ABSTRACT

ABD RAHIM, NUR AIRA BINTI. Exploring the Self-Regulatory Beliefs and Actions of Adult Undergraduate Students Learning in Online Credit Courses in a Land-Grant University. (Under the direction of Dr. Carol E. Kasworm).

The aim of this qualitative research study was to uncover in-depth understandings of the self-regulatory beliefs and actions of adult undergraduate students learning in online credit courses. A social cognitive model of SRL by Zimmerman was used as the theoretical framework for this study. This study was guided by three research questions: (1) What key beliefs do adult students hold about themselves as online learners? (2) How do adult students describe their engagement in the online learning process? (3) What strategies do adult students use to support their online learning?

Eleven NC State undergraduates who were identified as adult students volunteered to participate in this study in fall 2014 semester. All participants met the requirements of 25 years of age or above, had a self-supporting job and/or key family commitments; and were completing their courses in fall 2014 in online distance education format. Data were primarily gathered using semi-structured interviews to solicit participants’ experiences and critical incidents in online learning that led and informed their self-regulatory process. The study findings suggested that there were specific beliefs and actions that emerged as interwoven elements of the adult students’ online SRL process. These interwoven elements broadly suggested the complexity of the adults’ SRL process based in their personal beliefs, learning actions, their online course settings, as well as their broader life influences as adults.
The study delineated three specific conclusions based on the findings. First, the study concluded that adult students’ desire to self-regulate while learning online was motivated by key personal beliefs related to their goal commitments, perceived abilities to learn online, and perceived abilities to be a responsible learner. Secondly, the study found that adult students’ online self-regulatory process was adaptive in nature. Third, this study identified adult students’ use of a variety of key SRL strategies to meet the expectations of their online courses, their individual learning needs, as well as their multiple role demands. Following the conclusions, implications for theory, practice, and research were offered to impart the study’s contributions to the literature.
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Exploring the Self-Regulatory Beliefs and Actions of Adult Undergraduate Students Learning in Online Credit Courses in a Land-Grant University.

by
Nur Aira Binti Abd Rahim

A dissertation submitted to the Graduate Faculty of North Carolina State University in partial fulfillment of the requirements for the Degree of Doctor of Education

Adult and Community College Education

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APPROVED BY:

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I would like to dedicate this dissertation to my beloved family members. Each of them contributed their time, energy, and love to me in ways that made the completion of this writing possible, and made the entire journey worthwhile. The whole experience has deepened my love to them and made me want to be a better daughter, sister, wife, and mother to these amazing, important people in my life.

To Ibu, Ayah, Zack, Adik, Parie, and Rafa, I present this work in your honor.
BIOGRAPHY

Nur Aira Abdrahim comes from Malaysia. She first enrolled into the Department of Adult and Higher Education at North Carolina State University in 2008 in pursuit of an MS in Adult and Community College Education. She completed her Master in 2010, and continues into the Doctoral program to complete the highest degree that she could earn in the field.

She is also affiliated with University Putra Malaysia, a higher education institution in her home country, to which she hopes to return to and serve as a faculty member upon completion of her doctoral work. She has a great desire to foster adult education as a field of study and research in Malaysia, and she hopes this degree and experience will give her valuable insights to develop and expand the adult education practice in Malaysia.
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extend my special thanks to Dr. Lance Fusarelli, Dr. Raymond Ting, and Shana Scott for assisting in my complex needs as an international student at the Department, especially during the last leg of my studies. The Office of International Students (OIS) of NC State also has been amazing in supporting and responding to my needs.

There is also another academic department that I’m affiliated with in Malaysia. To the Department of Professional Development and Continuing Education (JPPPL) of University Putra Malaysia, thank you for providing me with a safe ground to return home to. I’m especially grateful for the earnest encouragement shown by my JPPPL superiors and colleagues while I was there. I especially want to thank Dr. Bahaman Abu Samah, Dr. Azizan Asmuni, Dr. Zoharah Omar, Dr. Khairuddin Idris, Dr. Azahari Ismail, Dr. Ismi Arif, Dr. Mursyid Arshad, Dr. Ashraff Anuar, and Dr. Abd Lateef Krauss. I so appreciated the warm welcome and smiles from Kak Aissa, Kak Nor, and Kak Atie, who made feel part of the big family again. I also received heartfelt support from fellow colleagues from Faculty of Educational Studies (FPP) and other faculty members across UPM. To Dr. Murni Marlina, Dr. Wan Zunairah, Dr. Mas Nida Khambari, Dr. Abu Bakar Razali, Dr. Arnida Abdullah, and Dr. Maizura Yasin, thank you for being a friend in need during my difficult days. To the Dean of Faculty Educational Studies, Prof. Dr. Aida Suraya Md Yunus, thank you for the second chance. Also to Kak Mimi, for fixing all my appointments with the Dean promptly. I also would like to thank you my sponsors, Ministry of Higher Education of Malaysia and University Putra Malaysia for funding the first few years of my graduate studies, which made the turn point of this degree possible.
Many special friends also supported and cheered for me during this long journey. Among them, Dr. Joanne Caye, Asilah Ahmad, and Dr. Nurulhuda Khairuddin earned the top three spots. Dear Joanne, I still remember the day you offered to gift me with your time and help in my dissertation writing. Thank you for repeatedly telling me to believe in myself (self-efficacy, yeap!), and for all those Skype sessions across the US and Malaysia. I can never repay you back, but I will remember to pass along your gift of kindness to someone else who might be in need of the same favor in the future. To Asilah, who ardently replied my countless texts of despairs and periodic happiness during my writing and re-writing moments. Thank you for reminding me to celebrate every small progress in my dissertation writing, and for insisting that I must not give up until I try my very best. I cherished our friendship even more now, of 20 years and counting! To Huda, thank you for being my non-GOT comrade. Out of all the luahan perasan sessions that we had, I always remember the time when you spent 1-hour comforting and telling me everything is going to be fine. I’m glad we got reconnected again after all those years apart, and I’m so happy that you made it through too! There were other friends who have supported my educational endeavor and touched my lives in important ways. To Diana Teh and Dr. Ben Tham, Dr. Tracy Pakornsawat, Dr. Dian Diana, and in the loving memory of Dr. Donna Hucul. Thank you for your beautiful friendship during my educational endeavor in Raleigh. To my GGs girls, Bet, Syeda, Lat, & Sher, thank you for the “scandalous” friendship love that we shared together. To Samba, for all the random Ed Psych theories discussions via Skype & Facetime, and for praying hard for me to pass my defense successfully. Also to Kak Dzeelfa, for kindly
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And finally, completing this dissertation would not have been possible without the collective support and encouragement that I received from my dearest family members. To my mom, Noraini Yatim, who welcomed us back under her roof since we came back home from the States. Thank you for nourishing us with your love and delicious home cooked meals. Thank you for your spiritual guidance and for strengthening my belief in the power of du’a (prayers) and istiqomah (consistency) to get me to where I want to be. To my dad, Abd Rahim Ahmad, who gently told me to keep persisting no matter how hard things seem at the moment. He once said to me not to worry, as everybody will play their parts so that I can
continue to do mine. To my brother, Mohd Zaim. I still remembered the day I came forward to him about my difficulty, and he told me not to despair. He then said the most important thing that has kept me going since “Don’t worry about your son. I’ll handle him for you. Just go and get your things done”. Also, to my youngest brother, Mohd Ashraf. Like everybody else in the family, he has cared for my son during the many hours I was writing away from home. Not forgetting, to my in-laws and Auntie Eileen, for their caring role and love towards our family, especially to our little boy.

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as a mom and student-researcher. Part of the process also includes our temporary separation and sacrifices, which you eventually accepted and understood as “mommy go to work”. All in all, thank you for growing together with mommy in this journey. And yes, now mommy has a little bit more time to take you on a train ride more often. As they said in your favorite Thomas book, go train, go!

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CHAPTER 1
INTRODUCTION

Much has been written about the growing presence of online learning and online education in higher education institutions. From a statistical perspective, students in online courses exemplify consistent growth in enrollments. Allen and Seaman (2013) tracked the changing course of online education in the US higher education institutions and reported an average annual growth rate of 15.8 percent in students’ online enrollment from the year 2002 to 2011. The same report also indicated that the percentages of students enrolled in at least one online course increased yearly over the last ten years period. In fall 2011, online enrollment at accredited postsecondary institutions in the US made up to 32 percent of the total enrollment, compared to only 9.6 percent in fall 2002. The growing trend in online enrollment continued into 2014, in which Allen and Seaman (2016) reported a 7% growth increase between fall 2012 and fall 2014 enrollments. Due to this continuous growth in online student enrollment, quality online education has become an important priority in higher education practice. In fact, Allen and Seaman (2016) reported as many as 63.3% of chief academic leaders of higher education viewed online education as a critical part of their long-term institutional strategy.

One of the forces that are fueling the growth of online education is the fact that more adults are coming back to higher education to update their knowledge and skills (Luskin & Hirsen, 2010). According to the Digest of Education Statistics (2012) report, an approximately 8.2 millions of adult students (students who are 25 years of age and older)
enrolled into degree-granting institutions in the fall of 2011 (Synder & Dillow, 2013). This number, inclusive of both adult students from the undergraduate and post-baccalaureate levels, represents nearly 42 percent of the total student population in the US degree-granting institutions. When focused on the undergraduate level only, the number breaks down to about 6 millions of adult students. This number represented about 33.5 percent from the total undergraduate enrollment in fall 2011 (Synder & Dillow, 2013). The high number of adult student representation in the overall student demographic situates the adult student population as an important segment in the higher education arena. In fact, this trend in student demographic has expanded the universities’ role in serving more diverse clientele, catering to different groups of working students, mature students, stay-at-home students, traveling students, part-time students, day students, night students, weekend students, and so forth (Salmi, 2001).

As online education becomes the more common form of distance education offered by many higher education institutions, many adult students choose to pursue their education through online offerings. In fact, based on past reports, the majority of online learners were identified as between the age of 25 and 44, which reflected the age range of students who were typically considered as adult learners (Stavredes, 2011). Based on the Noel-Levitiz’s (2013) Priorities Survey for Online Learners (PSOL), from 114, 138 students at 104 institutions, 90 percent of the online students were of 25 of age and above. In addition, 65 percent of them were also students at the undergraduate level. Meanwhile, based on a dataset from distance education in higher education, Aud et al (2011) also reported higher
percentages of distance education undergraduate students whose characteristics are typically considered as adult learners. The report noted that there were higher numbers of distance education students who are older (24 years of age and above), financially independent, married, have dependents, lived off campus, and registered as part-time students. The following Table 1.1 provides an overview on the general profiles of online and distance education students based on previous reports.

In addition, Noel-Levitz’s (2013) survey also reported the factors that influence a learner’s decision to enroll in online courses. Based on the rank of importance, the top three factors were convenience, flexible pacing for completing a program, and the student’s respective work schedule. These factors reflected the typical reasons as to why many adult students chose to participate in online learning. As noted by O’Lawrence (2006), the online and distance education format as the learning structure enable the adult students to take classes with time flexibility, convenience of working from home and/or at work, and allows them to be more in control over the pace of their learning.

In order to meet the demand of a varied group of adult students and rising number in online student enrollment, many institutions have increased their online offering in various academic courses and programs. In fact, the e-learning, distance education, and online formats accounted for one of the largest growth in higher education in the last 10 years, with a majority reported to be from non-traditional (adult) students (Sandmann, 2010). Compared to 34.5 percent of institutions in 2002, approximately 62.4 percent of higher education
institutions had moved from offering only online courses to providing fully online programs by year 2012 (Allen & Seaman, 2013).

Table 1.1

*General Profiles of Online and Distance Education Students*

<table>
<thead>
<tr>
<th>Selected characteristics</th>
<th>Number of students</th>
</tr>
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<tr>
<td><em>Priorities Survey for Online Learners (PSOL)</em></td>
<td><em>Percentages of online students that were surveyed</em></td>
</tr>
</tbody>
</table>
| Age distribution (Noel-Levitz, 2013) | Under 24 – 10%  
25 to 34 – 29%  
35 – 44 – 29%  
45 – 54 – 23%  
55 and over – 6% |
| Class level (Noel-Levitz, 2013) | Undergraduate level – 65%  
Graduate level – 32%  
Other level – 3% |
| Gender (Noel-Levitz, 2013) | Female – 70%  
Male – 30% |
| *The Condition of Education report* | *Percentages of students taking distance education courses from total enrollment (2007 – 2008)* |
| Age (Aud et al, 2011) | 15 through 23 – 15.1%  
24 through 29 – 25.9%  
30 or older – 30.1% |
| Attendance status (Aud et al, 2011) | Exclusively full time – 16.5%  
Exclusively part-time - 24.8%  
Mixed full-time & part-time – 22.3% |
| Dependency status (Aud et al, 2011) | Dependent – 14.3%  
Independent, no dependents, not married – 24.0%  
Independent, no dependents, married – 28.7%  
Independent, with dependents, not married – 25.5%  
Independent, with dependents, married – 33.0% |
The growth of online education has also brought a new learning paradigm in higher education in focusing on new modes of educational delivery; offering new learning domains; shaping new principles of learning, processes and outcomes; and creating new educational roles and entities (Harasim, 2000). From a pedagogical perspective, Harasim spoke of a favorable shift in the learning process where there were increasing efforts in creating active and collaborative online learning environment for the students. This student-centered environment was aimed to foster a high degree of student engagement, autonomy, and interaction during the online learning process.

**Self-Regulated Learning (SRL)**

Self-regulated learning (SRL), a key component of learner autonomy, is a construct of self-regulation that focuses on the academic domain. SRL deals with self-regulation components related to learning, particularly in school or classroom contexts (Dinsmore, Alexander, & Loughlin, 2008; Pintrich, 2000). In a broad definition, SRL refers to a self-directive and active process initiated by the learners to improve their learning performance under different influences and regulation of their cognitive and metacognitive abilities, motivational beliefs, behavioral actions, and/or environmental conditions that affect their learning (Boekaerts, Pintrich, & Zeidner, 2000; Zimmerman & Schunk, 2001). Zimmerman (1998a) also refers to SRL as academic self-regulation, with interest in examining how students become successful learners by transforming their mental abilities into academic skills in order to attain their academic goals. Self-regulated learning processes take place
when students exercise control during learning and regulate their personal (i.e. self-) processes, behaviors, and the immediate learning environment (Zimmerman, 1989).

In his SRL model, Zimmerman (1990a) also distinguishes between self-regulated learning *processes* and self-regulated learning *strategies* use to optimize those SRL processes. The assumption is that all learners will use self-regulatory processes to some degree when acquiring academic knowledge and skills, but may differ in their awareness and willingness to use strategic actions to achieve their academic goals. Zimmerman (1989) refers to these strategic actions as self-regulated learning (SRL) strategies. SRL strategies are defined as “actions and process directed at acquiring information or skill that involve agency, purpose, and instrumentality perceptions by learners” (Zimmerman, 1989, p. 329). Strategies enable students to assume the responsibility to engage in self-regulatory process as efforts to improve their learning. The students’ efforts to regulate learning involve three classes of determinants: personal processes, the environment, and one’s behavior. Within each of the three classes of determinants, Zimmerman (1990a) listed the major sources of personal, behavioral, and environmental influence in the following Table 1.2 (see next page).

It has been found that self-regulatory skills are essential for students in order to be successful in autonomous, student-centered online learning environments (Abrami, Bernard, Bures, Borokhovski, & Tamin, 2011; Dabbagh & Kitsantas, 2004). As the online learning environment primarily shifts the autonomy and responsibility of learning onto the individual learners, self-regulation skills become essential to supporting the students in exercising control and managing their own learning. Self-regulation also considers the importance of
students’ cognitive and metacognitive capabilities, motivation, developmental and social influences, and individual differences in influencing their learning process (McCoombs & Miller, 2007).

Table 1.2

**Determinants of Self-Regulated Learning (SRL)**

<table>
<thead>
<tr>
<th>Personal (self) influences</th>
<th>Behavioral influences</th>
<th>Learning environment influences</th>
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<tbody>
<tr>
<td>Student’s knowledge</td>
<td>Enactment of self-regulatory activities</td>
<td>Physical context</td>
</tr>
<tr>
<td>Metacognitive processes</td>
<td>• Self-observations</td>
<td>Social experiences</td>
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<tr>
<td>Goals or intentions</td>
<td>• Self-judgments</td>
<td></td>
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<tr>
<td>Affective processes</td>
<td>• Self-reactions</td>
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<td>Self-efficacy beliefs</td>
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Based on three years of empirical research, Kerr, Rynearson and Kerr (2006) found that successful online students were generally more self-directed and independent, as well as demonstrated personal responsibility in his or her own learning. They also found that successful online students were motivated to learn and were proficient in their academic skills (i.e. reading, writing, and computer skills). Most of these characteristics are akin to self-regulatory attributes and skills as described by Zimmerman (1994, 1998a). Further, earlier studies have consistently reported a positive association between various aspects of self-regulated learning in enhancing students’ academic performances (Boekaerts, 1997;
Paris & Paris, 2001). Though many previous studies in SRL have mostly been conducted in the K-12 environments (Paris & Paris, 2001), SRL is also becoming a more relevant and important area in higher education (Cassidy, 2011). Cassidy described a “renewed focus on individual differences” (p. 995) that was emerging in higher education. This concern for individual differences in higher education has occurred because of the growth in student diversity and increased diversity in modes of instructional delivery, particularly in the area of information communication technology (ICT). With this changing focus in higher education, SRL has emerged as an important framework to study the diverse nature of students’ differences in terms of their learning styles, academic control beliefs, motivation or perceptions to learning, and their self-monitoring and self-evaluation skills. Current research and discussions are suggesting that self-regulated learning may be an important characteristic for successful and effective online learners in higher education environments.

**Problem Statement**

The existing empirical studies of SRL have been conducted in areas where different motivational, cognitive, and behavioral variables such as task value, self-efficacy, learner’s control, cognitive and metacognitive learning strategies were examined in relation to students’ academic-related performances and outcomes in online learning environments (Artino, 2007a). Similar to previous research findings in traditional classroom settings, most of these studies have also demonstrated the positive linkages of SRL strategies in enhancing online students’ academic performances. Despite the increasing number of SRL studies conducted in postsecondary online education, SRL research in this area has rarely been
examined using adult samples. What have been mainly reported were studies that informed how adult students were driven by different academic motivation, satisfaction, prior experiences, goal orientations, and metacognitive knowledge in their learning process that set them apart from younger students (Dibiase & Kidwai, 2010; Hill & Hannafin, 1997; Justice & Dornan, 2001). All these factors have been recognized in the SRL literature as factors that influenced individual self-regulation and student decisions to use SRL strategies (Zimmerman, 1989). For example, Hill and Hannafin (1997) found that self-efficacy, perceptions of disorientation, metacognitive knowledge, subject knowledge, and system knowledge influenced the strategies used by adult learners during their self-learning process using the World Wide Web. However, there are relatively few studies that examined how adult students engage in self-regulation when learning in online credit courses. One study by Whipp and Chiarelli (2004) has found that adult graduate students were adapting a significant number of SRL strategies from traditional classroom into their online learning environment. While this finding is valuable, there is a need for additional studies to further examine the adult undergraduate students’ SRL process in online learning setting. Addressing this gap in the literature is especially relevant due to a high number of adult undergraduate students that are taking online learning across many higher education institutions (Noel-Levitz, 2013; Stavredes, 2011). Thus, this study contributed to this understanding by studying the self-regulatory process of adult undergraduate students in online credit courses.
Purpose and Focus of the Study

The purpose of this study was to explore the self-regulatory process of adult undergraduate students based on their beliefs and actions when learning in online credit courses. This study was interested in focusing on adult students who were enrolled in online credit courses at a 4-year degree granting institution. This study chose the definition of adult students as conceptually defined by Kasworm (2003). In particular, this study sought participation from adult undergraduate students based on their status of age (defined as twenty-five years of age and older) and met at least one aspect of being in the status of adulthood. The status of adulthood was assumed when a student was identified as responsible for at least one adult role involving work, family, and/or community, in addition to their academic commitments. Through the student’s age, accumulated experiences, and role responsibilities, it was assumed that the student conferred a perspective reflecting maturity and development as an adult. Thus, this study looked at adult students who were at least in their second year of undergraduate degree at a 4-year institution, 25 years of age and above, who either had a family or job commitment or both, and were currently enrolled in online undergraduate credit courses at the time of the data collection. In addition, this study was interested to examine the SRL process from a learning context of a predominantly online course setting. Thus, this research study considered adult students’ participation in online credit courses where 80 percent or more of the course content was being delivered synchronously and/or asynchronously through different media, with typically no face-to-face meetings (Allen & Seaman, 2013; Dabbagh and Bannan-Ritland, 2005).
Research Questions

The following research questions guided this study:

1. What key beliefs do adult students hold about themselves as online learners?
2. How do adult students describe their engagement in the online learning process?
3. What strategies do adult students use to support their online learning?

Theoretical Framework

According to Merriam (2009), a theoretical framework is the “underlying structure, the scaffolding or frame of your study” (p. 66). This study utilized Zimmerman’s (1989, 2000, 2002) social cognitive model of self-regulated learning (SRL) as the theoretical framework. This SRL model was based on Bandura’s (1986) social cognitive theory, where the key elements were derived from the triadic model of reciprocal determinism (Zimmerman, 1990a). Based on this SRL model, this study broadly explored the personal, behavioral, and environmental functioning of the adult students during a self-regulatory process based in their beliefs and actions while learning online. Zimmerman’s triadic model of self-regulation is presented in Figure 1.1.
Several key understandings of the social cognitive model of SRL informed the direction of this study. First, under the model’s triadic framework, the SRL process is viewed to be influenced by the interrelationships between personal, behavioral, and environmental factors. Zimmerman (1989) speaks of these personal, behavioral, and environmental factors as determinants of self-regulated learning (SRL). Each determinant subsumes several sub-influences that reciprocally shape a learner’s self-regulatory process (see Table 1.2). Therefore, this study broadly considered the dynamic presence of these triadic influences among the adult students when examining for their individual self-regulation in the online
learning process. Secondly, while engaging in SRL processes, the students are expected to be active participants and have some level of control in their own learning process (Pintrich, 2000). Thus, the SRL model assumes the importance of student’s personal beliefs in motivating and initiating their own self-regulatory efforts in learning. The social cognitive theory asserts that that “what people think, believe, and feel, affects how they behave” (Bandura, 1986, p. 25). Therefore, this study sought to explore the online adult students’ beliefs associated with their self-regulation to further explore the potential connection as illustrated in the social cognitive model of SRL. Thirdly, all learners are assumed to engage in the self-regulation process in varying degrees, based on the extent of their SRL strategies (Zimmerman, 1990b). Zimmerman (1989) defines self-regulated learning strategies as “actions and processes directed at acquiring information or skill that involve agency, purpose, and instrumentality perceptions by learners” (p. 329). Therefore, the study assumed that all adult students in this study were self-regulating individuals, in which their SRL strategies were explored to help understand the nature of their online self-regulatory actions. The key purpose for explicating these SRL strategies was to understand how adult undergraduate students improved their (a) personal functioning, (b) academic behavioral performance, and (c) learning environment using SRL strategies when learning in online credit courses. In addition, the social cognitive model also positions SRL as a situationally specific process (Zimmerman, 1989). This understanding implies that SRL differs depending on the learning context, and that learners are not expected to be equally self-regulatory in all learning domains. Rather, learners must be willing to adapt the SRL process to fit a specific
learning domain and feel efficacious about doing so (Schunk, 2001). As stated by Bandura (1986) “the relative influence exerted by the three sets of interacting factors (personal, behavioral, and environmental) will vary for different activities, different individuals, and different circumstances” (p. 24). Therefore, the inclusion of context (i.e. the online course setting) was strongly emphasized in this study in order to enrich the understanding of the adult students’ self-regulatory process when learning in online credit course setting.

The decision to anchor this study based on the social cognitive model of SRL was grounded in two reasons. The first reason was because the social cognitive model considers the importance of context in explicating the SRL process during learning. This inclusion was particularly important because of this research’s interest in understanding the adult student’s self-regulatory process in online learning context. The previous distance education literature has demonstrated the applicability and adaptability of social cognitive models of SRL as a framework for studying the online and Web based learning processes (e.g. Hodges, 2005; Miltiadou, & Savenye, 2003; Wang & Lin, 2007; Whipp & Chiarelli, 2004). As alluded by Artino (2007a) through his literature review on SRL research in online education, “a social cognitive perspective on self-regulation, which addresses the interrelationship between the learner, the learner’s behavior, and the social environment, appears to lend itself well to an understanding of how successful learners function in online situations” (¶ 11). In addition, the social cognitive model of SRL is a comprehensive model that covers different areas in self-regulation that concern cognition, motivation, behavior, and context of learning, thus
making it the most applicable model of SRL across different settings (Panadero & Alonso-Tapia, 2014).

**Significance of the Study**

With a combined interest in online learning, self-regulated learning, and the adult undergraduate student population, this study sought to provide various theoretical and practical contributions to the literature. First of all, this study has informed the current research on the self-regulatory process and SRL strategies used by the adult undergraduates in online credit courses. Current literature has not adequately considered adult participation in online environments and self-regulation (Hodges, 2005), since previous SRL studies were mostly conducted in K-12 settings and from traditional classroom environments (Boekaerts, 1997; Paris & Paris, 2001).

Furthermore, this study also extended the understanding of how adults engaged in online learning environments from the perspective of self-regulated learning. Previous research relied heavily on self-directed learning (SDL) literature to direct inquiry about adult students’ engagement in online learning context. While many studies have demonstrated the relevance of self-directed learning in online learning context, Long (1989) asserts that most SDL models in adult education literature lack focus in addressing the psychological dimension of self-directed learning. Long argued that the psychological dimension of SDL, which addresses “the degree to which the learner, or the self, maintains active psychological control of the learning process” (p. 3), is indeed a critical dimension in self-directed learning. Learners who are psychologically in control of their learning can still be self-directed in
pedagogical controlled conditions, but not necessarily otherwise. To address this lack of psychological focus in SDL research, Garrison (1997) suggested that a similar learning process can also be examined from the perspective of self-regulated learning. Thus, the theoretical focus of this study contributed to both the body of knowledge in self-regulated learning and adult education literature.

Both instructors and adult students may also benefit from this study’s findings. Various studies have demonstrated that self-regulated learning positively affects learning outcomes in online learning environments (Artino, 2007a; Barnard, Paton, & Lan, 2008; Puzziferro, 2008; Yukselturk & Bulut, 2007). In addition, previous studies have also shown that SRL skills can be taught and developed (Boekaerts, 1997; Pintrich, 1995) and can even be enhanced by effective use of technological teaching tools (Kauffman, 2004). Thus, an understanding of the online adult students’ self-regulatory process and their SRL strategies may guide online instructors in improving their teaching practices and instructional designs of their online courses to better serve the online adult students’ learning needs. Furthermore, findings of this study, especially related to online SRL strategies, may provide valuable scaffolding information to guide adult students, especially beginner online adult students, to improve and support their own learning in online course settings. By encouraging and fostering the development of self-regulatory attributes among the adult students, both instructors and students can benefit from the potential academic improvements in online learning courses and programs offered across many higher education institutions.
Chapter Summary

The aim of this study was to explore the adult undergraduates’ self-regulatory process based in their beliefs and actions when learning online. This study utilized the social cognitive model of self-regulated learning as proposed by Zimmerman (1989, 2000, 2002). With increasing number of online classes and programs offered in the higher education institutions and a high percentage of adult students’ enrollment in online learning courses, this study sought to provide various theoretical and practical contributions to researchers, instructors, instructional designers, and adult students alike.
CHAPTER TWO

LITERATURE REVIEW

Current literature highlights the relevance of self-regulated learning (SRL) in enhancing students’ academic performances (Boekaerts, 1997; Lindner & Harris, 1993; Paris & Paris, 2001; Pintrich & De Groot, 1990). Research also advocates for the importance of self-regulated learning strategies in supporting student autonomous learning, particularly in online learning environments (Artino, 2007a; Bol & Garner, 2011; Dabbagh & Kitsantas, 2004; Hodges, 2005; Whipp & Chiarelli, 2004). However, current research concerning SRL and online learning are mostly dominated by studies based on the perspective of young adult (traditional) students (Artino, 2007a; Ke & Xie, 2009; Kee, 2010; Yoo & Huang; 2013).

Although the adult (nontraditional) students have been identified as the primary audience in the online learning environment (Aud et al, 2011; Noel-Levitz, 2013), very little research has been done to study the online self-regulatory process from an adult student perspective. This research filled the literature gap by contributing research on the self-regulatory process used by the adult undergraduate students in online credit courses.

The literature review on this topic was conducted in three related key areas: online learning, self-regulated learning, and adult undergraduates in higher education. The aims of this literature review were threefold. The first aim was to establish the contextual background of this study in relation to online and distance education in higher education. The second aim of this review was to provide an overview of the SRL literature and present the theoretical framework that was used to guide the study. Additionally, related research on SRL in online...
learning context was also reviewed. Meanwhile, the final section of this review presented the definition and characteristics of adult undergraduate students in higher education. Comparative studies between the adult and younger undergraduate students, and research related to online learning and learning strategies among the adult undergraduate students were also discussed. The general purpose of this chapter was to connect these three bodies of literature and establish the theoretical and empirical foundations of this study. In addition, the analysis of this literature review was intended to provide an understanding of the gaps in the literature in which the study seeks to address.

**Distance Education & Online Learning in Higher Education**

Although this study chose to focus on online learning, a brief discussion on distance education is presented in order to relate its historical connection and overlapping terms with online learning. Historically, distance education emerged from a philosophical commitment to provide educational access to those who were otherwise excluded from such opportunities (Larreamendy-Joerns & Leinhardt, 2006; Gunawardena & McIsaac, 2004; Shale, 2010). In higher education, distance education was first introduced as correspondence education through programs like home study and university extension (Harting & Erthal, 2005; Moore & Kearsley, 1996). These programs typically offered educational opportunities to students who could not afford to be in full time residence at an educational institution for various geographical and financial reasons. Since the early 1980s, distance education has evolved from its early correspondence form to sophisticated learning environments supported by various instructional technologies (Gunawardena & McIsaac, 2004).
As the practice evolved, the definitions and understandings of distance education have also shifted to reflect the development in its learning structure and instructional deliveries. However, several characteristics have remained central in the evolution of definitions of distance education. The first characteristic focused upon the element of student-teacher separation in either space or time as a fundamental concept that distinguishes distance education from face-to-face instruction (Keegan, 1986; Moore, 2003, Moore & Kearsley, 1996; Simonson, Smaldino, Albright, & Zvacek, 2012). The next integral characteristic of distance education has been the use of media to mediate a two-way communication during the distance learning process, using either print, electronic, or other technologies (Garrison & Shale, 1987; Keegan, 1986; Moore, 2003; Moore & Kearsley, 1996; Simonson, Smaldino, Albright, & Zvacek, 2012). In addition, distance education has been institutionally based and represented a learning experience between learners and instructors, thus differentiating the concept of distance education from self-study (Simonson, Smaldino, Albright, & Zvacek, 2012). In Moore’s (2003) view, distance education has been the generic term used to describe “all forms of education in which all or most of the teaching is conducted in a different space other than the learning, with the effect that all or most of the communication between teachers and learners is through a communication technology” (p. xiv). Moore also asserted that different terms may also reflect the subordinate concepts used in distance education. For example, the term e-learning has referred to the use of a particular (electronic) communication technology in teaching and learning.
One of the keys to understanding the evolution of distance education is by examining the development in communication technologies used in delivery of distance education (Archer & Garrison, 2010; Gunawardena and McIsaac, 2004). The various communication tools used in distance education have included print, broadcast media such as radio and TV, audio and videoconferencing technologies, to computer and the Internet (Gunawardena & McIsaac, 2004). Archer & Garrison (2010) distinguished between three different generations of distance education based on these types of communication and the technologies that were used to support it. Generation 1 is described as slow asynchronous distance education. During this generation, print-based correspondence education and radio and television broadcasting were the major instructional supports. The primary goal of distance education during this generation was to address the barriers of distance and time that otherwise prevented the students from taking part in the educational process. Following the introduction of audio and video conferencing, these new technologies have paved a new way for Generation 2 of synchronous distance education to emerge. This type of distance education allowed students and instructors to participate in classes simultaneously from different location (hence, the term synchronous). This arrangement supported for two-way communications to take place more efficiently and provided better support for group meetings and exchange of educational materials. Initially, the operating cost to support this form of communication was very expensive. This synchronous conferencing only became a feasible instructional delivery option in distance education after the introduction of home computer and the Internet. Meanwhile, Generation 3 of fast asynchronous distance education
offered ways of combining both the advantages of Generation 1 and Generation 2 while minimizing some of the drawbacks. This form of communication involves “electronic transmission of learners and facilitators’ contributions to a learning event into a central server, where materials are stored in a systematic way so that they can be accesses easily by other participants at any time” (Archer & Garrison, 2010, p. 322). With the advent of Internet access and introduction of the World Wide Web, this form of distance education has become a widely accepted practice among the education community (Archer & Garrison, 2010; Harasim, 2000). Distance education even obtained new terms such as e-learning and online learning to reflect the electronic components in its learning structure and instructional deliveries. In fact, the exponential growth of various forms of instructional technologies has resulted in a paradigmatic shift in overall educational practices. Higher institutions are now designating online learning as both an on-campus instructional alternative and also a form of distance education (Larreamendy-Joerns and Leinhardt, 2006).

**Online Learning: The Understanding of Terms and Related Definitions**

To focus upon the key literature for this study, it is helpful to seek clarity between similar terms used in conjunction with online learning. Commonly employed terms in the literature include online education, e-learning, Internet learning, distributed learning, blended learning, networked learning, flexible learning, tele-learning, virtual learning, computer-based learning, web-based learning, mobile learning, open learning, and distance learning (Ally, 2004; Pachler & Daly, 2011; Mason & Rennie, 2006). An effort to distinguish some of these terms has been conducted by Moore, Dickson-Dean, and Galyen (2011). They
developed a survey to examine how online learning participants perceived three related terminologies together: distance learning, e-learning, and online learning. In general, most of the participants perceived that there were differences between the three terms. Distance learning was generally viewed as the older form of learning and included no form of face-to-face meeting. While both online learning and e-learning environments were similarly associated with the use of Web tools and the Internet, there were some variations in how the participants thought these terms differed. For example, in terms of hierarchical organization, some participants viewed e-learning as the broader term, in which online learning was considered as a sub-component of e-learning. In terms of media type, some participants perceived that online learning was more exclusively offered via the Internet and Web-based environments, whereas an e-learning environment may also include the use of older electronics and multimedia devices such as CD-ROMs. In conclusion, Moore, Dickson-Deane, and Galyen (2011) noted the inconsistencies in how these terms were perceived and used by both the survey participants and authors in the literature. However, given the diverse nature of all learning environments, Moore, Dickson-Dean, and Galyen pointed out that these inconsistencies were not surprising. The more important matter was for researchers and authors to selectively choose and sufficiently describe their selected term based on the context of their research and learning environment. This articulation was critical considering the profusion of terms involved in both distance education and online learning settings.

While their findings are limited, Moore, Dickson-Dean, and Galyen’s (2011) survey offer a valuable way to categorize the meanings and differences in terminologies used across
the online learning literature. They suggest looking at the differences from hierarchy organization, type of media used, the correspondence and interaction aspects of the learning environment, and the type of access (whether it can be considered on campus or off campus, remote or non-remote, or a type of blended learning). As observed by Mason and Rennie (2006), the meanings of these terms lie in the way in which the user conceptualizes the field. From a hierarchy organizational standpoint, the differences focus upon which term is the overarching ones containing other practices as a subset. For example, Mason and Rennie (2006) view distributed learning as the broader term that includes both components of distance and online education, as well as blended and face-to-face learning. Meanwhile for Nichols (2003), he speaks of e-learning as a means of education as opposed to a mode of education. Therefore, in Nichols’s (2003) view, e-learning can be incorporated into both face-to-face delivery or distance education learning settings.

There are also differing views on whether e-learning and online learning could be considered as a type of distance learning. Most definitions of e-learning in the literature are less concerned about learning at distance; rather they are more concerned about forming the best and most appropriate ways of promoting effective learning (Mason & Rennie, 2006; Nichols, 2003; Pachler & Daly, 2011; Wagner, 2001). The letter “e” in e-learning typically stands for “electronic” (Pachler & Daly, 2011, p. 11), and may refer to a wide range of technology applications, strategies, and tools. Thus, e-learning may include a wide spectrum of instructional activities involving the use of electronic media, to include computer-based training (CBT), course management software (CMS) or learning management system (LMS),
computer-managed instruction (CMI), computer mediated conferencing, virtual learning environment (VLE), and online distributed learning (Pachler & Daly, 2011; Wagner, 2001). As explained by Mason and Rennie (2006), several approaches can be used to develop and deliver e-learning— from supporting learning, to creating blended learning, and to learning that is delivered entirely online. The latter is usually referred to as online learning and is considered as one form of e-learning. This understanding is primarily why it is common to see the term e-learning being used synonymously with the term online learning.

As observed by Moore, Dickson-Dean, and Galyen (2011), the term “online learning” (p. 130) is the most difficult to define due to the differing views on how the term is being used in the literature. For some, the term online learning is being used to describe a learning situation or a mode of study that is wholly online (Allen & Seaman, 2013; Simonson, Smaldino, Albright, & Zvacek, 2012). Another common perspective is to view online learning as a subset of distance education (Moore, 2003) or as the newer, improved version of distance learning (Dabbagh & Bannan-Ritland, 2005; Hiltz & Turoff, 2005). As explained by Rudestam and Schoenholtz-Read (2010), some educational institutions were previously relying on individually directed study, mail, telephone, and/or infrequent residential sessions for contact between students and instructors, before they had come to adopt a strong online presence in delivering their instruction. This transition resulted in the term online learning being used to denote the newly improved distance learning courses offered by these educational institutions. Meanwhile, Dabbagh and Bannan-Ritland (2005) has explicated their definition of online learning as “an open and distributed learning environment that uses
pedagogical tools, enabled by Internet and Web-based technologies, to facilitate learning and knowledge building through meaningful action and interaction” (p. 15). In their focal understanding of online learning, the concept of distance is relatively unimportant and is not limited to the physical separation of the learner and the instructor. Instead, they spoke of teaching and learning events in online learning as a distributed process. A distributed learning process occurs across time and place, and may takes place synchronously and/or asynchronously through supports of different media. These understandings are particularly important to support the existing practices of online learning as both instructional alternatives to on-campus teaching and off-campus distance learning.

