the content] with my experience and go yes, that’s exactly what happened over here and over there.” Other references coded to Active Learner showed elements of reflection and summarizing the reading into the learner’s own words.

**Cognitive Effort theme summary.** Each of the seven codes falling under the Cognitive Effort theme deal with either the mental energy or the cognitive strategies used to internalize external content. The Cognitive Effort theme began as a plethora of codes that dealt with cognition. During second-pass coding, the researcher realized that this plethora of codes could be sorted into the general themes of Cognitive Effort and Internal Knowledge/Schema Building.

Both of the themes discussed thus far, Emotion and Cognitive Effort, are consistent with the theoretical lens used to inform this study. What was unaccounted for in the theoretical lens was the emerging theme of Internal Knowledge/Schema Building. This new finding is discussed next.

**Knowledge/Schema-Building Theme**

Once separated out as a theme, more references were coded to the Knowledge/Schema-Building theme than in the Emotion and Cognitive Effort themes combined. Over half (54%) of the 1170 references coded to the Internal Acquisition Process category were coded to
Knowledge/Schema-Building. Of the 629 references coded to the Knowledge/Schema-Building theme, 142 references were assigned to codes that reflect pure schema whereas 487 references were assigned to codes reflecting beliefs.

This next section describes the more significant codes associated with the Knowledge/Schema-Building theme, beginning with those codes most reflecting the schema construct.

**Type of learning.** The Type of Learning codes came from literature. These are considered schema building processes and are explained in Chapter-3. In order of increasing complexity, they are Cumulative, Assimilative, Accommodative, and Transformational. As may have been predicted, there were no references assigned to either Accommodative or Transformational. Much of adult learning tends to be assimilative, as was indicated in this research. However, there was also a significant amount of cumulative learning taking place.

Cumulative Learning is associated with rote memorization and occurs when the learner has no initial schema to add to. There were 18 references assigned to the Cumulative Learning code. Life Happens displayed cumulative learning when recalling French class in high school. When asked about why he found French difficult, he recalled how a friend helped him. “I think it was the memorization and I think it was just trying to understand . . . certain words in it. She was helping me understand how to memorize what it means in French. Hot Rod provided another example when he described how he studied for advancement courses in the Air Force. “There was some stuff I had to really read over and over and over and just by repetition, just memorizing; . . . binary codes was one I had difficulty with. . . . I just had to read it over and over, to the point where maybe I didn’t understand it, but read it enough to where if I seen it on a question I just knew that was the answer, just because of the repetition.”
Consistent with the literature, the majority of references (36 in all) were coded to Assimilative Learning. This is where the learner uses new knowledge to build on an existing schema. Rocket provided an exceptional example. When asked about the value of the SEA course, he reply included a discussion of our national strategies. “After I leave here, I'm going to be applying for the Command Senior Chief Program. I'll go and be part of the triad on a ship or a squadron or whatever. While you're still tactical-level thinking, the CO still has a responsibility to do that entire model, all the way up the chain, giving his input on what he needs on the ship, and what kind of money. That all goes to the DESRON, up to the Fleet Forces. Fleet Forces takes it up to Washington and fights for money. I see all that now.”

Chemist provided another example of Assimilative Learning when asked about why he learns better now than when he was younger. “I [am] able to absorb more. I think maturity is the biggest thing; that and a better background of experience.” Thus, based on the number of references, the most prevalent type of learning for participants in this study was Assimilative Learning.

“Familiar.” The “Familiar” code was another in vivo code. It tended to appear when questioning the participants why they chose their particular job (rating) in the military. Life Happens initially wanted to be a Photographer’s Mate. “It's just . . . something that I was familiar [with] . . . . Still to this day, photography interests me. I don't have a nice camera or anything like that but I think that I still find it interesting.” Similarly, Hot Rod explained why he found his initial Air Force training school relatively easy. “Even though it was an aircraft versus a car, growing up and having my dad teach me all of that, it just came easy to me. . . . Tech school was very easy for me because, like I said, it was mechanics. It was something you were generally familiar with, just a different platform.”
Know the “why.” If “Familiar” implies a degree of comfort due to a pre-existing schema, then knowing the “Why” indicates a desire to build on a pre-existing schema. At the SEA, each student is required to brief on a foreign country. Boomer explained, “I had Bulgaria. Having to explain the strategic importance for Bulgaria it was like everything clicked. It was like, ‘This is why.’ I understood why we have [our National Security Strategy], but then why it is so important for the other countries [to have their own security strategies]. It all tied into each other. Then I was able to comprehend it.” Finally, in discussing the value of the SEA course, Boxkicker was more to the point. “We did get a lot of good insight on the big why.”

Other children of the knowledge/schema-building theme. Several codes did not come up frequently in the interviews but were consistent with the Knowledge/Schema-Building theme. These were “Broadens Your Perspective” (an in vivo code), Gained Language to Explain Previous Actions, and searching for the “Truth” (another in vivo code). They share a common thread of adding to the existing, internalized knowledge of the participant. Altogether they account for only 13 references. Although they may be insignificant in numbers, they still represent a finding.

Up to this point, the codes discussed seemed to fit nicely within their assigned themes of Emotion, Cognitive Effort, or Knowledge/Schema-building. However this next code actually has a foot in two themes: Emotion and Knowledge/Schema-Building. That is the “Beliefs” code. (Beliefs as a code was discussed in Chapter-3 under the Data Analysis section.) Although this code might equally fall into either theme, Beliefs were placed as a child node under the Knowledge/Schema-Building theme.

Beliefs. The node in the Knowledge/Schema-Building theme with the most references was Beliefs. This single node spawned multiple generations of child, grandchild, and great
grandchild nodes. It accounted for 486 of the 629 references coded to the Knowledge/Schema-Building theme. As the participants discussed how they understood their learning, multiple codes became apparent that would eventually be compiled under Beliefs during second pass coding. Self-Esteem and Attitude Towards School/Education were the two most readily apparent codes to appear. Together they accounted for 61% of the references coded to Beliefs.

In general, codes subordinate to the Beliefs code tended to include two sub-codes: positive and negative. In describing his high school days, Chemist provided an example of a positive Self-Esteem. “Math and science were my favorite courses. I have an engineering brain. . . . math and science [were] just easier for me.” In contrast, when discussing study groups at the Senior Enlisted Academy, T-Bone displayed negative Self-Esteem. “I tried study groups, and it just doesn’t work because, myself, I feel like I’m the one holding the group up, or I don’t want to keep people here if they have their own study habits.”

The code Attitude Towards School/Education (which included Academic Work Ethic) was similarly polarized. On the positive side were participants like Cruiser. “I always aim to get a perfect score. If it’s a test, if it’s a hundred, I try to get a hundred. If there’s a bonus question, I want to get 105, or however many points it is. I still carry on till now. I did study a lot and made sure that all my homework was done.” On the other hand, Hot Rod’s negative Attitude Towards School/Education is what landed him in the Air Force. “When I was in high school, I was very much not into school. It wasn’t that I couldn’t pass; in high school I wasn’t focused. I was more into partying, having a good time, going fishing. I skipped school here and there. I did pass and I did graduate from high school. My dad seen that and right off the bat was, ‘Listen, you’re going down the wrong road. I won’t pay for college for you. You didn’t pay attention enough in high school and [you don’t] have the grades to get any student loans.’ He
actually took me to the Air Force recruiter; sat me down and said . . . I needed discipline and I needed structure in my life and I listened to him and I joined a few months after high school.”

Another code subordinate to the Beliefs code was Cognitive Affinity toward academic work. Again, this proved to be another polarized code where either academics came easy or one struggled with academic work. Interestingly, a positive Cognitive Affinity did not always correlate to a positive Attitude Towards School/Education. Life Happens was one such case. “I don't ever recall studying at all, hardly ever. I don't ... high school for me was ... I was big into sports and I just don't recall burning the midnight oil with a book open. I don't. I just think I breezed through high school and that was that, though it wasn't really much of a mental challenge.”

On the negative side of Cognitive Affinity, AB described why he chose enlisting in the Navy over going to college. “I didn’t want to go to college because, I guess it was ... the studying part ... Sometimes it makes me a little bit nervous, but I really did not ... I was tired of the school setting.” Here, AB displayed a negative cognitive affinity toward academic work. With other participants, Cognitive Affinity depended on the academic content. Bruce provided this example earlier. “The math, I never studied. I didn’t have to. It just came natural. Everything else ... the English, the history, all that ... triple the work. That’s what I had to do.”

Another complication of Cognitive Affinity is that it carries a significant Emotion component. Emotion can either help or hinder learning, even with the better students. Rocket pointed this out in his interview. “If I was interested and I felt challenged in a course, or if it interested me, I did well. [However] I think I had a low C in my English lit . . . not a big fan of history either. I passed them, but not without a lot of hem-hawing and dragging my knuckles. . . .
I was very mopey about it. I wasn’t happy to be there. I wasn’t really engaged. I did the minimum, what I had to do to get by.”

Still another code subordinate to Beliefs was Ambition—the belief of what one may someday do or become. After high school, Kidnapped attended college for a short time before entering the Navy. “I majored in political science because at the time I thought I really liked politics. I wanted to become a small town mayor.” Handler had a different story. “I went Navy because my grandfather served in World War II on the torpedo boats. He landed in Nagasaki after the bombing. . . . [He had] 17 grandchildren and nobody . . . joined the military. I wanted to make him proud and carry on some type of family tradition.” Most of the participants displayed some type of ambition during their interviews about how they learn.

Other codes subordinate to the Beliefs code included Work With Head, Work With Hands, Looking Backward and Down, and Looking Forward and Up. The first two codes, Work With Head versus Work With Hands, often appeared when participants relayed why they chose their particular rating in the military. These codes reflected they type of work the participants believe they find more enjoyable. Some preferred a more physical challenge. “My family was on a farm. Did a lot of hard work. I appreciated the hard work.” In contrast, others preferred a more cognitive challenge. “I was doing ordinance, and . . . [it] was painstaking, backbreaking work. I want to do something with my brain and challenge myself.”

As for the Looking Backward and Down, and Looking Forward and Up codes, they often appeared when the participants reflected on the future value of the SEA curriculum. Looking Backward and Down was a participant who looked to the past (i.e., backwards in time) and down the chain-of-command (i.e., toward subordinates) when it came to putting the SEA curriculum into practice. Bruce provided the following example. “I need to know how it affects me, how it
affects my Sailors here, so that I can make sure we get the mission done. The bigger picture . . .
that’s not a concern to me.” Contrast this with Rocket who looks to the future and sees himself in a position of higher responsibility. “What I found with this curriculum is [that] I’ve very much enjoyed this. Like I said, I’m a strategist, a theorist. The whole National Security Strategy, National Defense Strategy, how our nation builds its strategies, and how we as senior enlisted leaders fit into that piece of the puzzle, that broadened my horizons.” In both examples, Bruce and Rocket revealed what they believed to be the future value of the SEA curriculum. One looked back in time and down the chain-of-command while the other looked forward to the future and to positions higher in the chain-of-command.