Overall, the literature has demonstrated how the related terms and definitions of online learning are largely intertwined with the technological development used to support the learning process. In fact, it was pointed out by Larreamendy-Joerns and Leinhardt (2006) that online learning is more suited to be considered as “an emerging field that lies at the junction of distance education, human-computer interaction, instructional technology, and cognitive science” (p. 568). The development of online learning has not only affected the instructional deliveries in teaching and learning, but has also been associated with a paradigmatic shift in higher education institutions due to its significant growth. As concluded by Harasim (2000), “the convergence of the computer network revolution with profound social and economic changes has lead to a transformation of education at all levels” (p. 59).
Online Learning: Emerging Contextual Framework for Research in SRL

This study’s contextual focus was driven by the growth of online learning and the related paradigmatic shift in teaching and learning that took place in higher education institutions as a result of the growth. As reported by Allen and Seaman (2013), online enrollment at accredited postsecondary institutions in the US is approximately 32 percent of the total enrollment in fall 2011, compared to only 9.6 percent in fall 2002. At the same time, the numbers of institutions that are supporting online learning are also growing. Compared to 34.5 percent in 2002, as high as 62.4 percent of higher education institutions in 2012 have moved from offering only online courses to providing complete online programs (Allen & Seaman, 2013).

In Hanna’s (2003) observation, the changes in the traditional structure of higher education began with the inculcation of distance education practices. Hanna asserts that when distance education was first adopted as part of the universities’ practice, changes mostly occurred from procedural and technological aspects. These types of changes included practices such as universities developing new units for delivering distance learning courses or changing the instruction delivery modes without altering the content (procedural change). Another change included replacing the use of older technologies (technological change), such as print, radio and TV, to a more recent technology, like satellite television and teleconferencing network. The transformational change in higher education began to occur following the vast development of the Internet. Hanna notes (2003) “These changes are more than simple procedural changes or ways of conducting business; they represent fundamental
shift in values, assumptions, and missions and will result in new cultural assumptions and understandings over time” (p. 75). The Internet not only affected the teaching and learning practices in higher education, but also the ways universities administrated their operations. As a result of this systemic shift, the universities were expected to equip their environments with Internet access and network systems. The readily available facilities have since fueled more efforts to integrate online components into teaching and learning. As online teaching became a common practice in higher education, the distinction between on-campus learning and distance learning has gradually blurred.

With this integration of online components to support both on-campus and distance learning, new modes of educational delivery have also emerged. Current online education in post-secondary institutions can be distinguished by three primary modes of deliveries (Allen & Seaman, 2013; Harasim, 2000). The first one is referred to as the adjunct mode or Web-facilitated, where computer networks and/or Web-based technologies are used to provide enhancement to the classroom activities, but is not considered a part of the course requirements. This first mode of delivery is usually in face-to-face courses that have moved online with the help of a course management system (CMS), and includes the use of emails and computer conferencing to manage course administrative procedures such as distributing course syllabus, assignment information, and supplementary notes. For this type of delivery, the proportion of content that is being delivered online is estimated between 1 – 29% (Allen & Seaman, 2013). Mixed mode delivery is when the networking activities is integrated into the course curriculum and informs some part of the course grade, usually between the ranges
of 30% to 79% (Allan & Seaman, 2013). This type of online delivery is also known as the blended or hybrid learning, and typically uses online discussions and has reduced face-to-face meetings. The third mode is known as the online mode, where all course components are structured to represent between 80% to totally online with typically no face-to-face meetings (Allen & Seaman, 2013). Variations in this delivery mode come with the combination of synchronous and asynchronous classroom activities, where the media are heavily mediated by various computer-networking technologies. A virtual classroom is an example of this delivery mode. Dabbagh and Bannan-Ritland (2005) described the virtual classroom as a formal online learning environment that resembles a classroom environment, but without the face-to-face meeting.

As pointed out by Larreamendy-Joerns and Leinhardt (2006), one of the most promising contributions of online education is its contribution to the advancement in the scholarship of teaching. The recent development in Web pedagogical tools has allowed courses to be designed with the combination of the following attributes: (1) many-to-many (group communication); (2) any place (place-independence); (3) any time (synchronicity, time-independence); (4) text-based (enhanced by multiple media); and (5) computer-mediated messaging (Harasim, 2000). By combining these five attributes together, educators are presented with numerous options for integrating teaching technologies into their courses. In addition, new principles, processes, and learning outcomes have emerged, where there is an increased attention in creating more collaborative, active, and constructive learning environments. In particular, constructivist-based instruction has become one of the more
major influences upon online learning (Alonso, Lopez, Manrique, and Vines, 2005; Tam, 2000). Ultimately, these emerging teaching approaches and new learning principles have led to a pedagogical paradigm shift in many higher education institutions (Harasim, 2000). For example, both Barr and Tagg (1995) and Alonso, Lopez, Manrique, and Vines (2005) have spoken of the paradigm change in higher education as moving from a teaching paradigm (providing instruction) to a learning paradigm (producing active learning).

Meanwhile, from a technological standpoint, Brown (1990) has also reported on a pedagogical shift that took place from “seeing technology as a cognitive delivery system to seeing it as means to support collaborative conversations about a topic and the ensuing construction of understanding” (p. 269). For example, according to Adams and Morgan (2007), the first generation of e-learning tended to be technologically driven and was essentially more focused on transferring traditional classroom instruction into an online environment. It placed the instructor-in-control of the entire learning process, and paved a pre-determined, usually linear learning path for the learners. This first-generation approach worked well in the realm of technical training where the focus was on memory-based learning and preparing to pass information-based tests. However, this approach was found to be limiting in areas where learning depended on the detailed nature of problems and required learners to engage in critical thinking and reflective learning. The second generation of e-learning emerged to address this shortcoming, where the practice was grounded on the idea of putting learners in control of their learning by “configuring highly granular content for use in a non-linear fashion – in whatever way the learner chooses to learn” (Adams & Morgan,
In this sense, it was observed that the pedagogical implications of online learning were slowly shifting the positivist traditions in educational institutions to a more constructivist approach (Rudestam and Schoenholtz-Read, 2010). Overall, there has been an academic trend in higher education of instruction becoming more learner-centered, nonlinear, self-directed and accommodating (Howell, Laws, Williams, & Lindsay, 2006).

While it is not within the scope of this study to discuss the distinctions between active learning, collaborative learning, and constructivist learning, these student-centered learning approaches are often wedded to innovative instructional designs and rich learning environments. Due to this paradigm shift where institutions are offering more rich e-learning environments, studies of self-regulated learning (SRL) have become increasingly valuable in higher education (Cassidy, 2011). Particularly in the constructivist-based approach, course instruction has been designed to foster active and meaningful participation from the learners during the learning process. Due to the autonomous nature of this learning environment, there are significant needs for the students to engage in numerous self-regulatory processes such as goal-setting, planning, self-evaluation, and metacognitive monitoring and regulation (Azevedo, Behnagh, Duffy, Harley, and Trevors, 2012; Dabbagh & Kitsantas, 2004). In addition, the constructivist teaching approach is also interested to tap into the learner’s cognitive processes, self-reflective skills, and the learning process itself (Vrasidas, 2000). Thus, the SRL framework has been identified as a useful framework for research examining online learners due to its emphasize on learner control in managing one’s own learning process (Artino, 2007a; Dabbagh & Kitsantas, 2004; Hodges, 2005; Whipp & Chiarelli,
Against this emerging backdrop of rich and innovative online learning environments, this study connected in these conceptual perspectives by framing this research through the lens of self-regulated learning.

**Self-Regulated Learning (SRL)**

There is a broad literature that governs the areas of self-regulation and self-regulated learning. Self-regulated learning, or academic self-regulation, is considered the sub-component of self-regulation that focuses on the academic domain (Dinsmore, Alexander, & Loughlin, 2008; Pintrich, 2000; Zeidner, Boekaerts, & Pintrich, 2000; Zimmerman, 1994, 1998). When situating self-regulated learning (SRL) within the broader literature of self-regulation, Pintrich (2000) refers to SRL as “the application of general models of regulation and self-regulation [related] to issues of [academic] learning” (p. 451). In general, theories of self-regulated learning (SRL) attempt to explain how people improve their learning performance using a systematic method of learning that is part of one’s successful learning (Boekaerts, 1999; Zimmerman & Schunk, 2001). In addition, theories of SRL are also looking at how students acquire the capabilities to self-regulate through the different influences of cognitive and metacognitive abilities, behavioral actions, motivational and emotional processes, and/or contextual conditions (Boekaerts, Pintrich, & Zeidner, 2000; Martin & McLellan, 2008; Zimmerman & Schunk, 2001).

Overall, the self-regulation literature has identified SRL as a multidimensional process involving an extensive mix of constructs (Boekaerts, 1999; Martin & McLellan, 2008; Pintrich, 2000; Schunk & Ertmer, 2000; Zeidner et al, 2000; Zimmerman, 2000). To
illustrate the multiple constructs and processes involve in SRL, Schunk and Ertmer (2000) offer the following description:

Self-regulation comprises such processes as setting goals for learning, attending to and concentrating on instruction, using effective strategies to organize, code, and rehearse information to be remembered, establishing a productive work environment, using resources effectively, monitoring performance, managing time effectively, seeking assistance when needed, holding positive beliefs about one’s capabilities, the value of learning, the factors influencing learning, and the anticipated outcomes of actions, and experiencing pride and satisfaction with one’s efforts (p. 631).

The multidimensional scope in SRL has allowed research studies in this area to be examined from different vantage points and understandings (Boekaerts, 1999; Zimmerman, 1998a). For example, Boekaerts (1999) states that research in SRL has been informed by three school of thoughts: (1) research on learning styles; (2) research on metacognition and regulation styles, and (3) theories of the self, including goal directed behaviors. Research on learning styles has provided information about the typical way students learn and the quality of their self-regulation process. Research on metacognition and regulation styles has extended the understanding of the students’ ability to direct their own learning process, mainly involving their cognitive processing and metacognitive knowledge. Meanwhile, research on goal directed behaviors has contributed to studies regarding student’s involvement and their commitment to their chosen goals, including the understanding of their motivations, or lack
thereof, in terms of why they chose to do certain things or not. Taken together, these three bodies of research have mainly shaped the key understandings of SRL research in the literature.

The SRL literature also recognizes that self-regulated learning can be understood from different theoretical perspectives (Zimmerman & Schunk, 2001). Zimmerman and Schunk provide comprehensive descriptions of seven major theoretical perspectives that are guiding the literature on self-regulated learning. These theoretical perspectives include SRL theories based on: an operant theory, a phenomenological view, a social cognitive view, an information processing theory, a volitional perspective, a Vygotskian perspective, and a constructivist view. In order to provide distinctions between these seven theoretical perspectives of SRL, Zimmerman (2001) suggests looking at the differences in how each perspective emphasizes the issues of motivation, self-awareness, key processes, social and physical environment, and the act of acquiring capacity (note Table 2.1). For example, from a motivational aspect, the operant theory of SRL linked a learner’s motivation to external reinforcing stimuli, while the phenomenologists perceived the learner’s self-actualization as the ultimate source of motivation during a self-regulation process. In addition, the focus of each perspective is also influenced by its theoretical orientation. For example, operant SRL models are originated from the behaviorist orientation, thus tending to focus more on the overt behavioral actions and external reinforcements when looking at a self-regulation process (Mace, Belfiore, & Hutchinson, 2001). In comparison, SRL perspectives that are derived from the cognitive information processing theories are more concerned about the
knowledge structures, cognitive operations, and metacognitive strategies during self-regulation (Winne, 2001; Winne & Hadwin, 1998).

While differing in their theoretical orientations, most of these SRL perspectives operate through a common set of learning assumptions (Pintrich, 2000). The first assumption is described as the active, constructive assumption, where learners are assumed to be active participants in constructing their own meanings, goals, and strategies during the learning process. SRL theorists view learners as active contributors of their own learning process, rather than being passive recipients of information during learning (Schunk, 2001). The second assumption refers to the potential for control assumption, where SRL theories expect that learners have some level of control in certain aspects of their cognition, motivation, and behavior, as well as some abilities to modify the elements of their learning environments. The assumption for control is important because self-regulation is not a study of mental ability or an academic skill, but more about understanding how learners exercise control in a self-directive process by transforming their mental abilities into academic skills (Zimmerman, 1998b, 2002). The third assumption is about having some kind of goal, criterion, or standard assumption during the learning process. This assumption is another key in self-regulation as it will allow learners to continuously monitor, adapt, and regulate their learning process in order to meet their desired goal and/or standard (Schunk, 1990). The last common assumption speaks of self-regulatory activities as the mediators between individual characteristics, environments, and actual achievement and performance. This assumption recognizes the multi-influences of individual’s personal characteristics, beliefs,
and contextual conditions during a learning process, in which through the means of engaging in self-regulatory activities, the learning outcomes and performances can be enhanced. Based on these four assumptions, Pintrich (2000) provides the working definition of self-regulated learning as:

An active, constructive process whereby learners set goals for their learning and then attempt to monitor, regulate, and control their cognition, motivation, and behavior, guided and constrained by their goals and the contextual features in the environment. These self-regulatory activities can mediate the relationships between individuals and the context, and their overall achievement. (p. 453)

Meanwhile, Zimmerman (2001) characterizes the definitions of SRL based on the roles of self-regulated learners. In his view, an SRL definition is about understanding how self-regulated learners generate their thoughts, feelings, and actions in order to attain their learning goals. According to him, “most definitions require the purposive use of specific processes, strategies, or responses by students to improve their academic achievement” (Zimmerman, 2001, p. 5). Zimmerman further adds that precise definitions of SRL tend to vary depending on the researcher’s theoretical perspective. Because every perspective emphasizes a different focus in its key SRL processes, there is a need for researchers to articulate which SRL perspective that they have chosen to inform their studies (Azevedo, 2009).
Table 2.1

A Comparison of Theoretical Views Regarding Common Issues in SRL

<table>
<thead>
<tr>
<th>Theories</th>
<th>Motivation</th>
<th>Self-Awareness</th>
<th>Key Processes</th>
<th>Social &amp; Physical Environmental</th>
<th>Acquiring Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operant</td>
<td>Reinforcing stimuli are emphasized</td>
<td>Not recognized except for self-reactivity</td>
<td>Self-monitoring, self-instruction, and self-evaluation</td>
<td>Modeling &amp; reinforcement</td>
<td>Shaping behavior and fading adjunctive stimuli</td>
</tr>
<tr>
<td>Phenomenological Information Processing</td>
<td>Self-actualization is emphasized Motivation is not emphasized historically</td>
<td>Emphasize role of self-concept Cognitive self-monitoring</td>
<td>Self-worth and self-identity Storage and transformation of information</td>
<td>Emphasize subjective perceptions of it Not emphasized except when transformed to information</td>
<td>Development of the self-system Increases in capacity of system to transform information</td>
</tr>
<tr>
<td>Social Cognitive</td>
<td>Self-efficacy, outcome expectations, and goals are emphasized</td>
<td>Self-observation and self-recording</td>
<td>Self-observation, self-judgment, and self-reactions</td>
<td>Modeling and enactive master experiences</td>
<td>Increase through social learning at four successive levels</td>
</tr>
<tr>
<td>Volitional</td>
<td>It is a precondition to volition based on one’s expectancy/values</td>
<td>Action controlled rather than state controlled</td>
<td>Strategies to control cognition, motivation, and emotions</td>
<td>Volitional strategies to control distracting environments</td>
<td>Ac acquired ability to use volitional control strategies</td>
</tr>
</tbody>
</table>
Table 2.1 Continued

<p>| Common Issues in Self-Regulation of Learning (SRL) |
|-----------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>Motivation</th>
<th>Self-Awareness</th>
<th>Key Processes</th>
<th>Social &amp; Physical Environmental</th>
<th>Acquiring Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vygotskian</td>
<td>Not emphasized historically except for social context effects</td>
<td>Conscious of learning in the zone proximal development (ZPD)</td>
<td>Egocentric and inner speech</td>
<td>Adult dialogue mediates internationalization of children’s speech</td>
</tr>
<tr>
<td>Constructivist</td>
<td>Resolution of cognitive conflict or a curiosity drive is emphasized</td>
<td>Metacognitive monitoring</td>
<td>Constructing schemas, strategies, or personal theories</td>
<td>Historically social conflict or discovery learning are stressed</td>
</tr>
</tbody>
</table>

The Social Cognitive View of Self-Regulated Learning (SRL)

The theoretical focus for this study was based on the social cognitive perspective of SRL. This section discussed the key theoretical elements of the social cognitive model of SRL as explicated by Zimmerman (1989, 2000, 2002). This particular SRL model was primarily based on Bandura’s (1986) work on social cognitive theory. Zimmerman (1989), who is the major proponent of the SRL model in social cognitive perspective, compared his model to the behavioral and pure cognitive views, where he asserts the following:

In comparison with purely SRL behavioral views, the proposed social cognitive account is less parsimonious because it includes numerous person (self) processes. In comparison with purely cognitive approaches, a social cognitive view is more restrictive insofar as it does not focus on mental phenomena unless they are manifested overtly in some form during social and behavioral functioning (p. 337).

One of the distinctive features of this social cognitive model of SRL is on its triadic model of self-regulation. It is based on Bandura’s (1986) triadic view of reciprocal determinism, where “behavior, cognitive and other personal factors, and environmental influences all operate interactively as determinants of each other” (p. 23). The central understanding in this model is that self-regulated learning is “not determined merely by personal processes; rather these processes are assumed to also be influenced by environmental and behavioral events in reciprocal fashion” (Zimmerman, 1989, p. 330) (The
formulation of Zimmerman’s (1989) triadic model of self-regulation is presented in Figure 2.1.)

![Triadic Analysis of Self-Regulated Functioning](image)


In Figure 2.1, Zimmerman (1989) depicts the relationship between three domains of self-regulation: *personal, behavior, and environment*. The model does not only reflect the triadic relationship, but also the reciprocal interactions between the three domains, which are of importance in Bandura’s (1986) view of the social cognitive theory. As asserted by Bandura, “social cognitive theory favors a conception of interaction based on triadic reciprocality” (p. 23). Covert self-regulation is placed inside the triadic model to indicate that
a person’s covert processes (such as metacognitive processes and self-efficacy) are also in a reciprocal nature with all the three domains of self-regulated learning.

**Key elements of the social cognitive model of SRL.** Building from Bandura’s (1977) earlier work on social learning theory, the social cognitive model includes broad elements of vicarious and enactive learning (Bandura, 1986; Schunk, 2001). Vicarious learning is learning through observation, also known as observational learning. Bandura (1986) asserts that much of human learning occur by vicariously observing others, where “the learning may take varied forms, including new behavior patterns, judgmental standards, cognitive competencies, and generative rules for creating behaviors” (p. 49). Meanwhile, enactive learning involves learning from the consequences of one’s action (learning by doing). How this view differs from the operant conditioning theory is in the interpretations of those behavioral consequences. Social cognitive theory contends that behavioral consequences serve as sources of information and motivation rather than as reinforcement of learning (Schunk, 2001). In social cognitive model, the view of knowledge is not limited to the learner’s acquired cognitive knowledge and metacognitive skills, but also when individuals performed previously learned skills (behavioral skills). Bandura (1986) distinguished cognitive learning from behavioral performances, because he contends that people can acquire knowledge that they may not demonstrate at the time of learning.

Another essential element of the social cognitive theory is on the importance of human agency, particularly through the exercise of self-efficacy and goal setting (Bandura, 1989; Schunk, 1990; Zimmerman, 1989). Bandura (1986) defines perceived self-efficacy as
“people’s judgments of their capabilities to organize and execute courses of actions required to attain designated types of performances” (p. 391). The self-efficacy mechanism plays a central role in the exercise of personal agency (Bandura, 1986, 1989, 1991). Self-efficacy beliefs affect the way people self-regulate, particularly in “the choices they make, their aspirations, how much effort they mobilize in a given endeavor, how long they persevere in the face of difficulties and setbacks, whether their thought patterns are self-hindering or self-aiding, the amount of stress they experience in coping with taxing environmental demands, and their vulnerability to depression” (Bandura, 1991, 257). Self-efficacy beliefs also influence individuals’ goal setting, where Bandura (1991) explains, “the more capable people judge themselves to be, the higher the goals they set for themselves and the more firmly committed they remain to them” (p. 258). Because social cognitive theory differentiates between possessing the knowledge (cognitive abilities) versus effectively applying the knowledge (behavioral performances), a sense of personal agency will make causal contributions on whether or not an individual is able to transform their mental abilities into effective self-regulation skills (Bandura, 1986, 1989, 1991; Zimmerman, 1989).

To further understand the multidimensional scope of self-regulated learning, it is important to be cognizant of the distinctions between self-regulatory processes and SRL strategies used to optimize those SRL processes (Zimmerman, 1990a, 1990b). The main distinction between self-regulatory processes and self-regulated learning strategies is on the learner’s exertion of strategic control during the learning process (Zimmerman, 1989; 2000). SRL strategies are purposive actions directed by learners in order to enhance their self-
regulatory processes. For example, goal setting is considered a type of self-regulatory process, while the related SRL strategies that can be used to optimize this goal setting process include making a list of tasks to accomplish during studying period and setting daily goals. While self-regulatory processes are considered present in every learner, learners are distinguished by “(a) their awareness of strategic relations between regulatory processes and learning outcomes, and (b) their use of these strategies to achieve academic goals” (Zimmerman, 1990b, p. 5). In this sense, a learner’s degree of self-regulation is based on the individual use of SRL strategies when engaging in self-regulatory processes. Through the lens of social cognitive model, both SRL processes and strategies are connected through a cyclical process in order to improve the learner’s (a) personal functioning, (b), academic behavioral performance, and (c) learning environment (Zimmerman, 1989).

**Cyclical phases of self-regulation.** To explain the structure of SRL processes in his model, Zimmerman (2000, 2002) described a cyclical process involving three phases: *forethought, performance/volitional control, and self-reflection* phases. In order to explain each of these phases, it is important to understand how elements from Bandura’s (1986) social cognitive theory informed Zimmerman’s (2000, 2002) cyclical model of self-regulation. As previously described, Zimmerman’s SRL model was grounded in several key elements from Bandura’s social cognitive theory, which included: the elements of triadic reciprocity, vicarious and enactive learning, and a sense of personal agency from self-efficacy and goal orientation beliefs. In addition, Zimmerman also modeled his cyclical phases of self-regulation based on Bandura’s (1986, 1991) conceptualization of self-
regulatory mechanism involving three key sub-processes: self-observation, self-judgment, and self-reaction. These sub-processes are mutually interdependent; for example when “observing aspects of one’s behavior (self-observation), one may judge them against standards (self-judgment) and react positively or negatively (self-reaction)” (Schunk, 2001, p. 130). Self-observation, an act of monitoring one’s own performance, provides the information needed to serve at least two functions in the process of self-regulation: setting realistic goals and evaluating one’s progress towards those goals. Self-judgment, the act of diagnosing one’s performance, then determines whether a given performance is regarded favorably or negatively, depending upon the personal standards against which it is evaluated. In response to the performances as evaluated during the self-judgment subprocess, self-reactive actions will follow. During the self-reactive subprocess, individuals will choose to respond according to their perceived behaviors. Positive self-reaction will lead to self-motivating incentives that can come in forms of tangible rewards and/or self-satisfaction.

Based on multiple elements from Bandura’s social cognitive theory, Zimmerman (2000, 2002) developed the following cyclical model (Figure 2.2) to explain the key processes involved in his SRL model. The forethought phase, involving task analysis and motivational beliefs, set the stage for learning and takes place before the actual learning begins. Task analysis involves “decomposing a learning task and its context into constituent elements, and constructing a personal strategy from prior knowledge of these elements” (Zimmerman & Moylan, 2009, p. 31). Task analysis takes place in two key parts: setting appropriate goals and conducting strategic planning to attain those goals (Zimmerman, 2000,
2002; Zimmerman & Moylan, 2009). Forethought process also assumes the importance of motivational beliefs in enacting SRL. As noted by Zimmerman (2000), “self-regulatory skills are of little value if a person cannot motivate themselves to use them” (p. 17). Zimmerman underlines four types of beliefs as the key motivational sources in his SRL process, which include: self-efficacy, outcome expectation, intrinsic interest/value, and learning goal orientation. Self-efficacy refers to personal belief about having the capability to learn or perform the task effectively, whereas outcome expectation concerns the belief about the success or outcomes of a given task. Student’s personal judgement about the interest and value of the learning tasks are also considered a form of motivational beliefs. The fourth motivational belief is goal orientation, which involves the learner’s belief or feeling about the purpose of their learning. Learning orientation that is intrinsically driven, such as for fulling personal satisfaction or gaining deeper knowledge of a certain subject, is perceived as a superior form of motivational belief influencing SRL (Zimmerman, 2000, 2002).

The next stage in Zimmerman’s cyclical model is the performance (volitional) control phase. This phase involves the learner’s behavioral efforts through self-control and self-observation that occur during the learning. Self-control refers to the process of sustaining the concentration and interest in engaging and completing a learning task. Self-control strategies include forming mental pictures of the task being learned (imagery), creating self-instruction to learn, improving attention focusing, and deconstructing learning tasks into key elements or focus (task strategies). Meanwhile, self-observation relates to an act of monitoring one’s own learning performance using various self-experimentation and self-recording strategies.
Self-reflection will follow through *after* the learning is done, where learners will evaluate their efforts using self-judgment and self-reaction sub-processes. Learners will self-evaluate their performances using a certain criteria or goal, and make causal attributions of their efforts based on their accomplishments. Causal attributions will lead to their self-reaction to the overall outcomes of their learning process. The feedback and actions in self-reflection phase will then inform back the processes in forethought phase, and compliment the whole cyclical nature of the self-regulation phases.

During the cyclical adjustments, the planning and selection of appropriate SRL strategies are crucial in order to account for personal, behavioral, and environmental factors that are constantly changing in the learning process. As noted by Zimmerman (2000), “self-regulation is described as cyclical because the feedback from prior performance is used to make adjustments during current efforts” (p. 14). Because no self-regulatory strategy will work equally well for all persons in all tasks or occasions, learners must learn to adjust their SRL strategies from one learning situation to another. Such adjustments are necessary because in the social cognitive view, self-regulation is understood as a situationally specific and context-dependent process (Schunk, 2001). For example, an adult student may have different self-efficacy beliefs about his ability to learn in the face-to-face classroom versus taking courses online. These different personal and environmental factors will accordingly influence how the adult student approaches his learning situation through different sets of self-regulation skills and strategies.
Conceptual Understanding of SRL strategies

Self-regulated learning is not an all-or-none process or a single trait that individuals either lack or possess (Boekaerts, 2006; Zimmerman, 1986, 2000, 2002). Instead, the self-regulatory mechanism is considered to be present in every learner, but the degree varies...
individually depending on how metacognitively, motivationally, and behaviorally active the learners are during their own learning process (Zimmerman, 1986). Individuals are considered self-regulated learners when they employ self-regulated learning (SRL) strategies during a learning process on the basis of their self-efficacy beliefs and commitment to academic goals (Zimmerman, 1989). The assumption is that all learners will engage in self-regulatory processes to some degree when acquiring academic knowledge and skills, but may differ in their awareness and willingness to use specific strategies to achieve their academic goals (Zimmerman, 1990b). Metacognitively active learners are individuals who plan, organize, self-instruct, self-monitor, and self-evaluate at various stages during their learning. Motivated learners are those who are autonomous in their own learning, have high self-efficacy beliefs, and are goal driven. Behaviorally active learners will proactively select, structure, and create environments that help optimize their learning.

Zimmerman (1989) defines self-regulated learning (SRL) strategies as “actions and processes directed at acquiring information or skill that involve agency, purpose, and instrumentality perceptions by learners” (p. 329). Some researchers also refer to SRL strategies as self-regulation or self-regulatory skills (Chen, 2011; Chmiliar, 2011). According to Zimmerman (1989), the purpose of employing SRL strategies during learning is to enhance the students’ self-regulatory processes. The triadic model assumes the influences of various personal, behavioral, and environmental factors when individuals engage in a self-regulatory process. By exerting the appropriate SRL strategies, self-regulated learners are seeking to improve their (a) personal (covert) functioning, (b) academic behavioral
performance, and (c) learning environment towards attaining their academic goals. In particular, the model assumes that every self-regulated learner has a certain degree of control in their learning process, and has the desire to improve their learning situation through the use of SRL strategies. Zimmerman (1989) noted the following:

A learner’s degree of self-regulation is assumed to be determined situationally by his or her use of strategies that fully incorporate triadic influences in obtaining academic goals. When a learner can exert strategic control over each of three types of influence, he or she can be described as self-regulated and the self-prefix can be legitimately be applied to that type of strategy (e.g. self-consequences). (p. 332).

When engaging in SRL strategies, students will be able to (self)-regulate on these different personal, behavioral, and environmental influences in order to improve their learning situations. For example, in order to improve his subject knowledge, a student may strategize by rehearsing and memorizing his class materials. By enhancing his personal influence (knowledge), this particular student is working to improve his learning process towards achieving his academic goals. In his SRL model, Zimmerman (1989) also refers to the triadic influences as the three classes of SRL determinants (Major sources of personal, behavioral, and environmental determinants, as described by Zimmerman (1989, 1990a), is listed in the following Table 2.2).
Table 2.2

*Determinants of Self-Regulated Learning (SRL)*

<table>
<thead>
<tr>
<th>Personal (self) influences</th>
<th>Behavioral influences</th>
<th>Learning environment influences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student’s knowledge</td>
<td>Enactment of self-regulatory activities</td>
<td>Physical context</td>
</tr>
<tr>
<td>Metacognitive processes</td>
<td>• Self-observations</td>
<td>Social experiences</td>
</tr>
<tr>
<td>Goals or intentions</td>
<td>• Self-judgments</td>
<td></td>
</tr>
<tr>
<td>Affective processes</td>
<td>• Self-reactions</td>
<td></td>
</tr>
<tr>
<td>Self-efficacy beliefs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


It is important to note that these triadic influences are not fixed nor are they symmetrical in strength. They do not occur simultaneously during a self-regulation process. As stated by Bandura (1986), “the relative influence exerted by the three sets of interacting factors will vary for different activities, different individuals, and different circumstances” (p. 24). In a learning situation where the student lacks effort in using SRL strategies to improve his learning process, influences in the learner’s existing personal (affect), behavioral or environmental factors are assumed to dominate (Zimmerman, 1989). The following section will provide a brief description and related SRL strategies that are associated with each influence from the three classes of determinants.

**Personal determinants.** The first personal influence, *students’ knowledge*, is distinguished by two different types: declarative and self-regulative knowledge. Declarative knowledge refers to a general knowledge in a particular subject (i.e. general knowledge in
Philosophy), while self-regulative knowledge is a combination of procedural and conditional knowledge that deals with how to use strategies, and when and why certain strategies are effective in specific situations. *Metacognitive processes*, on the other hand, are described through planning task analysis and behavioral control processes, which include actions such as selecting and altering SRL strategies to fit the intended task, and guiding and monitoring of strategic responses in specific contexts. *Goals or intentions*, which can include both long term and proximal goals, are influential to metacognitive processes and set the standard that a learner wishes to achieve. Some examples of goal setting strategies include making a list of academic tasks to accomplish and setting daily targets. On the other hand, *affective processes* are related to the learners’ disposition and emotional regulation, such as strategies on how to deal with stress and cope with anxiety. Meanwhile, the most important influence in the personal determinant influence is *perceived self-efficacy*. Self-efficacy beliefs can affect how high the students will set their own goals, and are capable of influencing both knowledge and metacognitive processes.

**Behavioral/performance-related determinants.** In Zimmerman’s (1989, 1990a) view, behavioral influences in SRL involve engaging in self-observation, self-judgment, and self-reaction strategies. Zimmerman (1989) considers these strategies as behavioral influences because “each class subsumes actions that are observable, trainable, and interactive” (p. 333) in the SRL process. Through *self-observation*, learners are more informed about their current performances to direct their self-regulated actions accordingly to meet their desired standard or academic goals. Zimmerman (1989) suggests two common
behavioral strategies of self-observation: (a) verbal or written reporting and (b) quantitative recording of one’s actions and reactions. An example would be a student who keeps track of her learning tasks through journaling. Self-observation through systematic recording can motivate a behavioral change if the students have high self-efficacy and are highly driven by their academic goals (Schunk, 2001). Meanwhile, self-judgment also carries an important influence when assessing academic goals. Bandura (1986) asserts that self-judgment revolves around developing personal standards and having a set of referential comparisons. In addition, it is also being influenced by valuation of the activities and performance attribution. Personal standards are mostly developed through different modes of social influences. Subsequently, referential comparisons are established, derived from sources such as standard norms, earlier performance levels, or absolute criteria such as standard test scores. Valuation of activities refers to the way people place values on activities that are significant to them. Meanwhile, performance attribution is related to “how people perceive the determinants of their behavior” (Bandura, 1986, p. 349), which is closely tied to how people self-react towards their perceived causes of outcomes, such as reasons for success or failure. Self-judgment strategies may include checking or self-rating procedures, such as evaluating one’s own written paper based on a rubric. The third interdependent class of behavioral influence is self-reaction. This behavioral influence involves reactions to one’s own performance based on the personal standards that are established during self-judgment process. Bandura speaks of three possibilities of self-reactions: evaluative reaction, tangible reaction, or no self-reaction. Evaluative reaction produces positive or negative feelings, thus resulting in
alteration of one’s internal standard. In addition, Zimmerman (1989) notes that some unfavorable self-evaluations of learning progress may even result in withdrawal from the learning process. Meanwhile, tangible reaction comes in both forms of rewards and punishments, and can be used as a form of strategy to motivate or encourage better performances. Examples of strategies may include treating oneself to a movie after daily targets have been accomplished, or turning down any weekend plan until all academic tasks are completed. According to Schunk (2001), tangible rewards can also enhance self-efficacy when it is validated through the students’ actual accomplishments. For example, when a student successfully won a competitive travel award based on the proposal that he wrote, this particular student will gain a higher self-efficacy in his ability to write research proposals in the future.

**Environmental determinants.** Zimmerman (1989) includes the influences of *social experiences* and *physical context* in his SRL model as environmental determinants. According to Bandura (1986), learners primarily learn from the environment through enactive and vicarious learning. In simpler terms, enactive learning refers to learning by doing, while vicarious learning is a type of learning that occurs through observation (Schunk, 2001). Zimmerman (1989) also discusses another form of social experience, looking at verbal persuasion. Although verbal persuasion is highly dependent on a learner’s level of verbal comprehension, past studies have shown that this method is especially effective when combined with a social modeling strategy (Rosenthal & Zimmerman, 1978; Zimmerman & Rosenthal, 1974). Examples of a peer discussion or a study group are select learning
strategies in this category. Additionally, Zimmerman and Martinez-Ponz (1986) also identified two other social supports widely used by self-regulated learners, which are seeking direct assistance from other people, and using literary and symbolic forms of information such as pictures and diagrams in their learning. The final environmental influences come from the structure, which include the physical environment and conditions of the learning context. Strategies in this category may include going to study in a more conducive place such as the library or gathering all the physical materials needed to support learning, such as getting supplies of reading and writing materials.

**Key research in SRL strategies.** According to Mayer (1988), the study of learning strategies involves “an attempt to understand how to help learners improve their ability to learn, to remember, and to think” (p. 21). The main focus of past research on SRL has been on the description of learning strategies that students have in order to independently guide and direct their learning (Boekaerts and Cascallar, 2006). Authors such as Boekaerts and Cascallar (2006), Garcia (1995), Garcia and Pintrich (1994), and Pintrich (1999) distinguish between two types of learning strategies in SRL: motivational and cognitive related strategies. Motivational strategies are strategies used to enhance goals, values, and expectancies in self-regulation. Meanwhile, cognitive strategies, which may also include metacognitive and resource-management strategies, are directed towards enhancing and regulating one’s cognition during a learning process. Cognitive strategies used to improve learning include rehearsal, elaboration, and organizational strategies; whereas, metacognition strategies identify with strategies such as planning, monitoring, and regulating. Meanwhile,
resource management strategies are the type of strategies students use to manage and control their environment, such as managing and controlling their time, effort, study environment, and social support (Pintrich, 1999).

One important view about employing SRL strategies is that it needs to co-exist with the motivation to use the strategies (Pintrich, 1999; Weinsten, Husman, & Dierking, 2000; Zimmerman, 1990b). Pintrich (1999) notes that there are three general types of motivational beliefs that have been associated with self-regulated learning: (a) self-efficacy beliefs (judgments of one’s capabilities to do the academic tasks), (b) task value beliefs (beliefs about the importance of, interest in, and value of the task), and (c) goal orientations (focus on attaining mastery of the task or extrinsic reasons such as grades, or attaining relative ability to social comparisons). The roles of motivational beliefs, especially related to self-efficacy and goal orientation beliefs, have been shown to increase the use of self-regulated learning strategies among the students (Pintrich & De Groot, 1990; Wolters 1998; Wolters, Yu, & Pintrich, 1996, Young, 1997).

There is considerable research that has identified the beneficial roles of SRL strategies in mediating students’ academic performances (for examples, see Cazan, 2011; Fuchs et al, 2003; Ho, 2004; and Kosnin, 2007). One of the early key research studies of SRL strategies has been conducted by Zimmerman and Martinez-Pons (1986). Part of their investigation was undertaken to develop and validate a structured interview for assessing students’ use of SRL strategies in naturalistic setting. The categories of the strategies were derived mostly from social learning theory and from other researchers with similar
theoretical understandings. As a result, they identified a total of fourteen categories of learning strategies: 1) self-evaluation; 2) organizing and transforming; 3) goal setting and planning; 4) seeking information; 5) keeping records and monitoring; 6) environmental structuring; 7) self-consequences; 8) rehearsing and memorizing; seeking social assistance from 9) peers, 10) teachers, and 11) adults; and reviewing records in forms of 12) tests, 13) notes, or 13) textbooks. From their pilot interview, they also identified six different learning contexts in which the high school students can initiate SRL strategies: 1) in classroom situations, 2) at home, 3) when completing writing assignments outside class, 4) when completing mathematics assignments outside class, 5) when preparing for and taking tests, and 6) when poorly motivated. The interviews were performed and analyzed by distinguishing between two groups of students, high and low achievement track groups. From their study, Zimmerman and Martinez-Pons reported significant association between academic achievement and use of self-regulated learning strategies. The high achievement group reported a greater use of self-regulated learning strategies when compared to the low achievement group. In addition, the researchers were also able to correctly classified 93% of the students into their appropriate track group based on the students’ knowledge of their self-regulation practices. This finding indicates that students’ achievement levels can be predicted through the measure of their self-regulated learning strategies. Zimmerman and Martinez-Pons’s (1986) study has identified the importance of self-regulated learning strategies as a construct of academic self-regulation.
Emerging SRL Research in Online Postsecondary Context

Although SRL has been recognized in other sectors of education such as in the K-12 environments (see Paris & Paris, 2001), current literature suggests several developments in higher education that have advocated the importance of SRL research. One of the primary influences in SRL research is driven by the growth of postsecondary online learning (Artino, 2007a, Dabbagh & Kitsantas, 2004; Hodges, 2005). In the last decade, there has been widespread growth of online instruction in higher education, both in the forms of distance learning as well as on-campus alternative delivery. As reported by Allen and Seaman (2013) in 2011, online enrollment in the US accredited postsecondary institutions made up to 32 percent of the total enrollment. In addition, more courses were adding online component or using technological tools to support their instructions, thus offering more forms of blended, constructivist-based, and technology-enhanced learning environments (Kitsantas, Dabbagh, Huie, & Dass, 2013; Harasim, 2000).