**Knowledge/Schema-Building theme summary.** The Knowledge/Schema-Building theme only emerged after second pass coding. However, once identified, it accounted for more references that the first two themes combined. In total, 629 references assigned to 29 subordinate codes were merged into the Knowledge/Schema-Building theme. A complicating factor in determining this theme was the Beliefs code. Defined as having both an emotional component and a knowledge component, the Beliefs code could fall into either the Emotion theme or the Knowledge/Schema-Building theme. Likely reflecting the researcher’s Western bias toward learning as cognition, the Beliefs code was assigned to the Knowledge/Schema-Building theme as described above.

**Category-1: Internal Acquisition Process Summary**

The Internal Acquisition Process accounted for the majority (over 71%) of the references assigned to codes in this study. Three major themes formed the Internal Acquisition Process category: Emotion, Cognitive Effort, and Knowledge/Schema-Building. Although there are some minor elements involving environmental interaction (e.g., flash cards, highlighters, etc.),
these three themes primarily focus on mental activities that occur inside the mind of learners in their attempts to internalize external content as new knowledge.

While listed as three separate themes, Emotion, Cognitive Effort, and Knowledge/Schema-Building are neither discrete nor are they independent of each other. Consistent with the concept of triune brain theory—one mind consisting of three brains (see Chapter-2), there is overlap between the themes. In particular, the Beliefs code overlaps both Knowledge/Schema-Building and Emotion themes.

Having considered the themes and codes associated with the Internal Acquisition Process category, the study now turns to the second category of themes; the External Interaction Process.

**External Interaction Process**

Whereas the focus on the first category of themes was primarily internal to the learner, this second category illuminates the interactions between the learner and his or her environment. These are events that occur in the learner’s external world and could generally be verifiable by a third party were someone there to witness the event. Three themes emerged within this category. Each theme is illustrated below via the stories of the participants.

**Learner-Behavior-Environment Interactions Theme**

The first theme in the External Interaction Process was informed by the literature and the study’s theoretical lens: Learner-Behavior-Environment Interactions. This theme was present in every participant interviewed. Furthermore, Learner-Behavior-Environment Interactions occurred in both training (how to do) and educational (how to think) learning situations.

In training situations, learners frequently interact with their environment during the learning process. Though a cognitive component of learning is always present, the object of the learning process—what is being learned—is often external to the learner in training (how to do)
situations. For example, Handler recalled how she learned to become a dog handler. “Dog handling school was ... there was very little to know as far as formally book education. It was all hands on. You had to do it right in order to get that dog to do what you needed it to do. You couldn’t guess at it. You had to through a process, you had to get the dog to sit, to stay beside you, you had to make sure you did everything right.” Handler described actions that would be verifiable by a third party; most likely her trainer.

Mortar Man had a similar story when it came to learning his first job in the Marine Corps. “It’s the whole tell, show, do concept. When I graduated from boot camp and I went to my [Marine Occupational Specialty] school, which is a basic Mortarman; it’s more practical application is how you retain. You have your classroom time, but a lot of times that doesn’t make sense until you’re actually doing practical applications.” For Mortar Man, interaction with the environment was a necessary component of learning.

As could be expected, Learner-Behavior-Environment Interactions were the key component in training (how to do) situations. The constant feedback between learners, their behaviors, and the environment shape the learning experience in training situations. Having successfully risen to senior enlisted ranks in a military system that epitomizes practical performance, these Senior Enlisted Leaders could talk for hours on their training experiences. Educational experiences, however, were another matter.

In educational (how to think) situations where the primary effort is schema-building, Learner-Behavior-Environment Interactions tended to supplement the learning process in the stories of Senior Enlisted Leaders. Hot Rod described his study group experience as only somewhat helpful. “Some guys will just read [a concept] out loud; make sure you know this; position power stands for this. Other guys are like, ‘What is position power?’ to make you recall
the concepts and try to walk you through it. That helps out. Just by reading it helps me out.
Just by doing that helps me out. Unfortunately, it only lasts for about a half hour or forty-five
minutes and they go “Oh I’m hungry” and everybody starts talking about something else. I’m
like ‘Okay, there’s really no more value of being here and I’m going to go.”

Beyond interaction with peers, teacher-student interaction was an important part of
learning in educational settings. Smurf related her experiences. “I'm more instructor-led. I
don't like the distance learning thing, either. I like somebody to stand in front, say what they're
going to say. If I have a question, I can raise my hand, and be like, hey, what did you mean by
this?”

Although Learner-Behavior-Environment Interactions played a role in educational
situations, for the most part much of the heavy lifting was on the internal acquisition process.
Chemist described his schema-building activities as an effort in solitude. “When I'm reading
through the articles, I've gotta be in my room. I can't read with noises and stuff. I've gotta go
back to my room to do that. And it’s quiet. Lights on, it's gotta be bright. And quiet. Then I just
need time just to read it. No music playing; it's all quiet.”

Overall the participants admitted to a mix of approaches to learning in educational
situations. Most preferred a combination of environmental interactions along with dedicated
time for the internal acquisition process. All valued the learner-teacher interaction. Some found
group studies valuable while others did not. But at some point, learning in the educational
setting came down to a dedicated cognitive effort to internalize the material being learned—the
solitude approach.

However the solitude approach assumes that the learner has the reading skill necessary to
interact with the external content. For learners without the ability to read at a functional level,
Learner-Behavior-Environment Interactions became the primary means to learn even in educational situations.

Such was the case with the two slow readers who did not normally read books. In Bruce’s words, “Everything goes back to how I grew up. Everything I did was all farm life, things like that, so everything back then was, ‘Let me show you how to do it,’ because there is no books on it. You didn’t have time to read and learn that way. It's, ‘Let me show you.’ Everything I do now, and even in the military growing up, it was, ‘Show me.’ Show me once, and then let me go from there. That’s pretty much the same way it is now. It's, ‘Show me. I got you.’ You ask me to read about it to learn about it, it's not going to happen. It's never been in my mind.” In training situations, learners like Bruce can excel. However when placed in an educational environment, lacking the ability to interact with academic content becomes a significant handicap.

Training-related codes within the Learner-Behavior-Environment Interactions theme included “Trial and Error,” Learning by Doing or by Repetition, “Experience,” and “One Step and a Time.” Educational-related codes within the Learner-Behavior-Environment Interactions theme included Teacher-Learner Interaction, Theory to Practice, and Study Groups. Codes subordinate to Study Groups described the group activities that occurred such as Practice Recall, Summarize in Own Words, and Leveraging Others.

**Learner-Behavior-Environment Interactions theme summary.** The Learner-Behavior-Environment Interactions theme focused on activities learners engage in during the learning process. These activities would often be verifiable by an observer assuming one were present. Additionally, these activities occurred in both training (how to do) and educational (how to think) settings.
So far, the codes associated with the External Interaction Process category concerned direct interactions between learners and their environments during the learning process. However, during second pass coding new themes emerged from what was initially coded under Learner-Behavior-Environment Interactions. One theme was somewhat removed from the actual learning process but played a significant role in the learner’s life. This theme was titled External Enablers and Inhibitors.

**External Enablers and Inhibitors Theme**

A significant part of the stories participants told about their learning processes included people or events that either helped them move forward to become better learners or else had to be overcome in order to move forward. In contrast to the Cognitive Challenges code which dealt with issues internal to the learner, this theme concerned enablers and inhibitors in the learner’s external environment. External Enablers and Inhibitors was a significant theme in External Interaction Process category. It included 213 references whereas the Learner-Behavior-Environment Interactions theme included 198 references. Subordinate codes within the External Enablers and Inhibitors theme included Home and Outside Influences, Habitus, External Opportunities, External Barriers-Challenges, and Life Happens.

The most significant code within the External Enablers and Inhibitors theme was Home and Outside Influences. It accounted for over half of the references coded to this theme (131 out of 213). This code was present in each participant interviewed. Life Happens talked about the girl in high school French class that helped him when he was struggling. Hot Rod talked about his dad teaching him to build street rods. Rocket talked about his first supervisors in the Navy taking him under their wing as he struggled with his first watchstation qualification. Sometimes
it was a family member and other times a co-worker or someone else in the environment. Everyone had someone helping them or encouraging them to learn.

But not all Home and Outside Influences were positive. Approximately one-quarter of the references coded to Home and Outside Influences were negative. Chemist attributed his poor performance in high school to hanging out with the wrong crowd. “My senior year I only went to school for half the year because I was expelled for disciplinary stuff. Then I got let back in. I was able to get my diploma but I was not a good student.” He joined the Navy because “it would get me away from the guys I was hanging around with. I mean, they were my friends, but I was at least smart enough to know that I would be still sitting on that couch today at their house.”

For Kidnapped, a shot at the big leagues kept him from being successful in college. “In 1999 we got a call from the New York Mets to be their 36th round draft pick. I got to think about it. My mother was like ‘No, I want you to go to college.’ So I went to college instead of that. . . . I wish I would have never gotten that phone call, because that kind of put my perspectives in a different place. I went to college, screwed it up, and here I am.”

Boomer’s painful memories cause him to exhibit test anxiety even today. “As for the stress, I don't want to blame anybody, but I blame myself and I blame my atmosphere growing up—where my ex-stepfather used to beat me down physically if I did bad on tests. Coming up to that it still, I think it's still instilled in me. I try to do as well as I possibly can.”

In short, Home and Outside Influences reflected a collection of references where people inside or outside of the family had an influence on the learner’s educational opportunity. Although these influences were not a direct element in the actual learning process, they were key enablers and inhibitors impacting the learner’s ability to be in a learning situation. Home and
Outside Influences accounted for 62% of the references coded to the External Enablers and Inhibitors theme.

Another code in the External Enablers and Inhibitors theme was Habitus. Here, the researcher used Habitus to indicate the maintenance of a working class identity through an undervalued appreciation for education. One out of three participants cited motivation to enlist in the military from a prior enlisted parent or grandparent. Most of the participants came from working class backgrounds and divorce was a frequent family element. Struggle and hard work were common early-life descriptors. Few described their family backgrounds as middle class, and fewer still had immediate family members with college degrees.