Following this recent technological and pedagogical shift, several scholars have pointed out the emerging SRL research in postsecondary online education. For instance, Tsai, Shen, & Fan (2013) have reported that the number of online SRL studies has significantly increased between the years of 2003 to 2012, with approximately sixty-seven percent of the research studies conducted in higher education settings. Meanwhile, Artino (2007a) has also identified a considerable number of empirical studies that have used different components and perspectives of academic self-regulation to frame their research in online postsecondary settings. One of the primary investigations in this area is on examining the relationships
between different variables of SRL and measures of related academic performances using correlational study approaches (for examples, see Azevedo, Guthrie, & Seibert, 2004; Barnard, Paton, & Lan, 2008; Lynch & Dembo, 2004). In essence, most of these correlational studies have provided empirical support on the significance of self-regulated learning in online students’ academic outcomes. Another area of SRL inquiry is on examining the relationship between learner control and self-regulation. In particular, some researchers have examined how the varying amounts of student control and self-regulation influenced the learner’s achievement and motivation in online learning environments (see Eom & Reiser, 2000; McManus, 2000). Although some research in this area did not present statistically significant outcomes, most of these studies supported the idea that high self-regulating students are more likely to succeed in autonomous online learning environments. The third major area of investigation is studies on designing and supporting self-regulation in online learning environments (for examples, see Dabbagh & Kitsantas, 2005; Kauffman, 2004). In conclusion, this line of research reported positive outcomes on the various use of web-based pedagogical tools (WBPT) in enhancing and supporting different self-regulatory skills among the students. Taken together, these three areas of research have mainly contributed to the emerging SRL research in online postsecondary context.

Conversely, Cassidy (2011) also highlighted two other trends that are boosting the research and practice of SRL in higher education. These trends include increased student diversity and increased diversity in modes of delivery, especially in regards to information communication technologies. As further noted by Cassidy, these trends have resulted in a
renewed focus in accommodating students’ individual differences within the higher education practice. As a result, SRL has emerged as a relevant concept in higher education, in particular because “self-regulated learning seems to offer a mechanism capable of both representing student individual differences in learning, and implementing changes in normal practice which reflect the individual needs of the students” (Cassidy, 2011, p. 995). In addition, he also proposed several guiding points that are valuable in promoting the understandings of SRL in higher education settings. These points are presented in Table 2.3 (Note following page).

In essence, the current research on various components of SRL in online learning has postulated two important implications in supporting further research in this area. First, many of the previous studies have provided support on the relevance of SRL in research concerning the online learning environments. Based on Artino’s (2007a) review, he noted a consistency in the literature that reports on the positive roles of SRL on online students’ learning outcomes. For example, Azevedo, Guthrie, and Seibert (2004) revealed that students in hypermedia learning environments were more likely to grasp the content of the subject knowledge when they engaged in SRL strategies. Studies also showed that students who made efforts to self-regulate were more satisfied with their online learning experiences and were more likely to succeed in their online learning (Artino, 2007b, Barnard, Paton, & Lan, 2008; Puzziferro, 2008; Yukselturk and Bulut, 2007). Artino (2007b) reported that task value, self-efficacy, and prior experience with online learning were linked in important ways to students’ self-reported satisfaction, perceived learning, and intentions to enroll in future
online courses. All these studies suggested that SRL is an important area to consider when examining students’ learning in the online environment.

Table 2.3

*Guidance Points on the Implementation of SRL in Higher Education*

- not all students are equally predisposed to self-regulate, but aspects of self-regulation improve as a result of effective teaching and learning practices;
- self-regulated learning requires the development and deployment of learning strategies, positive self-efficacy, and pursuance of meaning goals;
- introducing curriculum strategies which focus on the development and enhancement of cognitive skills, metacognitive skills and affective skills to improve self-regulated learning;
- student self-monitoring and self-evaluation are important factors in the development of self-regulated learning;
- self-regulated learning improves with practice;
- self-regulated learning can be improved through guidance, modeling, and effective strategies;
- self-regulated learning requires an ‘enabling environment’, including the physical setting, material resources, and social interaction and positive support from teachers and peers;
- there is a particular emphasis on information and communication technologies as a tool to support self-regulated learning;
- self-regulated learning involves a new role for teachers which focuses on process-oriented teaching, with students actively involved in the learning process, i.e. ‘learn how to learn’;
- any interventions to promote self-regulated learning are likely to be long-term;
- implementation requires a ‘whole-school’ approach involving support of both senior management and teachers.


Secondly, it has been noted that self-regulatory skills are present in every learner, but learners engage with these skills in varying degrees during a learning process (Boekaerts & Cascallar, 2006; Zimmerman, 2000, 2002). Previous empirical studies have shown that these
differences are influenced by various factors, which include cognitive levels, metacognitive knowledge, prior experiences, and motivational beliefs such as perceived self-efficacy, task value and goal orientation beliefs (Hill & Hannafin, 1997; Pintrich, 1999; Wang, Shannon, & Ross, 2013). For example, Pintrich (1999) has reported that students with higher self-efficacy, task value and goal orientation beliefs were more motivated to employ more types of cognitive strategies in their learning process, when compared to students who were lacking in the motivational beliefs to do so. As pointed out by Cassidy (2011), self-regulated learning seemed to offer a mechanism that was capable of including the students’ individual differences when studying the learning process. However, very few studies have attempted to identify the self-regulatory process used by individuals by delineating the students based on their group differences. One study that has attempted to explore the potential differences between two groups of students was conducted by Artino and Stephens (2009). In their study, Artino and Stephens examined whether there were motivational and self-regulatory differences between undergraduate and graduate students enrolled in several online courses. Their findings suggest that both groups do exhibit different levels of motivation and self-regulation while learning online. In addition, Artino and Stephens offered the following remark “Even the most cursory attention to recent trends in higher education will illustrate the growing importance of online learning in today's world. Despite its importance, only a few studies have examined how different groups of students actually go about learning in these highly autonomous educational settings” (p. 150). Conversely, very little is known about adult students’ self-regulatory processes in the online learning environments. What is
known in the literature indicates that there are notable differences among the adult students in terms of their motivation, attitudes and approaches to studying (for examples, see Donohue & Wong, 1997; Eppler, Carsen-Plentl, & Harju, 2000; Justice & Dornan, 2001). Despite the increasing number of online SRL studies and its potential theoretical relevance for adult learners, SRL research has rarely been examined using adult samples. This gap has provided an area and focus for further investigation for this study.

**Adult Students and Online Learning in Higher Education**

Another significant trend affecting higher education is the number of adult students who have become a major sub-population in postsecondary institutions (National Student Clearinghouse, 2012). Based on the survey conducted by the National Student Clearinghouse (2012), approximately 38 percent of all postsecondary students in US higher education institutions, inclusive of both undergraduate and graduate students, are identified as adult students (students who are 25 years of age and older). In addition, the report also breaks down the adult student population into three age groups: 25 – 29, 30 – 39, and 40 and over. Within a 3-year period from 2009 to 2011, a noticeable trend was observed across all the three age groups where the percentage of adult students attending college on a full-time basis has been steadily increased. Noel-Levitz and CAEL (2011) conducted a study to identify the enrollment factors that influenced the adult students’ decisions to enroll into an academic program. In the order of importance, the top ten factors cited are availability of the desired program, convenient time and place for classes, flexible pacing for completing a program, time required to complete a program, availability of financial assistance, requirement for
current or future job, cost, ability to transfer credits, reputation of institutions, and availability of online classes (Noel-Levitz & CAEL, 2013). Many of these priorities reflect the general need of adult students who are seeking flexibility during their quest to upgrade their level of education.

**Definitions and Discussions of Adult Undergraduate Students**

An important first step in research that focuses on the adult undergraduates is to delineate the adult undergraduate students from the general student population. However, defining who and what characterized the adult undergraduate students have been a “stubborn and messy problems” in the literature (Kasworm, 2014). Although there have been a variety of definitions for adult undergraduates in higher education, most institutional reports and empirical research studies have used chronological age and involvement in adult roles, as key definers for this student population.

In defining adult students, chronological age typically refers to defining age where individuals would allegedly have achieved a certain level of psychosocial maturity, self-sufficiency and/or financial independency from their parents or primary caregivers (Choy, Premo, & MPR Associates, 1995; Kasworm, Polson, & Fishback, 2002). Age is also used to identify adult students who are older than the typical traditional age students at the time of enrollment (Horn & Carroll, 1996). Institutions such as the Council for Adult and Experiential Learning (CAEL, 2000), National Student Clearinghouse (2012), and American Council on Education (2014), identify adult students as those who are 25 years and older. Another variation of this age definer is often focused upon the ages of 24 years old and above
defining adult students based on chorological age presents “a practical way to separate and
define a group of students who have greater maturity, more complex life experiences, as well
as more significant heterogeneity and complexity than those who are younger” (p. 3).
However, defining and identifying adult students based on an age parameter alone is not
enough, as age does not sufficiently reflect the social complexities of the adult
undergraduates students in terms of their adult roles and other adult responsibilities (Bean
and Metzner, 1985; Flint, Zakos, & Frey, 2002; Kasworm, 2014; Kim, 2002). As explained
by Flint, Zakos, and Frey (2002) in the following:

…age alone cannot be the cause for attributing label “adult” when we mean to
denote persons with life circumstances requiring social independence,
commitments to family and work, and personal identities that have evolved
beyond that of full-time student (p. 2).

Therefore, many institutions and researchers have expanded their definitions to include
involvement in adult roles and related background characteristics as additional key definers
of adult students (Bean & Metzner, 1985; Choy, 2002; Horn & Carroll, 1996; Kasworm,

When defining the adult student, involvement in adult roles normally reflects the
student’s competing responsibilities in their self-supporting roles involving work, family, and
community (Kasworm, 2003). This adult involvement would typically include
responsibilities such as working fulltime, being married, and/or supporting other dependents.
Other authors have also distinguished adult students based on their academic participation. Examples include criteria such as delayed enrollment, part-time attendance, and off-campus residency (Bean & Metzner, 195; Chickering, 1974; Kasworm, 2003; U.S. Department of Education, 2002). A broad definition of nontraditional students have been outlined by the National Center for Education Statistics (NCES), to include at least one of the following seven criteria: 1) have delayed enrollment into postsecondary education; 2) attend part-time for at least part of the academic year; 3) are financially independent of their parents; 4) work full time when enrolled; 5) have dependent(s) other than a spouse; 6) are a single parent; 7) lack a standard high school diploma (U.S. Department of Education, 2002). Horn and Carroll (1996) also described three different levels to which students are considered nontraditional based on the number of criteria that are present: 1) minimally nontraditional (one criteria), 2) moderately nontraditional (two to three criteria), and 3) highly traditional (more than four criteria). The NCES definition has been used by several organizations such as the Association for Nontraditional Students in Higher Education (ANTSHE, 2014) and Association for Orientation, Transition, and Retention in Higher Education (NODA, 2014) as a benchmark in identifying and recognizing the adult (nontraditional) students in higher education.

Adding complexity to the discussion is also the variety of terms used to distinguish the adult student population from the general student population. Among the terms that have been identified in the literature include older students (Kasworm, 1980), commuter students (Chickering, 1974; Stewart & Rue, 1983), mature students (Phillips, 1986; Richardson,
adult learners (Apps, 1981), working students (Hall, 2012; Kellogg & Smith, 2009),
and nontraditional students (Bean & Metzner, 1985; Choy, 2002; Horn & Carroll, 1996). In
most comparative research, the term “nontraditional student” has been favorably used to
distinguish the adult undergraduate students from the young (traditional) undergraduate
students (for examples, see Donohue & Wong, 1997; Eppler & Harju, 1997; Johnson &
Nussbaum, 2012; Loesch & Foley, 1988). Historically, traditional students have been
profiled as undergraduate students between the ages of 18 to 24 years old, enrolled in college
immediately after graduating from high school, and attended college full time with parental
or financial aid support or both (Kimbrough & Weaver, 1999; Philibert, Allen, & Elleven,
2008). Meanwhile, nontraditional students have been typically differentiated on the basis of
age, college residence, financial dependence on family, attendance status, and their degree of
socialization on campus (Bean & Metzner, 1985). However, as noted by Kasworm, Polson,
and Fishback (2002), using the term “nontraditional” may be problematic, as the term can
refer to a wide variety of students other than those who are over 25 years of age. According
to them, “nontraditional students can also be younger students who are married, handicapped,
racially or ethnically diverse, female, or part time” (p. 3). Due to the differing terms and wide
array of definitions of adult students in the literature, Kasworm (2014) proposed the
identification and construct of an adult undergraduate student to include an age parameter
based upon a logical rationale for the study, and three other key factors of: 1) financial
independence, 2) commitments to adult roles involving family and/or work, and 3) self-
identity outside of their role as a college student. Meanwhile, for the purpose of reviewing
the related literature on adult undergraduates, this proposed study will continue to utilize the varied adult student terms (i.e. nontraditional) and its complex positionalities in various research context.

**Prior Research on Adult Students in Online Learning Settings**

Adult students have been identified as the majority audience for online learning (Stavredes, 2011). A review of demographics conducted by Noel-Levitz (2013) has identified that only 10 percent of online students are 24 years of age and below, indicating that a vast majority of online learners are considered adult students (those above 24 years of age). In addition, Aud et al (2011) has reported a statistical pattern where there was a higher percentage of distance education enrollment from undergraduate students who are older (24 years of age and above), financially independent, married, had dependents, lived off campus, and registered as part-time students. All these characteristics reflected a student population that has what has been considered as the typical profile of adult students (Kasworm, Polson, & Fishback, 2002).

As online learning becomes the more common form of distance education, the online format has significant appeal for adult students. Adult students generally value having a course option in an online format, as the learning structure enables them to take classes with time flexibility and convenience of working from home and/or at work, and provides them with more control over the pace of their learning, (O’Lawrence, 2006; Zembylas, 2008). In fact, more public universities are offering a variety of online options for degree completion,
such as online or hybrid degree programs, and massive open online courses (MOOC) in order to accommodate the growing needs of adult students in higher education (Gast, 2013).

While the statistical evidence suggested that a large number of online students consisted of older students with nontraditional profiles, research efforts that have focused on adult students in online learning contexts have not been adequately addressed in the literature (Kee, 2010; Ke & Xie, 2009; Yoo & Huang; 2013). Previous studies have reported that some adults perceive that learning online might be difficult for them because of their lack of understanding of the online learning methodology and low technological skills (Stein, Wanstreet, & Calvin, 2009; Zembylas, 2009). However, many adult students have overcome these issues as they continue in their online courses. In fact, there have been several reports on how older adults were more likely to persist and succeed in online classes than younger, less experienced students (Moore, Bartkovich, Fetzner, & Ison, 2003; Velasek, 2001). As noted by Hoskins and van Hooff (2005), “when older adults are not disadvantaged by lack of general education, IT knowledge, and access to computers, they are more active in their use of online learning than younger adults” (p. 188). Adult students have also been generally satisfied with their online learning experiences (Ke & Xie, 2009).

When learning online, the current literature also suggests that adult students are intrinsically and extrinsically motivated to learn (Blake, 2009; Dibiase & Kidwai, 2010; Yoo & Huang, 2013). As reported by Yoo and Huang (2013), adult students are motivated by both the opportunities to learn new things (i.e. new technologies, new learning experiences), and also on the prospects for job improvement or future career change upon completion of their
online program. They also express willingness to learn new technologies in order to improve their online learning experiences. In fact, for many adult students, online instruction could create new learning situations where they become self-motivated to learn and increase their competencies in instructional technologies, even though it is not a part of the instructional objectives (Shinkareva & Benson, 2007).

**Comparative Research between Adult and Younger Undergraduates in Higher Education**

Prior comparative research between the adult (nontraditional) and younger (traditional) students has unveiled some notable differences in terms of their attitudes and approaches to studying. For example, prior studies of in-classroom settings have examined their comparative differences from several aspects, including their goal orientations, learning preferences, study skills, and academic performances. Overall, the findings reported several distinctions between the adult undergraduates and younger students, particularly in their goal orientations and prior experiences; these differences have affected their learning preferences, strategies, and approaches (Donohue & Wong, 1997; Eppler, Carsen-Plentl, & Harju, 2000; Eppler & Harju, 1997; Loesch & Foley, 1988; Johnson & Nussbaum, 2012; Morris, Brooks, & May, 2003; Richardson, 1995). In one example, research has found that adult undergraduates are driven by significantly higher intrinsic motivation than the younger undergraduates, which resulted in positive affect among the adult undergraduates in their learning process (Bye, Pushkar, & Conway, 2007). More importantly, one profound comparison study by Justice and Dornan (2001) has identified some metacognitive
differences between these two subgroups. Nontraditional (adult) undergraduates were found reporting more frequent use of higher-level cognitive study strategies than the traditional age (young adult) undergraduates. Furthermore, study strategies that were found to positively improve the traditional undergraduates’ academic performance were found to be insignificant in the nontraditional undergraduate. Based on these findings, Justice and Dornan suggested that the learning processes of nontraditional (adult) undergraduates may differ in important ways from those of their traditional (young adult) peers.

Several research comparisons in online learning environments have also reported some differences between adult and younger undergraduate students. In one study, Dibiase and Kidwai (2010) looked at two different sections of an online course respectively designed for undergraduate students (younger adults, median age 21) and certificate-seeking professionals (older adults, median age 34). With the exception of time commitments of each of these two sections schedule (15-week for undergraduates versus 10-week term for working professionals), both sections had identical content and course constructs. The findings reported noticeable differences in attitudes between the younger and older adult students. Older adult students were found to devote more time and efforts in their learning process and were significantly more satisfied with their online class experiences as compared to their younger counterparts. It was also mentioned that both groups enrolled in the course for different reasons (fulfilling degree requirement versus career advancement purposes), indicating different academic motivations existed between the two subgroups.
Furthermore, there was also information that has suggested a linkage between the adult students’ personal influences and their SRL strategies when learning online (Hill and Hannafin, 1997; Whipp and Chiarelli, 2004). However, research in this area has been very limited. At present, a literature search in this area has only identified two related studies. The first study examined how self-efficacy, metacognitive knowledge, subject knowledge, and system knowledge affected the strategies used by adult learners during their self-learning process using the World Wide Web (Hill and Hannafin, 1997). They found that different levels of self-reported knowledge in metacognitive, subject, and system (the World Wide Web) impacted the strategies used by these adults differently, thus determining the successfulness of their self-learning outcomes. The other study was conducted by Whipp and Chiarelli (2004) based on a social cognitive model of self-regulated learning. In their study, Whipp and Chiarelli examined how six graduate students used and adapted traditional SRL strategies in order to complete tasks and cope with challenges in a Web-based course. They found that online adaptations of SRL strategies were used across all three phases of self-regulation: forethought, performance, and self-reflection phases. For example, under a goal setting strategy during the forethought phase, students made use of their daily log-on record to coordinate their online and offline work accordingly. Other online SRL adaptation strategies included sorting discussion threads, frequent checks of online grade book, and doing multiple back-ups of their online work. In addition, Whipp and Chiarelli also examined the motivational and environmental influences on the use of SRL strategies, and found the importance of self-efficacy, intrinsic goal orientation, interest, and attributions in influencing
the choices of self-regulated learning strategies used by students. These two studies illustrated the key presence of SRL strategies among adult students when engaging in online learning.

While the scholarly scope is still narrow, the above findings have provided some indications on how academic motivation, goal orientations, prior experiences, and metacognitive knowledge may differentially influence the ways adult students engage in online learning courses. Given the prevalent number of adult students in online learning, it is curious that a large number of online studies are still dominantly focused upon the young (traditional) students’ perspectives. This limited research advocates for further investigation of the self-regulatory process based on the adult students sample.

Chapter Summary

This chapter presented a literature review on three significant areas that informed the study. The first area focused upon online learning presenting varied definitions of terms. In addition, it focused upon the paradigmatic shift in the teaching focus of higher education, which has influenced the core interest of this study in self-regulated learning areas. The section in self-regulated learning provided a comprehensive overview of the theory and outlined the theoretical foundation of this study based on a social cognitive perspective. In addition, discussions of research in SRL strategies were also presented. The final section presented a discussion on adult undergraduate students in higher education, with the emphasis on highlighting their differences from the young undergraduate students. It also focused upon the lack of understanding of self-regulatory processes from an adult student
perspective, particularly in the online learning environment. As noted by this literature, there was a need to explore and delineate the self-regulatory process SRL of the adult undergraduate students in the online credit course setting.
CHAPTER THREE

METHODS

The purpose of this study was to explore the self-regulatory process of adult undergraduate students learning in online credit courses. This research was focused on studying the individuals’ beliefs and actions while learning online, while also accounting for the contextual influence of how online course setting informed the adults’ actions to self-regulate. A social cognitive model of self-regulated learning (SRL) (Zimmerman, 1989, 2000, 2002) has been identified as a theoretical framework for this study. As previously discussed in chapter two, Zimmerman’s model assumes the influences of various personal, behavioral, and environmental factors of learning in shaping individual’s self-regulation (See Table 2.2).

By utilizing the conceptual lens of social cognitive theory, this study considered a selected area of SRL using a qualitative research approach. Previous SRL studies have predominantly relied on quantitative survey methods based on students’ self-reports to assess the causal relationship between different aspects of self-regulation (Perry, 2002). While these investigations have contributed to the knowledge base and shaped the existing understanding of SRL, there has been a lack of depth in explicating “what learners actually do versus what they say they do, or how features of a particular learning context can influence what learners generally think and do” (Perry, 2002, p. 1).

Thus, the aim of this qualitative research study was to provide an exploratory lens to understand the self-regulatory beliefs and actions of participating adult students in online
course setting (Merriam, 2009). In guiding its research, this study considered the following research questions: (1) What key beliefs do adult students hold about themselves as online learners? (2) How do adult students describe their engagement in the online learning process? (3) What strategies do adult students use to support their online learning? This chapter outlines the descriptions of research design for this qualitative study, including plans for participant recruitment and data collection; approaches to data analysis; methods to support the study’s trustworthiness; the articulation of the researcher’s positionality and assumptions; and a chapter summary outlining the overall research design.

**Research Methodology and Design**

When planning a research design, careful consideration must be given in choosing a research strategy that would best fit the intent of the study and the nature of the research problem (Creswell, 2014). In social science research, qualitative research is most appropriate when the research intent is more exploratory and descriptive in nature. In particular, the goal of qualitative research is to study and uncover the “meanings, concepts, definitions, characteristics, metaphors, symbols, and descriptions of things” (Berg, 2007, p. 3). Because this study aimed to provide exploratory and descriptive findings of self-regulatory beliefs and actions of adult undergraduate students in online credit courses, employing a qualitative investigation has allowed an in-depth exploration of these actions and understandings of adult learners as they engaged in learning in an online environment. As emphasized by Merriam (2009), “qualitative researchers are interested in understanding how people interpret
their experiences, how they construct their worlds, and what meaning they attribute to their experiences” (p. 5).

This study used a basic qualitative approach as its research design and methodology. A basic qualitative research approach embodies all the characteristics of a qualitative research, but it is generic in a sense that it does not have an additional dimension or specificity that are found in other approaches such as in phenomenology, grounded theory, narrative analysis, or critical qualitative research (Merriam, 2009). Caelli, Ray, and Mill (2003) suggest their understanding of basic (generic) qualitative approach as follows:

From our perspective, generic qualitative studies are those that exhibit some or all of the characteristics of qualitative endeavor, but rather than focusing the study through the lens of a known methodology, they seek to do one of two things: either they combine several methodologies or approaches, or claim no particular methodological viewpoint at all. (p. 2)

While all qualitative research approaches have a common interest in explaining how people make sense of their experiences in a given phenomenon, the underlying focus of basic qualitative research is simply to uncover, interpret, and present those experiences into meaningful findings (Merriam, 2009). In addition, basic qualitative research is typically driven by a particular theoretical framework to inform the focus of the study. Depending on what is relevant to the theoretical framework, data collection will be structured through interviews, observations, and/or document analysis. Through its respective theoretical lens, data analysis will be performed by identifying “recurring patterns” (Merriam, 2009, p. 23).
These patterns will then be represented as findings, and supported by the data from which they were derived.

At the most fundamental level, a basic qualitative study must represent all the key characteristics of qualitative research (Merriam, 2009). Both Bogdan and Biklen (2007) and Merriam (2009) suggest several key characteristics in defining and shaping a qualitative research. The first characteristic situates the meaning-making process as the heart of qualitative research. As described by Merriam (2009), “the overall purposes of qualitative research are to achieve an understanding of how people make sense out of their lives, delineate the process (rather than the outcome or product) of meaning-making, and describe how people interpret what they experience” (p. 14). Qualitative research focuses on making sense of the participants’ perspectives, presenting and interpreting meaningful data, and promoting in-depth understanding and/or description of the process or phenomenon of interest. This research study approached the topic of online SRL process of the adult undergraduate students by positioning the participants’ perspectives as central to the outcome of this study. Ultimately, the goal of this study was to explore and present an in-depth description of the self-regulatory process used by adult undergraduate students in online credit courses.

A second key characteristic of qualitative research is the inductive nature of the research process. This aspect of qualitative research promotes a research design that is flexible, evolving, dynamic, and responsive to changes during the research process (Merriam, 2009). This characteristic is particularly influential during the data collection and analysis
process, where findings are induced from the data into forms of themes, categories, and concepts. Bogdan and Biklen (2007) described this process as “bottom up” (p. 6), where qualitative researcher will continuously work with bits and pieces of information that are gathered along the process and move towards forming a greater understanding of the phenomenon of interest. However, due to the inductive nature of qualitative research, this characteristic also presents a struggle in situating the role of theoretical framework in a qualitative study (Merriam, 2009). Nonetheless, Merriam argued that the “theoretical framework is derived from the orientation or stance that you bring to your study, and every study has one” (p. 66). She further elaborated that most qualitative research contributed to the existing body of theories in ways in which: “(1) data are analyzed and interpreted in light of the concepts of a particular theoretical orientation, and (2) a study’s findings are almost always discussed in relation to existing knowledge (some of which is theory)” (p. 70). While performing an inductive approach to the collected data, this study also used the theoretical framework based on the social cognitive model of SRL to guide the data analysis and interpretation of the findings.

The third characteristic of basic qualitative research is the emphasis on the information gathered in naturalistic settings and from the participant’s point of view. Context is an important concern in qualitative research (Bogdan & Biklen, 2007). Thus, when conducting a qualitative research, it is essential for the researcher to become the primary instrument and get as close to the data source as possible. As posited by Merriam (2009), the human instrument is the most ideal in qualitative research because human beings have the
capabilities to be adaptive and responsive to the research needs during the data collection and analysis process. At the same time, researcher will also carry their positionality and own biases into the study, which will inadvertently impact the study. As this is an inevitable aspect of using a human instrument, Merriam suggests that every qualitative researcher must carefully identify and monitor their subjectivities when conducting a research. This study noted and addressed the subject of researcher’s positionality and assumptions in a separate section of this chapter.

Another distinctive characteristic of qualitative research is its focus upon rich data descriptions. Rather than numbers, qualitative data naturally take the form of words or/and pictures. Depending on the research approach, qualitative data may include interview transcripts, fieldnotes, photographs, videotapes, personal documents, memos, and other official records (Bogdan & Biklen, 2007). When analyzing the data, the qualitative researcher will work as closely as possible to maintain the richness of the data in forms of which the data was recorded or transcribed. As stated by Bogdan and Biklen, “nothing is trivial, that everything has the potential of being a clue that might unlock a more comprehensive understanding of what is being studied” (p. 5). In dissemination of findings, the written word is very important in qualitative research. Qualitative findings often contain direct participants’ quotations, and may be supplemented by quotations from documents, field notes, excerpts from videotapes, and electronic communication in order to produce a rich description of qualitative findings. The researcher may also convey what they have learned about the study by presenting the descriptions of the context, the participants
involved, and the activities of interest (Merriam, 2009). This study has presented a rich description of the self-regulatory process described by the adult undergraduates in online credit courses, by supporting the research findings using participant profiles, expanded participant quotes, and personal narratives that highlight the descriptions of beliefs and actions of SRL as reported in this study.

**Site & Participant Selection**

When planning a research design, Berg (2007) recommended selecting a study site that is both accessible to the researcher and has an appropriate target population to meet the research purpose. He advised “select a site or setting that is reasonable in size and complexity so the study can be completed within the time and budget you have available” (p. 39). Due to the study’s interest in studying the adult undergraduate students in a postsecondary setting at a 4-year institution, locating a target population within NC State offered the best option for the researcher in terms of practicality and accessibility.

In addition, this study was also interested to examine the topic from an online course setting, looking at credit courses where 80 percent or more of the course content is being delivered via online with typically no face-to-face meetings (Allen & Seaman, 2013). At NC State University, all online courses were offered as a type of distance education (DE) that was administered and supported through the Distance Education and Learning Technology Applications (DELTA) unit. Therefore, the researcher made contact with the Director of Distance Education Administrative Services at DELTA, and obtained some statistical information about the DE courses that were offered at NC State. In fall 2013-14, NC State
offered a total of 1,783 distance education courses and section (personal communication, July 14, 2014). From these numbers, there are 997 courses that were offered at the undergraduate level. Total DE enrollments were distinguished by enrollments from on-campus undergraduate students (a total of 24,743 enrollments), and enrollments from distance education undergraduate who took DE programs (a total of 1094 enrollments). The DE course delivery at NC State was offered in three different formats, with some courses combining more than one of the following format: Internet delivery; interactive video-conferencing; and face-to-face site-based format at locations remotely from NC State campus (NC State Distance Education, 2014). The DE courses at NC State were offered throughout the year, during the regular Fall and Spring semesters, as well as for the Summer sessions (Summer I, Summer II, and Summer 10-Week sessions). Majority of the courses were offered via Internet delivery, supported largely by Moodle, an official Learning Management System (LMS) used at NC State. In addition, the online course offerings may also be enhanced using other online learning tools such as Blackboard Collaborate (suites for synchronous learning tools), WebAssign (for homework, quizzes, and tests) and other tools, as determined by the respective instructors. Most of the online courses did not required campus or site visits, where all course requirements can be completed online or remotely from campus.

In targeting the online adult students, this qualitative study performed a purposeful sampling to seek for individuals that that can provide insights and in-depth understanding about the study. Patton (2002) described purposeful sampling as a sampling method that
“focuses on selecting information-rich cases whose study will illuminate the questions under study” (p. 230). In particular, this study performed a mixed purposeful sampling by combining several strategies to meet the multiple needs of the study. The mixed sampling strategies were performed in order to meet the purpose of this study, based on interest and focus of the study, the targeted participants that were available, the constraints being faced, and the sample size that was needed to satisfy the needs of the study.

A key step in purposive sampling was locating for individuals who can provide “information-rich cases – cases from which one can learn a great deal about matters of importance and therefore worthy of in-depth study” (Patton, 2002, p. 242). Therefore, the first logical step in purposeful sampling was to “establish[es] in advance a set of criteria or a list of attributes that the units (or individuals) for study must possess” (LeCompte and Preissle, 1993, p. 69), and then proceeds to locate individuals that meet the predetermined criteria. The sampling criteria for this study was developed based on two key strategies: (1) logical rationale for the study based on criterion sampling; and (2) theory-based sampling using theoretically informed criteria (Patton, 2002). Key criteria for this study’s selection was NC State students who were: (1) enrolled as undergraduates as of fall 2014; (2) completed 30 hours of credit or above (Sophomore classification or above); (3) 25 years of age or older (as of August 1, 2014); and (4) were completing their courses in fall 2014 in online distance education format only. Moreover, this study also required the participants to have completed at least two DE credit courses at NC State prior to fall 2014 semester. This requirement was
to ensure that all participants had adequate online learning experiences to share and compare during the interview process.

A theory-based sampling strategy was also employed to further refine the participant selection for this study. A theory-based sampling was a more conceptually oriented version of criterion sampling, where “the researcher samples incidents, slices of life, time periods, or people on the basis of their potential manifestation or representation of important theoretical constructs” (Patton, 2002, p. 238). Therefore, in addition to using age as a parameter to delineate the adult undergraduates from the larger undergraduates population at NC State, this study also outlined additional criteria using the adult student’s definition as conceptually defined by Kasworm (2003). This definition refers to adult students as those who not only represented the status of age (twenty-five years of age or older), but performed at least one other adult role or responsibility, or satisfied at least one aspect of being in the status of maturity and development complexity. The status of responsibility was identified when the student was performing adult roles involving work, family, and/or community, other than their role as a college student. Meanwhile, it was assumed that the student would confer a perspective reflecting maturity and development as an adult based on the student’s age, accumulated commitments, and/or role responsibilities. Therefore, in addition to age, this study was also seeking for students who have self-supporting jobs and/or family dependent(s), on top of their college student commitment.

In essence, this study was looking at adult students who were 25 years of age and above, at least in their second year of an undergraduate degree, who had a self-supporting job
and/or family commitment, were completing their courses in fall 2014 in online distance education format only (during the period of data collection), and had taken at least two DE online credit courses at NC State prior of fall 2014 semester. The individuals that met the above criteria were identified using several strategies. First, a list of eligible students was drawn through the Office of Institutional Research and Planning (OIRP, formerly known as UPA) at NC State using the following criteria: (1) enrolled as undergraduates as of fall 2014; (2) completed 30 hours of credit or above (Sophomore classification or above); (3) 25 years of age or older (as of August 1, 2014); and enrolled only in DE online credit courses for fall 2014 semester. Based on the above criteria, the Office of Institutional Research and Planning responded to the researcher’s request with a total of 147 number of participants that met the study’s requirements. Due to limitations of student information that can be filtered and selected by the OIRP, the rest of the eligibility requirements were identified in the selection process in two ways: (1) by listing all the criteria in the study invitation, in which interested, eligible respondents self-selected themselves to participate; and (2) prior to selecting and setting up for interviews, all the eligibility criteria for participation were noted and confirmed with interested respondents who made contacts with the researcher (see Appendix B).

Invitations to participate in this research were distributed in three ways. First, an email request was sent out by the researcher based on the list provided by the OIRP. Second, on behalf of the researcher, the same email request was administrated and posted by the program adviser of the Leadership in Public Sector (LPS) program to its undergraduate students. The reason why the LPS program was specifically chosen for this recruitment
strategy was because at the time of this study, LPS was currently the only full standing Distance Education program offered for undergraduates at NC State. The program was also known to cater to primarily adult students, specifically those with military and administrative work experiences background. Third, printout flyers of the study request were also disseminated at two distance education testing locations on NC State campus (Note Appendix F). A total of eleven participants were recruited for this study; six responded from the mailing list, four were from the LPS program, and one volunteered after reading the flyer information.

Data Collection

Data collection refers to “a series of interrelated activities aimed at gathering good information to answer emerging research questions” (Creswell, 2007, p. 118). Basically, any ordinary information and raw materials can become data in the mind of a researcher (Merriam, 2009). It captures and communicates someone else’s experience, gives insights into someone else’s perspective, and provides rich descriptions on the nature of study. Therefore, in order to transform the data into meaningful findings, data collection must be pursued based on the kind of analysis that the researcher wishes to undertake (Garwood, 2006). This study collected three types of data; using interviews, documents, and field notes. This section described the specific methods of data collection and procedures that were conducted in the study.
Interviews

The primary data collection method for this study was through interviews. Interview represents a “purposive conversation” (Bogdan & Biklen, 2007, p. 103), conducted in order to “yield direct quotations from people about their experiences, opinions, feelings, and knowledge” (Patton, 2002, p. 4). By using interviews as the method of data collection, the researcher was able to solicit purposeful information directly from the participants using their own words.

A total of eleven participants were interviewed for this study. This study conducted in-person interviews with all participants using a semi-structured format. A semi-structured format means the interviews were less structured, more flexibly worded, and did not have a certain order to the questioning (Merriam, 2009). The flexibility of a semi-structured interview allowed the researcher to be responsive to the individual’s responses during the interview process. An interview protocol with a listing of potential key question was used to make sure that all major topics were consistently covered in every interview (note Appendix E). The development of the interview questions was mainly guided by the research questions, this study’s theoretical framework (Zimmerman, 1989, 2000, 2002), and the researcher’s formal literature review on the topic. The interview questions were devised to support the answering of the study’s three research questions. Because the study aimed to draw and collect the student’s unique recall of learning processes during their online learning experiences, specific methods were used to increase the relevance of the data collected through the interviews. In particular, this study depended upon two interview techniques;
think-aloud protocol and critical incident technique, to effectively draw the recollection of participants’ self-regulatory experiences when learning online.

**Think-aloud protocol.** This is an interview technique that “aims to elicit the inner thoughts or cognitive processes that illuminate what’s going on in a person’s head during a performance of a task” (Patton, 2002, p. 385). Based on their individual online learning experiences, several related learning task situations were selected and presented to participants during the interview process (Note Appendix E, Part 2). The goal was to get the participants to verbalize their thoughts and feelings as they engaged in the learning tasks inside their head (Patton, 2002). This technique was found to be effective in getting the participants to recall details on the steps that they took when performing online learning tasks, particularly in the interest of drawing their specific strategies as they engaged in self-regulatory process.

**Critical incident technique.** This technique was performed both as a form of data collection and a method for data analysis in this study. The critical incident technique (CIT) is “as its name suggests, involves the study of critical incidents – or significant instances of a specific activity – as experienced or observed by the research participants” (Hughes, 2007, p. 1). In particular, the purpose of the CIT in the study was not necessarily to draw on the dramatic experiences, but rather, to invoke the participant’s responses towards critical incidents that contributed to the richness of the data and the intent of the study. During the interview process, this technique was essentially used to capture the essence of the participants’ real-life experiences in a contextualized setting. By drawing on their critical
incident events when learning online, this technique helped to elicit information from the participants that are both context sensitive to the online course setting, as well as focused on events that are deemed significant by the participants in retrospect to their overall online learning process.

This study also followed the five-step CIT process as outlined by its progenitor, John Flanagan (1954). The first step in CIT was to ascertain the general aims of the activity, which essentially relates to the study’s research questions and provides directions for steering the activity to meet the intent of the study. The study aim was to identify the associated learning incidents that lead to the use of SRL processes by the study participants, as expressed through their beliefs, thoughts, actions while learning online. Accordingly, the next step was to specify plans and conditions for collecting the incidents. This stage was achieved by developing and refining the interview questions as means to collect information for the study, that ranges from “studying effective and ineffective ways of doing something, to looking at helping and hindering factors, collecting functional or behavioural descriptions of events or problems, examining successes and failures, or determining characteristics that are critical to important aspects of an activity or event” (Butterfield, Borgen, Amundson, & Maglio, 2005, p. 476) (see Appendix D & E). The third step was data collection, which was collected orally in the study through semi-structured interviews. The two final CIT steps were analyzing the data; and interpreting and reporting the findings. Further discussion is explained under the data analysis section in this chapter.
Data collection stage was phased out once data saturation was met. Data saturation was determined based on redundancy of information received during the latter interviews and replication of pattern identified in the dataset (Bowen, 2008).

**Documents**

In addition to in-depth interviews, this study also relied on documents as a secondary data collection method. Documents were collected and used in the study in two ways. First, as available and willingly provided by the participants, the researcher requested and collected course materials from past online courses that participants had completed at NC State. The documents collected included course syllabus; description of weekly assignments and readings; description of major individual or collaborative assignments/projects; assignment or scoring rubrics; and additional supplemental documents as voluntarily provided by the participants. The main purpose of this data collection strategy was to gather supplemental information to help the researcher to understand the discourse and nature of the course setting as presented in the participants’ narratives. All these documents were obtained by requesting them directly from the participants with a list of suggested documents prior to their interview session (Note Appendix C). In some cases where the participants mentioned specific information during the interview, the researcher followed up by asking the participant to send the related document as deemed necessary to support the researcher’s understanding of the information they have previously provided.

Secondly, the rationale for collecting the course documents was to collect additional information about the online course structure. The data was used to address the subjectivity
issue of different courses that were taken by the participants by providing additional references to help compare the differences in the online course component. Another key advantage to this strategy was the triangulation of the data collection, where the data was used to probe and identify certain course components that have bolstered the SRL processes specifically for certain individuals by using critical incidents.

**Field Notes & Memos**

This study also used the field notes technique to record different observations, emerging themes and patterns, or connection between pieces of the data that emerged while interviews were conducted or when the documents were reviewed. According to Bogdan and Biklen (2007), field notes are “the written account of what the researcher hears, sees, experiences, and thinks in the course of collection and reflecting the data in a qualitative study” (p. 199). During the course of the data collection, the researcher recorded two types of field notes, known as the descriptive and reflective field notes (Bogdan & Biklen, 2007). The descriptive field notes consist of researcher’s observations on the details that have occurred in the research setting. The contents include descriptions of the subject, physical setting, reconstruction of dialogue, accounts of particular events, depiction of activities, and observer’s behavior (Bogdan & Biklen, 2007). In addition, the researcher also took reflective field notes. Reflective notes typically consist of the researcher’s reactions, ideas, hunches, and dilemmas that emerge during the course of research (Bogdan & Biklen, 2007). Reflective notes may also record problems, inadequacies, and mistakes that occurred in the research setting. During the study, these field notes were used together with interviews in aiding the
researcher in the following areas: (1) fleshed out the context in which the interviews took place; (2) provided the researcher with a self-reflective lens to continuously monitor her thoughts and subjectivity in the research setting; (3) kept an accurate record of the methods, procedures, and evolving analysis for research design improvement purposes (Bogdan & Biklen, 2007). All these advantages were particularly important to ensure the quality of this study.

In addition to field notes, the researcher also developed and recorded memos during her research. Memos are considered distinct from field notes, distinguished by its interpretive nature of journaling as opposed to being descriptive (Gibbs, 2007). Memos are essentially notes about the dataset. Memos offer some insights and preliminary analysis about the data while being collected. Its content built upon the earlier memos, and all memos were brought forward into higher level of data analysis after the researcher phased out from the data collection stage. This technique complimented the constant comparative method of data analysis that was performed for this study. Discussion on the data analysis procedures was elaborated in the data analysis section of this chapter.

In terms of journaling the field notes and memos, the researcher recorded all her field notes and memos in a “reflexive journal” (Erlandson, Harris, Skipper, and Allen, 1993, p. 143). Instead of maintaining multiple records, the researcher kept track of all her descriptive, reflective, and interpretive field notes and memos in a single journal by marking them differently based on the letter brackets as suggested in Gibbs (2007): Observation notes (ON); Methodological notes (MN); Theoretical (or analytical/ interpretive) notes (TN); and
Personal (or reflexive) notes (PN) (Richardson, 2004, p. 489). All these notes were collected and maintained throughout the course of this research.

**Data Collection Procedures**

The NC State University Institutional Review Board (IRB) granted permission to conduct and perform this research on July 9, 2014 (IRB Approval #4097). Based on administrative review, the IRB board determined that this study design’s posed minimal or no risk to potential participants. This study thus was approved as *exempt* from the policy as outlined by the Code of Federal Regulations (Exemption: 46.101. b.2). During the data collection process, additional IRB revisions were also approved for requests to employ additional recruitment strategies until data saturation was met.

A pool of potential participants was identified through the Office of Institutional Research and Planning at NC State based on the criteria previously discussed above. Upon receiving the email list, the researcher initiated contact by sending out an email request to invite voluntary participation for the research. To protect the confidentiality of all the students in the mailing list, all the email addresses was sent out in bcc (blind copy) mode. Only the researcher’s email address was visible to all the students that were contacted in the email invitation. Additionally, to solicit participation from the adult undergraduates in the Leadership in Public Sector (LPS) program, the same email request was posted internally by the LPS’s program advisor on behalf of the researcher. Research invitation was also extended using printout flyers that were posted in two distance education testing centers on NCSU.
campus (Note Appendix F). A total of eleven respondents were successfully recruited to participate in this study.

The email request to invite participation for this research included the following information: (1) research purpose; (2) eligibility criteria for participation; (3) expected hours of commitment when participating, (4) compensation for participation, and (5) the researcher’s contact details (Note Appendix B). Interested participants were asked to contact the researcher directly and provide their names and contact details, best time to be reached, their program major, and number of online DE courses that they have completed at NC State prior to fall 2014 semester.

Interview appointments were established by the participants’ choice of their most convenient time and place to be interviewed. For every interview that took place, each participant was requested to either email or bring relevant documents, including a course syllabus, descriptions of weekly assignments or course project, assignment grading guidelines (rubrics), and other related online course material documents as supplementary materials for the interview (Note Appendix C). For every interview session, all participants were asked to complete the written consent form (Note Appendix A).

Prior to the interviews, all the participants were asked to fill in a brief introductory questionnaire (Note Appendix D). The purpose of this brief questionnaire was to gather basic background information about the participants that were relevant to the purpose and logistics of the study. The interview was subsequently conducted after the above step was completed.
Each participant that completed the interview was given an Amazon gift card worth $15 as a compensation for their time and participation.

The final protocol was to perform a member check procedure with the participants. This procedure was one of the strategies selected to increase this research’s trustworthiness. This procedure was conducted in two stages. First, upon completion of the interview, the researcher briefly summarized all the main points that the participants have discussed during the interview. The key advantage to this step was that it allowed the participants to promptly correct or respond to any errors or misinterpretations that may occurred during the conversation. In addition, all participants were also given an option to review their transcriptions via email. All transcripts were delivered to the participants within 2 to 3 weeks from the day of their interview by email or via US post service based on the preferences indicated by them in the introductory questionnaire. For confidentiality purposes, no identifying information was included in the transcription that was sent to the participants.

All corrections that were identified were corrected and communicated to the researcher via email. Upon completion of the data collection, all pseudonyms of the participants were gathered, and one name was drawn from the list as the receiver of an iPad mini. At the final stage of the data collection, the researcher sent out an email to all participants to thank them for their time and voluntary participation in the research.

**Data Analysis**

Data analysis refers to a systematic process of working with the data using some method or process that will allow for understanding and interpretation of the data (Bogdan &
Biklen, 2007). The key purpose of doing a data analysis is to make sense out of the data (Merriam, 2009). Merriam views the data analysis as the “process of making meaning” (p. 176), where the researcher works to consolidate, reduce, and interpret large amounts of data in order to transform the data into meaningful findings. Qualitative data analysis involves the analytic task of identifying incidents, codes, and categories, as well as developing the codes and categories into findings, and making connections to the literature and research inquiry (Merriam, 2009).

This study analyzed the data using the combination of constant comparative method and critical incident analysis to identify recurring themes across the dataset. A qualitative software analysis, MAXQDA was used to assist the researcher during the data analysis process, particularly from the aspect of data management and handling. The constant comparative method, as the name implies, refers to a strategy where the researcher actively compares a particular incident with another incident within or among the dataset collected during the study (Birks & Mills, 2011; Merriam, 2009). In this study, data analysis was simultaneously conducted in conjunction with data collection because the final categories were determined based on the continuous analysis of the data. The data collection process was phased out once data saturation has been met. Data saturation referred to a point where the data collected no longer adds to any new understandings of the existing information (Merriam, 2009). During the analysis, the researcher determined data saturation in her study based on the following indicators: (1) when new data collected can be added into existing categories or themes (recurring pattern); and (2) when additional data collected does not
result in any new insights to be learned about the study (redundancy of data) (Bowen, 2008; Charmaz, 2003).

The analysis was also guided by the critical incident analysis process as recommended by Flanagan (1954) and Hughes (2007). To begin the critical incident analysis, a frame of reference was established. A frame of reference referred to a set of broad categories that were used to generally classify the incidents collected that pertain to the purpose of the study (Flanagan, 1954). The study’s frame of reference for the analysis was to look for positive or negative incidents that led to the SRL processes among the adult undergraduates when learning online. The next step was the formulation of categories and subcategories of the data by using inductive approaches. Flannagan (1954) described this step as a subjective process that depends on the “insight, experience, and judgment” (p. 344) of the researcher. The process began with an open coding; a task where the researcher assigns some sort of “shorthand designation” (Merriam, p. 173) such as abbreviated text, numbers, or colors, to any part of the data that catches the researcher’s attention as significant or potentially relevant to the study. When doing an open coding, the researcher was basically being open to any possibility that may be found in the data (Merriam, 2009). The purpose of this coding was mainly to “fracture the data” (Birks & Mills, 2011, p. 12). In addition, “line-by-line coding” (p. 258) was also performed on each of the transcripts as recommended by Charmaz (2003), in order to heighten the researcher’s sensitivity and familiarity on the data.

After the tentative names and brief definitions for the main categories have been created from the open coding process, the data analysis moved on to the next level of coding.
The next level of coding focused upon modifying, combining, and reducing the number of codes and categories into more refined categories and subcategories. According to Merriam (2009), the process of combining the open codes was also known as the axial coding. This process also included continuously re-examining and revising the main categories and subcategories through constant comparative method, where new sets of data were continuously being brought into the study analysis. Next, Merriam (2009) described a process of “a subtle shift to a slightly deductive mode of thought” (p. 183) where the analysis then moved from a highly inductive process when exploring and forming the tentative categories to primarily deductive process during testing and confirming those categories. When refining and finalizing the categories, Merriam (2009) asserted that the final categories should be responsive to the research purpose; be exhaustive, mutually exclusive and sensitive to the data as much as possible; and be conceptually congruent to one another. At the juncture where the researcher began to identify repeating patterns and regularities in the dataset, data collection process was phased out and the researcher begin to exclusively work on interpreting the final categories and reporting them into meaningful findings.

**Trustworthiness & Rigor in Research Design**

When conducting a study, a researcher needs to ensure that the study meets the quality and rigor of a good research practice (Marshall & Rossman, 2011). The idea of trustworthiness represents the naturalistic framework for ensuring rigor in qualitative research. As noted by Lincoln and Guba (1985) there are four trustworthiness criteria in naturalistic inquiry research: credibility, transferability, dependability, and confirmability.
The first key criterion deals with the credibility of the study. Credibility, the equivalent concept for internal validity, deals with the question of whether research findings are congruent with the reality (Merriam, 2009). Although the notion of reality was very subjective when viewed within the interpretive nature of qualitative research, the goal was to promote confidence that the study had recorded the phenomena of interest as accurately as possible. This study engaged in several strategies as its efforts to increase the credibility and validity of this study. The first strategy was to use the triangulation method. Triangulation refers to the practice of collecting information and comparing results from multiple sources or methods in the same study (Denzin, 1978). In particular, this study engaged in a triangulation strategy by collecting and recording data using multiple strategies: interviews, documents review, and researcher’s field notes. By combining different methods in the same study, the researcher may more confidently assumed that the data has been collected as accurately as possible by overcoming the flaws of one method by using the strengths of another (Denzin, 1978).

The second strategy for validity and credibility in the study was performing member checks with the study participants after the interviews have been completed. Based on the suggestion by Erlandson, Harris, Skipper, and Allen (1993), member checking was conducted at the end of interview by summarizing the data and allowing the participants to immediately respond to any errors or misinterpretations that may occur during the interview. This strategy was especially salient for me as a bilingual researcher, where English is not my first language. In order to check for accuracy, the interview transcription was also furnished.
to the respective participant within 2 to 3 weeks from the day of their interview, with any feedback and changes being communicated back to the researcher via email.

Meanwhile, the second measure of trustworthiness in a research study was the transferability of the research findings. While generalization is not a goal in qualitative research, the purpose of this criterion is to provide sufficient contextual information about the study, so that other readers will be able to assess the context of study and apply it to their own situations if applicable (Shenton, 2004). To ensure that this aspect of a qualitative research was being met, this study incorporated the strategies as proposed by Guba (1981): (1) performed a purposive sampling in order to maximize the range of information being covered, and (2) provided rich thick description by specifying everything that a reader may need to know in order to understand the findings in the given context. The triangulation method discussed earlier has also supported the transferability of the research findings by ensuring that the data collected was rich and comprehensive.

The final two criteria include the dependability and the confirmability of qualitative research. Dependability rests on the issue of achieving consistency when performing a qualitative research. The purpose is not for future researchers to repeat the work and get the same results, but rather, demonstrating that the findings are consistent with the data collected (Merriam 2009, p. 221). As a strategy to promote dependability of this study, the researcher maintained an audit trail of all the steps taken during the research process. This strategy includes maintaining detailed descriptions of the methods, procedures, and decision points through the use of a reflexive journal. The reflexive journal enhanced the dependability
aspect of this study by serving as a diary that provides “information about the researcher’s schedule and logistics, insights, and reasons for methodological decisions” (Erlandson, Harris, Skipper, and Allen, 1993, p. 143) The same reflexive journal also essentially become a part of the audit trail for this study.

The same strategy of the reflective journaling also promotes the confirmability of the study. Confirmability in qualitative research refers to measures taken to ensure that the research findings are the result of the experiences and ideas by the participants, instead of letting the researcher’s subjectivity to dominate the findings (Shenton, 2004). Because a human instrument (i.e. the researcher’s interpretive view) was being used to conduct this qualitative study, steps must be taken to ensure that the researcher’s subjectivity in the research process was being addressed as much as possible. One strategy that was used as to document the researcher’s positionality in a reflexive journal. The use of the reflexive journal was a valuable strategy to enhance confirmability of this study because it aids the researcher to articulate “biases, dispositions, and assumptions” (Merriam, 2009, p. 219) that they bring into the study. In addition, the researcher’s positionality was also presented to the readers in the following section. The researcher positionality statement provides the readers with an understanding on how the researcher’s positionality might influence any aspect of the study (Patton, 2002).

**Researcher’s Positionality and Assumptions**

This statement of my positionality as a researcher will inform myself and the reader of how the data was being selected, filtered, and analyzed in this research study (Creswell,
2007; Merriam, 2009). In fact, Patton (2002) suggests that it should principally provide
“personal and professional information (about the researcher) that may have affected data
collection, analysis, and interpretation -- either negatively or positively -- in the minds of
users of the findings” (p. 566).

My interest in this topic of study stemmed from my first experience tutoring the adult
undergraduate students who were taking a distance education course back in my home
institution in Malaysia. I was intrigued not only by the interest they showed on the subject
that I taught, but also on their overall motivation and enthusiasm to complete the distance
education program successfully. As I established a relationship with the group that I taught, I
learned more about the various aspects of their learning process, in particular on their self-
supporting efforts to learn and manage their learning in the distance education program.
When I first developed my research proposal, I had planned on conducting this research in
Malaysia with a similar group of students. However, due to personal and financial
restrictions, I decided to conduct this study with the NC State undergraduate student
population. Since I’m also an NC State student and had previously taken several distance
education (DE) courses as part of my Master and Doctoral programs, I had a certain
familiarity with the primary course management system (Moodle) commonly used by NC
State’s instructors to support all their online DE courses. I also went through a learning curve
period when I first took my online DE course at NC State, thus I had formed pre-conceived
ideas on how to approach and manage the learning situation based on my previous
experience. Hence, it was critical that I recognized my own prior learning experiences when I
conducted the data collection and analysis process during my research process. One of the strategies that I used was a bracketing strategy. Bracketing refers to “the process of setting aside, suspending or holding in abeyance presuppositions surrounded a specific phenomenon (Gearing, 2004, p. 1433). A bracketing process involved suspending both the internal (researcher) suppositions such as personal knowledge and experience, and external (phenomenon) suppositions that may be contributed by the researcher’s academic background and theoretical knowledge (Gearing, 2004). My internal suppositions, as described, were related to my prior experiences in taking several online DE courses and being familiar with the course management system (CMS) frequently used at NC State. My external suppositions about the study were highly influenced by my academic background as a graduate student in the adult education program at NC State. I came to view that most adult students were highly motivated and brought a unique set of experiences into their formal learning process. I also acknowledged that adult students might deal with many personal and work challenges outside from their role as a student. I believed that all these factors might hypothetically impact the ways they choose to engage in a learning process, in both positive and negative ways. When shaping this research, I presupposed that all adult students were engaged with SRL strategies to some extent in their learning, and that taking online courses required them to become self-regulated learners to an even a higher degree. I presupposed that their online learning experiences were distinct from those of traditional-age, younger college students, and I feel that it was important to explore those experiences by framing it through the lens of self-regulated learning. As a qualitative researcher, it was important for
me to identity all these presuppositions before I entered the field, and to be consciously aware of it as I performed my data analysis and interpretations. More importantly, I continuously reminded myself not to let my experiences and assumptions to dominate the study, but rather, let the experiences of my participants speak to the study.

Chapter Summary

This chapter presented the qualitative research design that was used for this study. The study utilized a basic qualitative approach to study the self-regulatory process used by the adult undergraduates in online credit courses. This methodology was focused on uncovering the beliefs and actions of the participants in this particular topic. The study was inductive and naturalistic in nature, and rich in its data description. The social cognitive theory of self-regulated learning (SRL) was used as the theoretical framework to guide the study, although new categories were allowed to emerge from the data as part of the inductive process. Data were collected within the NC State student population by locating the adult undergraduates who were enrolled in online DE courses in fall 2014. The study relied on purposeful mixed sampling and several recruitment strategies to identify all participants in this study. The primary data source for this study was interviews, with supporting data from documents and field notes. A critical incident analyzing using the constant comparative method was used to largely analyze the dataset, with a focus on developing the categories and themes that were highly inductive. A qualitative software analysis, MAXQDA was also used to assist the researcher during the data analysis process, particularly from the aspect of data management and handling. Several trustworthiness strategies were performed, such as
data triangulation, member checks, as well as keeping an audit trail and reflexive journal. In addition, this study also presented rich thick descriptions as measures to increase the trustworthiness of the research findings. A description of the researcher’s positionality was also discussed in order to promote transparency in regards to the researcher’s biases and subjectivities. To also maintain trustworthiness, the researcher also employed a bracketing strategy to identify both the internal and external presuppositions that the researcher may have brought into the study. This strategy was to ensure that participants’ perspectives will be placed as central to the study, rather than being skewed by the researcher’s prior experiences and beliefs of the topic.
CHAPTER FOUR

FINDINGS

This chapter presented the findings of this research study exploring the self-regulatory beliefs and actions of adult students learning in online credit courses. Eleven North Carolina State University’s (NC State) undergraduate students voluntarily participated in this study. All of these students were initially identified based on their online (distance education) course participation in the fall 2014 semester. All of them also met the following sampling criteria: 1) met the age requirement of 25 years of age and above (as of August 1, 2014); 2) have a self-supporting job and/or family commitments; 3) are at least in their second year (Sophomore classification) or above; 4) were completing their fall 2014 semester through online (distance education) courses only; and 5) have completed at least two distance education online credit courses at NC State University prior to fall 2014 semester. Ten of these students participated in online courses that were completely asynchronous. This asynchronous online setting enabled the students to complete a course without having to either commute to a physical location or participate at a specific time for a class each week. Meanwhile, one student participated in site-based (synchronous) distance education courses. These courses required the student to watch pre-recorded lectures at an assigned site, while the rest of the course requirements were completed asynchronously online.

By employing a basic qualitative investigation (Merriam, 2009), these eleven adult students were interviewed regarding their beliefs and actions when learning online. Through the students’ narratives and sharing of critical incidents, their experiences were analyzed
using thematic analysis to identify emerging themes across the data set. Through the process of data analysis, data were reduced to meaningful segments which were then categorized and assigned descriptors (Creswell, 2013) to provide a broader conceptual overview on how adults described, experienced, and supported their online learning process. Zimmerman’s (1989, 1990) social cognitive model of self-regulated learning (SRL) provided the conceptual framework for this study.

This study sought to illuminate the following research questions: (1) What key beliefs do adult students hold about themselves as online learners? (2) How do adult students describe their engagement in the online learning process? (3) What strategies do adult students use to support their online learning?

By drawing upon online adult student experiences and critical incidents, three sets of key findings emerged from the data. The first set of findings discussed the beliefs of these adult students in viewing themselves as online learners in the current learning setting. The second set of findings focused upon the adult students’ key actions in the management and engagement of their online learning. Meanwhile, the third set of key findings revealed the strategies and related supports that adult students had identified as important when engaging in their online studies. To add richness to the study’s findings, brief descriptions of individuals’ participant profiles were provided in the first section.

Participant Profiles

As an overview, eleven adult undergraduate students from North Carolina State University (NC State) participated in the study. Seven participants were interviewed during
fall 2014 semester, while the remaining four interviews were completed in Spring 2015 semester. All of these students were initially identified for this study based on their online (distance education) course participation in fall 2014 semester. The total sample included nine female and two male students who ages ranged from 26 to 60 years old. The average age of the students was 38 and the median age was 36. This group represented students from different academic programs and colleges. As of spring 2015, all participants were upper division undergraduate students, except for one individual who graduated at the end of fall 2014 semester. All but one student came into their current undergraduate program through one of two pathways: (1) re-entry students who came back to complete their previously unfinished degrees at NC State; (2) transfer students who completed their associate degrees at community colleges. For some students, related credits such as those from military and previous bachelor’s degrees from other institutions were also carried over into their current undergraduate standing.

Because this study was interested in exploring the participants’ broader life involvements as adult students on their online course participation, their employment and family related information were also examined as part of the study profiles. Out of the eleven participants, five students were employed full time; one had a part time teaching job; two persons held both a full-time and an additional part-time job, while three others were stay-at-home-parents. All but one student had children, with ages ranging from 1 to 20 years old.
Most of these adult students participated in their degree programs on a part time basis. However, four of the eleven students attended on a full-time basis during the semester of fall 2014 when they were recruited for interviews. Among the eleven interviewed students, four of them were in online degree completion program in Leadership in the Public Sector. One student participated in a distance site-based Mechanical Engineering program. The remaining students were students from other undergraduate programs at NC State. All of these students were initially identified for this study based on their online course participation in fall 2014 semester; all of them were completing their fall 2014 semester through online (distance education) courses. Upon contacts, these students volunteered to participate in this study. Table 4.1 summarized the demographic overview of the eleven adult students.

In order to have a fuller sense of the study participants, a brief profile of each student has been presented in the following pages. This study was geared towards understanding how adult students, with existing adult role responsibilities, described their beliefs and actions when learning in online course setting. Therefore, each individual profile highlighted each participant’s involvement as a student in relation to their key adult roles and responsibilities, such as job and/or family responsibilities. In addition, these profiles described their current degree program, educational background, past life experiences, and purpose for getting a degree. All identifying information, including the names of the interviewees, has been changed to maintain anonymity of their real identities.
Nadine

Nadine is a 40-year-old female student. She holds both a Bachelor’s (Elementary Education) and a Master’s (English) degree. Nadine is currently pursuing a Bachelor’s degree in Women & Gender Studies because of her interest to learn about the subject matter in a more structured way.

Nadine viewed herself as a lifelong learner, noting that this was one of the reasons why she is pursuing another bachelor’s degree. She described herself as a disciplined and enthusiastic student, and often expressed her desire to get good grades while also deeply engaging herself with the learning materials. She typically took one class per semester. In her learning process, she noted receiving encouragement and support from both her husband and her employer.

Nadine is married and works full time. Her normal working hours are from 9am to 5 weekdays, requiring 40 hours of her time commitment every week.

Jillian

As a 60-year-student, Jillian was the oldest among all the study participants. She obtained her first bachelor’s degree (Interior Design) in the 70s. She was currently enrolled in the Leadership in Public Sector (LPS) degree program in order to update her knowledge and gain a more current degree.

Jillian described extensive work experiences in the project management area, and was working as a project manager at a large service company at the time of the interview. Her job commitment often required long hours, with expectations to work in the evening and
weekends based on the project needs. She carefully selected the online LPS program because the degree area fit her job field. It also let her participate in classes without having to take the time away from work. She regularly took two courses per semester.

Jillian described herself as a type A student who often wanted to achieve the best grades in her studies. She was also very attuned to applying her project management skills to support her learning process. In addition, she focused her class interests on the practical connection of the class to her job or to other knowledge areas that reflected her interest. She desired to continue working for a non-profit organization after she reaches the retirement age, and hoped that the LPS degree would serve as a boost to her future career.

Jillian is married and lives with her husband. They have one adult child who is away at college.

**Amelia**

Amelia is a 28-year-old married student. She is a stay-at-home mother to two young children, aged 2 and 12.

At the time of the study, Amelia was enrolled in the Political Science program. Her aspiration in getting this particular degree was driven by past work experience as a paralegal. Amelia hoped that a degree in Political Science might be a good foundation for a future law career. In the present degree program, she reported a 4.0 GPA standing and credited herself as being a very good student.

Amelia also shared that when she started college at 18, she was also responsible for a child. She recounted having to go through a lengthy process to complete the first two years of
her degree because she was working and caring for a small child at home. Her past experiences in college included taking classes at night, on weekends, and via online. She entered the degree program at NC State by getting a transferable Associate Degree from a local community college. At NC State, she regularly took two classes every semester.

In her studies, she indicated receiving significant support from her husband, especially in relieving her household duties at home and caring for children in the evenings and on weekends while she studied.

**Olivia**

Olivia is a 26-year-old single mother. She has four young children, ranging in age from one to seven years old.

Olivia was pursuing a degree program in Social Work at the time of her interview. She initially started at NC State back in Fall 2006, while she was 4-months pregnant with her first child. After she had her baby, she continued taking classes online and on-campus while working at the same time. In 2011, Olivia decided to withdraw from school. She reapplied and was admitted in Fall 2014. When asked about her reason for coming back, Olivia described a strong desire to finish up her degree and to become successful in life. She also saw the degree as an important credential to have to start a business that would support her hometown community.

After starting back in her program in 2014, she believed she had become a more dedicated student. She reported how she made efforts to apply what she learned and engage
in deep thinking in her classes, and noted how she was making decent grades in all her courses that semester.

Olivia was also a full time student who was currently not working. To support her study and family needs, she was financially dependent upon alimony for her children and financial aid based on full-time student status. While juggling her roles as a single mom and a full-time student, she occasionally has received support from her partner, friends, and families to ease her domestic and parental responsibilities.

**Renee**

Renee was a 36-year-old student from the Environmental Science degree program. In the interview, Renee described an interesting start to her educational journey. When her son got lead poisoning 3 years ago, she started to do significant reading in that area. From these efforts, she decided that she wanted to make a respected contribution to society in the Environmental Sciences field. At the same time, she was also looking to improve her family earning and becoming a good role model to her children.

She started this collegiate journey by taking the SAT exam and making excellent scores. However, because she has been out from school for 15 years, she was told to get some community college experiences first. After completing her Associate degree at a local community college, she enrolled into NC State. She described herself as a diligent full-time student, who not only cared about her grades, but also wanted to master the knowledge taught in all her courses.
Renee is married and has two children, aged 3 and 11. She is currently not working and is financially supported by her husband. She receives significant support from her husband in her academic pursuits. They share equal responsibilities in caregiving for their children at home and homeschooling their older child together. They also mutually agree to dedicate some days in a week where Renee would go to campus and work on her school commitment.

**Miranda**

Miranda was a 38-year-old majoring in the Leadership in Public Sector program. She retired from military duty after being in service for 20 years. Currently, she worked full time as a paralegal. However, she was looking for a career change, and wanted to find another job that utilized her military experience in management supervision. Although she had already earned three associate degrees from multiple institutions, she found that most jobs of her interest require a bachelor’s degree. Therefore, she came to NC State to acquire the needed qualification.

She described herself as a good student, who valued her education more now compared to when she was younger. She took one or two classes per semester depending upon other personal and family needs.

Miranda is married and has two children, aged 4 and 6 years old. She receives family support from both her husband and mother, especially in caring for her children’s needs. This support helps her to put more time towards her study commitment.
Laurie

Laurie was a 53-year-old female student who was pursuing a degree in the Leadership in Public Sector program. She also worked as a part-time preschool teacher. She initially started attending NC State after high school during the 70s. However, she got married and decided to quit in order to support her husband to finish his degree. In 1994, she attempted to continue her degree, but withdrew again after one semester when she found out she was pregnant with her first child. She made a comeback to NC State in Fall 2012.

At this point in her life, Laurie desired to fulfill her personal goal of completing a bachelor’s degree. She also wanted to set a good example to her children. She described herself as a very motivated student, where she was mainly looking to get good grades in order to improve her academic standing from her past undergraduate experience.

She is married and has two children; one is away at college and her youngest daughter is a freshman in high school. Her husband is paying for her studies and is supportive of her learning process. He wants Laurie to earn her degree after she helped put him through school many years ago. Laurie also acknowledges both her children’s support and involvement in her learning process.

Rebecca

Rebecca was a 27-year-old female student from the College of Education. She initially started her bachelor’s degree in Mathematics Education right after high school in 2005. She stopped attending in 2008 after she had her first child. Once she made a decision to come back to college, she went to a local community college for a year. She returned to

Rebecca held two jobs; a full-time job as a retail manager, and a part-time teaching job at an elementary school, which took about 55 hours of her time every week.

While Rebecca is not legally married, she has a partner with whom she is married based in their mutual religious beliefs. Between them, they had three children in their household. Her partner provides her with lots of support, especially in alleviating her household and parental duties, so that she can have more time to focus on her school commitment.

She also receives support from her workplace. Her supervisor supports her by letting her take time off or a longer work break in order to complete her academic responsibilities. Upon completion of her bachelor’s degree, she plans to come back and do a minor in Mathematics. She aspires to become a teacher after she has completed all of the program requirements.

Lizzie

Lizzie was a 29-year old female student studying in the Leadership in Public Sector (LPS) program. She finished her associate degree in her early 20s, and then decided to get married and started full time work. After three years, she decided to come back and get her bachelor’s degree in teacher education. She completed one semester at another institution in North Carolina, and then realized she was pregnant. Because the degree program required her to undergo a student teaching placement, Lizzie decided to quit. She could not afford to stop
working, pay for childcare, pay for her school fees, and go for the student teaching placement for a semester. She chose to return to NC State in 2012, based in her new knowledge about the LPS program, a total distance (online) education program.

Lizzie worked two jobs; as a full-time nanny, and also managed a part-time tutoring management business. She reported balancing her workload between her nanny job and classes in the following manner--whenever she took more classes in a semester, she would supervise fewer children under her care. In Fall 2014 semester, she had enrolled her son into a preschool, and therefore decided to take classes full time for the first time.

Lizzie described herself as a very good student, and often sets a very high academic expectation for herself. Given all her commitments in life, Lizzie perceived that she has been unable to give full attention to her studies, thus creating some internal conflict for not meeting her own academic expectations.

Lizzie is married and has one 2-year-old child. Lizzie has the support from her husband and her parents who live locally. They take care of her son whenever she needs some time and space to focus on her school commitment. Lizzie’s long-term plan is to get into the teaching field, and therefore she is looking to pursue a Master’s of Art in Teaching upon completion of her bachelor’s degree.

**Andrew**

Andrew was a 36-year-old male student from the Mechanical Engineering distance education program. He worked full time as foreman for a construction company. Andrew noted that at 30-year-of-age, he realized that he could not go any higher from his current job
position without further education. He wanted to have better financial and life security, thus he started taking classes at a local community college in 2011. He completed his associate degree within 4 years, and transferred to NC State in Fall 2014.

Andrew described himself as a hard-working student who was willing to put in extra efforts into his studies. As an older student, Andrew perceived himself as someone who needed to work harder in order keep up with his learning, since he had been out of school since high school.

Andrew is married and has two young children in elementary school. He receives support from both his family and employer. Andrew’s wife gave him the time and space to study, while his superior lets him take time off from work as needed to work on his school-related purposes. Upon completion, Andrew hopes he can find a suitable engineering job at a local military base where he lives.

**Inman**

Inman is a 35-year-old male student from the Environmental Technology and Management program. At the time of interview, Inman recently graduated from his program in Fall 2014.

Prior to graduation, Inman had returned to school at the age of 30, first taking classes at a local community college. His main reason for coming back was to acquire a bachelor’s degree that would allow him to have career mobility beyond his current job as a waiter.

Throughout his school years, Inman continued to support himself by working as a waiter. He was strategic about his job during that period, because he wanted to have a job
that paid enough to put him through school, while allowing him to have the flexible working hours necessary to meet his school needs.

In the pursuit of completing his bachelor’s degree, Inman got divorced and settled for shared custody with his ex-wife to care for their seven year-old daughter. Inman is a devoted father and saw his daughter’s future needs as a motivator to finish his degree. He shared his pride about his daughter’s involvement in parts of his learning process.

As a student, Inman described himself as someone who really knew what he wanted. He actively sought in-depth understanding on subjects and courses that he perceived would apply to his career prospects. After his graduation in December 2014, Inman reported that he found the job that he wanted and was starting his new career.

Profiles Summary

As presented in Table 4.1 (see next page), this study included adult students from different academic programs, genders, ages, and family backgrounds. These students also differed in terms of the life experiences that they brought with them into the program, mostly in conjunction with their current or prior work experiences, previous collegial experiences, and educational pathways into the program. Their adult roles involving work and family also varied from one individual to another. Some students juggled multiple roles and responsibilities.

Each student began his or her undergraduate program with differing motivations, aspirations, and purposes. Some students entered the degree program to gain better career or employment opportunities after graduation, whereas others talked about finishing their
degrees for their own personal achievements or individual learning needs. Their motivations during the learning process were also fueled by different goals and personal learning expectations, such as getting good grades, improving their cumulative GPA, becoming good role models to their children, or acquiring knowledge for their personal or career related purposes. Through the sharing of narratives and critical incidents, these adult students shared their respective journeys toward a common goal – acquiring a Bachelor’s degree from NC State
Table 4.1  

*Overview of Participant Information*

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Academic Program</th>
<th>Semester Course Load*</th>
<th>Employment</th>
<th>Family Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nadine</td>
<td>Female</td>
<td>40</td>
<td>Women &amp; Gender</td>
<td>Part time</td>
<td>Full time</td>
<td>Married with no children</td>
</tr>
<tr>
<td>Jillian</td>
<td>Female</td>
<td>60</td>
<td>Leadership in Public Sector</td>
<td>Part time</td>
<td>Full time</td>
<td>Married with one adult child (away for college)</td>
</tr>
<tr>
<td>Amelia</td>
<td>Female</td>
<td>28</td>
<td>Political Science</td>
<td>Part time</td>
<td>Not working (stay-at-home mother)</td>
<td>Married with two young children</td>
</tr>
<tr>
<td>Olivia</td>
<td>Female</td>
<td>26</td>
<td>Social Work</td>
<td>Full time</td>
<td>Not working (stay-at-home mother)</td>
<td>Single mother with four young children</td>
</tr>
<tr>
<td>Renee</td>
<td>Female</td>
<td>36</td>
<td>Environmental Science</td>
<td>Full time</td>
<td>Not working (stay-at-home mother)</td>
<td>Married with two young children</td>
</tr>
<tr>
<td>Miranda</td>
<td>Female</td>
<td>38</td>
<td>Leadership in Public Sector</td>
<td>Part time</td>
<td>Full time</td>
<td>Married with two young children</td>
</tr>
</tbody>
</table>

120
Table 4.1 Continued

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Academic Program</th>
<th>Semester Course Load*</th>
<th>Employment</th>
<th>Family Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laurie</td>
<td>Female</td>
<td>53</td>
<td>Leadership in Public Sector</td>
<td>Part time</td>
<td>Part time</td>
<td>Married with one teenage child, and one adult child (away for college)</td>
</tr>
<tr>
<td>Rebecca</td>
<td>Female</td>
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<td>Education General Studies</td>
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<td>Have both time &amp; part time jobs</td>
<td>Married with three young children</td>
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<tr>
<td>Lizzie</td>
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<td>Full time</td>
<td>Have both full time &amp; part time jobs</td>
<td>Married with one young child</td>
</tr>
<tr>
<td>Andrew</td>
<td>Male</td>
<td>36</td>
<td>Mechanical Engineering</td>
<td>Part time</td>
<td>Full time</td>
<td>Married with two young children</td>
</tr>
<tr>
<td>Inman</td>
<td>Male</td>
<td>35</td>
<td>Environmental Technology &amp; Management</td>
<td>Full time</td>
<td>Full time</td>
<td>Divorced with one young child</td>
</tr>
</tbody>
</table>

* Referring to the student’s semester course load in fall 2014 semester
Background Context: Learning in an Online Learning Environment

A key consideration in this study was a focus on the online learning context among the students who participated in this study. This emphasis was particularly important because it established a learning environment where these students, who were completing their semester through online courses, were expected to exercise a high degree of self-control and personal autonomy in order to fully engage in the online learning process. Current literature had shown empirical support on the importance of self-regulated learning in the online learning arena, largely requiring students to be more autonomous and able to take control of their own learning process (Artino, 2007a, Dabbagh & Kitsantas, 2004; Hodges, 2005).