Chemist cited the importance of family members having firsthand knowledge about the college experience. “I went to college after high school because everybody said you had to go to college to be successful. But nobody gave you anymore data. . . . So I had no guidance other than that, because nobody in my family . . . went to college. The generation above [me] all went to college, but they had all passed away. So there was nobody to tell me, you know, hey, you need to do it but we don't know why yet.”

Most of the participants came from working class backgrounds, and most were headed toward working class jobs prior to entering the military. For those that did see education as a stepping stone to a better life, the money was not there. In T-Bone’s words, “I did want to go to college. I just didn't want to add that [financial] strain or burden to my family.”

Given the population in this study, it is perhaps not surprising that External Opportunities often came in the form of military enlistment. Chemist described his situation when, at the end of his first semester in college following high school, he realized that “college wasn't for me because it was too expensive and I didn't know exactly what I wanted to do at that time. . . . It
was right after Christmas. I actually got a letter in the mail from the recruiters that said you can get a ten thousand dollar bonus for this new program. So I went to the recruiter with the flyer and said, ‘Hey I want to do this.’ The recruiters didn't know anything about it. I said the only way I am going to do this is if I get $10 grand. The money drove me a lot in those days.” For Chemist, External Opportunity came via the U.S. Postal Service.

However not all external interactions were positive. In fact, there were twice as many references coded to External Barriers than to External Opportunities. Lack of funds prevented Chemist, Handler, and Smurf from going to college after high school. Similarly, surgery for Cruiser’s stepfather drained the family funds. Bruce started a family at an early age and his need to put food on the table precluded any educational opportunities. “I didn’t join the Navy until I was 28 years old. I ended up having a family at 18, 19 years old, so of course, the emphasis was put on taking care of my family. I was working, at times, 80 hours a week if needed, week-to-week paychecks. That’s the way it was.”

In sum, External Opportunities code and External Barriers code reflected situations where the environment either enabled or hindered the learning process. Although not part of the actual learning process, these codes represent significant influences that impact the learner in either a positive or negative way.

The final code in the External Enablers and Inhibitors theme was Life Happens. (Note: at the risk of generating some confusion, Life Happens was used as both a pseudonym and as a code in this study.) The Life Happens code collected references reflecting serendipity, unintentional or unplanned events, and situations where the participant’s only explanation was “time caught up with me.” The Life Happens code was present in over half of the participants’ stories.
For example, Handler has been working on a bachelor’s degree at Saint Leo University off and on since 1999. “I have 164 college credits right now. My bachelor’s degree in criminology has been rolled on me three times because I haven’t been able to finish it due to deployments and being deployed. . . . When they roll your degree and they stop offering those classes, you’re kind of stuck. Like what am I supposed to do now? That’s kind of where I’m at.”

Hot Rod entered the Aircraft Armament field in the Air Force because that was what was available when he left Boot Camp. The reason Cruiser ended up in the nuclear field was because his American citizenship paperwork luckily had cleared by the time he entered the Navy. Otherwise he was headed toward the Aviation Electrician field. Kidnapped joined the Navy at age 17 “just for a little while.” College was not working out, so after one semester “[I] decided I wanted a challenge with something else. I figured I would go do the Navy for a little bit and come back to college. But here I am, fourteen years later.”

In some cases day-to-day events proved to be an educational enabler. At other times, as was the case with Handler’s deployments, they proved to be an educational inhibitor. Although not part of the actual learning process, many of the participants’ stories included unplanned events that led them either toward or away from educational opportunities. To capture their influence on the learning process, these references were assigned to the Life Happens code.

**External Enablers and Inhibitors theme summary.** The External Enablers and Inhibitors theme represented environmental factors that either encouraged or deterred the participant from reaching educational opportunities. Whereas the Learner-Behavior-Environment Interactions theme focused on the actual learning process, the External Enablers and Inhibitors theme was concerned with factors peripheral to the actual learning process. As a collection there were more references in the External Enablers and Inhibitors theme than there
were in the Learner-Behavior-Environment Interactions theme. From the participants’
perspectives, External Enablers and Inhibitors was an important element in their stories of
themselves as learners.

Where External Enablers and Inhibitors emerged as a theme peripheral to the learning
process, another unanticipated theme emerged from the external interaction process during
second pass coding that was a direct element of the learning process. With only 54 references it
was by far the “smallest” theme in this study. This “smallest” theme was the External Content
Nature theme.

**External Content Nature Theme**

This final theme was about the content the learner was attempting to master.
Specifically, this theme refers to content that exists in the learner’s external world which is to be
internalized as knowledge via the learning process. In educational situations, external content
often takes to form of academic texts.

In training situations, content can take the form of concepts or information that need to be
internalized (e.g., radar frequencies), or mastering an external behavior (as was the case with
Handler and her dog), or a combination of both internal knowledge and external behavior as is
often the case with watchstation qualification. In other words, in educational situations the
learning process converts external content into internal knowledge, whereas in training situations
the learning process converts external content into either internal knowledge, external behavior,
or both.

Regardless of the learning situation, this theme looked at the nature of the external
content relative to its perceived difficulty from the learner’s perspective. In short, it is the
learner’s perception of how difficult this content will be to learn or master. Three codes made up
this theme: Cognitively Challenging Content, Non-Challenging Content, and Physically Challenging Content.

Far and above the most significant code in this theme was Cognitively Challenging Content. Recall the participant Life Happens hardly ever studied in high school. “I breezed through high school . . . though it wasn't really much of a mental challenge.” However advancement exams in the Navy proved to be more of a challenge. “I was an E-4 for five test cycles, and everything else I made the first time up. Once the light bulb came on that you actually have to study, I made [E-5] and every rank thereafter.”

Further, there are two sides to Cognitively Challenging Content. For some, it motivates. Rocket was in a gifted program in middle school. He recalled, “I was challenged. I felt like I had to give it my all, and I was pushed and motivated, and I wanted to do better. It pushed me to want to learn more.” Although a good student in middle school, he proved otherwise in high school. “Once I got to high school, I went back to a normal high school, so I got away from that advanced curriculum. I didn't feel as challenged anymore. I didn't care as much. Typical teenager, I felt like I knew it all. I wasn't as driven in that environment, because I just didn't feel challenged. I graduated on time, barely.”

However not everyone finds Cognitively Challenging Content motivating. AB, one to the two slow readers who do not normally read books, recalled his experience in welding school. “I went to a technical college to be a welder, but then when you go to technical college you do more than just welding. I'm like, Man, I didn’t know you were going to put me in a communications class. I had to take a English class, and all this writing ... they make you do all that, too, before I could even start arcing stuff or whatever. I guess that’s how they make money.” For some, Cognitively Challenging Content was a burden to be avoided.
Similarly participants tended to respond to Non-Challenging Content in one of two ways. The first response was to complete the work and move on. Boomer displayed this response when he talked about his initial schooling in the Navy where he learned the skills to be a Culinary Specialist. “[In] A-school, the tests were not academic. . . . A-school was much easier than I had expected.” The second way participants responded to Non-Challenging Content was to put in minimal effort as was reflected by Rocket’s earlier comments regarding high school. In either case, whether the content was considered challenging or easy, the nature of the content had an influence on the learning process.

Cognitively Challenging Content and Non-Challenging Content codes were present in both training (how to do) and educational (how to think) situations. However this final code was exclusive to training and workplace situations. Physically Challenging Content was only mentioned by a few participants. This code referred to work that either required physical strength to complete or carried a complexity component. As to the former, T-Bone mentioned earlier his reluctance to enter a rating that he characterized as backbreaking labor. As to the latter, Hot Rod description of his work in the Aircraft Armament field could be classified as physically complex. “[My job is] loading munitions on an aircraft or installing pieces of special equipment, installing maybe a gun system into the aircraft and then troubleshooting an aircraft; installing a gun system, installing suspension equipment that holds munitions, the missiles, the rockets, is very mechanical. It’s installing bolts, safety wire and hooking up electrical connectors and performing an ops check to ensure that system is working.” The nature of Hot Rod’s content illustrates something that requires both physical strength (e.g., loading munitions) and reflects physical complexity.
**External Content Nature theme summary.** To sum up, the External Content Nature theme represented complexities in the content that influenced the learning process. External Content Nature can be either cognitive or physical. Cognitively challenging content motivated some but discouraged others. Similarly, some participants were attracted to military ratings that were more physically demanding while others shied away from backbreaking labor. In all cases, the nature of the content somehow influenced the learning process.
Category-2: External Interaction Process Summary

The External Interaction Process accounted for nearly one-third of the references assigned to codes throughout this study. Three major themes made up this category: Learner-Behavior-Environment Interactions, External Enablers and Inhibitors, and External Content Nature. These three themes concentrated on environmental activities, events, and conditions that either influenced or were part of the learning process.

Having reviewed the six themes uncovered by this narrative analysis, the next section examines how this evidence addresses the research question.

Research Question Analysis

The research question that guided this narrative inquiry was, “How do Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?” During semi-structured interviews each of the 15 participants told their stories of how they approach learning in both training (how to do) and educational (how to think) situations. Six themes emerged from the data. Together these themes address the question of how Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role.

Based on the number of references coded, for these Senior Enlisted Leaders learning was primarily a knowledge/schema-building endeavor. The participants discussed the various ways they would memorize or make sense out of the learning material. As mature learners with on average 18 years of military service, they had a firm grasp of how they would approach acquiring new knowledge. They also had a sense of their cognitive ability and by extension the amount of effort they would need to expend to learn something new. What they were least aware
of, perhaps, was the role emotion played in their learning experience. Some showed direct
awareness whereas others seemed only tangentially aware of how emotion impacts their ability
to learn.

To a lesser degree participants expressed concern with environmental interaction during
the learning process in educational situations. Though they were generally acutely aware of their
preferred mode of study (e.g., alone in a quiet room or in a classroom during a vibrant group
study session), their focus was primarily on the internal acquisition process in educational
settings. In other words, in educational situations where the object of learning is primarily how
to think, few participants saw the external interaction process as a viable means to achieve that
end.

On the other hand in training situations where the object of learning is primarily how to
do, external interaction was the primary approach to learning. Additionally it was expected that
someone would be there to guide the student to successfully acquire the intended skill. Weather
it was firing a mortar round down range or standing watch at a new watchstation the trainer-
trainee interaction was the centerpiece of the learning process. Furthermore, for participants who
self-described as lacking good reading skills, the “show me first” approach was their exclusive
means of learning in either training or in educational settings.

Through the course of their stories, participants identified two other themes regarding the
interaction process. On the one hand, environmental factors (either physical or social) often
either enabled or inhibited potential learners from being in a learning situation in the first place.
On the other hand, the nature of the content often played a significant role in the learning
process. Challenging content (either physically or cognitive) motivated some while
demoralizing others.
In conclusion, qualitative analysis of the stories from 15 Senior Enlisted Leaders attending the Navy Senior Enlisted Academy revealed that how they understood their learning could be organized into six themes. Three of these themes were associated with the internal acquisition process while the other three themes were associated with the external interaction process. Table 4.6 lists the research question, the six themes, and selected participant quotes that illustrate each theme. The themes are generally listed in the order of number of references coded to that particular theme.
Chapter 4 Summary

This narrative inquiry explored how Senior Enlisted Leaders understood their learning while enrolled in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role. It included two pilot interviews with Senior Enlisted Academy instructors and 15 interviews with Senior Enlisted Academy (SEA) students. The

Table 4.6

Linking Themes to Research Question

RQ: How do Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?

**Internal Acquisition Process**

- **Knowledge/Schema-Building:** (Rocket) “I’m a big picture thinker. . . . Once [my instructors] were able to break it down and give me that big picture, what I’m doing and how it plays into the full [electromagnetic] spectrum, that’s where I really started to [learn].”

- **Cognitive Effort:** (Hot Rod) “I’ll go back and read it and then once I’ve done that I’ll go back and read through my notes. I guess this is more repetition. In writing it, I’m thinking about it; ‘OK. Position power is this.’ As I’m thinking it and writing it, it tends to stick easier.”

- **Emotion:** (Smurf) “If I was interested in it, then I would be in tune, ask a lot of questions, stuff like that. If not, then I just get through it. . . .

**External Interaction Process**

- **Learner-Behavior-Environment Interactions:** (Cruiser) “At nuclear power school, [we would] go back to our classrooms . . . for studying. We sometimes just say, ‘Hey, we just went over reactor theory or reactor physics. I don’t understand this part. Can we sit around and discuss it, if you will?’ A lot of times, the folks were helpful and were appreciative of that because they had issues too.”

- **External Enablers and Inhibitors:** (Bruce) “In high school, I was actually up every morning at 5:00 because we lived so far out in the country; you had to get up early to catch the bus for the drive in. We’d get about a 45-minute drive in on the bus, and school started.”

- **External Content Nature:** (Handler) “[In high school] I got to a peak with math. I think I got into pre-calculus at my junior level and it was a lot of hard work and it just was like, where are we going with it? Where are we going with it? I just lost interest.”
interviews were transcribed using Rev.com services and the data was analyzed using NVivo qualitative analysis software.

This chapter introduced the typical SEA class demographics based on historical records as well as the demographics of the two SEA classes involved in this study. Next, the fifteen participants were introduced. Participants were interviewed using a semi-structured interview format. Additionally, since learning often includes a social component, participants were interviewed in either individual or in small group formats. With the exception of the five participants from the last two small-group interviews, each participant was assigned a pseudonym based on their narrative. The participants from the last two small-group interviews chose their own pseudonyms as part of the interview process.

All participants in this study (including the two pilot interviews) had achieved the rank of either E-8 or E-9, and had volunteered to participate in this study. Additionally, participants from the pool of volunteers were selected to best represent the typical SEA class make-up. Twelve of the participants were U.S. Navy, two were U.S. Marine Corps, and one was U.S. Air Force. Also consistent with SEA class demographics, two of the participants were female and 13 were male. These participants also represented a mix of the typical SEA class educational backgrounds with two participants holding Master’s degrees, three holding Bachelor’s degrees, and the remaining holding either a high school diploma (or equivalent) or an Associate’s degree.

Next, the six themes that emerged from the qualitative data analysis were identified and explained using participant quotes to illustrate the codes that made up each theme. These six themes fell into two overall categories which were consistent with the theoretical lens used to guide this study. The first category, the Internal Acquisition Process category, is comprised of the Knowledge/Schema-building theme, the Cognitive Effort theme, and the Emotion theme.
The second category, the External Interaction Process category, is comprised of the Learner-Behavior-Environment Interactions theme, the External Enablers and Inhibitors theme, and the External Content Nature theme. NVivo screen captures showing the six themes along with the codes associated with each theme are included in Appendix I.

Finally, the six themes were linked to the research question to address how the participants as Senior Enlisted Leaders understood their learning while enrolled in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role. Together these six themes enable a conversation on learning that addresses both training (how to do) and educational (how to think) situations. They also highlight the central role of emotion in human learning.

Having reported the results of the research findings, the next chapter, Chapter-5, interprets the results of this study, draws conclusions, and presents recommendations for future research.
CHAPTER 5 CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to explore the nature of how Senior Enlisted Leaders (SELS) approach learning as they attend an education-based curriculum designed to help them transition from a focused, technical role (how to do) to a broader, leader/manager role (how to think). To do so, this research used semi-structured interview protocol to capture SEL learning experiences. The interviews were transcribed and data was inductively analyzed using NVivo 10 software to code, organize, and categorize participants’ views on their learning.

All participants in this study (including the two pilot interviews) had achieved the rank of either E-8 or E-9, and had volunteered to participate in this study. Twelve of the participants were U.S. Navy, two were U.S. Marine Corps, and one was U.S. Air Force. Thirteen participants were male and two were female. On average the participants had 18 years of military service. Seven participants listed high school as their highest education level, two of whom were slow readers who do not normally read books. Eight participants were interviewed individually and seven were interviewed in small groups.

One challenge with this study was that the participants had received extensive military training and yet were now in an educational setting. To compensate, this study combined Bandura’s (1986) social cognitive theory and Illeris’s (2003) three dimensions of learning to differentiate training (how to do) from educational (how to think) learning situations. This combined model shown in Figure 5.1 served as the theoretical lens throughout the study.

Figure 5.1. The Combined Model
The data was analyzed using the inductive approach of Miles et al., (2014). The data was initially coded during first cycle coding. Next, the data was reduced as codes were combined into six themes during second cycle coding. These six themes represent the significant findings in this research. The section that follows examines these themes via the scholarly literature on human learning.

**Interpretation of Themes**

The research resulted in six themes sorted into two categories. The two categories were informed by Illeris’s (2003) three dimensions of learning: the (internal) acquisition process and the (external) interaction process shown above in Figure 5.1. The internal acquisition process is a psychological process whereby the learner attempts to either gain new knowledge or to elaborate on existing knowledge. In contrast, the external interaction process is concerned with the interaction “between the learner and his or her social, cultural, or material environment” (Illeris, 2003, p. 398). Together these two processes result in an internal-external dynamic that is suitable for examining learning in both educational (how to think) and training (how to do) situations (Gortney, 2010).

Of the six themes, three were consistent with the literature review and are reflected in the Combined Model (Figure 5.1). Beyond that, three additional themes emerged from the research analysis and are not elements of the Combined Model. These six themes are summarized in Table 5.1.
Rather than discuss old versus new themes, this next section will review the themes organized by the two broader categories of internal acquisition process and external interaction process. What follows is an interpretation of the six themes in Table 5.1 beginning with the internal acquisition process themes before moving to the external interaction process themes.

### Internal Acquisition Process Category

The three themes that fell into the Internal Acquisition Process Category are the Knowledge/Schema-Building Theme, the Cognitive Effort Theme, and the Emotion Theme. These first two themes (Knowledge/Schema-Building and Cognitive Effort) emerged from the original Cognition Theme in the Combined Model. Discussion of all three internal acquisition process themes follows.

#### Knowledge/Schema-Building Theme

Recall from information processing theory, Hackman and Johnson (2009) posited that knowledge is comprised of symbols organized into categories within the human mind. These categories are further organized into schemas which people use to make sense of the world (Hackman & Johnson, 2009). In his seminal work on the three dimensions of learning, Illeris (2003) modeled the knowledge-building process as a single element: the Cognition dimension—
the psychological effort of “dealing with the learning content” (p. 398). The results of this study would indicate that a single dimension may be too broad. In contrast to a single dimension, the Cognition dimension may be better modeled as two separate elements: one that focuses on the actual schema building process itself and another dimension focused on the cognitive effort required to create that new (internal) knowledge.

The Knowledge/Schema-Building Theme is reflective of the great deal of literature on how people learn (Collay & Cooper, 2008; Hackman & Johnson, 2009; Illeris, 2007 [1999]; Merriam et al., 2007; Mezirow, 1981; Simon, 1978). As the participants described how they understood their approach to learning, many of their comments were consistent with the literature on adult learning. Thus, incorporating this theme into a model on human learning would be in keeping with the existing scholarly literature.


**Cognitive Effort Theme**

Most might agree that cognitive effort is not always proportional to knowledge gained. With some participants in this study, relatively little cognitive effort was required to produce results. They would simply read something and they would retain it. However with others, even the greatest effort seemed to produce almost negligible results. For example, Bruce mentioned, “When I study for a quiz, I read it, and my problem is that I don’t comprehend what I read. . . . This last [assignment] I read, it was 10 or 11 pages. I read all 10-11 pages: I still had no clue. So I took about a 30-minute break, tried to clear my mind up a little bit, and then go back and have to reread it.” In short, there is a significant difference between cognitive effort expended
and actual knowledge gained. However the theoretical lens used for this study did not account for this differentiation.

Like learning in general, there is a great deal of literature concerning cognitive effort (Illeris, 2007 [1999], 2009; Knowles et al., 2011; Merriam et al., 2007; Phipps, Prieto, & Ndinguri, 2012). Perhaps cognitive effort as a construct is best epitomized by Flavell’s (1979) seminal work on metacognition—the learner’s ability to monitor the results of expended cognitive effort. Therefore, to better refine the discussion on the internal acquisition process, an improvement to the theoretical lens used in this study would be to differentiate between cognitive effort and the object of that effort—knowledge/schema-building.

**Emotion Theme**

Recently scholars are beginning to challenge the Western bias against the role of emotion in learning (Illeris, 2003, 2007 [1999]; Kirkpatrick, 1998; Merriam et al., 2007). Coincidentally Chapter-4 mentioned that Emotion was the first theme uncovered during the analysis phase. Beyond that, MacLean’s (1978) triune brain theory identified the emotional brain as the central repository for long term memory. Beyond that, many of the participants highlighted the centrality of emotion in the learning process.

To quote Life Happens when it comes to reading academic material, “if it's something that's really not interesting to me like this is pretty plain or pretty boring type stuff, I [will] start thinking of other stuff.” Nummela and Rosengren (1986) argued that all incoming information passes first through the learner’s middle (emotional) brain. Equally informing is that when emotions run high, the emotional brain will overpower the upper rational brain (Hart, 1981).
In short, consistent with the literature on brain research, this study results would indicate a more central role of emotion in human learning than indicated in the combined model that was used as a theoretical lens.