Overview of the Distance Education Offerings at NC State University

This study context was situated in distance-based credit programs and courses of North Carolina State University (NC State) in Raleigh, North Carolina. Distance education programs of NC State are administrated and housed under DELTA (Distance Education and Learning Technology Applications), a division of the NC State University Provost’s Office. This division has provided:

- learning to students wherever they’re located and whatever their life circumstances. As an extension of the university’s land-grant mission, we offer more than 350 distance education courses and more than 80 degrees, certificates, lateral entry or teacher licensure programs.

(https://www.ncsu.edu/academics/distance-education/)
Distance education offerings at NC State represent a variety of academic classification levels (associate, undergraduate, graduate, professional, and lifelong learners) and academic disciplines. For academic year 2013 – 2014, DELTA reported a total of 39,793 distance education (DE) enrollments at NC State (personal communication, July 14, 2014). At the undergraduate levels, these numbers were broken down by enrollments from on-campus undergraduate students who took DE courses (a total of 24,743), and enrollments from undergraduate students who were completing a complete DE program (a total of 1094). There were a total of 89 distance education degrees, certificates, lateral entry or teacher licensure that were offered in NC State. Among these numbers, three total online programs were at the undergraduate level, which included: 1) the Leadership in Public Sector program; and two distance site-based Engineering programs in 2) Mechanical Engineering Systems and 3) Mechatronics Engineering.

Throughout these varied programs and courses, students were able to enroll in online courses and programs for each of the three main semesters of the year. While DELTA offered the portal and technological supports for distance education and specifically online learning offerings, these credit courses and programs in the online environment were administered, taught and evaluated within the academic colleges and departments of NC State. Both tenure-track and adjunct faculty of those departments and colleges were the instructors of record.

For this study, adult online students were solicited and subsequently volunteered to participate in the study. Of the eleven students, four of the eleven were enrolled in one online
degree completion program, Leadership in the Public Sector; one student participated in a distance site-based Mechanical Engineering program; while the remaining six interviewees were students from various undergraduate programs at NCSU (Note Table 4.1).

**Components of the Online Learning Environment**

For this study, online learning was defined as a course structure where 80 percent or more of the course content was being delivered through the synchronous and/or asynchronous learning technologies. At NC State, the DE course delivery was mainly supported using one of the two learning technologies: 1) Internet delivery or 2) Interactive video-conferencing (NC State Distance Education, 2014). The NC State Distance Education described their course delivery as followed:

At NC State, Distance Education courses are offered and supported using various delivery formats. Some courses utilize more than one delivery format. The majority of courses are delivered via technologies such as the Internet or webcasting. Students with access to the appropriate technology may access these courses from their homes or other locations. Such courses make use of asynchronous scheduling, which means that students do not have to access them at specified times. Occasionally a course may require visits to campus (or a remote location) for assignments or exams.

(https://distance.ncsu.edu/student-services/course-delivery.php)

Online distance education environments also represented key learning features and supports that were housed in assigned computer-based programs interfaced with the online
learning environment. This integrated set of interactive online services served as a key learning platform for these online students to access and obtain information, tools, and resource for supporting and enhancing the educational delivery and management of their online learning. A majority of DE courses at NC State were supported by Moodle, a primary learning management system (LMS) used at NC State. All Moodle sites came with their own communication support features such as integrated emails and discussion forums, and were accessible via NC State’s own web-based course management system called Wolfware. The Moodle learning space was primarily used to provide the instructional materials for the course such as readings, video lecture links, and other resources as determined by the instructors. In addition, different web-based learning tools were also used to support other online course activities as needed, and were typically integrated or linked within the Moodle sites for easy access by the students. Each web-based tool supported a particular instructional purpose. For example, Blackboard Collaborate was used as a meeting space to support synchronous online classroom meeting. Forum was used as a discussion board that enabled the students to participate in asynchronous discussions at different times. Other tools that were used included: Mediasite and podcasts (for delivering pre-recorded lectures online), Web-Assign (web-based homework system for supporting graded homework), SCORM Activity Module (interactive homework activity), and Google+ (social network integration in online learning).

In this study, most students noted that their online DE courses contained online video lectures and/or readings that required weekly involvement and completion of assignments.
Other course components varied, based on the course subjects and instructor preferences. From the interviewed student descriptions, humanities courses typically had heavier emphasis on class readings, written papers, and participatory discussions; while the sciences, mathematics, and engineering courses were structured primarily based on weekly reading topics, homework assignments and online exercises. Humanities courses typically had more written assignments and discussion forums included as part of the course grades, including both short written assignments and major term papers. Meanwhile, the science, math, and engineering courses were typically more exam-oriented (including graded homework, quizzes, and tests). Some courses also assigned group work and online presentation as part of their course assessments. Most courses, for these students, had a final exam. Courses that did not have a final exam usually had a major project assigned as a larger portion of the grades. Several courses also had unique course components that were counted towards the grades, mainly to enhance the student’s participation and understanding in the particular subject area. Examples offered by the study participants included a food diary project for a Nutrition course and a community observation independent study for a Social Work course.

For most of the courses, adult students in this study participated in DE online courses that were asynchronous in nature. This online environment enabled the students to complete a course without having to either commute to a physical location or participate at a specific time for a class each week. One exception was for one participant in this study, Andrew, who enrolled in a distance Mechanical Engineering Systems (MES) program at NC State. The MES program was classified as a site-based distance undergraduate program that was
remotely administrated by NC State. While it was considered a distance education program, distance MES students were required to attend lectures at a site-based location in Craven Community College at Havelock, North Carolina. Students may choose to participate in a live lecture that is delivered via web-cam synchronously during actual lecture hours at NC State Main Campus, or watch the pre-recorded versions of the original lectures in the evening hours. This particular student, because of his full-time job commitments, chose to watch the pre-recorded version of the lectures in the evening after he completed his job duties. Either way, on-site attendance at Havelock Community College was compulsory and counted towards the grade. Other than this distinction, the distance MES courses were also supplemented by Moodle and other online integration tools in a similar fashion with the rest of online DE courses that were discussed in this study. Therefore, this one adult student’s participation in the MES program was considered relevant to the study, and his learning context was treated as similar with the rest of the participants in study.

The syllabus, as the major component to structure the course focus and flow, typically offered an outline of the varied course components and the specific assignments and expectations for each week. While the instructor provided guidelines and an embedded learning structure within the course, each student was expected to complete the assigned work tasks and keep up with the pace of their online classes on their own time schedule. This expectation was also mentioned in some, but not all, of the online course syllabi guidelines collected from the participants in this study. For example, one instructor noted in her Geology I course syllabus, “This is an online course where you are largely responsible for
your own learning. Self-motivation and regulation will be critical to your success in the course.” Similarly, another instructor wrote, “Because this is a distance class and there are no formal meetings, you need to be self-disciplined. Make sure you keep up a steady pace in watching the lectures and reading the textbook.” These remarks provided further support on the need for these study participants, who participated in all online courses during the semester, to play an active role in supporting their own learning process.

**Adult Students’ Beliefs as Online Learner and the Perceived Impacts of These Beliefs on Their Online Learning Efforts**

As participants shared their experiences in navigating and supporting their online learning process, their narratives were interwoven with evaluative thoughts of themselves as online adult learners. This section described the key beliefs that participants expressed in viewing and evaluating their personal capacities as online learners, and how they perceived these beliefs impacted and supported their online learning efforts. There were four key beliefs including: 1) Beliefs of having specific life goals in guiding degree pursuit; 2) Beliefs reflecting commitments to attain desirable academic goals; 3) Beliefs about perceived abilities to be a responsible learner; 4) Beliefs of perceived academic abilities and skills to learn in online environment. The following described how participants connected their beliefs as online learners to their online learning efforts.

**Beliefs of Having Specific Life Goals in Guiding Degree Pursuits**

As a collective, adult students in this study reported their decision to pursue collegiate studies were guided and driven by their life goals to satisfy or meet their specific individual
needs through attainment of these degrees. All of them came back or started the undergraduate program by their own choice. Each of them was able to articulate their own reasons and purposes for being in the degree program. These individuals viewed themselves as motivated learners from having a strong sense of purpose in initiating and directing their own degree pursuits. In their views, the fact that they made their own decisions to pursue or come back to school were often associated with their willingness to be an active participant in their own learning process. Although they may have been encouraged by career or family needs, these individuals believed their motivation to learn was unique and personal to them as these life goals were anchored by their own desire or interest to meet their self-defined needs. In regards to learning online, these students believed connecting or relating their life goals into in their studies helped them become effective online learners because these goals and purposes provided them with the drive and willingness to independently and proactively complete their online courses.

The group cited four types of life goals that guided their degree pursuits. These differing life goals, included: 1) desiring a future career change or advancement; 2) fulfilling personal goals, i.e., for personal achievement or learning interest; 3) improving their financial and/or personal situation in relation to themselves and/or their family; and 4) becoming a good role model to their family, especially their children. Most of these students reported more than one life goals that supported their pursuits based in both their past life history, their varied life roles, as well as their personal desires for their current and future life situations.
Career change or advancement. The first subgroup of students noted that they pursued a degree program because they desired a career change or advancement from their current jobs. For example, Andrew started his degree program in engineering because he was looking for career mobility that could provide him a better financial and life security. Andrew worked as a foreman for a construction company, which he described as “a hard job”. When he realized he no longer could move upward in his job, he considered seeking a college degree. In his own words, Andrew described his reasons for getting a degree.

My [current] work [as a construction foreman] is so different than [engineering] school. Most people in my line of work are there as a result of not having much school, but then you have people in my [supervisory] position that are there and they don’t have much school either. But we’re [the supervisors] just different than they are [the crews]. We’re able to see the big picture and build the houses and control the crews and work with the people, and I can do that. That’s good where I’m at [in my job], but still not where I want to stay, and there’s not much more future in that. That was my main reason for going to school. If I can find an engineering job in that [construction] field that would be perfect. We’ll see what happens.

Inman also came back to pursue his degree for a similar reason. He was in the service industry for a long time, and was a looking for a career change. He previously worked as a restaurant worker and was later promoted to a supervisory role. However, he disliked the career he was in, due to the low pay and long work hours that included evenings and
weekends. He saw the need to find a better job to upgrade his family living situation. He articulated,

    I knew what I wanted to do. I had a reason for being here. I made the choice to come to school, nobody else made me do it, so I knew why I was in school. Basically to get a better job and have a better center of living and make more money.

Olivia, who was a returning student, was also very precise and clear about her life goal and her reason for coming to back to finish her degree. She aspired to start a business and perceived gaining a degree as an important stepping stone towards her career aspiration. She enunciated the following enthusiastically:

    I’m pretty driven. I guess it’s like I’m so focused on my goal, like this is what you have to do, so that’s what you have to do. If you want to be taken seriously in this world, this is what you have to do….I want to start my own business. And I know that I need to have a substantial degree from somewhat recognized school. So that’s why this is pretty much my motivation.

Miranda was another student who was seeking career mobility as the reason for her degree pursuit. She was an ex-military who had served for 20 years prior to her retirement. At the time of the interview, she worked full time as a paralegal. However, she was looking for a career change, because she was unhappy with her job position, in which she expressed,

    I hate my job with a burning passion. I’ve been doing it for 9.5 years and I’m still in the exact same position. There’s no mobility in it and nowhere to
I’ve been trying to find another job for several years and it’s impossible… so many jobs won’t even look at you without a bachelor’s degree even though I have 3 associate’s degrees.

She believed her motivation to finish her degree was fueled by her strong desire to find another job that recognizes and matches her military experience, potentially in management supervisory role. She said, “My job has made me miserable which makes me motivated to finish my degree.”

**Personal goals or learning interests.** A second subset of students spoke about acquiring the degree to fulfill their own personal goal or learning interest. Laurie was one of these students. After putting her degree studies on hold for many years because of her life commitments, she decided to come back in her 50s to complete her degree. As she shared, “It may, at this point, it may just be wanting that personal goal of having completed my Bachelor’s degree.” Similarly, Lizzie spoke about what this degree means to her personally. She expressed, “Well, I basically feel, for my own self-worth, I need a Bachelor’s degree, you know.”

As for Nadine, her reason for getting another Bachelor’s degree, in addition to her first degree in English, was personal and unique from the rest of participants in this study. She described herself as someone who “just really like[s] to learn; and I like to think.” She stated her reason for enrolling into the program was to fulfill her lifelong learning interests. She explained:
I like the structure of the program, as far as taking certain courses and to learn the basics of the program. I could just take classes willy-nilly, but I enjoyed being enrolled in a program so I know what I’m expected to do and I feel like I could get well-rounded basis of knowledge. So, I’m a lifelong learner, and I just enjoy taking classes.

**Personal achievement.** Meanwhile, Laurie, Rebecca, Olivia, and Amelia, as a third subgrouping of adult students, saw their end goal – earning a Bachelor’s degree, as an important personal achievement in their lives. Amelia for example, shared the long process she took to complete the first two years of her degree. She started taking college classes at the age of 18. However, as a teen mother who was also working, she took longer to complete her credit requirements.

It’s just taken me this long to get through the first two years of my degree. I did it part time while working, and then having a child at home. So I took night classes, online classes and Saturday classes. I had to take a semester off here or there, so it was just a very drawn out process basically.

After noting the lengthy process that she went through, Amelia then said, “The longer I did it, the more it was like, I have to finish or why go through all that.” As for Rebecca, Laurie, and Olivia, all of them were returning students who previously left their NC State’s enrollment for varied personal reasons. They all returned and re-enrolled into NC State with intention to finish their incomplete degrees. For Rebecca, completing her degree was her main goal for coming back. She said, “I just still want to finish my degree.” The returning
students also noted the different outlook they had about their own learning now, as compared to when they first started as a high school graduates. Olivia for example, shared her changing perspective from her initial college experiences to her current situation:

I don’t know why I didn’t take NC State seriously when I got in here first time. But now it’s like, okay, I have to take this very seriously, you know, because I want a degree from here. I actually do want a degree from here.

**Family-related reasons.** The final subgrouping of students were parents who specifically attaching their purpose for getting a degree as means to meet their family’s needs and/or to become a good role model to their children. Inman was really clear about how important this reason was for him:

Us older students know why we’re here. We have a reason and motivation and a goal. For me is that, I have a daughter. I want to make sure number one, that she goes to college, and I want to make it [to finish my degree] so she doesn’t know there’s anything else [that is more important than getting an education]. So she doesn’t have a choice [but to go to college], but without [me] forcing it on her.

Renee reported that her family was a primary factor; they were her number one reason for being in the degree program. She wanted to help improve her family earnings, while also becoming a good role model to her children. This is how she described it:

Just thinking about my husband, [he] really doesn’t make much money for what he does, in my opinion. If I can be doing something [be on a job] that
I’m proud of, but also to show a good example to my children and to have something [a job] that would pay more, it will be more fulfilling for me and I feel like it’s a good example for my children. That’s one of the big determinants of whether children go to school is if their mother has gone to school more than their father.

For both Andrew and Laurie, they also pointed out the importance of participating in the degree program in order to demonstrate a good example for their children. In particular, Laurie reported that part of her motivation to do well in her studies was to show her children the right way to do it. She said:

I have children. One in high school and one in college now. The one in college, she is a sophomore. So she has seen me start this process of being in college. And, and so for my children, I want to show them ‘Okay, this is what you need to do when you’re in college and when you are taking classes.’ And when I have problems, I tell them, ‘I’m having difficulty with this, and this is what I’m going to do to fix it.’

In the case of Andrew, he spoke about his struggles adjusting to the engineering program at NC State. At the time of the interview, he had just entered his second semester. He perceived the engineering classes at NC State as highly demanding and much more difficult compared to community college level courses. He said, “It’s the hardest thing I’ve ever done in my life. I was ready to break down last semester; I was ready to quit.” When asked what kept him going despite what he just expressed, he answered:
I’m not a quitter. My kids, you don’t want your kids to see you quit. If I’d known it was going to be this hard, I don’t know if I would have started. But now I have to finish.

Despite his struggle, Andrew was committed to finishing his degree. In particular, he was motivated by his desire to provide good examples to his children; he wanted to exemplify to them the value of his persistence and hard work in gaining education.

All of the interviewed students believed that their specific life goals were a valuable component in their efforts to learn online. They saw a clear linkage between their online coursework and its contributions towards their future or larger goals. These students believed these purposes representing their life goals for pursuing a degree made them more persistent and focus as online learners.

**Beliefs Reflecting Commitments to Attain Desirable Academic Goals**

In addition to defining their life goals in relation to their degree pursuits, participants also reported strong beliefs in their commitments to attain the desirable academic goals that they have set to achieve within their coursework. These students were specific in noting the academic goals that they wish to gain in learning and completing their online course. They described three types of academic goals: grade-oriented, knowledge-oriented, and practical-oriented goals. Most of these students expressed more than one of these goals in their learning pursuits.

**Grade-oriented goals.** In this study, adult students reported on grade-oriented goals directed towards attaining measurable academic achievements in their studies. Examples of
grade-oriented goals would include such things as getting desirable grades in subjects taken (e.g., getting an A grade) or improving their overall grade point average (GPA) in their coursework. The majority of students expressed grade-oriented goals as an imperative in their learning process. They wanted to do well in their studies, thus aiming to get the highest grades possible. Amelia, for instance, reported that she held this particular goal in every course that she took. She said, “I aim for an A obviously, and then just to get the highest grade possible.” Jillian also set her goal on getting A’s in all her courses. She expressed, “I guess you could say, I’m a type A personality. So unless I’m doing the best, it’s just you know, doesn’t suffice [to meet my own expectations].” Lizzie said, “Really anything less than an A is not really acceptable for me (with a small laugh). So yes, I have very high expectations for myself.”

For other returning students such as Laurie and Rebecca, they wanted to improve their overall grade point average (GPA). This perspective was based in their previous academic studies representing a lower GPA. Therefore, they perceived it was important for them to get good grades in their current courses. For example, Rebecca explained,

I want to make good grades. When I came back, I was kinda in that warning area as far as my grade point average. And I knew that was my problem before, because I was paying for school [by working] when I started.

Meanwhile, Laurie also was seeking to make amends from her past college experiences. She said, “I had left the university on good terms, but my grade point average was not very
good.” Therefore, she had a strong desire to do well in her classes in order to improve her overall grades. She explained:

   I’m very motivated [to do well in my courses] because I did not have a great initial undergraduate experience. I want to get As because I want to bring that grade point average up. And some of my [past] classes were Ds; I have some no credits. You know that’s very hard to pull up, when you get, especially when you get a no credit.

As for Renee, one of her learning goals was to achieve a 3.7 GPA that would qualify her to apply for a fellowship to help support her studies. She said, “Right now I have a 3.6 at NC State, and there’s a fellowship I want to get that has 3.7. So I hope I can get it up to that.”

Overall, it was noted that grades and academic results were valued as important for the majority of the participants in this study.

**Knowledge-oriented goals.** Many adult students reported specific knowledge oriented goals in their online studies. These goals were directed towards gaining mastery and deep understanding of the course content. Examples of these knowledge-oriented goals included some students expressing intentions to acquire a good grasp of knowledge and comprehension from the courses they took, or learning the subject matter for the sake of learning. The majority of the students outlined this type of learning goal as an important outcome when studying and taking classes. Nadine, who enrolled into the degree program because of her lifelong interest in learning, shared, “I am committed in getting good grades, but also committed to learning the materials.” When describing her learning steps and
processes, Nadine often expressed her interest to fully learn the class materials for the sake of her own personal knowledge. In one of her examples, she shared:

   So, I’m coming to this [Biomedical Ethics] class with some opinions already.
   It’s not like I know nothing about the topic at all and that everything is new.
   So whatever I’m reading, a paper or an essay or an article, I’m evaluating what the person is saying, to see if it’s seems logical and rational. And also, comparing it to what I really believe … So, there’s a lot going on there, and it’s not something that you can rush. And the test is only testing if I understand what the author said which was in the essay. But for me personally, I want to know whether I agreed with the author and you know, if this is going to change my mind or something I might have believe[d] for 20 years. I didn’t take the class just to pass test, I take the class to engage with the materials.

   Miranda shared similar learning goals with Nadine; she wanted to be knowledgeable in what she learned. She wanted to retain the knowledge that she learned from each of her classes and utilize it as needed. She described what her learning goal was:

   I try to learn something; I try not to crush and flush as I call it; stuff everything in and then wash it out to prepare for the next class. I want to get something out of each class that I can recall and use.

Meanwhile, Renee was shifting her focus on learning the subject matter beyond just getting the grades. She noted:
[Before] I was kind of more just thinking about getting the grade than really being able to understand the material. [But now], even the Geology [course] which I’m not intrinsically interested in, I said, this is my chance to learn something. I’m here; I’m spending however much money and so much time. I’m trying to think of how I can make use of the information because that’s what it’s there for, rather than just do the minimum to get the grade.

Another student, Andrew, expressed concern about not learning his course materials well enough. He deemed passing the classes with minimum grades as not sufficient, as he wanted to be able to really grasp the knowledge from each of the courses. He was considering ways to slow down his study pace, so that he would be able to spend more time to learn the course materials well. He noted:

I’m thinking about slowing it [my study pace] down some more. When I started school, I was doing 11 or 12 credit hours. And now I’m down to 6 and I still don’t have time, because the classes are just so much more demanding. I don’t want to be the student that gets to the end [graduate] but barely made it and didn’t learn anything. I’ll learn stuff but not enough.

Students who reported this commitment to knowledge-oriented goals often reflected their efforts to study their course materials in deeper and more engaging ways. They were driven by their own willingness and interests to learn the subject matter well and retain the information for their own knowledge purposes.
**Practical-oriented goals.** A third subset of students also expressed practical-oriented goals as part of their coursework learning. These students were actively seeking to make connection from what they had learned from their classes into their own real-life situations. These students expressed interest in developing specific skills and/or knowledge which had practical applications to their current or future life situations. For example, Inman was really precise about seeking and focusing his learning on courses that he perceived would be useful for him in his future career. He shared the following perspective:

The one thing about our degree is a lot of the courses are specifically geared towards one aspect of a career path. So I try to gain as much knowledge as I know will be applicable to me from each class, which is good because it makes me work harder for certain things… there are classes like a GIS (Geographic Information System) course which can help me in my career and is a skill people see on my resume. That made it more enjoyable. And it helps keep me focused because I know I need to really learn things from this course.

Inman also shared another example where he took a personal finance course, because he wanted to learn and apply the knowledge from that class for his personal use. In his own words, he described the goals that he had in mind:

I took a personal finance course as well, which ended up counting [it] for an advised elective for me. But I took the class because I felt I needed some financial skills as far as money handling in my own life, budgeting and
planning and things like that….. If I can get something out of it, that’s really beneficially makes [studying] it a lot easier.

Jillian was another student who expressed similar goals in her learning. Earlier when she was looking for a suitable degree program, she was specific on the areas that she wanted to study. In particular, she was looking for a degree in areas that would match her interest and work experiences. She found the Leadership and Public Sector degree program at NC State to be a good fit. When approaching her course assignments and projects, Jillian reported bridging her work experiences and interests into her coursework learning. She gave an example focused upon developing a special event proposal for her Fundraising class:

So what I did was, I begin formulating what I’m going to write on, what’s special, and what I try to do is something that is applicable to what I have experienced, or something that has a particular value to me. So I was thinking, what kind of special event would I want to do [in real life]? What would be something that I might actually do, that I could do this [special event proposal assignment] as a basis [for this project].

As reflected in her thought process above, Jillian’s goal was to acquire and transfer the knowledge she learned from her classes into applicable real-life situations.

Other participants such as Olivia, Amelia, Renee, and Miranda had also noted how they often looked for opportunities to apply their learning into real-life situations. Students who expressed practical-oriented goals appeared to show intentions to learn in meaningful
and useful ways when engaging in their online studies. They desired to connect their present learning into potential or future real life applications.

Overall, it was noted that all participants in this study were able to identify and articulate their own academic goals that they wish to attain in their coursework learning. They were clear about the desired academic goals that they wish to attain, and were also committed to realizing them. There were three types of academic goals that these students identified: grade-oriented, knowledge-oriented, and practical-oriented goals. While the group placed a high value on achieving grade-oriented goals, a majority of them also desired to complete their courses with more than just good grades. Many of them were also focusing on gaining valuable and practical knowledge for their own personal or career purposes. All three types of academic goals were highlighted as important in their learning as these students focused on completing their online courses.

**Beliefs of Perceived Abilities to Be a Responsible Learner**

Students in online classes were expected to work their way through their online coursework largely on their own. Therefore, participants noted the importance of being a responsible learner to support their own learning. They expressed willingness to undertake the commitments that came with their student roles; by viewing their studies as a priority, and by noting their willingness to prioritize considerable amount of time, efforts, and resources into their studies over certain aspects of their lives; including making sacrifices of their personal, and sometimes, family times. More importantly, as adult students, many of
them expressed recognition and acceptance of the competing responsibilities that they often faced from their studies and from adult roles commitments. As suggested by Inman:

But it [school] adds a lot of responsibility to you; you still have to maintain your family responsibilities, and you still have to maintain your standard of living. You have two car payments and you have to pay rent and maybe will buy a house and you’re still thinking all that while you’re trying to get good grades at school and trying to work and all that.

Being adult students, their studies were often viewed as a priority that was placed on par with their existing adult roles and responsibilities. For example, Lizzie noted, “So my priorities are my son, and the nanny-ing [my full time job], that has to be first. And then school, and then Wake Tutors [my part-time business job]. And last is housework.” Similarly, Amelia viewed her school commitment as her number one priority after her household duties. She said, “I’m not working; I’m a stay at home mom, so outside of my household duties, school is number one.” Likewise, Nadine shared, “So my first priority is, you know, okay, I’m gonna [going to] have to keep my job, so that we can have money to support ourselves, that kind of thing. But secondly you know, school really becomes the highest second priority.”

In thinking about their online studies, these students believed they were responsible for the quality and timeliness of their studies. They stressed the importance of investing and making own efforts to take control of the process and outcomes of their online learning. For example, Rebecca pointed out the following:
Just be organized, because it’s easy to, because the assignments are not always day to day, and you are not seeing the teachers every other day or anything like that. So you have to keep in mind that this assignment is due every week, say Sunday. Like I have to make sure that no matter what happened during the week, that’s what I’m going to do on Sunday. Even if he [the instructor] doesn’t tell me in person or somebody doesn’t remind me, or if I don’t look at the website, the assignment is still due. So you have to be responsible for all your assignments, for all your exams, for all your quizzes.

Lizzie also expressed a similar thought. She believed learning online requires the learners to be more responsible in their own learning because “you don’t have anybody walking you through it. [So] You have to have some [sense of] responsibilities [towards your online studies]; so just scheduling, making time to study, and having it be a priority.”

As for Olivia, coming back as a returning student made her realized the importance of taking responsibilities for her own learning in order to be a successful learner. At the time of interview, she was a full-time student who was completing four online courses. As she navigated her coursework learning largely on her own that semester, she recognized the different outlook she had on the need to take more responsibility and made study efforts towards her own learning. She said:

So it’s like, you actually have to take responsibility for your own education in some way…You actually have to apply it, you have to study, you have to work for it, you have to retain the information by any means possible because
they [the instructors] can potentially ask you anything. And before then, I do not think that way. I do not feel like I have too much responsibility [in my own learning] or where I thought it [the learning] would come pretty much naturally [without making much efforts].

Additionally, some students believed they had to prioritize the importance of the tasks and roles in their life in terms of time commitments, and create time and space for their student role commitments. As they considered the priority of their student role, they often found that they had to sacrifice not attending to social and personal time, as well as cutting back on family commitments or negotiating with key others to cut back on time commitments and responsibilities in other parts of their life. Inman provided an example from his own experience in completing four online courses during his last semester in Fall 2014.

I didn’t go to any parks or go out and socialize. And it was just because of the courses and the time and I just really didn’t do much of anything other than school…You don’t have a lot of leisure time and that’s one of the things that you have to cut out. You have to sacrifice that leisure time if you want to be successful at everything that you’re doing. That’s the biggest thing is cut out your leisure time, and make sure that even if it’s just [studying] a little bit every day when things [academic demands] aren’t so pressing.
Miranda also believed she had sacrificed a lot of her personal times to cope with the demand of her studies. She shared how she used her lunch hours at work to watch lectures, do class readings or take quizzes from her online courses. She said:

You have to be willing to make sacrifices. I use to like to take my lunch hours and go sit somewhere to eat, [but now I used my lunch hour to do my online studies]. I [also] have sacrificed a lot of personal pleasure reading time, which was always very important to me.

Similarly, Rebecca spoke about the sacrifices that she had to make to prioritize time for her studies. Earlier, she noted that online courses do require students to spend a considerable amount of time to complete the coursework. While not having to go to a physical classroom could potentially save students some commuting time, she pointed out that students need to be willing to complete their online studies at other times. In her case, it was at the expense of her personal and family times. She expressed:

[When taking online courses], think about what you want to get out of the course, and how do you want to live your life, because right now, I’m sacrificing a lot of like personal, family stuff just to concentrate on school. Because even though you are not [having to attend lectures] in the classroom, online courses do take your time.

Overall, these students expressed beliefs about their perceived abilities and willingness to take responsibility for their own learning. They believed in making proactive efforts to support the successful completion of their online studies, by prioritizing for their
studies and placing considerable amount of time and resources into those studies over certain aspects of their lives; including making sacrifices of their personal, and sometimes, family times.

**Beliefs of Perceived Academic Abilities and Skills to Learn in an Online Environment**

Participants in this study expressed confidence in their academic abilities and skills to learn in online environment. In discussing their online learning experiences, they shared understandings of specific behaviors that they believed were important. Having self-discipline and being able complete the study tasks independently were among the things discussed by these participants. In their views, these academic abilities were not only the important behaviors for successful online learning, but were also seen as their personal abilities that made them successful online learners.

Rebecca for example, believed online learning was suited for someone who was a self-starter and could study independently on their own.

I think it shows like they say in the very beginning, that online course is not for everyone. Like if you’re not, if you can’t work independently and you can’t have initiatives like, do your work yourself, then online courses are not for you.

Rebecca was essentially referring to her independence to study online, and believed it was one of the key abilities that supported her successful online learning experiences. She had shared numerous examples of how she arranged her own study schedule, contacted the instructors, sought resources for additional information for her assignments, and organized
the completion of all her online coursework on time. She believed all of these actions were a reflection of her ability to study independently as online learner.

As for Lizzie, she strongly emphasized the importance of self-discipline and self-regulation when studying online due to its autonomous learning structure. She said,

I think people have to really have a lot of self-discipline and self-regulation and being able to schedule. I would really stress that, to someone who is considering going to school online.

In noting the above, Lizzie appeared to reiterate the story that she shared earlier about how she made herself follow a rigorous study routine that she set for herself. She stressed the importance of self-discipline when learning online:

[I believed] I’ve gotten better at just being able to sit down, and like I said, get it done. Just put myself [to sit] down and focus, force myself down to work [study]. And that started a year ago actually, because I had three kids [that I babysat] at that time, and three online classes, instead of two…And I had to, literally as soon as I walked out from my son’s room after putting him down for his nap, I would not take a break. I would walk straight to the computer. Couldn’t go eat, couldn’t turn on the TV for even five minutes, I have to start work[ing on my online coursework]… and that’s been the key to being successful, where there’s no time to sit down for a break.

Meanwhile, two students suggested that they only took courses online if and when they perceived they had the interest and ability to complete the course successfully in online
format. These students noted that they made their own mental evaluation of their abilities and interests prior to enrolling in any online courses. Nadine for example, suggested her mental evaluation of herself before opting to take any courses online:

So it’s a combination of [whether] I like materials, [whether] it’s a good format, and mentally [if I am] in a place to do that. Because I knew, now that I’ve taken several distance ed. classes, I know that “Hey, I have to be more discipline[d] with my time” than I do with in-person class.

Therefore, Nadine suggested that her careful consideration in selecting her online courses made her more confident that she could be successful in completing it.

Inman suggested a similar understanding. He said that in deciding to take an online course, students should “really judge it, to see if it’s something [the subject] you can learn online”. He commented:

Know your strengths and weaknesses: Are you somebody who can self-motivate? Do you know how to schedule? Do you know how to keep yourself going without anybody pushing you? That’s what it comes down to; you’ve got to look at yourself.

Inman further highlighted his own belief in noting his developing confidence in his ability to learn online. In his reflection, he described how he had successfully completed four online courses in fall 2014 semester.

It took me a long time to be brave enough to take four classes online [in the fall 2014 semester]. Lots of times I took one online [course], and then two
online [courses]. I knew by last semester that I had the ability to do it. I knew I had the ability to motivate myself and the skills to do it.

Additionally, participants also discussed specific skills that they believed supported their academic abilities to learn online. As a group, many of the students suggested that their time management skills, organization skills, communication skills, and multi-tasking skills had helped them be more efficient and resourceful in supporting their online learning process. For example, Laurie believed her organization skills were valuable in helping her manage her online studies. She expressed,

I think my best skill…are organizing [organization]. You know, organizing how I need to complete this task. So, what do I need to do on what day, is to get this reading done, or this writing assignment done, or this Power Point done, so you know, that’s been really helpful.

For Miranda, her time management skill stood out as important when discussing her ability to learn online. She noted that she increasingly became better in managing her time to efficiently complete her online studies. She said:

I think being able to look at [coursework] load that you have at the time. This is what has to be done during the week for each of these classes, and this is how much time it’s going to take me to get it done, this is how much time I have to get it done, and I’m going to have to eat into this kind of time to get it done. I learned time management a little better.

Some students also identified specific academic skills that were invaluable to them
when learning online. Amelia, for instance, credited her writing skills as one of her strongest academic skills, “I do feel like I have strong writing skills. Most of the online class is [about] writing papers and communicating on discussion boards and things like that. My writing skills definitely come in handy there [when learning online].” Another student, Renee, viewed her advanced reading ability as a valuable skill to have as online learner. She described, “I can read quickly and so if something is written, I can cover the same material much more quickly than the time I’d be in the classroom.”

In essence, majority of the participants expressed understandings of specific behaviors that lead to successful online learning. They noted their ability to study independent and be self-disciplined when studying for their online courses. Some also suggested specific skills such as time management, organization, communication, and academic skills as valuable in supporting their abilities to learn online. In discussing their online learning experiences, these students believed they had the ability to learn well in online format, based on their own recognition of specific abilities and supporting skills that they had identified as instrumental in supporting the successful and efficient completion of their online courses.

Section Summary

This section presented the participants’ beliefs of themselves as online learners. These beliefs were delineated based upon the students’ discussions of their own online learning experiences. They shared insights on what was important in their beliefs as online learners and noted key understandings of successful and effective behaviors within an online
environment. They also noted specific abilities and supporting skills that aided them in being successful online learners.

In essence, these beliefs of online adult students reflected the evaluative thoughts of themselves as online learners. These key beliefs were grounded in their beliefs of having specific life goals for pursuing degrees, their commitment to attain their desirable academic goals, their belief of being a responsible learner, and their belief towards their perceived academic abilities and skills to learn in an online environment.

**Adult Students’ Key Actions in Managing and Engaging in Online Learning**

The second part of this study explored adult undergraduate students’ key actions in engaging, managing, and supporting their learning in an online environment. In describing their online learning experiences, these adult students suggested that the online environment presented an important context that corresponded to how they experienced and managed their learning through asynchronous online course setting. In particular, these adult students reported engaging in specific actions that were geared towards successful completion of their online courses. They identified two set of defining actions that framed their key experiences in online learning: 1) Navigating the varied designs and requirements in online courses; and 2) Balancing and negotiating adult roles and responsibilities.

**Navigating the Varied Course Designs and Requirements in Online Courses**

Because these adult students were learning primarily through the asynchronous online courses, these students typically navigated and completed their assigned lessons on their own. They were required to take responsibility for accessing the learning management
system, the designated assignments, and course resources that were provided by their respective instructors. While most of these online courses shared the common features of an asynchronous learning setting, students did note that each of these online courses did not provide an equal learning experience. Rather, they perceived there were differences in terms of how these online courses were designed and delivered, and the requirements to complete them. Nadine for example, noted the following observation:

I found a lot of diversities in the approaches to online classes than when I have traditional classes…; I’ve taken four classes [to-date], and they all been designed very differently as far as how you interact with the teacher and the materials, the people and the [instructional] technologies used.

In general, the students shared both the positive experiences of online course designs that they valued, while also noting their less satisfactory experiences in certain online courses. Their comments provided some indications of their judgement of effective and ineffective online course designs. As a group, they suggested that effective online course designs contained several of these elements: 1) Easy navigation of course structure with good organization flow; 2) Clear expectations of the course contents and requirements communicated through well written instructions (e.g. well-developed course syllabus, email communication with instructor); 3) Varied instructional materials (e.g., lectures, readings, handouts, video links) provided for supporting different learning styles or preferences; 4) Opportunities for active interaction and getting prompt feedback from instructors and/or online classmates; 5) Well-balanced demand between course content taught and course
activities assigned for engaging with the course materials. Conversely, they also suggested that less effective online course designs were lacking in one or more of these elements. Their observation of these different elements revealed both their awareness on how these different course designs impacted their online learning experiences, as well as their focus in navigating these varied online course designs and requirements. They spoke of several areas which contributed to the different experiences they encountered in navigating and completing their online studies.

**Course structure and organization flow.** In online courses, course structure and organization flow were important aspects of the course for some of the participants. These students perceived some online courses had better course structure or organizational flow than others. This area was of a particular concern for Laurie, who believed the ease of navigating a well-organized course facilitated her online learning efforts; whereas a disorganized course caused her frustration. She spoke of a specific course that she believed represented a good structure of an effective online course. She commented on both the course’s organizational flow and the clearly written instructions in effectively guiding her to successful completion of the course. She further shared how she navigated her learning in this particular online course using a well written syllabus as her guidance:

I mean this is the back of the first page [of the syllabus], this is what you are going to be expected to do, this is how much your grade is going to be, there’s gonna [going] be exams, and there’s gonna [going] be a Power Point presentation. So I *knew* all of that was coming up. And then he tells me, he
tells us, each week runs from Monday 12.01am to Sunday at 11.59pm. So things that I have due for him, I could space out over the week…So then he gave us the course schedule, and you know he says, this week, these are the things that you are gonna [going] do. [He] even [provided] check boxes [for each of the items due for every week in the syllabus], which is wonderful...
And so on mine [the copy of my syllabus] at home, every week, once I’ve gone through [completed the course items for the week], I checked off stuff. I numbered what week it is, so I know what week I’m in, so yeah, here’s the week, here’s what you gonna [going] do.