**External Interaction Process Category**

The three themes that fell into the Internal Acquisition Process Category are the Learner-Behavior-Environment Interactions Theme, the External Enablers and Inhibitors Theme, and The External Content Nature Theme. Only the first theme is reflected in the Combined Model. The remaining two themes emerged from the data analysis. Discussion of these three external interaction process themes follows.

**Learner-Behavior-Environment Interactions Theme**

The Learner-Behavior-Environment Interactions Theme was consistent with Bandura’s (1986) concept of triadic reciprocality in his social cognitive theory. Interestingly, this theme was prominent in both training (how to do) and in educational (how to think) situations. In training situations, Bandura’s (1986) vicarious learning construct proved to be a dominant component. AB illustrated this when he talked about learning the requirements of his rate. “*When I first came in the Navy it was just you instructed me, you show me, bam, show me one or two times I do it ... bam. You do this right here, and just keep practicing doing it over and over again, and you get good at it.*” On the other hand, in educational settings Vygotsky’s (1978) Zone of Proximal Development (ZPD) was often illustrated via the study group sessions that frequently came up in the interviews.

In summary, many scholarly works have examined the Learner-Behavior-Environment Interactions Theme (Bandura, 1978, 1986; Cantrell et al., 2010; Clandinin, 2007; Cumming-Potvin, 2007; Paris & Jacobs, 1984; Schyns et al., 2011; Schyns et al., 2013; Zhang & Wu,
2009). As expected, it was far and above the dominant finding regarding the actual learning process from the external interaction perspective. However it was not the dominant environmental-related theme uncovered by the research analysis. The discussion of that theme follows.

External Enablers and Inhibitors Theme

In telling their stories about how they learn, all of the participants included some segment about someone or something that either supported or inhibited their efforts to reach an actual learning situation. This resulted in the External Enablers and Inhibitors Theme. Although it was not an element in the actual learning process, the researcher felt that its prominence in the research results warranted inclusion.

Enablers and inhibitors to education tended to fall into either of two categories. Social enablers and inhibitors were frequently family members or friends who were somehow involved in the learner’s journey toward education. Physical enablers and inhibitors were entities such as geography or technology. In all cases whether they were social or physical, enablers and inhibitors represented an important aspect of how the participants viewed themselves as learners. In other words, the External Enablers and Inhibitors Theme were, from the participants’ perspectives, important components of their self-efficacies as learners (Bandura, 1977, 1986).

Recall from Chapter-2 Illeris (2007 [1999]) argued that “all learning is ‘situated,’ i.e., that the learning situation not only influences, but also is part of, the learning” (p. 97). In fact, one illustration of his model depicted the environment as a continuum stretching from the learner’s immediate social environment to the general societal situation (Illeris, 2007 [1999]). If this concept were expanded further to include a temporal dimension, then the External Enablers and Inhibitors Theme would lie along the Environment continuum. Furthermore, the seeds of
habitus would also lie along this continuum as well as within the learner’s (internal) belief system.

**External Content Nature Theme**

This final theme centered on the content in the external environment that the learner was attempting to master. In educational settings, this mastery would often take the form of new internal knowledge. In training situations, mastery could take the form of new internal knowledge, new external behavior, or a combination of both knowledge and behavior. The findings in this theme are mixed.

Recall that as enlisted members become more senior, the nature of their learning shifts from training-centric to education-centric (Gortney, 2010). This drove the need for a theoretical lens that could examine both training (how to do) and educational (how to think) situations. Bandura’s (1986) social cognitive theory model proved to be effective in examining training-centric situations. Similarly, the combination of Illeris’s (2002, 2003, 2007 [1999], 2009) Three Dimensions of Learning supplemented by Bandura’s (1986) model (i.e., the combined model depicted in Figure 5.1) proved useful in examining all aspects of learning in educational settings. However what was unaccounted for was how the content itself might influence the learner’s approach to mastering that content.

The External Content Nature Theme emerged as the last significant finding from the data analysis phase. Recall that Bandura (1977) described efficacy as “the conviction that one can successfully execute the behavior required to produce the outcomes” (p. 193). True to a social constructivist paradigm (Creswell, 2009; Maxwell, 2005; Ponterotto, 2005), the External Content Nature Theme illustrated that the same type of content affects different people differently. For
example, some found academically challenging content motivating while others would avoid it at all costs.

In sum, the nature of the learning content does indeed influence the learning process. However the nature of that influence was inconsistent among the participants in this study. Some participants found challenging content motivating whereas other did not.

**Beliefs Code**

One last finding that seemed to be missing in the combined model was the Beliefs Code. Miles et al. (2014) defined a belief as “part of a system that includes values and attitudes, plus personal knowledge, experiences, opinions, prejudices, morals, and other interpretive perceptions of the social world” (p. 75). In other words, Beliefs are part Knowledge and part Emotion.

Since Emotions are manifested in the middle brain, and Knowledge/Schemas are stored in the long term memory of the middle brain (Illeris, 2007 [1999]) but become activated by the upper brain when needed for higher order thinking skills such as analysis, evaluation, and synthesis (Nummela & Rosengren, 1986; Reardon, 1998), then Beliefs must be elements of both the middle emotional brain and the upper rational brain. Said differently, rather than a Theme all to itself, Beliefs reflect a combination of two themes: the Knowledge/Schema-Building Theme and the Emotion Theme.

**Discussion and Conclusions**

The previous section examined the study’s themes, showing how the scholarly literature informed the study’s results. This next section begins with a broader discussion of the results, summarizes the key findings, and highlights implications for further theory development.
General Discussion

In general, the combined works of Bandura (1986) and Illeris (2003) reflected in the combined model (Figure 5.1) proved a viable theoretical lens to explore the nature of how Senior Enlisted Leaders (SELs) approach learning as they attend an education-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role. Illeris’s Emotion (2002, 2003, 2007 [1999], 2009) was the first theme to emerge, even prior to the start of second cycle coding. Additionally, Bandura’s (1986) triadic reciprocality between learners, their behavior, and the environment was another prominent theme that emerged from the analysis.

Beyond looking at themes, the literature proved useful for determining other learning-related codes used in the analysis. Some scholars looked at the learning process—what learners do to learn—others focused on the cognitive aspects of learning, and some looked at both (Bandura, 1986; Hackman & Johnson, 2009; Illeris, 2009; Merriam et al., 2007). The combined model, a product of the study’s literature review, considered both how learners acquire new knowledge (the internal acquisition process) and how they interact with their environment to make sense of their world (the external interaction process) (Bandura, 1986; Illeris, 2003).

Even though the combined model proved useful to examine how the participants viewed their learning, some concepts discussed in the literature review did not appear to emerge from the analysis. Specifically, the discussion on the content nature from a paradigm perspective (Creswell, 2009; Ponterotto, 2005) did not seem to be present. (See Chapter-2: Paradigm Influences on Learning: Natural versus Social Sciences for further detail.) Although this concept may still be relevant, there were no indications of such in the study’s results. The thought behind the idea was that natural science concepts like ballistics tend to follow a postpositivist paradigm
whereas social science concepts like leadership often follow a social constructivist paradigm. It may be that the concept of the content nature from a paradigm perspective is not relevant or that the interview questions were not sufficient enough to examine this concept.

All in all, there was a good alignment between the research data and the scholarly literature on adult learning. Having drawn some general conclusions, this next section summarizes the key findings uncovered in this research.

**Summary of Key Findings**

On the whole, this research showed that combining two models can be useful when examining two different types of learning: training (how to do) and education (how to think). Generally speaking, training content tends to focus more on the psychomotor domain whereas educational content tends to focus more on the cognitive domain (Gortney, 2010). With this as an overview, this research identified the following.

First, both training and education involve two key processes: an internal acquisition process where new knowledge is added to the learner’s storehouse of information and an external interaction process where the learner interrelates with his or her environment. On the one hand, educational situations tend to require more effort with the internal acquisition process. On the other hand, training situations can emphasize either or both processes, depending on the nature of the training content. Said differently, education requires mostly thought and reflection whereas training can require both thought and reflection and action. Thus it follows that the learning strategies used in training situations and those used in educational situations may not always be the same.

Second, having functional reading skills is a critical enabler in educational situations, but not necessarily so in training situations. In educational settings the primary interaction often
takes the form the learner interacting with academic material. Not always so with training situations where the primary interaction is often with another human (i.e., the trainer). Both Bruce’s and AB’s stories in Chapter-4 suggested that incompetent readers can do well in training situations, but become fish out of water when they find themselves in an educational context. In short, students who are not competent readers may find themselves educationally handicapped.

Additionally, without functional reading skills, advanced reading skills become meaningless. For example, Bruce talked about reading the first sentence in every paragraph, but to no avail. He was applying a speed reading technique but still got nothing in return for his effort since he lacked the skills to read academic material in the first place.

Altogether these points suggest a need for pre-screening in educational situations to verify that potential students have reading skills commensurate with the program’s academic requirements. Otherwise, the results of this study suggest a negligible return on investment when funding educational opportunities are afforded to students who cannot comprehend typical academic material.

Third, emotion plays a significant role in human learning. Of the 1170 references coded to the internal acquisition process category, 259 were coded to Emotion. Additionally, 486 references were coded to Beliefs, a second code which represents part knowledge and part emotion. To put it another way, nearly two out of every three references in the internal acquisition process category had something to do with emotion. Consequently, any study exploring human learning that ignores emotion is likely overlooking a significant amount of relevant data.

Fourth, the role of discipline in general education cannot be understated. This study involved several participants who lacked academic discipline in high school and subsequently
were poor performers, and yet the entered the military only to become academic achievers. Why? What changed? In discussing his training school in the Marine Corps, Numbers may have said it best. "It was extremely rigorous, but it was very directed. There wasn’t much wiggle room on how you’re going to do your activities.” In short, some bright young students may be poor academic performers only because they are allowed to be.

Fifth, for some students in a training environment, practice and application become the dominant learning mode while conceptual learning skills atrophy. T-Bone (who ironically likes to work with his head vice doing backbreaking manual labor) noted, "If I don't get to use it, apply it, or it gets reinforced, then it's just words on a paper to me." Or as Smurf related, "I'm more instructor-led. I don't like the distance learning thing, either. I like somebody to stand in front, say what they're going to say. If I have a question, I can raise my hand, and be like, hey, what did you mean by this? Or, you know, so ... yeah." In these circumstances a study skills workshops may be just as important to non-traditional students as they are to high school graduates who enter college directly.

To conclude, this research combined several theories in human learning to explore how Senior Enlisted Leaders (SEls) attending the Navy Senior Enlisted Academy understand their learning in both training and educational environments. Among these theories were MacLean’s (1978) triune brain theory, information processing theory (Hackman & Johnson, 2009; Simon, 1978), Illeris’s (2003) three dimensions of learning, and Bandura’s (1986) social cognitive theory. Beyond general theory, the study combined the works of Illeris and Bandura to create a theoretical lens to examine participant learning. Several key findings emerged from the data analysis.
Having summarized the key findings, the next section revisits the original work of Illeris (2003) and Bandura (1986) in light of the research results, and makes suggestions for where this branch of scholarship might go based on these findings.

**Implications for Theory Development**

As useful as the literature was to explain how learners viewed their learning, this research uncovered themes that were consistent with the literature but were not consistent with the combined model. According, some refinement of existing concepts and inclusion of other themes might prove a more comprehensive approach to understanding how people learn.

Following Illeris’s lead, this study considered two broad categories of human learning. Illeris (2009) believed that “all learning implies the integration of two very different processes; namely an external interaction process between the learner and his or her . . . environment, and an internal psychological process of elaboration and acquisition” (p. 8). Similarly, the themes from this study were sorted into the Internal Acquisition Process category and the External Interaction Process category.

However there were some differences between Illeris’s (2003) version of the acquisition process and what the study yielded. The first difference noted was that Illeris had only two components in the internal acquisition process: Emotion and Cognition (Illeris, 2003). In contrast, the study yielded three themes of Emotion, Cognitive Effort, and Knowledge/Schema-Building.

And there were differences with the external interaction process as well. This section of the combined model was based on the work of both Illeris (2003) and Bandura (1986). It included a single theme of Learner-Behavior-Environment interactions, Bandura’s triadic reciprocity. However during second cycle coding, two additional differences from the
combined model emerged. Both of these new themes, namely the Enablers/Inhibitors Theme and Content Nature Theme, belong as elements in the learner’s external world.

Beyond introducing new themes, the prominence of the Beliefs code as an element of both Knowledge and Emotion should somehow be included in a general theory on learning and behavior. All in all, though the combined model proved useful in conducting this research, the results from the analysis suggest some refinements. These modifications are the subject of the next section.

**Learning and Behavior Theory**

The purpose of this study was to explore the nature of how Senior Enlisted Leaders (SELs) approach learning as they attended an education-based curriculum designed to help them transition from a focused, technical role to a broader, leader/manager role. To conduct this research, the works of Illeris (2003) and Bandura (1986) were combined to form the study’s theoretical lens. This combination was necessary to examine learning process in both training (how to do) and educational (how to think) situations.

The results of this research suggested some refinements to the combined model in order to capture additional elements of the learning process. These refinements are depicted in Figure 5.2. The explanation

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**Figure 5.2. Learning and Behavior Theory**
of these suggested refinements follows; begin first with the changes to the internal acquisition process before moving to the external interaction process.

To better describe the learner’s internal world, the original Cognition term was expanded from a single element into two elements; Cognitive Effort and Internal Knowledge. Next, Illeris (2003) used a double arrow in his initial construct to indicate the “integrated interplay between . . . psychological functions involved in any learning” (p. 398). Thus to retain this original intent, three double arrows are used between Emotion, Cognitive Effort, and Internal Knowledge in Figure 5.2. Together these three elements represent the expanded internal acquisition process.

Next, keeping with the internal acquisition process, subtitles of Long Term Memory and Active Schema are added to Emotion and Internal Knowledge respectively. These subtitles highlight important concepts from the literature review. Similarly, the upper brain executive functions are added to the model between Knowledge and Cognitive Effort.

Next, to account for the prominence of Beliefs, a thick double-arrow is added connecting Emotion and Knowledge. Lastly, the three main elements of the acquisition process are oriented as shown in Figure 5.2. This parallels triune brain theory concept, placing the cognitive (upper) brain above the emotional (middle) brain. Additionally, consistent with the literature, Emotion becomes the focal point for internalizing all external content, making it the gatekeeper of all learning.

Moving to the learner’s external world, subtitles of Content Nature and Experience are added to Environment and Behavior respectively. The former reflects the new theme that emerged from the coding process while the latter simply amplifies that behavior produces experiences. Additionally, Behavior (i.e., external effort) and Cognitive Effort (i.e., internal effort) are now juxtaposed to Emotion, further highlighting the role of emotion in human action.
Next, arrows are added to the bottom part of the model on either side of Environment to indicate Illeris’s (Illeris) concept of the environment as a social continuum. Finally, Enablers/Inhibitors are added to each side of the Environment to infer a temporal dimension of the social continuum.

This final model represents a comprehensive approach to understanding human learning and behavior in both training and educational settings. It incorporates the major components of the original combined model (Bandura, 1986; Illeris, 2003), adds new themes uncovered in this research, folds in additional material from the literature review (Yeager & Yeager, 2013), and mimics concepts from triune brain theory (MacLean, 1978). A noted exception to triune brain theory is that the lower brain’s primal mind functions are not represented in this new model on learning and behavior (MacLean, 1978).

**Recommendations for Future Research**

As fruitful as this research was in answering the question how do Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role, the study also brought other issues to light. For example, several participants in this study struggle with reading yet do well in math or science. Why? How can some students be comfortable manipulating symbols as required in math and science and yet be at a loss in comprehending words on a page?

Could it be that some people are predisposed to becoming good readers or gain a love for reading via their upbringing, while others go through life as struggling readers unless someone or something forces them otherwise? Cruiser grew up reading his grandfather’s encyclopedias as a child and eventually became a fast reader who loves to read. Cruiser takes to reading like a duck takes to water. Bruce, on the other hand, takes to reading more like a rock, sinking to the bottom
and getting nowhere. But when it comes to numbers, Bruce is right at home. “Numbers come natural to me. The only thing I can say about high school was ... the math, I never studied. I didn’t have to. It just came natural. . . . So Storekeeper was the perfect rating for me.” Future research on why some students take to reading while others do not may be of value to the field.

Beyond reading, it would appear that some novice learners do not include group studies as a learning strategy. Rather, they prefer to go it alone. Cruiser was the designated leader for his group at the SEA. On the topic of study groups he observed, "I do realize that there is value in group study and group learning. It's just that in my opinion, my group has yet to take advantage of that or hasn't done that a lot since being here." Other than student-teacher interaction, study groups are a prime learning tool from the external interaction process perspective.

Cruiser’s observation begs more general questions. What strategies can learners use to improve their individual study? What strategies can learners use to improve their studying with others? How do the arts (e.g., drama class) help students become better learners? Are learning strategies universal or do some strategies work best with certain academic disciplines? The curriculum at the Navy Senior Enlisted Academy largely falls under the Organizational Leadership and Political Science disciplines. Future research on useful learning strategies organized by academic discipline may be of value to the field.

Continuing with the external interaction process, the Learning and Behavior Theory discussed in the previous section is centered the individual. It looks at an individual’s learning and behavior. However human relationships are an important aspect of life and learning. How could the new model be modified to account for multiple human relationships? Perhaps network
theory may be of value here. In any case, future research that leads to a model incorporating human relationships into human learning and behavior may be of value to the field.

Finally, the results of this study suggest that students who are slow readers and who do not normally read books will likely have a very negative emotional experience when forced into academic settings such as the SEA. Furthermore and consistent with Kirkpatrick's (1998) first level of evaluation (Did they like it?), these students will not likely learn very much from the course of instruction. Since there were only two participants in this study who met the criteria of slow readers who do not normally read books, further research should be conducted with this population to determine if these findings are relevant to a larger population.

Having considered possibilities for future research stemming from this study, the next section looks at how the results of this inquiry might impact the Navy Senior Enlisted Academy or similar organizations.

**Implications for Practice**

Mohrman and Lawler (2012) argued that research should benefit both theory and practice. Earlier it was shown how existing theory on adult learning and behavior may benefit from the results of this study. The question remains: How might the Navy Senior Enlisted Academy profit from this research? Here the researcher suggests several proposals.

First, although the population was limited, the study suggests that students who lack functional reading skills gain very little from the curriculum and generally have a very bad experience in going through the curriculum. In short, the student loses. Furthermore, the organization also loses. Resources spent on bringing these students to Newport for 6 weeks would be better spent on students with reading skills commensurate with the curriculum demands.
In sum, the SEA might consider adopting a policy requiring prospective students to take a reading assessment and including those results in their application to attend the course. Additionally, students who perform below standards should be vectored toward programs designed to help struggling readers improve. Such a policy would not only benefit the SEA in terms of garnering a better return on expended resources, but would also improve the military by raising the literacy competency of the senior enlisted force. Of note, the researcher has already shared this finding with the SEA’s Director who concurs with this suggestion.

Second, since reading skills are so pivotal in educational situations, any improvements can only lead to students getting more out of the curriculum. Moreover, the SEA recently put all of its readings on the iPad and issues iPads to students while they are in residence. The offer an after-hours functionality workshop on how to use the iPad, but there is no corresponding workshop on reading academic material on the iPad. Hence, the SEA might consider creating a workshop designed to help students improve their ability to read academic material on the iPad.

Third, similar to the reading strategies suggestion the SEA might consider offering a workshop designed to help students improve their study skills. Such a workshop would cover individual and group strategies, exposing students to techniques they may not otherwise know. As Knowles (1975) lamented earlier, “it is a tragic fact that most of us only know how to be taught; we haven’t learned how to learn” (p. 14). Offering a learning strategies workshop can help these adult students become better learners.

Fourth, the results of this study have implications for improving instructor awareness on the role of emotion in human learning. Emotion was the only theme to emerge at the end of first cycle coding. In the end, nearly two out of every three references coded to the internal acquisition process had something to do with Emotion. In short, emotion is central to human
learning. Promoting a healthy classroom environment should be a prime instructor concern. Beyond the classroom, the stress of military life can weigh heavily on some people. Just as poor reading ability can trump an educational opportunity, so can a powerful negative emotional situation.

Finally, the SEA curriculum design rests heavily on a traditional academic approach where reading academic material is the primary means of acquiring new knowledge. Recall Knowles’s (1975) statement, “it is a tragic fact that most of us only know how to be taught; we haven’t learned how to learn” (p. 14). An article in the current issue of the British Journal of Educational Technology argues that, due to the ubiquitous presence of digital technologies in the modern workplace, informal learning is now more important than formal learning (Za, Spagnoletti, & North-Samardzic, 2014). Accordingly the authors encourage organizations to identify ways and means to promote organizational learning via digital technologies (Za et al., 2014). Along these lines, the SEA might consider redesigning some of its curriculum to incorporate a delivery method that (1) requires the use of digital technologies to gather information and (2) involves a technique that could be used to gain new knowledge after students have returned back to the Fleet and Field.

Having considered contributions to theory and implications for practice, the next section summarizes the study and concludes this doctoral thesis with some lessons learned from a first time researcher.