In contrast, Laurie also expressed her frustration in another online course that she took, mainly noting the course’s lack of organization and specifics in providing structures and guidelines to completing the course. For Laurie in particular, she perceived the course’s lack of structure created difficulty for her to organize her own learning tasks. She expressed,

This course just took so much efforts [to plan]…[like for example], she gave assignments like for Exercise 1,…but there’s no [due] dates [that was assigned for this assignment]. So no way to plan for that, no way to put it into the [my] agenda, knowing that, [this assignment] not only is something that I think to think and write about, [but] I also need to watch a movie as well [as part of the requirements to complete the assignment]. So that’s like what, 2 hours plus [of my time]. But I have no way to plan that in [my schedule].
From Amelia’s perspective, a well-organized online course allowed her to follow the timeline and course activities as prescribed by the instructor more confidently. She said, “Some courses are just easier to follow. I always have the [course] schedule printed out, and I like to be able to go through and check off, like week 1 is done, week 2 is done.” Like Laurie, Amelia also spoke about her experience with a specific course that she perceived had a less effective structure. She was noting her confusion and difficulty in navigating her learning in this course, and reported that she had to be more cautious in ensuring she did not overlook any important assignments or due dates in the course.

This course I think maybe didn’t seem as geared toward an online classroom, so things [course resources] were like really hard to find on the website…It just almost seemed like either she [the instructor] is not geared that way [to teach online] or maybe it was like one of her first online classes because the website was very confusing. Even having to find where the assignments and videos and discussion board were difficult; it was not well organized…. So with this course, I always print out everything they have online…I just had to check back in [the course websites or emails] a lot more regularly to sort of cross reference what [the due dates] I had on the paper [schedule].

These students also indicated that their online learning satisfaction increased in well-organized online courses; while courses with a weak organization flow were perceived as challenging and more difficult to manage.
Rich and varied course materials, resources, and interaction for supporting learning. Some students viewed the varied course materials, resources, and interaction presented in an online course as important in determining how they could earn and engage in the course. They perceived some online courses were more engaging and interesting; these courses offered more rich and varied materials, resources, and interaction for supporting their learning and engagement in the online environment. For example, Miranda spoke of a particular course which she felt was effectively designed and made her feel more engaged to learn the course content. She described:

[For this class], The lectures were really interesting and they were pre-recorded lectures. The book was great; it was actually written by a professor at UNC….I was riveted the whole semester in that class. Just the way he laid [the content and] everything out was very clear and concise. With the assignments and everything, he answered any questions anyone had. And the way his lectures were [designed], you could insert a question at a point in the lecture so he’d know what you were asking about. And other teachers didn’t really have that option…Other classes I might just simply get information out of.

Another student, Inman, shared contrasting examples of his learning experiences in two different online courses. In his first example, he described a favorable online learning experience from a course in his major. The coursework was delivered via online lectures, with each topic corresponding to the homework or project that the students were assigned to
do every week. In addition, the course activities were also supplemented with relevant reading topics, online tutorials, and a very interactive student forum as facilitated by the instructor. Inman felt like he benefited a lot from the course’s online instructions. He perceived that his learning experience was enhanced by both the engaging course materials and interactive discussions that he had with his online classmates. He then contrasted his experience with another online course. He perceived the online instruction from this particular course was less effective because the course instructions were only delivered by Power Point (a commonly used online presentation software) lectures every week, followed by several scheduled tests and exams. There were no other supplemental materials that were provided by the instructor except for a single textbook that Inman perceived was only relevant for the first week of class. He described having difficulty engaging in this particular online course. Nonetheless, Inman still scored A’s on both courses. He also shared the approaches he used to study these two courses. He noted these approaches were different because of the way these two courses were designed. He elaborated:

The one I was engaged in---there is no way to get through that class without doing the work [that was assigned] because every week we had to submit a map of our work and a report associated with it. It was very hands-on…And the other course, it’s just memorization. Just read and read and if you need to, read again. That’s what it came down to. That’s all you could do is read. We didn’t know of any resource we could go and test our own knowledge…It got
to the point where I would do the PowerPoint, then rewrite it [the lecture notes], then reread it sometimes twice [before taking the exam].

These students reported the availability of course materials and resources provided in online courses varied greatly. They perceived online courses that were designed with rich and varied learning materials promoted more engaging and effective online learning experiences. They also valued online courses that offered opportunities for active interactions with their online communities.

**Recognizing and meeting instructor’s expectations.** Adding to the complexity of navigating and completing their online courses were the perceived expectations of their course instructors. Students believed each instructor had their own set of expectations towards students’ work in each course. These expectations were either expressed by communicating it directly to the students through the course syllabus and assignment, or in more indirect ways such as through the tone they set in their course syllabus and ongoing class communication, or on certain things or topics they emphasized in the course. These students viewed instructor’s expectations as important in determining how they coped with the course demands. In some online courses, students believed they could deliver what the instructors expected by making reasonable study efforts. For example, Olivia shared how she viewed her instructors’ expectations in two of her online courses. In the first online course, Olivia believed the instructor expected a more verbatim recall of the course content that was taught in the lectures. In the second course, Olivia perceived the instructor stressed more on
gaining deeper understanding of the content, mainly by expecting the students to make considerable efforts to learn the course materials.

Like this lecturer in my Nutrition class, she lectures step by step. So this is lipid [a type of food chemical-related process], and this is how lipid work, this is what lipid does (mimicking the lecture). So you know, if I can’t recall these step by step process(es) of at least 85 percent of it, that means I haven’t focus(ed) on it… (In a different example) With my logic [instructor], he expects you to do your own research. Like when you come into the class, or you start the paper, you should already, you know, research this term, you should already completed, you know, two of the assignments that I [the instructor] posted on Moodle, you know…He doesn’t do all of the ones that you probably want to address, so you kinda got to extend yourself out a little bit more. And read the book a little deeper, probably go over a chapter or two, to kinda make it connect a little bit more. So that’s a little more work on your way. But that’s just how he is, I guess. I’ve read some comments on him and they said he is very hard (small laugh).

From a different perspective, Lizzie perceived certain instructors have more demanding expectations than others. She noted some of her online courses were very time-consuming, and made her became less willing to meet those demands. She said:

The classes that are most time-consuming, I get burned out on those…Sometimes it just depends on the professors, and sometimes you
know, you can expect to have the same amount of time that you would have spent if you were attending a live class, plus the homework time. But sometimes I think, they almost over-compensate, so some professors just require more work that I can really give.

A group of students also reported their emerging ability to recognize instructor expectations and tailor their learning efforts to meet the specific needs of these courses. For example, Amelia illustrated:

I probably learned that if I can figure out what the instructor wants early on, then I could sort of cater what I do, so I don’t ever do anything that’s not efficient. So just being able to recognize, based on their syllabus and their introductions and things like that, what the instructor is looking for, and how I can deliver that.

Inman exemplified a similar thought as Amelia. He noted:

And depending on the course, usually as I got further along I kind of knew what to expect from the instructor and what they wanted, so I’d pick out by 4 or 5 weeks in what they really wanted us to know and focus on that and take notes on that or cover the Power Points on that… Some of it [knowing the expectation] is instinctual I think; some of it is you pick it up after a long time. You learn what teachers want; they all want certain things. It’s hard to explain because kind of the way they say things or the way certain things are emphasized.
These students suggested recognizing and meeting instructor’s expectations in their online courses present another important conduct in determining how they navigated the completion of their online courses. They reported adjusting their study efforts based on their perceived expectations of their course instructors. They reported in certain courses, they believed they could meet their instructor’s expectations by making reasonable study efforts. In some courses, the demand was viewed as overwhelming and undermined their efforts to do well in the course.

Overall, participants reported several elements of online course designs that they perceived contributed to their unique learning experience in navigating and completing their online courses. These online adult students suggested there were specific elements in their online course designs, as well as the expectations implied by the instructors for the student performance, that influenced how they managed and engaged with their online studies.

**Balancing and Negotiating Adult Roles and Responsibilities**

As part of the broad set of learner actions interwoven with their online learning efforts was also the participants’ ongoing concern for balancing their adult roles and responsibilities while actively participating in their online studies. Most of the students in this study were working and thus, needed to continue maintaining their employment throughout their studies. In addition, there were students with full-time family responsibilities, as stay-at-home parents. For many of these students who had work responsibilities, they also had family responsibilities involving parental and familial duties. Because of these work and
family adult roles and responsibilities, online courses became an important option for these adult students to pursue their educational goals within a supportive learning context.

Valuing online course flexibility to fit and sustain ongoing life schedules. As mutually shared by the group, one common key valued feature of the online courses was its flexibility. The flexible structure allowed the adult students to pursue their degrees while still maintaining their adult roles and responsibilities. The asynchronous online course setup, to a certain limit, enabled the students to schedule their own class or study times, to learn at their own pace, and/or to arrange their study place at more convenient locations. Jillian for instance, noted how the flexibility of online learning was very important for her in order to keep up with her job. She shared,

[It’s] that ability to pick up the work and do it when I, when I plan to do it, rather than having to go to a traditional classroom. So I couldn’t do it if I were, you know, having to go to a traditional brick and mortar school. It’s just the ability for me to pick up and be available to my client, [which] will supersede me being in class during the day.

Rebecca, shared how she liked the independent working and flexibility to access the online classes and study materials as needed. She also noted how valuable the online structure was to support her learning process as she led her busy adult life routines. She said, “As far as how my life is structured right now, it [online learning] fits perfectly.” Similarly, Amelia, who was a stay-at-home mother, noted how important it was to have a flexible class schedule and the freedom to organize her study times in relation to her schedule. She said,
[I valued] the freedom in my schedule [when learning online]. I can work at 3 o’clock in the morning if I have to. I can start something and stop it if something comes up, and then go back to it. Getting to a seated [on-campus] class, a lot of the time has just been out of the question [because of my parental responsibilities]. So that’s the main thing [about taking online classes], is the freedom in my schedule.

Meanwhile, for Laurie, it was the flexibility of online classes that allowed her to come back into the degree program in her 50s. She described how the flexibility of online classes enabled her to plan and coordinate all her commitments into a manageable schedule.

So if it’s 10 o’clock at night, which it’s often is, after I’ve gone to work all day, and I’ve come home and I cook dinner, and we clean up, and my other child, my child at home has done homework and we gotten in bed and fed the pet, you know, all that kind of stuff. Finally, it’s quiet, 10 o’clock at night, I can go to class, which otherwise I couldn’t do, so. That [flexibility], I really liked that because, you know, although I can’t get to a classroom, I can go to a [an online] classroom. You know, it’s 10 o’clock at night, Dr. [instructor’s name] was there waiting to give me a lecture.

As a collective, all participants reported how the online asynchronous learning setting provided them with the flexibility that supported their needs as adult students. By pursuing their education through these online courses, these students could participate in classes at a time and location that suited their busy schedule.
**Juggling multiple roles and responsibilities.** When thinking about their learning in an online environment, the adults reported that they continuously made assessment of their role responsibilities and life circumstances in relation to it impacting their learning process. By and large, their online learning experiences were mostly described in relation to how these students viewed themselves as students who were engaged in multiple roles; such as being a full-time worker and/or a parent. They characterized their commitments to learning as juggling the rigors of their multiple roles. They noted that their learning often took place within the realm of their adult world; they must incorporate their studies within their life schedules involving their commitments and responsibilities as adults with jobs and/or family. For example, Andrew offered an overview of his life during the spring 2015 semester (when the interview took place):

I have one son who is in 6th grade, and into baseball; so that’s busy because I want to be a part of that. Baseball [season] is just getting started up again now, and they practice four nights a week and have two games a week. I want to be into it as much as I can, even if it’s sitting in the car doing homework. Then I have another son who is not into sports, but is really smart and in a lot of clubs and things, and I try to be there for those things. At church I have things I do as well. I have a drama team that I’m in charge of; we do a lot of dramas and stuff and that takes time. My wife has things she has to do, so when she does those, I have to make sure I’m with the kids. And my job--I leave the house about 6 every morning, and I get off work at 4:30, go to school, get home 8:30
or 9 at night. So it doesn’t leave much time for other things, and school is two nights a week right now [where I go and watch the pre-recorded lectures on the assigned site], and those other nights I have to devote to homework when I can. But I’ve got to sleep sometimes… I barely survived last semester [fall 2014] and this semester is getting to be just as hard. Last semester nobody saw me because I was working hard and committed to finishing it, but I’m to the point that I don’t know if I can do another semester like that. I’d spend 20 or 30 hours every week on homework [alone].

While these students placed a high priority on their studies, they also understood that their adult roles and responsibilities were also of equal priority in their lives. They spoke about their commitment not only as a student who had to remain engaged in their online studies, but also as one who needed to keep a sense of balance in other aspects of their adult roles. In fact, many of them perceived the balancing act was the challenging part of their online learning experiences. Many shared their struggles to remain engaged in juggling two or more of these roles: as a parent, a worker, a spouse, active community member (i.e. member of a local church, volunteer at children’s school), and as an enrolled online student at NC State. Inman, who graduated from his program in fall 2014 after five years, reflected on his overall experience in completing his degree. Specifically, he noted his efforts to keep a sense of balance in his involvement with his family. He said:

It’s challenging; it’s tough. For me it’s really hard because I really was so focused on school that I kind of let my family go to the wayside. I made sure I
spent time with my daughter. I didn’t make sure I spent time with my wife and that was really a problem…I spent very little time with my wife and I couldn’t understand why she didn’t understand why I was doing it and it was part of the reasons we got divorced. We didn’t see eye to eye on that anymore. Finding the right balance is what it comes down to. It was a whole lot easier to balance after we separated, because I didn’t have to give her attention anymore. And my daughter, we now have shared custody so there’s a whole week when I don’t have my daughter at all and I can do as much schoolwork as I possibly can, and then the next week I do have my daughter all week so then I spend time with her. That’s one of the best things about the e-courses is it makes it easier to cram a whole lot of work into one week and then laying off the next week doesn’t hurt too bad. I think that was the biggest thing, just balancing everything. It’s a really tough part.

Inman’s stories highlighted how he was focused upon achieving “the right balance” in his life, involving his efforts to be a responsible and attentive father to his daughter, while also maintaining his involvement with his ongoing coursework. He was also working, mostly full time, to support himself and his family throughout his studies. As voiced in his reflections with online learning, Inman noted how he made a mistake of being too focused in his studies, contributing to his separation with his wife. He realized it was just as important to keep some sense of balance in his life in regards to both his studies and family commitments.
Andrew provided a somewhat similar perspective, noting that he couldn’t neglect his parental role while he was in the process of trying to get his studies done. He said he needed to maintain the balance of both working hard on his studies while also maintaining his parental responsibilities. He believed he needed to keep some sense of balance in his lives in order to set a good example to his children:

Well, the tricky part for me is that I can sit here and I can work really hard [in my studies] to secure my future. But how is it affecting my kids’ futures if they are not getting the attention they need [from me]? They can grow up and say ‘I’ll never going to go to school, I watched my dad do it all my life, and he was miserable’. So, [what if] I never saw them, and they might say, ‘I never going to do it [go to school]’. So, I have to keep that balance there so that I’m a good example of what they need to be, not a bad example.

For majority of these students, keeping a balanced life also meant they had to constantly parse out their time to study in relation to the time needed for their family situations and/or work obligations. Having flexibility for their online studies was both an advantage but also presented decision difficulties because of their multiple obligations. Working adults shared they had to consider key time commitment factors in relation to their working hours and job-related commitments. Students with parental responsibilities had to take into consideration their family’s schedules and children’s routines. Therefore, students reported their study schedules were often squeezed in between their work and/or family
commitments. Miranda, for example, illustrated how she typically scheduled her routines involving her multiple roles as a worker, parent, and a student. She reported:

Everyday I’d get up, do work out, come home, take a shower. My kids get up and my mom would come over [to babysit my children]. Then I’d go to work...During my lunch hour [at work], I’d do school work; watch lectures and take quizzes or read...Then I come home and somebody has to cook dinner, so it’s usually me. Then I help my older son with his homework or play with the younger one. Then put them to bed, and then I might have more school work to do.

Miranda’s story highlighted the integration of her life routines that was not only focused on her study commitments, but also on how she strived to balance her multiple life roles and responsibilities as an adult.

**Lacking sufficient time to meet all life role commitments.** Many perceived that their online learning participation was challenged by their lack of time because of significant demands in their adult role commitments. For example, Andrew expressed, “Everything struggles when you don’t have enough time. If I had 8 days a week I could probably do it [spend more time studying for my courses], but I don’t [have enough time].” Renee also expressed her own struggles, “I can’t really change my schedule. There are too many factors [that I need] to think about. I need to constantly think about when can I do my studies. There’s just so much for me to think about sometimes.” Another student, Lizzie, shared part of her struggles was her inability to devote more time and efforts into her online studies.
because of her other adult commitments. She said, “It’s been difficult for me as a student now with so many other responsibilities, not to be able to give it a 100 percent. So that’s been one thing that has been so hard for me to balance.”

**Renegotiating life priorities.** Most online adult students also believed that they had to continuously re-negotiate their priorities between their different roles and tasks. They found themselves shuffling and reshuffling their priorities depending on the demands of their studies or life exigencies associated with their adult roles. They also suggested that their priorities change at different times depending on what were more important and critical for them in their studies and their adult roles. For example, Amelia described how she felt, “There are times where I just have to accept that my family is going to come first. The family unit is what makes it difficult but also what makes it possible for me.” She shared the following situation as an example:

There was a situation where my younger daughter was sick. I had put her to bed three or four times and she just wasn’t staying asleep. And I realized that if I didn’t go and lay down with her, she was going to be up all night. So I had to prioritize my daughter’s need that night. I ended up setting my alarm and getting up a 6 am to finish the thing [online coursework] that I had planned on staying up late to do. So in the end, it was like, I felt like I had to choose between school and my kids, but at the end of the day I just keep pushing to where it is.
Inman shared a similar point of view on how he viewed and negotiated his priorities in life from time to time. He said:

Sometimes you don’t need to get an A on every assignment…At certain times, I may need to say, I don’t need to study five hours for this test. Let me go ahead and have dinner with my wife or take my daughter to the playground. Just make sure you know what your priorities are.

For these students, the flexibility of online courses provided the support for these students to balance their multiple roles involvements. When faced with adult roles dilemmas in their studies, the students negotiated their priorities and schedules so that their online studies could still take place at different times. Most believed the key to achieving balance in their studies was by weighing their different commitments and being flexible with their priorities from time to time. As shared by Laurie, “I didn't prioritize by number all the areas of my life. I guess I really don't know how! Everything becomes important at different times.”

Section Summary

This section discussed the key actions and experiences associated with how adult students engaged and managed their learning while undertaking online courses at NC State. Firstly, these online adult students discussed their experiences in navigating their learning through different online courses, noting the elements in their online course designs that positively and negatively impacted their learning experiences. They also identified and acted
upon instructors’ expectations for their participation and preferred outcome performance in their online courses.

Secondly, students also spoke about their focus in balancing and negotiating their adult roles and responsibilities through their online studies. They were relating their online learning to their needs and dilemmas as adult students. In particular, they discussed how they juggled and balanced their adult roles and responsibilities through access and flexibility provided by these online courses. They noted their commitment to achieve a sense of balance in meeting the demands of their multiple roles through continuous renegotiating of their life priorities, as well as their dilemmas in lacking sufficient time to devote and focus more on their studies.

**Adult Students’ Strategies for Studying and Learning Within an Online Environment**

The third section of this study focused upon the strategies of learning and the related supports that aid adult students in their learning within an online environment. In describing their online learning strategies, these adult students identified three key areas as important to their learning. These three areas included: (1) Strategies for acquiring and retaining course content; (2) Strategies for staying engaged in completing online studies; and (3) Strategies for managing and accomplishing online coursework.

**Strategies for Acquiring and Retaining Course Content**

All adult students in this study entered into the online learning process with a set of personal learning goals that they sought to accomplish. All of them had spoken to wanting to acquire, learn, and retain the content they learned through their online courses. They
described creating strategies that supported their ability to remember, understand, and apply the materials in their online courses. They identified three sets of strategies: 1) Assessing readiness and preparing to learn; 2) Identifying preferred ways to self-process and organize information; and 3) Creating meaningful or practical understandings of course contents.

Assessing readiness and preparing to learn. Ten out of the eleven participants noted that they made early efforts to assess their own readiness and to prepare for their learning in an online environment. They sought out the overview of their course objectives and learning tasks, in order to identify what learning content they were expected to study and learn. They also sought to familiarize themselves with the course expectations and requirements for learning in their courses. They used two strategies to support their preparation to learn.

Reading course instructions and understanding course requirements. Because each online course had different requirements and was uniquely structured by the respective course instructor, students believed their first step in preparation for the course was to gain understanding of the course instructions and requirements. Participants gauged and determined what content was important to learn by reading the course instructions. They suggested that the course syllabi and handouts were key definers in identifying key requirements and course content. For example, a majority of the students mentioned the value of their online course syllabi as an important document that set forth their learning expectations and content overview of the course. Nadine shared the following thoughts:
And all my Distance Ed [online] classes, the syllabus for each class has always been very clear. This is the amount of information you need to learn, and this is when you will be responsible for knowing it, which is helpful for planning.

Rebecca also spoke of her early preparation to read and understand her course instructions. She shared, “Early on, I read through all the syllabus to get a head start. Like, what are the things that I’m supposed to be learning, that kind of thing. Just knowing what to look for.” Similarly, Olivia mentioned a similar approach, “Basically, just knowing what the course is about. All the course information, stuff to learn, deadlines, you can get all those from the syllabus, mostly.” As for Amelia, reading through all her course instructions provided her with a sense of control in terms of the content and tasks that she was supposed to learn in that course. She said, “I like to know everything from day one to the very last day [of the course]. So being able to have that information in advance…reading the course syllabus, and handouts too, yeah.”

**Identify and assess the course content based on prior knowledge or own interest.** A subset of students also reported they made their own assessment of the topics or subjects that they were seeking to learn. These students were seeking connections in the course materials to determine whether or not the content fits with their own interests or what they already knew. They believed it helped them to prepare to learn the course better. Jillian illustrated her point:
I can look at something, and usually assess from a flyover or at least by the first chapter, how well I’m going to do [in the course]. In the Leadership and the Fundraising courses, I’m very familiar with both of those. It’s very easy, it’s what I do for a living, or what I have done as a volunteer. Another example, the last online course that I took was Geology. Had nothing to do with anything that I had done ever, and it took a lot of effort to understand the concept and to, the labs and identifying minerals, and so it was arduous. And I knew I have to spend a lot more time on that [Geology course].

Inman cited another example where he spoke about his strong interest to learn and retain the knowledge from a subject for his major. He suggested he examined and perceived the course content as important to support his future job endeavor, and thus, made him more ready to learn and engage with the course materials. He noted:

> There’re classes like a GIS (Geographic Information System) course … I know I need to really learn things from this course. I need to do more than just get a good grade. So [when I get ready for a course] really it was how much is this [course] going to help me in my career and how much am I interested.

In addition, in focusing upon courses that strongly aligned with their interests, backgrounds, or their future careers, students also noted that they made a mental note of the courses that they knew were unfamiliar or challenging to them. For example, Laurie noted that Philosophy was not a strong subject for her, and she suggested having to work a lot harder to learn materials from this particular course. Andrew reported that the NC State
engineering courses were a lot more difficult to grasp, and believed he had to study harder in order to fully learn and understand the course materials.

These adult students used several strategies to assess their readiness to learn based upon their own learning interest and their perceived prior knowledge. For these students, identifying and making connections between past knowledge and interest and their upcoming courses reflected their intent to foresee how well they could learn and engage with the course content, and how they could plan forward for efficient and effective learning.

Identifying preferred ways to organize and learn the course content. Online courses for these students meant that they typically were learning and engaging in learning materials, such as online lectures and assigned readings on their own. Rather than passively listening or reading the course materials, many of them described making active efforts to reinforce the understandings of the learning materials. They identified different strategies to help them both engage in learning and in organizing key understandings of the course content. The range of strategies suggested by these students included highlighting or writing down key information, creating visual or personalized study notes, and triangulating and reinforcing information learned using multiple resources. They all mentioned a thematically similar purpose for employing these strategies; they wanted to make sure they retained, understood, and were able to make effective use of the course content that they were learning. For example, Nadine shared one of her study strategies in her assigned readings:

I like to write [while doing my readings]. I think well through writing, so having to write about the material was a good way for me to engage with it.
And then I also like, it helps me get my thoughts in order, it helps me, just helps me think about what I was reading instead of just kinda breezing through it.

Amelia reported how she applied a note-taking strategy that she learned in a speed reading class when doing her assigned readings from her online courses. She said not only did this strategy help her understand the reading materials better, she believed she was also being efficient in gathering key information as cues that could be used to develop her written assignment. She shared:

They [the speed reading class] also taught us note taking skills so, that instead of just highlighting something, they told us every time you highlight something in your readings, make notes of why you did that. It’s almost like you’re making the outline on the readings as how you understand it. So when it comes time to go back [to the readings] and write a paper, I know I highlighted this because it was the main theme. This was the question they asked, this was the answer. So gathering the information to use for my own work was a lot easier.

Two students also shared how they created visual or personalized study notes from the class materials that they were learning. They believed this particular strategy helped them organize and integrate the information that they were learning more effectively. For example, Rebecca described how she was able to effectively recall information that she learned from her course to answer her exam.
I’m a visual learner and I have like a photographic memory, so everything I do, I have to write it down...The way I structured my notes, like I took a Geology class, so just how I formatted my notes kinda help me picture it [the information from the class]. When I went to take my exam, that’s how I saw it, I remember how my notes look, and what characteristic was under what category, so that’s how I recalled it.

Five students shared they triangulated and combined the information they were learning in their courses using multiple study resources. These students believed they learned better when they could utilize multiple study resources to integrate the information. For example, Rebecca shared how she used her textbook to supplement the content that she learned from her online lectures.

Sometimes I do miss things from the online lecture. But for the most part, I go through my [text]book, and anything that is not jotted in my notes [from the lectures], then I jot it [the information] down from the book.

Inman shared how he liked to learn both by listening to lectures and reading the course materials. He believed these two strategies, when combined together, helped strengthen his understandings of the course content. He described:

I value the [video] lectures because it’s nice to just hear somebody explain something. I like to read about something, then hear about it and then work on it. That’s the way I’ve seen that’s helped the most. I almost always retain [the course content] and never have a problem.
Meanwhile, Lizzie described a similar way of how she preferred to learn her course content. She actively took notes when listening to her online lectures, and she also triangulated her study resources by engaging in both her course lectures and readings. She shared the strategies that she felt worked the best for her:

This is the [online course] structure that I really like. You have your readings and then they actually post online video lectures. I love that, because [to me], you can’t learn all by reading. Some professors give you all reading… Usually they [the instructors] will have lecture notes like the power points, I will print those out, and take notes on it. And that’s what really helps me, writing notes. That’s how I really like when I have lectures like that. And then I always do very well on the exams. And I do feel like I retain the materials better as well.

**Creating meaningful or practical understandings of the course content.** Five participants also reported they actively sought to establish understanding in what they were learning from their online courses and applying them to real life connections. These students believed finding relevant connections to the content helped them create meaningful or practical understandings of the subject matter. They also believed this particular strategy made their learning more engaging and satisfying. For example, Olivia shared one of her study approaches:

I always try to think ahead of what I’m …learning. Like to try apply it to like everyday life, like, or what you may use this information for. Like try to apply it. So once you apply it, it will make it more easier to learn. Like I used the
information in Nutrition before. Like you know, I actually changed my eating habits up…So figure out how to use it to your own lives, that helps a lot.

Miranda also shared how she made personal connection with the knowledge that she learned in a particular course. She described:

With the religion class, it was the Intro to the New Testament… The lectures were really interesting and they were pre-recorded lectures. The book was great; it was actually written by a professor at UNC. I’m a Christian and I go to church and I’ve never really read the New Testament. And we had to read the whole thing for the class, and it was more of a historical point of view than a religious point of view, but it made me look at it and look at my religion differently. My husband watched the lectures with me, and we really got a lot out of that class. We changed churches because of it. I was riveted the whole semester in that class.

Amelia also cited an example where she made connection between political news that she read in the mass media, versus the academic perspectives of the same topic that she learned in her Political Science courses. She compared her thoughts of media content versus course content as follow:

In my political science classes, it is nice to be able to hear people say things about something happening in the news and it’s [the news was] not very realistic. And then what I can say is, ‘Did you know in reality this is what they were trying to do [based on what she learned in her Political Science course]’.
Being able to learn [academically] about things without the flashiness of the news just makes it a lot more realistic and not as propaganda.

Two other students, Inman and Jillian, also shared how they sought to make meaningful connections between what they were learning in their courses towards their current or future work professions. Jillian provided an example based on an assignment she wrote for one of her online courses. She described how she chose and explored the subject matter to write about based on her work experiences.

It was a Public Leader Profile assignment, where you take someone [a public leader] that you admired and you apply, you identify the traits and examples of that, that you’ve learned in the textbook. I chose Steve Jobs, because as he was developing the technology that eventually leads to Apple [a technology-based company], I was actually working for some of the larger technology companies in the park (referring to the Research Triangle Park in North Carolina). And it was very interesting to see what he was experiencing and what he was doing is similar to what we were having here in the park, and what I had experienced in corporate politics. It was just, it was very fascinating, I enjoyed [learning about] that.

For these students, they believed the process of contextualizing what they learned in their courses provided a more meaningful and practical learning experience.
Strategies for Staying Engaged in Completing Online Studies

Because online asynchronous studies are primarily based in solitary learning efforts, students also self-initiated strategies to help them stay engaged in completing their online studies. In particular, they spoke of two sets of strategies to foster and sustain their desire to continuously participate in their online course learning. These sets of strategies were focused upon how these students were 1) Staying connected with their online course community; and 2) Sustaining focus and persistence to learn online.

**Staying connected with online course community.** Because these students were taking classes online, they understood that they were largely responsible for staying engaged and keeping focused in their learning through the online environment. Part of this engagement was based in a belief of staying connected with their online course community. Students reported they stay connected by actively participating in threaded discussions and online course forums, and contacting or having frequent conversations with their instructors for advice, help, and additional guidance. Students believed by staying connected with their online course community, they were able to engage with their online courses through helpful discussions, learning interactions, and useful information that supported their learning within an online environment.

**Connecting with instructors.** Some students reported their proactive stance in connecting with their course instructors during their online studies. Five participants mentioned making active attempts to contact their instructors for any help or support regarding their studies. For example, Laurie shared how she would seek help from her course
instructors and teaching assistants whenever she encounters any problems or difficulty in her studies. She expressed:

If you run into a problem [in your studies], it’s not just your problem. You can take it somewhere, and somebody can help you. So when I have problems, like having difficulty with this [class], this is what I’m going to do to fix it. I’m going to talk to the TA [teaching assistant], I’m going to talk to my adviser. Like when I have any kind of question about my classes, I try to contact the instructor or the TA.

Two other students believed not only in contacting their instructors for help, but also in establishing good online relationship with them through frequent communications and contacts by email. For Rebecca, in particular, she reported value in being closely connected with her instructors. She shared how she frequently communicated with all her course instructors, so that she could contact them more easily for any help, advice, or guidance in her online studies. She perceived the efforts were not only helpful for gaining academic supports from them, but also for personalizing who she was as a student, particularly as returning adult student who were juggling multiple responsibilities in addition to her studies.

I’m really close with my teachers. I have to be, in order to make sure I’m on top of things. So I email and talk to them almost every week, because there’s just always something that’s going to happen. [Like] I’m going to forget about or be late on, so I talk to them early in the semester and explain like, what’s
going on in my life, and how I’m willing to do anything I can to make sure I pass the class and what help they are willing to give me.

Meanwhile, another student, Andrew, reported the positive connection he had shared with some of his instructors. He perceived some instructors shared mutual understandings in regards to his parental responsibility as an adult student, and that they were also willing to help him as needed in his studies. He shared:

I’ve had some really great instructors that I connected with…A good thing about being an adult is you can relate better to the instructors and instructors can relate better to you because a lot of them have kids as well. You get a lot more help from them I think. You ask for it and they’re almost always willing to help you.

**Interacting with online classmates.** Beyond making connection with the course instructors, students such as Inman, Olivia, Laurie and Lizzie mentioned the value of interacting with their online classmates. These students reported they interacted with their classmates and peers about their ongoing class and coursework via online forums and threaded discussions provided within their online courses. Two participants, Laurie and Lizzie, noted these forums and threaded discussions served as a valuable source of information regarding their online class. As noted by Lizzie, “Having those conversations [in the online discussion boards] helped me be alert with everything that is going on [in the online courses].” Others believed keeping an active interaction with their online classmates helped them to learn collectively and engage with the course materials through the exchange
of ideas and opinions about their courses. Olivia shared an example where she perceived the online discussion that she participated in her online class was helpful for her learning.

So everybody’s on Google Plus [a social network platform], and you have to watch a video or read a paper, or read an article, something like that, and then you have to go back and forth with everybody on your ideas and thoughts, and if you agreed with them or if you don’t, stuff like that…And when you joined in on the conversation, you can kinda read what everybody’s going to say, everybody’s ideas if they support it. But it helps with learning, it does help. Because you’ll be like ‘ohh, I never thought of that’ or you know, ‘she really had a good point’. But so, so reading [all the posts], [while] it’s time consuming, but it’s beneficial, I think they are.

Meanwhile, Inman believed being an active participant in his online course helped him in his coursework learning. He illustrated the following example from his Geographic Information System in Hydrology course:

You start working on your assignment and every week had its own discussion forum. And that’s where you got a lot of complex help with other students and from the instructor and a teaching assistant. You never had to wait long for an answer which was good. I got answers at 2 in the morning before…You’d go on there and troubleshoot and you’d have either a lot of students helping each other or the instructor coming in or people just figuring things out. When you
have like 30 people working on the same problem, somebody eventually figures it out.

These students believed they were more encouraged to engage and keep up in their studies by keeping their online participation and communication active within their academic instructors and their online classmates.

**Sustaining focus and persistence to learn online.** Students also described their occasional struggles to remain engage in completing their online studies. Juggling the strenuous academic workload while having to make time for their family and/or job had caused some of these students to feel drained and burned out at various times during the semester. Because the students must assume the responsibility to complete their online courses on their own, they spoke about their strategies to sustain their focus in completing their online studies.

**Engaging in self-encouragement and morale support.** Students discussed how they engaged themselves in positive thoughts, conveyed internally by them or from their support group, for maintaining their focus and commitment in their online studies. They understood elements in their thought process that motivated them, and used those thoughts as self-encouragement to keep a continual focus in their online learning efforts. Some of them were focusing upon their achievement or progress that they had made in their studies, while others spoke about relating their current online learning efforts to their personal goals. Three of them expressed satisfaction in their learning accomplishments thus far in the degree program, and often expressed they were motivated by their desire to continue the good efforts they
made in their studies. Olivia for example, took pride in the grades she was making in the semester she was interviewed (fall 2014). It was her first semester coming back as a returning adult student, and she happily reported that she was making good grades thus far in all four of her online courses. Despite all the challenges she faced as adult student, she said, “What was amazing is that I’m actually …doing well [in all my courses]. Like you know, I was trying to, I always challenge myself a lot sometimes to focus [on my studies]. It motivates me [to study].”

Four students also shared how they self-encourage themselves to study by thinking about how their current tasks (i.e. studying online) can bring them closer to achieving their goals. For example, Olivia shared how she consciously thought about her goals to encourage herself to study when she noticed that her focus in doing her online studies was diminishing.

It’s like plenty of time I just do not want to do anything, you know I’m just going to sleep more today (laughed). But, it’s just, I just want to be successful.

I want to start my own business, and I know that I need to have a substantial degree from somewhat recognized school, so that’s why this is pretty much my motivation [to study.]

Amelia shared how she was determined to realize her goals of earning and completing her Bachelor’s degree from NC State. She stated getting into NC State was one of her big goals. Now that she is in the program, she often has to remind herself of the goal that she was trying to accomplish. She expressed her willingness to do “whatever it takes” to successfully complete her courses and finishing her degree. Some students, such as Miranda and Laurie,
charted their own progress towards completion of their degree program to visually remind them of their end goal. As noted by Miranda, “To finish another [online] class is a step closer to finishing the whole thing. I just have to maintain my focus.”

Some students also drew upon moral support through encouragement provided by their support group, particularly their spouses, close family members, as well as friends and colleagues. This encouragement was judged by these students as bolstering their motivation to persist in their studies. This morale support was perceived as valuable to help them validate the worth of their efforts in keeping focused and committed to their studies. Olivia mentioned the important role that her big family played in providing her the encouragement she needs to stay committed in her studies. She reported:

I would say [I valued their] encouragement. Most people are really excited that you’re in school…I have a big family. So I have like three cousins that are pretty much like sisters, and then I have two actual sisters, and then two actual brothers. And then my grandma and my mom. So they, they are kinda really proud of me, like you know, they’re like ‘you know what, make sure you just stay focus.’ Stay focus, and you know, even though it’s hard, stay focus.

Rebecca shared how she felt supported by her colleagues, who expressed their support by sending her resources and links that they thought might be helpful to her studies. Inman shared how he often talked to colleagues and family about his ongoing studies, and how their
words of support were significant to him, “When I felt like giving up, I’d talk to the right person and they’d say you can’t, just keep going.”

**Scheduling personal time or taking breaks.** To alleviate the stress that they often experienced during the semester, a subgroup of students scheduled personal time away from course activities or took temporary breaks from their studies. This effort was valued because they perceived it helped increased their focus and productivity in their studies, and avoided feeling burnout from the stress and exhaustion of their rigorous routines. For example, for fulltime workers such as Jillian and Andrew, they both have shared that they tried to limit their studying hours in the evening by 9 pm. Andrew said, “I have my time set and I do have a rule that I don’t do anything after 9 at night. That’s just a rule I’ve stuck to. You’ve [I’ve] got to relax sometime and [I’ve] you’ve got to sleep sometime, you know.”