**Summary and Reflections**

The purpose of this study was to explore the nature of how Senior Enlisted Leaders approach learning as they attend an education-based curriculum designed to help them transition from a focused, technical (how to do) role to a broader, leader/manager (how to think) role. The
goal of this research was to examine the learning strategies used by Senior Enlisted Leaders in training and in educational situations, and to better understand the role of emotion in human learning.

The study confirmed that learning involves two processes; the internal acquisition process and the external interaction process between the learner and his or her environment. Further, both of these processes are present in training (how to do) and in educational (how to think) situations.

The study also found that the ability to read academic material was a critical enabler for educational situations but not necessarily so in training situations. Furthermore, the study identified the central role of emotion in human learning.

In the course of this study the author gained numerous lessons learned as a first time researcher. These lessons follow, beginning with those more appropriate for general research before moving on to those more applicable to the local context.

**Lessons Learned**

This study proved extremely valuable in helping the researcher grow as a scholar practitioner in many ways. Several of these lessons are shared below in the hopes of helping others learn from the researcher’s mistakes.

First, it is important to complete a Reflexive Journal entry for each interview immediately following the session and prior to reviewing the interview transcript. That will give the freshest and purest reflexivity regarding the session.

Second, names are much easier to relate to than Interview-01, 02, etc. Initially the researcher did not assign pseudonyms to participants who elected to do individual interviews. This became very cumbersome during the analysis phase. Eventually the researcher assigned a
pseudonym based on the participant’s story. From there it was much easier to remember who said what, especially when searching for quotes to support the analysis.

Third, always bring name tents and markers to small group interviews, and allow the participants to select a pseudonym. This was not done for the first small group interview which only involved two participants. That interview was very awkward and impersonal as names could not be used to protect anonymity. The researcher decided to try using name tents in the subsequent small group interview. This technique added fun to the interview process as each participant picked their own pseudonym (T-Bone, Boxkicker, Smurf, etc.). It also promoted a more relaxed atmosphere.

Fourth, the transcript received from Rev.com needed to be reformatted for auto coding by paragraph structure prior to being imported into NVivo. For this reason it is better to reformat the transcript for NVivo auto-coding before sending the transcript to the participant for member checking. This way the document the participant edits is the same document imported into NVivo for coding. Otherwise it falls to the researcher to incorporate the participant’s edits into the document that is eventually imported into NVivo.

Fifth, if students will graduate before member checks can be completed, be sure to verify their alternate e-mail addresses or agree on some other means of contact. In one instance, the participant graduated before member checks could be completed and was never heard from again.

Sixth, for this study, it would have been better not to schedule any interviews until after the midterm exam (early in Week-4). Especially for high-school-only graduates, the students have not had enough time to figure out how they approach learning at the SEA. These student in
particular can provide a richer description of study habits and better articulate future value of the course the closer to graduation they are interviewed.

Finally, the Naval Postgraduate School Institutional Review Board does not allow sending participants the interview questions in advance. They will only allow a general list of topics to be covered during the interview. This will be important for future studies at the Senior Enlisted Academy or at the Naval War College.
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Appendix A

U.S. enlisted ranks by Service

<table>
<thead>
<tr>
<th>Paygrade</th>
<th>Navy and Coast Guard Ranks</th>
<th>Army Ranks</th>
<th>Air Force Ranks</th>
<th>Marine Corps Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-9</td>
<td>Master Chief Petty Officer</td>
<td>Sergeant Major</td>
<td>Chief Master Sergeant</td>
<td>Master Gunnery Sergeant</td>
</tr>
<tr>
<td>E-8</td>
<td>Senior Chief Petty Officer</td>
<td>Master Sergeant</td>
<td>Senior Master Sergeant</td>
<td>Master Sergeant</td>
</tr>
<tr>
<td>E-7</td>
<td>Chief Petty Officer</td>
<td>Sergeant First Class</td>
<td>Master Sergeant</td>
<td>Gunnery Sergeant</td>
</tr>
<tr>
<td>E-6</td>
<td>Petty Officer First Class</td>
<td>Staff Sergeant</td>
<td>Technical Sergeant</td>
<td>Staff Sergeant</td>
</tr>
<tr>
<td>E-5</td>
<td>Petty Officer Second Class</td>
<td>Sergeant</td>
<td>Staff Sergeant</td>
<td>Sergeant</td>
</tr>
<tr>
<td>E-4</td>
<td>Petty Officer Third Class</td>
<td>Corporal or Specialist</td>
<td>Senior Airman</td>
<td>Corporal</td>
</tr>
<tr>
<td>E-3</td>
<td>Seaman</td>
<td>Private First Class</td>
<td>Airman First Class</td>
<td>Lance Corporal</td>
</tr>
<tr>
<td>E-2</td>
<td>Seaman Apprentice</td>
<td>Private First Class</td>
<td>Airman</td>
<td>Private First Class</td>
</tr>
<tr>
<td>E-1</td>
<td>Seaman Recruit</td>
<td>Private</td>
<td>Airman Basic</td>
<td>Private</td>
</tr>
</tbody>
</table>
Appendix B

Recruitment script

Hello. My name is Bud Baker. I am here as a doctoral candidate at Northeastern University. The great news is that I am beginning the data collection phase of my dissertation. This journey started with an SEA student survey comment that stated, “I was up every night until midnight and I still didn’t get through all of the readings.” That statement led me to examine if perhaps we, the educators, were at fault. I compiled historical data on SEA student demographics and realized that the highest education level for over half of the typical SEA class was high school, and in most cases that was 15 to 20 years ago.

That discovery led me to what I feel is a significant issue. As educators we are assuming you have the academic skills to succeed in a higher educational setting, but that may not always be the case.

Which brings me to today: I am searching for about a dozen or so students to interview with the goal of understanding how students attending the SEA approach learning in training and in educational situations. I hope to interview some students individual and others in small groups of two or three.

Why small groups? Research shows that “small group interviews” work best for topics people could talk about to each other in their everyday lives—but don’t.

All interviews will last approximately 1 hour. During the interview I will simply ask you to tell me about learning situations you have experienced both in the workplace and while here at the SEA. In other words, I want to hear stories from your perspective about unclassified training and educational learning events in your Navy life.

The interviews will be conducted in the third floor conference room here in Tomich Hall at your convenience. I can meet whenever your schedule works out best. Participation is entirely voluntary. Also, please be aware that you are free to withdraw from the study at any point in time; even after we start the interview.

If you would like to participate in this research, all I ask is that you contact me either directly (face-to-face), via my iPhone (talk or text) (401) 829-7771, or via my Northeastern University e-mail address: baker.ge@husky.neu.edu. We will then start a dialogue to figure out when to meet and which format you prefer; individual or small group. Again, I am asking for 1 hour of your time. I will take care of the rest. Your participation in this research is purely voluntary, will have no effect on your academic standing at SEA, and you can drop out for any reason at any point in the process.

Please contact me later today if you are interested in participating. For your convenience, I will hang a copy of this Recruitment Script which contains my contact information as a Word document in the share drive Student folder.
If you have any questions or comments about this research, you can contact either me or any of the following:

- Principal Investigator, Dr. Margaret Gorman, at (202) 425-7111, or by email at m.kirchoff@neu.edu.
- Nan C. Regina, Director, Human Subject Research Protection, (617) 373-4588, irb@neu.edu.
- Co-Principal Investigator, Dr. Thomas Gibbons, (401) 841-4008, or by email at gibbonst@usnwc.edu.
- Navy Postgraduate School IRB Chair, Dr. Larry Shattuck, (831) 656-2473, lgshattu@nps.edu.

Thank you for your service, and thank you or all you do to make this world a better place.
Appendix C

Research question and interview questions

**RQ:** How do Navy Senior Enlisted Leaders understand their learning amidst enrollment in an educational program aimed to transition them from a technical leadership role to a more strategic leadership role?

<table>
<thead>
<tr>
<th>Interview Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IQ-1 Warm-up</strong></td>
</tr>
<tr>
<td>Please tell me about your family background: Growing up, what was your home life like, and what made you decide to enlist in the Navy?</td>
</tr>
<tr>
<td><strong>IQ-2 Warm-up</strong></td>
</tr>
<tr>
<td>Please tell me about your educational background: what were you like as a student in High School? (and if applicable: College?)</td>
</tr>
<tr>
<td><strong>IQ-3 Warm-up</strong></td>
</tr>
<tr>
<td>Please tell me about your military background: How many years have you been in the Navy? What rate did you choose when you first came into the Navy, and why did you choose that particular rate?</td>
</tr>
<tr>
<td><strong>IQ-4</strong></td>
</tr>
<tr>
<td>Here you are in a course designed to help you transition from a focused technical role to a more strategic, leader/manager role. Let’s start with the past. Tell me a story about how you have approached learning situations in the past.</td>
</tr>
<tr>
<td><strong>IQ-5</strong></td>
</tr>
<tr>
<td>Now you are at the Navy Senior Enlisted Academy (SEA). Tell me a story about how you approach learning situations here at the SEA.</td>
</tr>
<tr>
<td><strong>IQ-6</strong></td>
</tr>
<tr>
<td>Beyond the certification you get as an SEA graduate, how does this course of instruction help you to become a better Senior Enlisted Leader in the Navy?</td>
</tr>
<tr>
<td><strong>IQ-7</strong></td>
</tr>
<tr>
<td>I am interested in how your approach to learning might have changed over time. Looking back, please give me a word or phrase that describes you as a learner when you first entered the Navy, and another word or phrase that describes you now as a learner at the SEA.</td>
</tr>
<tr>
<td>• Why did you choose that word (or phrase)?</td>
</tr>
</tbody>
</table>
Appendix D

Individual and group interview scripts

**Individual Interview Introductory Script:**
Thank you for taking the time to talk with me today. As mentioned earlier, I am in the final phase of my doctoral studies at Northeastern University. My role here is as a student at Northeastern University. I am here to gather stories about how students at the Navy Senior Enlisted Academy approach learning in training and in educational situations.

First, I want to emphasize that all participants in this study will remain anonymous, and that your participation is completely voluntary. If you don’t mind, I would like to review these consent forms with you before we begin.

[Review and sign consent form]

Thank you. I have two more administrative items to discuss before we begin. With your permission, I would like to record this session so I can focus on our conversation. Additionally, I will have our interview transcribed and will e-mail you that transcription for your review, comments, or additional insight. Is that OK?

Great! Let’s begin.

**Small Group Interview Introductory Script:**
Thank you for taking the time to talk with me today. As mentioned earlier, I am in the final phase of my doctoral studies at Northeastern University. My role here is as a student at Northeastern University. I am here to gather stories about how students at the Navy Senior Enlisted Academy approach learning in training and in educational situations.

First, I want to emphasize that all participants in this study will remain anonymous, and that your participation is completely voluntary. If you don’t mind, I would like to review these consent forms with you before we begin.

[Review and sign consent forms]

Thank you. I have a few more administrative items to discuss before we begin. With your permission, I would like to record this session so I can focus on our conversations. Additionally, I will have our interview transcribed and will e-mail you that transcription for your review, comments, or additional insight. Is that OK?

Finally, I want to re-emphasize that the intent for this study is that the participants remain anonymous. However, I cannot control what you do after this interview. Therefore I am asking you to respect each other’s privacy and not repeat any of the stories you hear from another participant. Can we all agree to that?

Great! Let’s begin.
Appendix E

Interview informed consent form

Northeastern University, College of Professional Studies
George H. Baker, Jr.

Preparing Military Leaders: A Narrative Inquiry Exploring How Senior Enlisted Leaders Understand How Their Learning as They Transition from a Technical Role to a More Strategic Leader Role

Informed Consent to Participate in a Research Study
We are inviting you to take part in a research study. This form will tell you about the study, but the researcher, George “Bud” Baker, will explain it to you first. You may ask him any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

Why am I being asked to take part in this research study?
We are asking you to be in this study because you are a student attending the Navy Senior Enlisted Academy (SEA).

Why is this research study being done?
The purpose of this study is to understand how people approach learning in both training (practical, how-to-do) and in educational (conceptual, how-to-think) situations.

What will I be asked to do?
If you decide to take part in this study, we will ask you to participate in a 1-hour interview. This interview will be conducted in Tomich Hall and will be recorded using a digital recorder. Afterwards, the researcher will have the interview transcribed and will e-mail you the transcription for review, corrections, and any additional thoughts.

How much of my time will it take?
The interview will last approximately 1-hour.

Will there be any risk or discomfort to me?
There is no foreseeable risk or discomfort from participating in this study. While there is always a possibility that interview data and related audio recordings may get lost or stolen, this would result in little risk based on the nature of the interview questions (understanding how the participants approach learning new material). In the unlikely event that study data are lost or stolen, the researcher will notify you immediately.

Will I benefit by being in this research?
There will be no direct benefit to you for taking part in the study. However you may feel some benefit from knowing your participation in this study may lead a program that could help others who later attend the Navy Senior Enlisted Academy (SEA).
Who will see the information about me?
Beyond Bud Baker, your identity as a participant in this study will not be known. Your part in this study will be kept confidential. Only Bud Baker will see the information about you. No reports or publications will use information that can identify you in any way. Your statements during the interview will be transcribed by a professional company following industry standards for security and confidentiality. Participants are identified as Speaker1, Speaker2, etc. All recordings and transcripts will be maintained by Bud Baker until the thesis has been approved. Afterwards, all transcripts, recordings, and data files will be destroyed.

Real names will not be used in the notes taken during the interviews. You will be assigned a pseudonym that only Bud Baker will know. That pseudonym will be used throughout the interview to ensure confidentiality and protect your identity.

In rare instances, authorized people may request to see research information about you and other people in this study. This is done only to be sure that the research is done properly. We would only permit people who are authorized by organizations such as the Northeastern University Institutional Review Board or the Naval War College Institutional Review Board to see this information.

Can I stop my participation in this study?
Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time. If you do not participate or if you decide to quit, you will not lose any rights, benefits, or services that you would otherwise have as a student at the SEA.

Who can I contact if I have questions or problems?
Please contact the researcher, Bud Baker, at (401) 829-7771 or by email at baker.ge@husky.neu.edu. You may also contact the Principal Investigator, Dr. Margaret Gorman, at (202) 425-7111, or by email at m.kirchhoff@neu.edu.

Who can I contact about my rights as a participant?
If you have any questions about your rights in this research, you may contact Nan C. Regina, Director, Human Subject Research Protection, 960 Renaissance Park, Northeastern University, Boston, MA 02115. Tel: (617) 373-4588, Email: irb@neu.edu. You may call anonymously if you wish.

Yes, I agree to take part in this research:

___________________________________________________________________
Print Name/ Signature/Date

___________________________________________________________________
Print Name/Signature of person who explained the study/Date
Appendix F

Small group informed consent form

Northeastern University, College of Professional Studies
George H. Baker, Jr.

Preparing Military Leaders: A Narrative Inquiry Exploring How Senior Enlisted Leaders Understand How Their Learning as They Transition from a Technical Role to a More Strategic Leader Role

Informed Consent to Participate in a Research Study

We are inviting you to take part in a research study. This form will tell you about the study, but the researcher, George “Bud” Baker, will explain it to you first. You may ask him any questions that you have. When you are ready to make a decision, you may tell the researcher if you want to participate or not. You do not have to participate if you do not want to. If you decide to participate, the researcher will ask you to sign this statement and will give you a copy to keep.

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We are asking you to be in this study because you are a student attending the Navy Senior Enlisted Academy (SEA).

Why is this research study being done?

The purpose of this study is to understand how people approach learning in both training (practical, how-to-do) and in educational (conceptual, how-to-think) situations.

What will I be asked to do?

If you decide to take part in this study, we will ask you to participate in a small group, 1-hour interview. This interview will be conducted in Tomich Hall and will be recorded using a digital recorder. Afterwards, the researcher will have the interview transcribed and will e-mail you the transcription for review, corrections, and any additional thoughts.

How much of my time will it take?

The small group interview will last approximately 1-hour.

Will there be any risk or discomfort to me?

There is no foreseeable risk or discomfort from participating in this study. While there is always a possibility that interview data and related audio recordings may get lost or stolen, this would result in little risk based on the nature of the interview questions (understanding how the participants approach learning new material). In the unlikely event that study data are lost or stolen, the researcher will notify you immediately.

Will I benefit by being in this research?

There will be no direct benefit to you for taking part in the study. However you may feel some benefit from knowing your participation in this study may lead a program that could help others who later attend the Navy Senior Enlisted Academy (SEA).
Who will see the information about me?
Outside of the members in the interview group, your identity as a participant in this study will not be known. Your part in this study will be kept confidential. Only the researcher and your group members will know the information you share in the group session. Beyond that, only the researcher will see the information about you. No reports or publications will use information that can identify you in anyway. Your statements during the interview will be transcribed by a professional company following industry standards for security and confidentiality. Participants are identified as Speaker1, Speaker2, etc. All recordings and transcripts will be maintained by Bud Baker until the thesis has been approved. Afterwards, all transcripts, recordings, and data files will be destroyed.

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Can I stop my participation in this study?
Your participation in this research is completely voluntary. You do not have to participate if you do not want to and you can refuse to answer any question. Even if you begin the study, you may quit at any time. If you do not participate or if you decide to quit, you will not lose any rights, benefits, or services that you would otherwise have as a student at the SEA.

Who can I contact if I have questions or problems?
Please contact the researcher, Bud Baker, at (401) 829-7771 or by email at baker.ge@husky.neu.edu You may also contact the Principal Investigator, Dr. Margaret Gorman, at (202) 425-7111, or by email at m.kirchoff@neu.edu.

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Yes, I agree to take part in this research:

___________________________________________________________________
Print Name/Signature/Date

___________________________________________________________________
Print Name/Signature of person who explained the study/Date
Appendix G

Member checks

Post Interview/Post Small Group Follow-up E-mail

Dear XXXX,

Thank you for your time and willingness to share your experiences with me on (date). As we discussed, I am sending you this follow-up e-mail so you can review the transcription of the interview for accuracy (see attached). Please feel free edit the transcription as necessary, as well as to offer any additional thoughts, ideas, or reflections you may have had since our face to face interview.

When finished, please reply to this email even if you have nothing to report. Or, if you prefer, you can contact me at (401) 829-7771. Thank you again for your valuable time, and for your willingness to unselfishly improve the Navy Senior Enlisted Academy curriculum.

Sincerely,

Bud Baker
Appendix H

Initial code list

<table>
<thead>
<tr>
<th>Theory</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flavell’s Metacognition</td>
<td>metacognitive knowledge, metacognitive experiences,</td>
</tr>
<tr>
<td></td>
<td>metacognitive goals, metacognitive strategies</td>
</tr>
<tr>
<td>Vygotsky’s Sociocultural Theory</td>
<td>cognitive development, collaboration /social learning,</td>
</tr>
<tr>
<td></td>
<td>scaffolding, maturation of needs, zone of proximal</td>
</tr>
<tr>
<td></td>
<td>development (ZPD),</td>
</tr>
<tr>
<td>Knowles Adult Learning Theory</td>
<td>adults have a need to know, dependent (pedagogical)</td>
</tr>
<tr>
<td></td>
<td>learner, self-directed learner, the adult learner’s</td>
</tr>
<tr>
<td></td>
<td>experience, readiness to learn/task-oriented learning,</td>
</tr>
<tr>
<td></td>
<td>internally motivated to learn, negative self-concept as</td>
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<td></td>
<td>a student</td>
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<tr>
<td>Combined Model Codes</td>
<td>behavior, cognitive effort, environment, emotions,</td>
</tr>
<tr>
<td></td>
<td>internal knowledge, external content, study groups,</td>
</tr>
<tr>
<td></td>
<td>planning, cognitive flexibility, inhibition control,</td>
</tr>
<tr>
<td></td>
<td>working memory, long term memory</td>
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<tr>
<td>Types of Learning</td>
<td>cumulative, assimilative, accommodative,</td>
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<tr>
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<td>transformational</td>
</tr>
<tr>
<td>Educational Formats</td>
<td>formal education, informal education, non-formal</td>
</tr>
<tr>
<td></td>
<td>education, online education</td>
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Appendix I

NVivo screen captures

Two Categories and Six Themes:

Next, screen captures for each of the six themes follow. The code hierarchy is fully expanded to identify all of the codes assigned to each theme.
Knowledge/Schema-Building Theme:

[Diagram showing nodes such as Beliefs, Self-esteem, Cognitive Affinity, Ambitions, Types of Learning, Cognitive Effort, and Emotion with associated Sources and References counts.]
Cognitive Effort Theme:

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<tr>
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<td>Learning strategies-- flashcards, highlight, etc.</td>
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<td>Reading ability</td>
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<tr>
<td>Reading strategies</td>
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<td>Cognitive challenges - internal to learner</td>
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<td>Reflection</td>
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<tr>
<td>Summarize into own words</td>
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Emotion Theme:

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<td>202</td>
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<tr>
<td>Emotion</td>
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<tr>
<td>+ Positive Emotions</td>
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<td>- Negative Emotions</td>
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Learner-Behavior-Environment Theme:

External Enablers and Inhibitors Theme:
External Content Nature Theme:

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