Meanwhile, Miranda and Laurie tried to incorporate some time in their schedule to do personal activities for themselves. For example, Miranda tried to keep up with her exercise routine in the morning and on Sundays. She believed taking personal time away from studies and work helped her from feeling burnout from the rigors of her study and work routines. Laurie shared that she tried to incorporate some “me time” in her schedule, such as taking a yoga class and having breakfast with friends.

Students with families also reported that they took breaks from online coursework by spending time with their spouses and/or children. After coming back from work, Nadine made sure that first, she spent some time with her husband before she started studying. As for Inman, he viewed the time he spent with his daughter as a good break in between his job and
studies. Olivia took a break on weekends, because she wanted to be out from her house, spend time with her children, and visit her families. She said:

I don’t do [school]work on the weekend, I take my weekends to myself.

Usually I try to go out, to the park, to visit families, to kinda keep them up in what I’m going through.

In another example, Olivia also shared how she utilized her Fall semester break to give herself some time away from her studies. She explained why taking that break was beneficial to her:

The Fall break, it was so beneficial for me. Like I needed that break because I was so, I mean it was so much thinking… So that Fall break kinda gives me a break from all of it. And it actually kinda clears my mind, I can re-group, and do some readings.

By scheduling breaks and taking some personal times off, these students believed they were avoiding issues of burnout or exhaustion that could hamper their focus from completing their online coursework.

**Strategies for Managing and Accomplishing Online Coursework**

All adult students in this study had major role commitments to either work or family obligations or both, as well as their commitment to their student role. Many described their life schedules as busy, and for some, demanding, as they sought to remain engaged in performing and managing all their responsibilities. As described by Laurie, “(I’m) very, very
busy. And every week is different depending on what’s necessary for my classes and what’s necessary for my family, and so forth.”

As adult students, they reported their studies rarely took place with a sole focus in a student role. Rather, their studies had to be managed and sometimes, performed jointly with their adult roles and responsibilities. The rigors of juggling their multiple roles were often associated with scarcity of their times, energy, and personal resources. In their ongoing efforts to stay in control of their online studies, these students reported initiating five set of strategies to help them manage and accomplish their online coursework. These five set strategies were 1) Developing and organizing study schedules; 2) Handling and organizing multiple study task; 3) Staying informed of online study tasks and own academic progress; 4) Identifying or setting up a study environment; and 5) Establishing viable support structures.

**Developing and organizing study schedules.** Developing and organizing study schedules was a key theme that surfaced from the participants’ interviews. These participants suggested that creating a study schedule was not only pertinent for planning and managing their time, but also important in anchoring a consistent commitment from them in completing their online studies. As adult students, they understood that their studies were competing for time in relation with their other adult roles and responsibilities. Therefore, they often relied on having a well-developed study schedule so that they could maintain consistent participation in their studies, while they balanced the demands of their multiple roles. They developed their own schedules, blocked off time commitments, and organized their life routines for completing their course commitments in a timely fashion. As reported by the
group, their study times were as small as an hour, or some reported that they were able to study for an eight hours block. Two key considerations were used by these adult students in developing and organizing their study schedules. They utilized a timeline and due dates of their courses, and organized their study schedules based in their adult roles and commitments. Their main focus was to create a study schedule that would allow for timely completion of their study tasks within their already busy adult life schedules.

**Being attentive to the course timelines and due dates.** Course timelines and due dates inherently served as an important consideration for students when developing their study schedules. Course timeline and due dates were particularly important in efficiently meeting assignment deadlines. In creating their study schedules, the majority of students typically began by developing a broad overview of their semester’s schedule. They referenced the information that was typically provided in their course syllabi, and recorded all the important timeline and due dates into their own personal calendar or planner. For example, Renee said, “I look through the syllabi and I post everything…I put it on the calendar at the beginning of the semester, and then I just look [at my calendar] to the next week and see what’s on my schedule.” Laurie shared another example,

> What I typically do is look at the syllabus for when things are due, and I didn’t bring it with me today [when the interview took place], but I have my agenda, my personal agenda book, and it’s like my life (small laugh). And if I had it with me, I can show you [the researcher] my months and it’s [the agenda] like everything [course deadlines and schedules were] written on it
everywhere. But I’ll go through, usually at the beginning of the semester, and
I look at the syllabus, and I take my agenda, and I write when things are due.

Four participants reported they utilized their phone calendar for scheduling all their courses’
timelines and due dates. Meanwhile, the rest mostly preferred using a paper-based calendar.
Lizzie for example, described how she outlined her semester schedule:

In the beginning of the semester, I sit down and print out everything that I
needed to do and I write it all down. I have a bulletin board, and I print out,
not the entire syllabus, just the schedule. And I highlight dates and when
things are due…But I highlight the dates, or if they [the courses] don’t have a
very clear syllabus, I actually type up for myself and put the due dates in the
calendar… it’s an old school desk calendar…Every time I sit down at my
[study] desk, I [will] have my calendar.

These students noted their beliefs about the importance of being attentive to their course
timelines and due dates. They believed this organization allowed them to predict how their
semester flowed, to serve as a conspicuous reminder of their important academic due dates
and deadlines, and to constructively plan time to do their studies throughout the semester.

Planning study schedules based on adult roles. As adult students, their schedules
were also defined by commitments from their adult roles. Adults who were working
considered their time commitments related to their jobs; such as regular work hours. Adults
with family responsibilities spoke about their commitments as a spouse and/or a parent.
For adult workers, these students considered their working hours and job-related commitments when scheduling time for their studies. They assigned times when they were not working to focus on their studies, such as in the evenings and weekends. For example, Jillian shared her usual time for doing her studies, “Work takes a majority chunk of the daytime, because my customers are there during the day. And so, I do my studies usually during the evening, maybe pick it up at 6.30 pm or 7 pm, and then stop at 9 pm.” Meanwhile, Laurie, who worked three days a week as a part-time preschooler teacher, shared one of her scheduling routine, “I don’t work on Fridays, I don’t have any other classes on Fridays, so Fridays then … I catch up on my school work or I start school work that’s due next week, or whatever.”

Students who were parents reported creating a study schedule that revolved around their family’s routines. Renee for instance, planned her study times around her sons’ schedule. She said, “One time that I can work [study] is on Tuesdays and Thursdays, when my sons have taekwondo. That’s like an hour block, and I can also do work [study] after they go to bed which is about 9 o’clock.” Miranda, who was both a full time worker and a parent, shared her study routine, “I usually do work during my lunch hour at work, and after my kids go to bed at night.” As for Olivia, who was a full-time student and also full-time parent, shared how she scheduled her studies around her children’s routines:

Okay, so, how I kinda work it [my studies] out. I wake up at 6.30 in the morning, get everybody dressed, and get everybody ready. I have two kids that are in school, so they catch the bus at 7.30 am… I’ll give the babies their
bottles and change their diapers for the morning, then I watch lectures for about an hour or half or two while they play. And then, I’ll clean up, give babies their bath, put their clothes on, everything. And then, I’ll kinda chill out. Or if something is due, I’ll probably get started on that, but [that is] between 1 and 3 o’clock, because they [the older two children] get out from school at 3.40. So after 3.40pm, …I'll do homework session with both of them. And then at night, they go to bed at 9 pm, but they are usually in their room by like 7 pm, or 7.30 pm. So [after the children go to their room], I’ll try to like, make sure I check my emails [at] this time. I’ll check them [the e-mails] to make sure I’m on top of everything. And, I’ll either work on my Math assignment or whatever I have going on.

As reflected above, Olivia was specific on the times she normally did her studies; she based it upon her children’s schedule. Scheduling study times based on adult roles were one of the key strategies reported by these adult students in support of their studies. They provided various examples, from work to family sensitive scheduling, to help them balance their life schedules while undertaking their studies.

**Handling and prioritizing multiple study tasks.** Because the vast majority of these students were taking more than one online course at the time of this study, they were largely responsible for handling varied and sometimes competing course commitments. In juggling these multiple online courses, the students reported how they used two strategies to handle,
organize and ultimately, fulfill their multiple study demands: (1) Approaching tasks based on priorities; and (2) Breaking study tasks into smaller subtasks.

**Approaching study tasks based on priorities.** Students described one of their key strategies for handling the completion of their multiple study tasks was by setting their own list of priorities. Prioritizing their study tasks involved the students identifying the tasks and deciding when to do them. Overall, the group described several defining criteria when outlining their priorities, based on 1) due dates; 2) complexity or difficulty of the tasks; and 3) their perceived understanding or valuing of specific course subjects.

First of all, it was a common practice for these students to prioritize their study tasks based on the course deadlines and due dates. For example, Andrew noted how he normally approached his tasks:

I just have a folder for each class. And at the front of each folder is the course schedule and list of things that I need to do. Every time I go to do [my] homework, I open them [the folders] both up, and see which one [homework] is due first. And that’s the one I work on.

Amelia shared how she normally arranged her task priorities based on its due dates. She also occasionally prioritized based on study tasks that took her more time, or subjects that she perceived as more important in her major. She elaborated:

I have had things [assignments] due very close to each other…so I’ll usually just say whichever is due first, I’m going to work on that and not worry about the other one. Most things you have to do research and all that. But there are
times when I have to decide like a class for my major is more important than an elective. So I’ll work on the paper if it’s longer or if it’s going to take more time, then I’ll prioritize that. But it usually just depends on which one is due first.

The second defining criterion that the students considered was based on their own assessment on the difficulty or complexity of the tasks; whether the tasks required more time and efforts. For example, when working on his weekly homework assignment, both Andrew and Inman mentioned they preferred to start with difficult tasks that took them longer, and then move on to doing the easier ones. For example, Andrew said, “Typically there is a class that you [I] know is going to take longer, so I do that one first or at least try to, and then do the easier one.” Lizzie, on the other hand, chose to approach her study tasks in the opposite way from Andrew and Inman. She informed, “I always try to do the smallest and easiest first. Get them out of the way, one less thing on my plate.”

Some students also made distinctions between tasks that they could accomplish with minimal efforts, and tasks that needed more effort or required their full concentration. For example, Rebecca shared how she was being purposeful when electing to do different study tasks while she was at home with her children. She shared:

Usually when they [the children] are around, I can’t do the lectures, so that’s usually the time when I’m doing discussion forums, or worksheet or something like that, that doesn’t require me to actually really pay attention or really hearing things. I can be kind like, go to the book and look for the
answers. And I won’t do exams or quizzes when they [the children] are around because most of the time, they [the exams or quizzes] are on timers, so I can’t stop to see what they [the children] need and go back [to resume the exams or quizzes].

Olivia mentioned that she did her readings whenever she had help from her partner to look after her twin babies. She utilized those quiet times to focus on her readings. She explained:

I try to read as much as possible when my guy is there. I focus on [doing my] readings because he [my partner] will have [babysit] the babies most of the time. So I try to get as much time reading as possible when I have help.

Because he’s not there all the time [to help me babysit]. When I have help, I will focus on readings.

Olivia also reported she chose to watch all her online lectures in the morning so that she could think about the content for the rest of her day. At night or in the evening, she typically used those times to do other tasks which required her to be more engaged and participative.

She provided the following examples:

I watch lectures in the morning, so I can think about it for the rest of the day…

[In the evening, I will do] any hands-on work, any work, like [writing] a piece of paper or doing some research, or catching up with my Maths, because that’s when I’m more wide awake. In the morning, I’m just watching my lectures.
Meanwhile, both Renee and Miranda reported that they prioritized their study tasks based upon their perceived ability to understand specific course subjects. Miranda said she spent more time on the course that she least understood. She said:

I guess it depends on how much I understand the course. If I understand the material more, that’s a little lower priority than the ones [that] I don’t understand. I’m going to spend more time studying on the ones I don’t understand, than the one I already have a good grasp of.

Renee reported she prioritized study tasks from courses that were of less interest to her, required her to more significantly understand the content, and required more attention from her. She said, “I do the one I like the least first, so I don’t run out of stamina [to finish the rest of my study tasks]. And then also this course that I got a bad grade in, I’ll definitely need to prioritize.” Renee also shared how she arranged when to do her study tasks based on the valued that she attached to the course subjects. She provided examples based on her favorite subject (toxicology) and her least favorite subject (geology). She reflected on her different efforts to study stating:

[For geology,] Since it takes more effort, I have to study it at a time of day when I expect to have peace and quiet and energy. So like the toxicology coursework, I can do at night before I go to bed because I know I’ll stay alert even if I’m tired. Whereas the geology coursework, I usually do during the time when I’m at school on Tuesday and Thursday and [when I] have no distractions.
Overall, students noted one of their strategies to stay organized in their studies was by approaching all their study tasks using their self-developed list of priorities; such as due dates, difficulty or complexity of the tasks, or their perceived understandings or valuing of specific course subjects.

*Deconstructing online coursework into steps or subtasks.* In managing and arranging the completion of their online coursework, nine out of the eleven students also reported a strategy where they deconstructed their online coursework into smaller steps or subtasks. Because the adults were often required to divide their time and focus between all their key adult role responsibilities, adults reported this strategy was valuable. This strategy helped them manage and arrange the completion of their study tasks at a pace that suited their busy schedule.

Some students provided examples based on more time consuming course assignments, such as written papers or course projects. For example, Rebecca mentioned this strategy twice during her interview. She described how deconstructed components of her larger projects into smaller tasks and assigned her own deadlines to those tasks before placing it in her personal calendar. She elaborated on the steps:

Projects that are bigger, [that] are due at the end of the semester, I have like a calendar where I write down what I need to do like every couple of days. Like I have a paper that’s due at the end of the semester, but in my calendar, I will have [my own] dates that I need to have two articles picked by, and then have another date that I need to have three pages done. And then I have another
date where I will have final, I mean a rough draft done...I break those [large assignments] down because I don’t have enough time to invest and try to do them within like a week at one time. So I have to break them down by weeks or months ahead or things like that.

Nadine shared a similar example like Rebecca. She described how she deconstructed her written assignments into subtasks that she could gradually complete over a period of time.

So what I would normally do at the beginning of the semester [is] look at the syllabus. [For example], I would have put on December 1 is when my paper is due. And then I would have back out from there [that date], how long I think I would need. So give myself a week to write the paper. A week before December 1, my calendar would say “start writing paper”. And then let’s say three days before that, watch the video. And then three days before that, read the articles, and then you know, [get the paper done]. So I work backwards [from the due date]. Partly I give myself big chunks of time like that, you know, because I work and life does happen.

While Amelia reported she did not have all the steps written down, she mentally planned and approached her writing assignment in a similar way. She described the following example:

[To write this written assignment], There was a long case study that went along with that [topic] about this event that happened, so I read through the case study…The case study was very long, so reading and understanding the case study and then listening to all the lectures took a lot longer. I didn’t write
this down or anything, but I sort of mentally say [to myself], it’s due a week from now. So by Monday I need to have the case study read. And by Wednesday I need to have the lectures done. And then from Wednesday night to Friday or whatever I’m just going to write and review the paper. I just sort of break it up into chunks and do it that way.

Other students also talked about using a similar strategy when approaching their weekly online coursework or when reviewing topics to study. Inman shared how he generally planned his study tasks for two weeks ahead by listing the coursework or assignments into subtasks. He said:

I normally look through my assignments for two weeks ahead and write down all the ones I need to work on and their due dates. And once I see what I have to work on, I go on, let’s say Monday I need to do this, this and this and so forth. I break it down.

Jillian believed her strong project management background led her into approaching her coursework “like treating it as a project.” She believed in approaching all her coursework-related tasks by systematically breaking it down into steps or topics. She shared one example of how she studied for her test in several review sessions while she was traveling at the same time. She said:

When I was studying for the mid-term, actually we were in Las Vegas that weekend for my birthday. So I printed them [the study materials] out, I took them on the plane with me, and I studied two chapters each day because there
were six totals [chapter], so it was [spread over] 3 days. Then [I] took all the tests when I was at the airport, way before the plane. And so I was ready, and I scored a 100 on them. So I mean, it’s just how much can I do, and what do I need to do, and how fast can I do it with the most efficient way.

By breaking down their study tasks into steps or subtasks, the students believed this strategy was valuable in helping them manage the completion of their online coursework more efficiently.

**Staying informed of online study tasks and academic progress.** As online learners, these students believed that they were largely responsible for staying informed of their online study tasks and being aware of their own academic progress. These students mentioned they were avid about checking their course websites (Moodle) and emails. They believed it was essential to keep themselves up-to-date with their course-related communication as frequently as possible. They kept themselves updated with all the study tasks and information related to their courses--such as weekly course schedules, due dates reminders, grades distribution, and important course announcements. For example, Amelia shared, “I check in on my [online] classes every single day multiple times. I always check my email; I always make sure if something is on the discussion board.” Amelia also shared a situation where she almost missed an assignment, but was able to recover from the oversight because she checked her email. She described:

I had just turned in another assignment that night, and thought I was like I’m done for a little while. Then I checked my email because you get an email

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saying your assignment was submitted, and there was a message from the instructor saying where is this other assignment [that I’ve not submitted]. So I emailed her back and said I don’t know how I missed this; I’m working on it right now…It wasn’t a very long assignment but I ended up turning in something that was academically pretty similar to my other assignments…Mentally I was a little bit crazy because my husband is thinking it’s 10:30 at night and we’re going to bed, and I’m saying I have to write a paper right now. I wasn’t going to go to bed until the next day.

Olivia, a returning student to NC State, contrasted the ways she used to approach her online studies during her initial undergraduate days and in her present online learning courses. She realized keeping herself well-informed and actively connected to her online courses were essential to stay on schedule and on-task with her online studies. She said:

Before, I checked my email once every like, 10 days (small laugh). And I do [did] not open every single email, I’ll just be like “nahh”. Now, I opened every single email and you know, I check my email everyday (with emphasis). Before, I check my online assignments once a week (small laugh), maybe, unless I needed some directions on. Now, I try to go, I logged into it [the course websites] at least twice a day or something like that. It’s a very go-to site for me right now, yeah. Before, it just wasn’t that important to stay connected with the class.
Six other students had mentioned a similar thing; that they always prompted themselves to check their emails and class websites (Moodle) to keep them aware of all course-related due dates and any new updates. They tasked themselves with a responsibility to always be on top of their study tasks, and made sure they made progress towards completing their online courses.

A subgroup of students also noted it was not only important for them to be well versed about their courses’ flow and updates, but also in staying actively informed of how well they were doing in their courses. They sought self-validation on their efforts, and self-assessed whether they were meeting their academic or learning goals (i.e., getting an A). Eight participants noted they checked their own academic progress by noting the grades they made and acknowledging the feedback they received from their online class or course instructors. Laurie mentioned how she was always keen to check on her grades every time she completed her exams or submitted an assignment. She said, “I always want to know how well I did [in my exam]…. for the assignments, to see if I’ve done it right.” In another example, Amelia shared how she valued getting feedback from her course instructors and made improvement in her approaches and thought process in pursuing the rest of her study tasks. She illustrated:

I always prefer to get first assignment back before the next one is turned in, so I can cater it [the next assignment] to whatever they [the instructor] said about the first one…Like I remember one of the first paper I turned in was a Greek Mythology class, where the instructor said I needed to be more concise and do
less background and more of my thought process. So going forward I have thought about that with every paper that I’ve written since.

These students suggested that their grades and feedback provided them with cues on areas of their learning that they can revise and change for continual improvement in their study progress.

**Identifying or setting up a study environment.** In an asynchronous online course setting, students were largely in control of where their studies took place, not only in time and schedule allocations, but the study locations as well. These students typically identified three different settings for establishing study locations for their online studies. First, all of them reported they set up a regular study environment, mostly at the convenience and comfort of their personal homes. For these students, having responsibilities as a worker and parent meant their personal home became their most practical and convenient space to do their studies. Laurie for example, shared that she did her studies within her home space after she completed her daily responsibilities:

> After I’ve gone to work all day, and I’ve come home and I cook dinner, and we clean up, my child at home has done homework, and we gotten in bed and fed the pet, you know, all that kind of stuff. Finally, it’s quiet, 10 o’clock at night, I can go to [my online] class, which otherwise I couldn’t do.

These students shared how they set up a designated space within their home where they organized their needed study tools (such as computers and printers) and supporting study materials (such as textbooks and printouts) for faster and easier access while they were
studying. These students believed that by designating a study space within their home, they could physically and mentally separate their focus and attention when it was time to do their studies.

A subgroup of these students also identified the additional space needed to accomplish particular study tasks in a quiet or non-distractive environment. Some perceived their regular study environment was not a conducive environment to accomplish specific study tasks. At times, they noted that they could be interrupted with the presence of their family members or with other distractions at their home. Therefore, these students also identified a different study setting from their regular study environment in their home setting. They believed this change was occasionally necessary to bolster their focus and commitment to complete their online study tasks. Studying at the library or on-campus, or having a study session at a coffee shop were among the efforts that they initiated to improve their study environment. Inman provided an example of this strategy:

When I’m working at home, sometimes it’s hard because my home computer is not only for school but for fun too. I have the internet there and I play games sometimes too. So sometimes it was [a choice between] homework or Star Craft [an online computer game]. And I still have not mastered that. The only way I can really get around that is to come up to the library and use a laptop and sit in the library and do it. That was the only way I could combat that.
Other students shared similar examples of how they switched their study environment when they perceived there was a need for it. Renee shared how she studying on campus twice a week in Fall 2014 semester even though she was taking online courses. In another example, Amelia shared how she studied until late at night at a coffee shop so that she could complete all her written papers that were due during the final week of the semester. Olivia took the opportunity to write her papers at a local library while her partner babysat her children. All of these students described their need to change from their home study environment to increase their focus and be more effective in completing their study tasks.

Some students also noted a third environment for their online studies. This setting could simultaneously allow them to be present at their job or family occasions, or while they were in transit, or minimally participating at a social event, while also study at the same time. This setting allowed them to be physically present at their other commitments while still being able to incrementally contribute to doing or completing their study tasks. The majority of the adult workers had noted that they used their workplace during lunch hours for studying. In a different example, Jillian shared that while she was on a business trip, she studied during her plane travel, and sat for her exam at the airport. Inman mentioned he once studied and worked on his homework while being inside a car for a 13-hour road trip for his work. Family responsibilities also offered alternative settings for needed study time. Andrew shared how he had done his homework at numerous places while being presence at his family’s events. He described:
I’ve done homework at a baseball game. I’ve done homework at the beach. I’ve done homework at a pool. Every year we [my family] go camping for twice a year, and this year we actually got a camper. So the last two times I’ve been in the camper doing homework, but before that was inside a tent on an air mattress.

These various examples of alternative study environments suggested that their decision on where to study was not based on a single or a static location, but rather, they actively changed and adapted their study environments to meet their ongoing study needs and role responsibilities.

Establishing viable support system. The majority of the students established their own support system to assist them in situations of need during their studies. The support that was discussed by these adult students was mostly associated with help to ease their parental or job duties, while they took some time to focus on their studies. Students with parental responsibilities, for example, sought out help from their families, especially from their spouse or partner, to look after their children while they stepped away to finish their schoolwork. For example, Amelia, who is a stay-at-home mother, credited her husband’s role in relieving her from her parental duties at home whenever she needed to focus on her studies. She said:

I’ve never been in a situation where I couldn’t make it work. He [my husband] knows how important school is for me, so if anything comes up he’s always there to say, ‘I’ll handle everything else [at home]’…Sometimes if I know I’m
getting behind [with my studies], I’ll warn my husband ‘Okay Sunday I’m going to need to leave the house and do nothing but school work’. So we’ll sort of prepare for that, and then I’ll do like 6 hours of school work. Then it will go back to trying to do things throughout the week.

Three students also received support from their family members (beyond their spouse or partner) who lived locally. These adult students reached out to them for help, especially when they needed someone to look after their child(ren). With this help, they were able to have more quiet time to focus on their studies. Lizzie for example, commented on the help and support she received from both her husband and her parents:

My husband will help watch my son in the evenings if I have an exam to do. I have my parents that live locally and I can get them to watch my son. Really it’s just, the support that I need is being able to not have my son around so that I can study.

In addition, some of the working adults also noted the support they received from their workplace. For example, Rebecca noted she received the support she needed from her workplace supervisors and colleagues in regards to her studies. She said:

People at work know that I’m in school too. So if I ask for some time off, they are fine with it, they are okay. Or if I say I need to leave early or I want to take a longer break because I need to do this discussion board before midnight or something like that, then they are like ‘Okay that’s fine, go ahead and finish’.
Both Nadine and Andrew also spoke favorably of their superior’s support in their studies. Both of them had shared how they were given permission to work half days on days they needed to write a paper or take a test. Nadine said, “My boss is very supportive. If I need to take half a day off to write a paper or go take an exam, she’s very supportive of that. And I do that when I need to.” Similarly, Andrew reported:

Anytime that I have a test, I’m fortunate enough to have a boss who is understanding and cares about me doing well in school, so I have permission to take off half a day. So every time I have a test, I’ll leave work at lunch and go straight to school and try to cram as much into my head as possible, so I might learn something that I haven’t learned yet [before taking the test later in the evening].

Overall, the adults reported the invaluable role of their social support system, namely from their spouses, families, and work superiors, in providing them with support or assistance in their studies. Andrew for example, emphasized the importance of having these support, “You have to have support of those other people [family, employer] in your life…or it’s going to be really difficult.” Receiving this help enabled the students to focus in getting their study tasks accomplished and help them keep at pace with their online studies.

**Section Summary**

Overall, this section delineated the three key areas of strategies that adult students reported while learning in an online environment. The three areas captured the ranges of strategies that the adults described when learning online. Each area focused on a different
aspect of the adult students’ learning process in supporting their overall studying efforts through online asynchronous course setting. The first area was focused upon the strategies that the adults used in acquiring and retaining the course content. The second area discussed their strategies for keeping themselves engaged when studying online. The focus of the third area was on how these students managed, planned, and paced themselves for accomplishing and completing their online coursework.

**Chapter Summary**

This chapter presented the findings of this research study under three main sections. The first section focused upon the participants’ beliefs in viewing themselves as online learners. They expressed four set of key beliefs. First, the students spoke about their specific life goals as being their purpose for getting a degree, and how they perceived these beliefs were manifested into their ability to become self-motivated learners when learning online. The second set of beliefs was related to their commitments in meeting their desirable learning outcomes and academic expectations that they set to attain within their coursework. These adult students noted the importance of attaining specific goals within their coursework learning, such as achieving good grades, and gaining valuable and practical knowledge for their own personal or career needs, in encouraging their online learning efforts. The third belief was related to the students’ perceived abilities in being a responsible learner for supporting their own learning. They believed in prioritizing time and efforts towards their online coursework and/or making personal sacrifices as the important elements of being self-responsible in their studies. The fourth key belief was related to how these students regarded
their abilities and perceived study skills to learn in an online environment. Majority of the participants expressed that they do believed than they can learn well in an online environment.

The second section presented the participants’ discussions in recounting their online learning experiences at NC State. Their experiences were framed and discussed under two set of key defining actions that framed their key experiences in online learning: 1) Navigating the varied designs and requirements in online courses, and 2) Balancing and negotiating adult roles and responsibilities. They reported understandings of different course structures and instructors’ expectations in impacting their approaches to their online studies. A further analysis of their narratives also suggested that these adults were also relating their online learning participation to their adult roles and responsibilities. The value of online learning’s flexibility and access were a common thread noted by these adult students, particularly in supporting their needs to maintain their roles and responsibilities while pursuing their studies. They also suggested that their adult roles had an influence on how they chose to engage and support their online studies.

The third and final section of this chapter presented the strategies that the adults described in support of their online studies. There were three key categories of strategies, included: 1) Strategies to acquire and retain the course content; 2) Strategies for staying engaged in completing online studies; and 3) Strategies for managing and accomplishing online coursework. Each category led to further discussions of specific strategies that the adults used to support their online learning and resolve the challenges they faced in their
online studies. Having good time management, being organized and resourceful, taking initiatives in their own learning, being vigilant about their course commitments and checking their own learning progress, having the capability to self-motivate and be persistent, making good connection with instructors and peers, establishing a personal support system, and having the ability to balance and prioritize all their responsibilities, were the important themes that resonated throughout the participants’ narratives.
CHAPTER FIVE

CONCLUSIONS, IMPLICATIONS, & RECOMMENDATIONS

This final chapter of the dissertation is organized into five sections. The first section provides an overview of the design of the study followed by a summary of the study’s findings. The next section presents three key conclusions that were inductively drawn from the findings. The fourth section presents the implications for theory and practice, with the final section suggesting recommendations for future research.

Summary of the Study

The purpose of this study was to explore the self-regulatory process of adult undergraduate students in online credit courses. The theoretical framework for this study was grounded in Zimmerman’s (1989, 2000) social cognitive model of self-regulated learning (SRL). The social cognitive model of SRL suggested that triadic constructs of personal, behavioral, and environmental influences determine how students engage in self-regulated learning. Using this theoretical framework, this study sought to explore the beliefs and actions of eleven adult undergraduate students who were learning through online credit courses at NC State University in the fall semester of 2014. Based in qualitative methodology, this study explored: (1) What key beliefs do adult students hold about themselves as online learners? (2) How do adult students describe their engagement in the online learning process? (3) What strategies do adult students use to support their online learning?
This study sought to expand the understanding of SRL by using adult students as the sampling focus to examine their self-regulatory beliefs and actions when learning in an online learning environment. There is currently very limited research in the areas of SRL that utilized criterion sampling based on age or adult status when exploring student’s participation and engagement in online learning. Eleven NC State undergraduates who were identified as adult students volunteered to participate in this study in fall 2014 semester. Their participation was solicited based on the following criteria: 1) met the age requirement of 25 years of age and above (as of August 1, 2014); 2) had a self-supporting job and/or key family commitments; 3) were at least in their second year (Sophomore classification) or above; 4) were completing their fall 2014 semester through online (distance education) courses only; and 5) had completed at least two distance education online credit courses at NC State University prior to fall 2014 semester. With exception of one participant, all other students in this study participated in asynchronous online distance education (DE), with the remaining student participated in site-based distance education courses. These site-based DE courses required the student to attend on-site (synchronous) online lectures as part of the course requirements, with the rest of the coursework offered online in an asynchronous fashion.

The research study was a basic exploratory qualitative investigation (Merriam, 2009). Interviews were the primary data source for this study. The researcher’s field notes and course documents (voluntarily provided by the participants) were also used to triangulate and refine the study’s findings. After completing the interview, each participant was emailed a
copy of their interview transcript to allow for member checking. Data were thematically analyzed using constant comparative and critical incident analysis techniques to identify recurring themes across the dataset. Codes and categories were developed to reduce and refine the dataset into meaningful patterns and themes leading to the key findings.

**Summary of Findings**

Findings of this research study were divided into three broad categories: 1) Adult students’ beliefs as online learners; 2) Key actions of adult students in learning online; and 3) Adult students’ strategies for learning online. A summary of each category of findings was discussed below.

**Adult Students’ Beliefs as Online Learner**

Participants identified four sets of key beliefs as online adult learners, and described how they perceived these beliefs impacted and supported their online learning efforts. First, all participants in this study were goal directed, believing their learning efforts were guided by their own purpose and reason for being in the degree program. Participants noted that they made their own choice to pursue their degree, propelled by their own desire to meet their life goals in personal, career, and/or family needs. Participants viewed their life goals as reinforcement to their focus and commitment to learn as online students.

The second set of beliefs was related to the adults’ commitments in meeting their desired academic goals. These students specifically noted the goals or outcomes that they wished to achieve from their online courses. They reported three types of academic goals. First was grade-oriented goals directed towards attaining desirable academic achievements in
their studies (i.e. getting an A or good grades). The second type of goal focused on knowledge oriented goals aimed at gaining mastery and deep understanding of the course content. The third was practical-oriented goals which focused on developing meaningful or applicable connections of what they learned into their current or future life situations. The majority of them spoke of attaining more than one of these goal types in their online courses. These students believed their online learning efforts were encouraged by setting academic goals representing these three types. These goals reinforced commitment to study online and to meet the expectations that they had set upon themselves.

The third belief as an online learner was associated with how these students spoke about being a responsible learner in support of their own learning. They perceived online learners, and specifically themselves, must assume greater responsibility for completing and managing their online studies. These students viewed their studies as a high priority, noting their willingness to arrange and prioritize considerable amount of their time, efforts, and resources in support of their studies. They particularly reported making sacrifices of their personal and sometimes, family time for their studies.

The fourth belief as an online learner was how they viewed and described their ability to learn in an online environment. They reported specific behaviors and abilities that they perceived were important for successful online learning, such as having self-discipline and being independent in their studies. Some also suggested specific skills in time management, organization, communication, as well as specific academic skills were invaluable in supporting their ability to learn online. Through these specific behaviors and academic skills,
participants believed they exhibited confidence in their ability to be proficient or excellent learner in an online environment. Participants ascribed these four beliefs as important in being successful and effective online learners.

**Key Actions of Adult Students in Learning Online**

Adult online learners identified two key actions important in the management and engagement of their online learning. The first key action was focused on how the adults navigated the varied online course structures/designs and course requirements of their online coursework. Participants noted that each online course was uniquely designed and had different requirements for completion, thus impacting their experiences and approaches to learning online. In particular, they noted their actions in navigating specific aspects of online course designs and elements that supported their learning. In their assessment of successful online learning, they perceived certain online course designs facilitated learning in online environment more effectively. They reported on other course designs which were more challenging and difficult to manage. Participants suggested that part of their online learning actions were focused upon addressing these differences in navigating and completing their online courses. They also noted the expectations of their course instructors that represented their valued or preferred learning behaviors and outcomes when learning online. They perceived that some instructors had more demanding expectations or emphasized more on gaining deeper understanding of the content. These instructors thus expected these students to make considerable efforts to learn the course materials.
The second defining action that they talked about was on their focus in balancing and negotiating their adult roles and responsibilities while they actively participated in their online studies. As adult students, these students perceived their work and/or family responsibilities had an impact on how they engaged and managed their online studies. They valued the flexibility of these online courses as it allowed them to fit their studies around their life schedules and adult role commitments. At the same time, they characterized their commitment to learning as juggling the rigors of their multiple roles. They emphasized their sense of balance in juggling two or more of these roles: as a parent, a worker, a spouse, an active community member (i.e. member of a local church, volunteer at children’s school), and as an enrolled online student at NC State. As an adult student, they also perceived their online learning experiences were affected by their lack of time to meet all their life role commitments, and subsequently to renegotiate their life priorities in relation to their studies.

Adult Students’ Strategies for Learning Online

The third set of key findings in this study focused upon the strategies for online learning and related supports. The strategies and supports that the adults discussed represented three key areas of importance in their online learning: 1) Strategies for acquiring and retaining course content; 2) Strategies for staying engaged in completing online studies; and 3) Strategies for managing and accomplishing online coursework.

The first area of strategies focused on their acquiring, learning, and retaining the course content. Participants spoke of three sets of strategies that corresponded to this area in their online learning. First, they spoke to their efforts to assess their readiness and make
preparation to learn the course content. They delineated strategies such as reading the course instructions, understanding the course requirements, and making their own assessment of the course content based on their prior knowledge or own interest in the subject matter.

Secondly, participants also described a set of strategies that reflected how these students recognized their own preferred ways to organize and learn their course content. Their varied strategies included highlighting or writing down key information, creating visual or personalized study notes, and triangulating and reinforcing information learned by using multiple resources. The third set of strategies described how participants created meaningful and practical understandings of their course content. They actively made connection between the content or topic that they learned in their online courses, and sought meaningful or practical connections from their daily lives and from their past and current work experiences.

The second area of strategies focused upon their efforts to stay engaged in completing their online studies. Because online learners were expected to initiate and complete their online study based primarily in solitary learning efforts, these students initiated two sets of strategies to help them remain engaged in their online studies. First, the students believed in staying connected with their online course community as a way to keep their online learning participation active and ongoing. Students shared how they connected and interacted with their instructors and online classmates for support, advice, and exchange of information and ideas through online mediums such as emails, threaded discussions, and online course forums. By keeping their online participation and communication active with their online course community, these students believed they felt more connected to continuously
participate in their online studies. Secondly, they also spoke of several strategies for sustaining their focus and persistence while learning online. As adult students, they often felt like their online learning participation was challenged by their limited time, energy, and resources in relation to competing responsibilities. They reported feeling drained and burnout from juggling their rigorous routines, and that caused them to occasionally withdraw from their studies. To overcome these situations, these students believed it was important for them to engage in self-encouragement and to seek morale support to bolster their focus and persistence. Students discussed how they engaged themselves in positive thoughts by thinking about their own learning accomplishments and goals. They used these positive thoughts as self-encouragement to keep a continual focus in their online learning efforts. Some also reported they sought and received morale encouragement from their support group (of spouses, family, and/or colleagues) for a similar purpose; to help them validate the worth of their efforts; and to keep focused and committed to their studies. For some adult students, scheduling personal time in their routines or taking temporary breaks from their studies were also perceived as helpful in increasing their focus and productivity in their studies. These students believed these strategies helped them alleviate the stress and feeling of burnout. These strategies further lessened the strain and stress which may have prevented them from completing their online study tasks.

The third area focused upon strategies for managing and accomplishing effective and timely completion of their online coursework. These learners identified five sets of strategies. The first strategy was developing and organizing their study schedules. Having a less defined
and less-structured class schedule for online learning created the need for greater control of their coursework learning by defining their own study schedule. In developing an effective study schedule that met their needs, participants spoke about being attentive and responsive to their course timeline and due dates, and by planning their study schedules based on commitments of their adult roles. Students who were parents reported creating a study schedule that revolved around their family’s routines, while working adults considered their working hours and job-related commitments when scheduling time for their studies.

Secondly, participants also discussed their strategies for handling and organizing their multiple study tasks. All but one student in this study took more than one online course during the times they were interviewed. They shared two strategies for handling and organizing their varied and sometimes, competing course commitments. First, they prioritized and approached their study tasks by outlining several defining criteria. These criteria included consideration for course timelines and due dates, as well as the complexity or difficulty of the assigned tasks. They also prioritized based upon their perceiving understanding or valuing of specific course content. Each student created their own list of priorities in terms of when and how they typically approached their multiple study tasks for effective and timely completion. Secondly, the majority of the students deconstructed the key steps or subtasks for effectively studying a topic or in developing assignments/projects. They reported this strategy was valuable in helping them manage and arrange the completion of their study tasks at a pace that suited their busy schedule. As for the third set of strategies, students also noted the importance of staying informed of their online study tasks and being
aware of their own academic progress. These students reported they kept themselves updated with information and communication regarding their online courses by frequently checking and assessing their emails and course websites (Moodle). They believed it was their responsibility to continually be aware of all their study tasks, due dates, and all communication related to completing their online courses. In addition, a subset of these students also believed in the importance of self-checking their progress and being aware of how well they were doing in their online studies. These students mentioned they frequently checked their grades and reviewed feedback that they received from their course instructors. As part of these efforts, they also focused upon improving their grades and academic progress in their online studies. Fourth, these students discussed their strategies in establishing a study environment for their online learning. The group identified three different settings for establishing their study environments. First, the majority of the adult students set up a designated space within their home as a regular study environment where they did their online studies. Beyond their homes, the majority of the participants also identified a need to study at other locations. For some, when they perceived they needed a quieter or non-distractive environment, they identified locations outside of their homes, such as the coffee shops and campus or local libraries, as the places where they would go to and focus on their studies. Additionally, some students noted an additional third study setting. These students spoke about other locations where they did their studies, including workplace or family outings, while traveling, or when they were minimally participating in a social event. These students reported these different settings allowed them to be physically presence
at their other commitments, while still being able to work with online coursework. Their final strategy was establishing a viable support system to aid them in situations of need during their studies. These students most often discussed their need for support to help ease their parental or job duties while they took some time to focus on their studies. Students with parental responsibilities shared how they sought help from their spouse, partner, and family members to look after their children. Some adult workers requested and were given time off by supportive employers so that they could work on their studies. Participants noted the invaluable role of establishing these support systems in supporting their successful completion of coursework.

**Key Conclusions**

This study explored adult students’ self-regulated learning (SRL) process while learning online. Self-regulated learning, in the simplest terms, can be understood as a theoretical construct with various components and sub-processes that are part of one’s successful learning (Boekaerts, 1999). SRL refers to a self-directive and active process initiated by the learners to improve their learning performance under different influences and regulation of their cognitive and metacognitive abilities, motivational beliefs, behavioral actions, and/or environmental conditions that affect their learning (Boekaerts, Pintrich, & Zeidner, 2000; Zimmerman & Schunk, 2001).

The summary of study’s findings suggested that there were specific beliefs and actions that emerged as interwoven elements of the adult students’ online SRL process. These interwoven elements broadly suggested the complexity of the adults’ SRL process.
based in their personal beliefs, learning actions, their online course settings, as well as their broader life influences as adults. This perspective aligned with Zimmerman’s (1989) view regarding the reciprocal interactions between personal, behavioral, and environmental influences that shaped individual’s SRL.

This study identified three specific conclusions, representing key beliefs and actions supporting self-regulated learning among adult students in online courses. These beliefs and actions represented the interpretive framework of self-regulated learning based in the understandings of motivational beliefs, self-regulatory process, and strategies, as suggested by Zimmerman (1989, 2000). The first conclusion focused upon participant beliefs which they suggested influenced their motivation to learn and self-regulate online. Secondly, adult students’ online self-regulation reflected an adaptive rather than cyclical process. The third conclusion found that adults believed their online learning success was based in the use of a variety of self-regulatory strategies to support the completion of their online studies.

**Adult Students’ Motivational Beliefs Influenced Self-Regulation**

Adult students in this study suggested the beliefs they held about themselves as online learners had a motivational influence on their self-regulation. Participants viewed themselves as motivated learners based in their beliefs of being goal-directed, skilled, and responsible online learners. The motivational influence of these beliefs on their SRL was delineated from the ways students spoke about these beliefs in relation to their successful online learning experiences. Participants associated these key beliefs as the grounding beliefs
that supported their online learning success. More specifically, participants suggested these key beliefs provided them the impetus to learn and self-regulate as they were learning online.

Participants’ thoughts are consistent with the claims of SRL theorists regarding the role of motivational beliefs in self-regulated learning (SRL). Motivational beliefs in SRL refer to the internal or covert thoughts that influence or encourage a learner to initiate and continuously engage on their learning tasks (Panadero & Alonso-Tapia, 2014; Zimmerman, 2000). Because self-regulated learning concerns the individual’s capability to make their own choice and act proactively on those choices, willingness to engage in SRL is assumed to be influenced and supported by the learner’s motivational beliefs during the learning process (Boekaerts, 1997; Zimmerman, 2000; 2002). In accordance with the social cognitive view, the theory asserts that “what people think, believe, and feel, affects how they behave” (Bandura, 1986, p. 25).

Participants suggested three key motivational beliefs of being an online adult learner that supported their self-regulation. The first was on their belief of being goal-directed in their learning. The second belief was related to their perceived abilities and skills to learn online. The third was focused on the adult’s belief in being a responsible learner. In the following, each of these beliefs were described and evaluated based on Zimmerman (2000, 2002) SRL framework and related literature on motivational beliefs.

**Motivational goal beliefs.** Participants strongly believed their goals were an important source of motivation during their learning. They described their goals in learning stemmed from their own desires to fulfill their self-defined needs and own academic
expectations of their studies. Through expressions of their goal-related beliefs, participants believed their actions and willingness to learn and self-regulate their learning were motivated by specific purposes or outcomes as guided by their goals.

Two sets of goals were reported by participants as part of their motivational beliefs influencing SRL. The first set of goals was based in their specific life goals guiding degree pursuits. These life goals represented the reasons or purposes, related to their career, personal, and/or family needs, that propel these students to come back or start their undergraduate degrees. Pintrich (2000) referred to this type of goal as the “purpose goals” (p. 473), which essentially refers to the student’s motive or underlying reason for engaging in a learning task. Purpose goals explained why individuals were motivated to pursue their learning. Participants in this study pursued their degrees based in their personal interests and self-defined needs in relation to their past, current, and future life situations. These goals included intrinsic-driven goals, such as fulfilling personal goals, i.e. for personal achievement or learning interests. In addition, they also reported extrinsic-driven goals, such as attaining better job prospects, career advancement, as well as family-related motivation.

Participants’ second set of goal beliefs represented the specific academic goals or outcomes that they wished to gain in learning and completing their online coursework. Pintrich (2000) labeled this type of goal as task-specific goals. Task-specific goals, also known as target goals (see Harackiewicz & Sansone, 1991) or action goals (see Gollwitzer & Bargh, 1996), represented the specific outcome that a learner is attempting to accomplish in his or her learning task, or the standard or performance they seek to attain in their learning
(Dweck, 1992; Pintrich, 2000). Task-specific goals addressed the what that people are attempting to attain or achieve out of their learning task. Participants in this study reported strong beliefs in attaining specific academic goals that they had set to achieve within their online coursework. These academic goals include attaining desirable grades, acquiring deep understandings of the course content, and developing practical connection of their coursework learning into their current lives or future work situations.

Participants suggested their willingness to engage in self-regulation while undertaking online courses had much to do with how they viewed the importance and value of these goals in relation to their learning. Participants believed having these goals motivate them to stay focused, remain persistence in their studies, and invest proactive efforts towards their learning in support of attaining their goals. The identified motivational influences of participant goals support Zimmerman’s (1989, 2000) contention that students’ awareness and commitments to their academic goals may significantly contribute to their self-regulation in learning. As the notion of being a self-regulated learner emphasizes the learner’s ability to direct and exert necessary effort into their own learning, having well-defined goals are critical in directing and motivating the behaviors to be performed during learning (Pintrich, 2000; Zimmerman, 2008). As goals represent one’s motive or desired outcomes for engaging in a particular task, goals may affect how people guide and direct their actions towards their goal pursuit (Austin & Vancouver, 1996; Latham & Locke, 1991).

Participants’ goal beliefs also reflected the co-existence of both intrinsic and extrinsic goals in motivating their learning. Although intrinsic and extrinsic goals were differentiated
based on the internal or external orientation of the stimulus (Ryan & Deci, 2000), the adults’ sense of volition towards their defining and attaining their own goals represented a type of autonomous motivation. Autonomous motivation refers to a type of motivation that is led by a sense of volition and choice in pursuit of goals or tasks that the students endorsed and viewed as valuable or important (Reeve, Ryan, Deci, & Jung, 2008). In this study, all participants asserted that they made their own choice to come back and pursue their degrees. Each of them was able to articulate the reason and purpose that undergirded their degree pursuits. All their goals were tightly linked to their personal interest and needs that they deemed as important and relevant in their lives. In the words of one participant, his degree pursuit was a choice that he personally made to fulfill his goals, and that although he was extrinsically motivated by the potential rewards of the degree, these goals were nonetheless of important to him: “I made the choice to come to school, nobody else made me do it. So I knew why I was in school--basically, to get a better job and have a better center of living and make more money.”

Further, this motivational understanding suggests that individuals who engaged in a behavior for autonomous reasons (e.g. based on personal endorsement, own interest, and self-satisfaction) are more likely to exercise self-regulation of the behavior because the tasks they undertake are perceived as interesting or personally important them (Reeve, Ryan, Deci, & Jang, 2012). Autonomous motivation is assumed for both intrinsic or extrinsic driven goals or outcomes, as long as the self-regulation behaviors are enacted with a full sense of volition and choice instead of being forced by external expectations or pressures to perform it (Deci
& Ryan, 2000; Reeve, Ryan, Deci, & Jang, 2012). This understanding differs from the traditional view of SRL model that focuses only on intrinsic learning intentions or intrinsic-driven goals alone as the key motivational beliefs supporting self-regulated learning (Zimmerman, 2000; 2002). This study argued that having extrinsic goals such as getting good grades, seeking better job or career advancement also provide valuable source of motivational beliefs for these adult students in support of their self-regulation.

Findings of this study, in regards to the adult student’s motivational beliefs related to their goals, were also consistent with two other research studies. In the first study, Rothes, Lemos, and Goncalves (2014) utilized a quantitative approach to study the enrollment motives of 310 adult learners who attended three different types of courses (short course; long vocational courses; long non-vocational courses). In this study, autonomous motivation was characterized by goals that were chosen and internalized by the individuals as personally important, meaningful, or beneficial to them. Meanwhile, controlled motivation referred to motives or behaviors that corresponds to or are forced by external pressures or expectations to perform it (e.g. job requirement). The study found that in general, participants clearly showed higher values of autonomous motivation than controlled motivation, suggesting that participants’ motivation for participating in these courses were mostly driven by their own choice and interest. In regards to their motives for participation, participants showed the highest scores in pursuit of three types of goals: epistemic (learning for its own sake); vocational (demand for skills or symbolic recognition needed to obtain, preserve or evolve in a job), and identity-based motives (demand for skills or symbolic recognition of one’s
identity/improving one’s status). Their findings suggest that adult learners’ in the study were motivated by both intrinsic as well as extrinsic, job-related motives for enrolling in these courses.

Meanwhile, the second quantitative study, also conducted by Rothes, Lemos, and Goncalves (2017), studied the motivational profiles of 188 adult learners from two Portuguese urban areas. The study’s main goal was to provide a better understanding of adult learner’s motivation by measuring and profiling their motivation. Study participants were selected from various educational programs of the Portuguese adult education system. As with the first study, the adult learners were found to score much higher in autonomous motivation than they did in controlled motivation. The study also examined the effect of their motivational profiles on various academic variables (namely self-efficacy, academic self-concept, study behavioral engagement, and use of learning strategies). They found that participants who scored higher in autonomous motivation were also shown to have higher measures in their use of learning strategies (including critical thinking, elaboration and organization skills, metacognitive self-regulation, construction of meaning for new information, and attempting to comprehend underlying meanings of a learning task). Their study thus suggested that having autonomous motivation in learning encourages higher self-regulation among the students. Together, the outcomes of these two research studies (Rothes, Lemos, & Goncalves, 2014; 2017), as well as the current study’s findings, suggest that adults tend to be self-motivated, autonomous learners because of their goal-related beliefs. As noted by Wlodkowski (2008), “For the process of learning – thinking, practicing, reading, revising,
studying…to be desirable and genuinely enjoyable, adults must see themselves as personally endorsing their learning because they have chosen it or they see themselves pursuing a valued or collective goal” (p. 107). The online adult learners’ sense of volition and choice towards attaining their own goals were found to motivate their actions to self-regulate online in important ways.

**Beliefs of perceived abilities and skills to learn online.** The second element of the adult student’s motivational belief was related to their perceived academic abilities and skills as online learners. Based in their recognition of their own perceived academic abilities and skills, participants saw themselves as capable online learners who believed they could navigate and learn well in an online course setting. Further, participants suggested a motivational link between their perceived academic abilities and skills as online learners and their willingness to engage and self-regulate their learning. Believing that they could learn well online encouraged these students to make self-regulatory efforts based on their judgement of effective abilities and skills that supported their online learning success.

In SRL literature, this particular belief is connected to the learner’s *self-efficacy beliefs*. Self-efficacy is defined as an individual’s belief in his/her ability and capacity to accomplish a specific task or goal (Bandura, 1986; 1997). Self-efficacious students view themselves as proactive agents of learning experiences, where their self-efficacy belief is theorized to determine the individual’s efforts and perseverance when engaging in a task (Bandura, 1989; 1997). Aligned with Bandura’s (1986) view, Zimmerman (1989; 2000) considers the perceptions of self-efficacy as the key motivational belief in his SRL model.
The reported influence of self-efficacy on online adult learners’ participation in online learning aligns with Zimmerman’s theory about the critical role of self-efficacy belief in influencing and motivating the act of self-regulated learning. Social cognitive theorists assume that effective self-regulation depends, in large part, on students’ confidence in their capability to perform the task and attain their desirable learning outcomes (Bandura, 1997; Zimmerman, 2000). Participants suggested their beliefs regarding their abilities and skills to learn online motivate them to increase their efforts, persistence, and choice of strategies. Even when faced with difficulties and challenges during their online studies, such as when facing time constraints or physical exhaustions from juggling multiple roles, these students believed that they were capable of overcoming their academic challenges because of their perceived competencies and online learning skills. Their actions supported Zimmerman’s (1994; 2000) claims that self-efficacious learners were more proactive in their SRL, and were more likely to increase and sustain their efforts to accomplish their learning tasks.

The connection between self-efficacy beliefs in motivating self-regulated learning found in this study was further supported by various empirical research studies concerning these two areas. According to Artino (2007a), self-efficacy has been studied more than any other construct by researchers who were using a social cognitive view of self-regulation to understand student performances in online settings. Based upon his empirical review, Artino (2007a) revealed that self-efficacious students report more use of learning strategies and display greater academic performances in their learning. In particular, a study performed by Wang, Peng, Huang, Hou, and Wang (2008) among distance learners found that self-efficacy
beliefs indirectly affected learning results; self-efficacy beliefs were found to improve both the learners’ learning methods and (goal) expectation of the results.

Other studies that specifically examined adult students’ self-efficacy beliefs, while not conducted within the SRL research domain, were also related to findings in the current study. For example, in a study by Ronning (2009), adult students’ self-efficacy beliefs were found to be strongly associated with meaningful and deeper study approaches. This connection suggested the potential linkages between the adult student’s self-efficacy beliefs and their willingness to engage in meaningful study strategies during their studies. There has also been evidence of self-efficacy beliefs and the adult learner involvement in multiple life roles. Van Rhijn and Lero (2014) studied student parents (i.e. students who have their own dependent children) who attended undergraduate programs in Canadian universities. In this study, two specific self-efficacy domains were measured among the adult students: academic self-efficacy and parental self-efficacy. Academic self-efficacy pertained to perceived beliefs of one’s capability to perform and complete academic tasks, while parental self-efficacy was related to parents’ beliefs in their efficacy in handling their relationship and interactions with their child(ren). This study found that the student parents’ beliefs in their ability to function effectively in their school (academic self-efficacy) and parental roles (parental self-efficacy) predicted their perceived ability to meet the demands of their multiple roles (i.e. achieving school–family balance). This finding suggested that self-efficacious adult learners believed they were able to juggle and balance the demand of their student and parental responsibilities simultaneously. As a result, the adults’ overall self-efficacy belief was found to be connected
to their satisfaction with school, family and life in general (van Rhijn & Lero, 2014). This study provided potential evidence on the importance of having strong self-efficacy belief in regulating the challenges commonly faced by adult students in juggling their multiple roles, such as those similarly described in this study’s findings.

**Beliefs of being a responsible learner.** The third element related to the adult’s motivational beliefs was the participants’ views of themselves as being *responsible* for the process and outcomes of their own learning. In particular, they expressed recognition and acceptance to undertake the academic responsibilities that came with their student role. As learning online required the students to primarily engage in learning without their instructor’s physical presence, these adult learners recognized that they must assume greater responsibility for completing and managing their online studies on their own. As noted by Dabbagh and Kitsantas (2004), online students were expected to exercise a high degree of self-regulation due to the autonomous nature of the online course setting.

According to Lauermann and Karabenick (2011), adults’ beliefs of being responsible towards their own learning reflected a sense of internal obligation and commitment to produce desirable learning outcomes (e.g. successfully completing their coursework) or prevent unwanted results (e.g. falling behind in their studies). For participants in this study, their feeling of being responsible towards their student role was based on the belief that they themselves were the ones taking the responsibility to contribute towards the quality and success of their own learning. Fishman (2014) indicated that “a personal sense of commitment towards the production or prevention of academic outcomes is by nature an
influential factor in a student’s life” (p. 698). Thus, she found students’ sense of responsibilities had a motivational impact on their self-regulatory strategies.

Participants’ beliefs about being a responsible learner also suggested the influence of their current life involvement as adults. In addition to being a student, participants identified themselves as responsible adults who were currently assuming responsibilities and commitments from being a parent and/or a worker. Participants suggested a connection between their perceived responsibility beliefs as adults and their sense of agency in assuming the greater commitments of their multiple roles, including being an online student. As posited by Kasworm, Polson, and Fishback (2002), “Adults [students] have multiple work, family, and civic commitments, and often are the major providers and nurturers of others. They are responsible people in a responsible world” (p. 2).

Participants believed their perceived responsibility beliefs as online adult learners provided them with a sense of agency that motivated them to take control and support their own learning. Bandura (1989) in his theory of human agency, refers to agency as “the capacity to exercise control over one’s own thought processes, motivation, and action” (p. 1175). According to Bandura (2006), the core of human agency lies on the view that “people are contributors to their life circumstances, not just a product of them” (p. 164). Having a sense of agency enable people to play a part in their own self-development, make adaptive or necessary changes in respond to their circumstances or environments, and be in control of their own actions and behaviors (Bandura, 2001; 2006). For example, as part of the adults’ responsibility belief towards supporting their own studies, they noted their willingness to
allocate considerable amount of time, efforts, and resources into their online coursework learning, including making sacrifices of their personal, and sometimes, family time in order to place a higher priority on their studies.

The connection between belief of perceived responsibility and a sense of agency is illustrated in the writing of Schwartz, Côté, and Arnett (2005) in their research on emerging adulthood identity among university students (mean age 22). They studied the progressive identity development of these students in their transition to adulthood, that is, in taking new responsibilities and assuming greater life choices, and its relation to their sense of agency. Agency is defined as (a) having a sense of responsibility for one's life course, (b) believing that one is in control of one's decisions and is responsible for outcomes, and (c) being confident that one will be able to overcome obstacles that may appear along the life course (Schwartz, Côté, and Arnett, 2005). The researchers found that a sense of agency among these emerging adults was positively influenced by their identification of life commitments based in their existing lives, including making deliberate life choices and exploring potential life commitments and responsibilities in their future lives. Their research findings thus suggested a connection between the student’s sense of agency and their identification of perceived responsibility beliefs based in their life roles and commitments, such as those exemplified by this study’s findings.

In SRL literature, this adult learner focus on responsibility for learning has not been explicitly discussed in Zimmerman’s (1989, 2000, 2002) SRL model. However, the interconnectedness between perception of responsibility and SRL has been examined in one
of Zimmerman’s research studies (see Kitsantas & Zimmerman, 2009). Their research illustrated that perception of responsibilities among college students mediated their study behavior, which in turn influenced their overall academic achievement (i.e. GPA). Further, Fishman (2014) also reported the connection between students’ sense of responsibility and their perception of control (student’s capacity to influence and attain desirable academic outcomes) among undergraduate students in a computer literacy course. Based on Fishman’s study, these beliefs of perceived responsibility and perception of control were found to influence the students’ ability to exercise effective learning strategies in support of their own learning. These two studies lend support to the current findings in suggesting that perceived responsibility beliefs had a motivational influence on the online adult learners’ self-regulation. However, a current literature search was unable to identify any related empirical studies regarding responsibility beliefs among adult learners in SRL research.

The first conclusion focused upon key beliefs which represented the participants’ view about themselves as online adult learners. Participants suggested they were three key motivational beliefs of being an online adult learner that supported their self-regulation. The first was on their belief of being goal-directed in their learning. The second belief was related to their perceived abilities and skills to learn online. The third was focused on the adult’s belief in being a responsible learner. Participants suggested having these key motivational beliefs provided them the impetus to learn and self-regulate as they were learning online.
The Adaptive Nature of Adult Student’s Online Self-Regulatory Process

The adult students’ online self-regulatory process was found to be a changing and adaptive process, rather than cyclical in nature. Contrary to the key literature, participants’ self-regulatory process did not reflect the cyclical phases of planning (forethought), implementation (performance), and reflection as illustrated in Zimmerman’s (2000, 2002) writing. Rather, adult engagement in online learning suggested a process that was more responsive to the fluid and converging demands that came from both their academic environment (i.e. online course structures and requirements), as well as their broader life involvement as adults.

As a collective, participants reported a broad behavioral pattern of engaging in the core elements of self-regulation while learning online, particularly in planning and self-managing their own learning towards the successful completion of their online studies. However, as adult students, their engagement in online studies seldom occurred in a total focus based in their student role. Rather, participants reported they had to manage and perform other commitments from their adult roles, while also being an online student. As cited in the literature, these adult students’ experiences reflected the influence and impact of complex life demands and role responsibilities on their student role involvement (Fairchild, 2003; Home, 1998; Kasworm & Blowers, 1994; Zhang, Lui, & Hagedorn, 2013). It was well understood, both from the findings as well as in the literature, that adult students typically do not view and engage in their college studies as a separate commitment from their existing adult lives. Rather, “most adults continue their complex lives – with added challenging role
of student” (Kasworm, 2008, p. 27). Their learning context is often situated within their broader adult life context – placed within their work, family, and community roles (Kasworm & Blowers, 1994), where “it is evident that the context of adult life directly and indirectly impacted adult involvement in higher education and engagement in academic and life role learning (p. 119).

The SRL literature tends to view student’s learning involvement as separate and isolated from the rest of their other life contexts. It is assumed that the primary tasks of the learner are focused only on the acts of studying and learning. Further, many SRL studies often concentrated on studying students’ activities and behaviors within a single context or examining specific behaviors (e.g. evaluation of learning tasks or setting a goal) (for example, see Belski & Belski, 2014; Cheung, 2004; Greene, Hutchison, Costa, & Crompton, 2012). However, for adult students, participation in college studies is usually only one of the many ongoing life commitments (Kasworm, Polson, & Fishback, 2002). Their college commitment is rarely concentrated on a single study activity or course. For participants in the current study, all except one were completing more than one course at the time of this study. Further, while completing their multiple online courses, they also simultaneously juggled other responsibilities associated with their adult roles. Their specific self-regulatory actions when learning online were focused not only on managing the varied course designs and meeting specific requirements of their online coursework, but also appeared to be integrated with their adult roles and responsibilities. For these students, self-regulation was mostly about finding effective and successful ways to manage and balance their varied academic
demands interwoven with their life demands from their adult world. As noted by Kasworm (2008), “Because adults have competing lives, hopes, and realities, each semester of college involvement represents either a renegotiation or adaptation of themselves and their lives” (p. 29).

Three other qualitative research studies have also reported on the adaptive and changing nature of adults’ SRL, as well as the importance of recognizing the impacts of adults’ other life contexts on their SRL. The first two studies examined adults’ self-regulated learning in the workplace context. In the first study, Margayan, Littlejohn, and Milligan (2013) studied the self-regulatory learning practices among working professionals. Their research focused upon adults taking personal responsibility for organizing their own learning within their workplace environment. The professionals’ SRL in the workplace was found to be “iterative, fluid, and continuous rather than clearly delineated into discrete stages of planning, implementation and reflection, as postulated by extant SRL theories” (p. 255). These findings further suggested that SRL in the workplace was structured and deeply integrated by the professionals’ work tasks and their job priorities. Further, it was also socially influenced by the community of the workplace environment, as well as by the broader organizational factors. Meanwhile, the second study, performed by van Eekelen, Boshuizen, and Vermunt (2005) focused on the work-related learning processes as reported by higher education teachers (instructors). They distinguished three types of self-regulation in the teachers’ workplace learning: planned learning, spontaneous unplanned learning, and non-linear learning. Their findings showed that while some teachers did plan for their
learning, most were involved in spontaneous and non-linear learning. They found that teachers self-regulate their learning spontaneously from all kinds of day-to-day teaching experiences without planning for it. Teachers were also involved in non-linear learning, where their self-regulation often starts with a problem or new task to be performed. Their learning process was described as non-linear in a sense that these teachers did not plan or establish their learning goal or how they were going to learn their task beforehand. Rather, their learning was led by inquisitive behaviors to learn something in order to solve a problem or perform the task. Meanwhile, in the third study, Berkhout et al (2015) explored the factors influencing adult medical students’ SRL in a clinical setting. Although the data reported broad elements of self-regulation among the clinical students, the study found “little evidence for the distinct stages as they are portrayed in Zimmerman’s (2012) model” (p. 596). Instead, their findings lead them to conclude that SRL in the clinical setting was a complex process in which many factors and different personal, contextual, and social attributes interacted, thus “making it [the SRL process] a highly individualized, context-specific process” (p. 596).

Although dissimilar in contexts and findings, these three studies shared a similar notion with the current study in concluding that self-regulation among adult learners may take place in a much more dynamic process rather than defined in phases or stages of learning. The current study and these three other studies broadly suggest that self-regulation in learning may be influenced by many factors and contexts in which the individuals are actively operating. Thus, the adults’ SRL process was found to be more responsive and
adaptive to the changes and demand of concurrent events or situations that impacted or triggered their learning.

**Using a Variety of Key SRL Strategies in Online Studies**

As the third conclusion, adult students suggested they used a variety of strategies to support their online studies. These varied strategies represented the adults’ collective efforts to be effective and successful in their online studies. The students also reported using a variety of strategies to adjust for certain context and demands as they were learning online. Their varied strategies were individually selected to meet the specific expectations or requirements of their online courses, differing individual learning needs, as well as multiple role demands affecting their studies.

Self-regulation in learning is assumed when the students proactively take control of their own learning process by engaging in deliberate and purposeful actions known as self-regulated learning strategies (Zimmerman, 1989). Strategies as reported by the study’s participants corresponded to three key areas of regulation in academic learning, including: regulation of the learner’s cognition, motivation/affect, and behavior related to learning (Dinsmore, Alexander, Loughlin, 2008; Pintrich, 1995). Students’ responses suggested they actively controlled and supported their own learning by employing a variety of strategies to regulate their cognitive, motivation, and behavior as they were learning online. The following discussions elaborate strategies used by adult learners in these three key areas of self-regulation.
Cognitive-related strategies. Self-regulation of cognition involved the use of cognitive-related strategies to improve and enhance the actual learning and understanding of the knowledge being learned (Pintrich, 1995, 1999). Cognitive strategies in SRL typically focused on how students engage with their learning materials through rehearsing, memorizing, organizing, and transforming their instructional materials to increase their cognitive understanding in academic learning (Pintrich, 1999; Zimmerman, 1989). In this study, students employed varied cognitive strategies that did not reflect a specific set of activities or sequence pattern of cognitive learning. Instead, their strategies for learning and understanding their course content were dependent upon how these students identified their readiness and preferred ways to organize, learn, and understand their online course materials. For example, the range of strategies they reported include reading and understanding specific course requirements, highlighting or writing down key information from instructional materials, creating visual or personalized study notes, triangulating and reinforcing information learned using multiple resources, and creating meaningful and practical understandings of the course content. Rather than passively learning the online course materials, these students actively sought to personalize and select their cognitive strategies based on their own assessment of the course demands, as well as identifying their own strategies that worked best for their learning needs with a particular content.

Similarly, two other research studies acknowledged the connection between learners’ awareness about their own learning and thinking process and the range of learning strategies they selected in supporting their own learning. In the first study, Hill and Hannafin (1997)
found that a variety of strategies were used by adult learners to support their independent learning about a chosen topic using the Internet. They also discovered that the type and amount of strategies used by these learners to search and increase their understandings of the topic was related to and influenced by their self-reported knowledge about the system (knowledge about the Internet tools being used), the subject matter (their prior knowledge about the topic being studied), as well as their own awareness about their thinking process (measured as metacognitive knowledge in the study). Meanwhile, Pressley, Etten, Yokoi, Freebern, and Meter (1998) identified approximately twelve types of study strategies used by college students to cope with their academic demands. They noted that these students selected and adjusted their study strategies based upon their perceptions and understandings of their course demands, their prior knowledge about the subject, instructor characteristics, as well as availability of peer supports. These two studies, as well as findings of the current study, enriches the understandings regarding students’ range of cognitive strategies used to support their learning, as well as the influences and reasons underlying their choices of varied cognitive strategies during the learning process.

**Motivational-related strategies.** Participants also suggested they employed a variety of strategies to actively control their motivational engagement while participating in online studies. Self-regulation of motivation involved strategies used to sustain or increase effort for initiating and completing academic tasks (Pintrich, 1995; Wolters, 1998; 2003); as well as regulating affective states or emotions during learning (Garcia, 1995). Motivational strategies in SRL may include identifying self-reward and goal-setting strategies (Wolters, 2003;
Zimmerman, 1989), conducting positive self-talk (Wolters, 2003), enhancing interest or enjoyment in the learning task (Wolters, 2003), lowering one’s expectations to negate anxiety (Garcia, 1995; Wolters, 2003), as well as using social resources and coping strategies to reduce stress and alter negative emotions associated with their learning (Boekaerts, 1997).

As a group, participants reported engaging in various motivational strategies to sustain and improve their continual focus in completing their online studies or tasks. In online studies, where learning is primarily self-initiated and based on solitary efforts, the ability to remain motivated is imperative for continuous participation and successful online learning experience (Sankaran & Bui, 2001; Yukselturk & Bulut, 2007). Furthermore, Zembylas’s (2008) study showed that online adult learners expressed and experienced emotions in ambivalent ways when learning online. They reported on experiences where “both positive and negative emotions coexisted and formed particular emotional climates that influenced adults’ learning experiences throughout the [online] course” (p. 82).

Two sets of strategies were reported by participants as part of their motivational regulation strategies while learning online. Some motivational strategies were broadly applied to their overall online learning engagement, while some others may have been more individually or situationally specific. The first set of motivational strategies focused upon how participants kept their interest and motivation sustained while performing and completing their online tasks. For example, a group of participants indicated they remained engaged in their online studies by staying actively connected with their online course community. This group saw their instructors and online classmates as important support
resources in their online studies. They perceived their motivation to learn online was enhanced by forming these connections. By receiving online interactions and support, the students felt their online tasks became more manageable, engaging and for some, more enjoyable learning experiences. In particular, this strategy of actively connecting with others was perceived as helpful to maintain their interest to participate and complete their online study tasks. Wolters (2003) refers to this type of motivational strategy as an interest enhancement strategy, where students seek to “increase enjoyment or the situation interest they experience while completing an activity” (p. 195). In his previous study, Wolters (1998) also found that students were able to adjust their strategies to control their motivation in three different learning situations. These situations included when the learning materials presented were 1) difficult or challenging, 3) boring or uninteresting, or 3) unimportant or irrelevant. Wolters’s study illustrated that motivation to study is a fluid and changing aspect in one’s learning process that can be managed and enhanced by employing various forms of motivational strategies.

Participants also reported a second set of motivational strategies that focused upon regulating their stresses and emotional challenges associated with their multiple roles. In the current study, most participants indicated the pressure to perform multiple roles and its impacts on their motivation and willingness to engage in their online studies. Many reported feeling stress at various times during the semester due to their multiple role involvement. The adults believed the demands of their multiple roles took a toll on their time, energy, and resources, thus impacted their ability and motivation to study online. Their reports of
conflicts or role commitments and demands of online learning were consistent with Zembylas’s (2008) study. He found that the most prevalent emotional struggles experienced by adult learners in distance education program were the stress and demands associated with their multiple responsibilities. To motivate themselves to stay focus in their online tasks during these discouraging and stressful moments, participants in this study reported using a variety of motivational strategies that they perceived as personally effective to them. Some chose to focus their internal thoughts on their future goals or current achievement, whereas others opted to seek outside encouragement, or engaged in self-rewarding or self-comforting behaviors to help alleviate their stresses.

The multiple demands and inter-role conflicts experienced by participants in this current study have been well-documented in many research studies concerning adult students (Fairchild, 2003; Kasworm & Blowers, 1994; Giancola, Grawitch, & Borchert, 2009; Home, 1998; Zembylas, 2008). In these studies, adults’ coping strategies were an important mediator for dealing with the stresses associated with their inter-role conflicts (family-work-school conflicts) while attending college (Giancola, Grawitch, & Borchert, 2009). Adults responded to stresses as either with positive or negative appraisal (i.e. seeing stressors as challenges to be overcome versus viewing stressors as disrupting their lives). Based upon their assessments, adults may have engaged in various coping strategies through positive reinterpretation (interpreting the stress from a different, more positive viewpoint), getting instrumental social support, taking positive and forward thinking about the outcomes, venting out the emotions, being in denial, or disengaging or distancing oneself from the current
environment or stresses (Giancola, Grawitch, & Borchert, 2009). These researchers also found that adult students tended to use more positive appraisal and adaptive coping strategies in dealing with their stresses. Meanwhile, Thompson (2013) described three key motivational strategies that female adult students used in navigating and managing their emotional challenges during their studies. These motivational strategies included forming their own social support, engaging in self-encouragement, and avoiding or suppressing their negative emotions. All of these studies lend support to current findings regarding adult students’ reliance on various motivational strategies to cope and manage their emotional challenges and stresses while participating in their online studies.

**Behavioral-related strategies.** Self-regulation of behavior involves active and strategic control of one’s actual behavior while engaging in learning (Zimmerman, 1989), including one’s management of various resources (e.g. time and study environment) that are related to their learning (Ben-Eliyahu & Linnenbrink-Garcia, 2015; Pintrich, 1995). Key behavioral strategies in SRL include managing time resources, strategic task planning, self-monitoring and self-evaluating of study commitments and progress, managing study environment, as well as seeking help and support in learning (Ben-Eliyahu & Linnenbrink-Garcia, 2015; Pintrich, 1995, 1999; Zimmerman, 1989). All these strategies were discussed by study participants as ways they managed their online coursework.

The various behavioral strategies that participants reported also suggested the broader influence of their multiple roles and commitments as adults. First and foremost, studying in an online course setting was a choice that these students made to integrate their college
studies into their existing and busy adult lives. Because online courses were typically offered as asynchronous learning experiences, participants could schedule their own class or study times, could learn at their own pace, and/or could arrange their study places at more convenient locations (Note, some courses also required synchronous involvement on occasion). As a matter of fact, these students sought to learn and take classes online because they perceived the flexibility of online learning structures would adapt more readily to their multiple life commitments. While face-to-face courses normally required the adults to restructure their life commitments around their study schedule, online courses enabled these students to instead, fit their studies around their life commitments. Therefore, participants’ strategies for managing their online studies represented not only their proactive efforts to be successful in their online studies, but also their strategic actions to integrate their study commitments into their broader world of adult roles involvement. Their range of behavioral strategies thus primarily focused on planning and negotiation of resources and support that would not only facilitate the successful completion of their online studies, but the integration of their multiple, and sometimes, competing life responsibilities.

Participants’ behavioral strategies also suggested the relatively permeable boundaries between the adults’ school, work, and/or family role involvements. The adults’ strategies for managing their online studies were often made in consideration with their other roles, because commitments or changes in one role would affect or influence the other. For example, adult role involvements were shown to have an influence on ways in which students managed and planned time for their online studies. Their study schedules were
planned not only based on their academic timetable and course related deadlines, but were also adjusted according to their life schedules. When possible, these students tried to create and allocate discrete times for their online studies in relation to their schedule of other life demands. Thompson (2014) refers to this strategy as “separating the spheres” (p. 201), which refers to adult students’ attempt to maintain control and set boundaries of their time and space to minimize conflicts between their multiple roles. Boundaries make it easier for an individual to concentrate on what was important in the moment, leaving issues involved in other roles outside the created boundary (Ashforth, Kreiner, & Fugate, 2000). However, when their time resources became tight or limited (e.g. during busy academic period or facing unexpected family or work obligations), these students spoke about improvising or using other time management strategies. Examples of these strategies included making time allocation changes in their schedules, or by combining and performing their key routines together. Accordingly, students also adjusted their time management strategies based on their perceived course needs. Courses that were more difficult or demanding were often prioritized and allocated more resources and efforts. The adults’ strategies reflected what Zimmerman and Moylan (2009) described as strategic planning. Strategic planning refers to how learners choose or construct appropriate learning methods or strategies to suit the task and environmental setting of their learning situation.

There were also strategies that were interdependent or had been combined to support one another. For example, the adults’ time planning strategies were often tied to their task planning strategies. These students focused on developing effective and efficient study
schedules that met their pace and needs as adult students. For some adults, in order to be able to study at a more conducive learning environment (e.g. library), they relied on having support that could help relieve them from their parental responsibility at home. When necessary or as needed, workplace or family events became their study environments, where these adults would study while also being present at their other events or commitment. As noted by van Rhijn (2012), the understanding of how multiple roles and contexts affects adult students may provide a more holistic view about their experiences and their participation in college or academic environment. As such, the inclusion of the adults’ broader life involvements and its influences on their self-regulation behaviors in this study further expand the understanding regarding how adult students strategized and adjusted their behavioral strategies while completing online courses.

A study by Benda, Bruckman, and Guzdial (2012), offered a detailed understanding regarding the parallel impact of course demands and external commitments on adult students’ online learning process. Their study examined adult professionals who were completing online introductory computer science courses, and found that “time requirements of programming assignments were unpredictable, often disproportionate to expectations, and clashed with the external commitments of adult professionals” (p. 1). Strategies described by these adult professionals primarily centered on developing various time management strategies to meet and accommodate the demand of their programming assignments in amidst of their life regularities as working adults (some also had family commitments). Other
reported strategies include seeking possible help from instructors and peers through available online communication.

Another study (Jezegou, 2013) discussed the various ways adult students adjusted their self-regulated behaviors in an e-learning situation. According to Jezegou, the adult’s strategies were determined by the online course’s degree of openness (or flexibility), as well as events and circumstances of their professional and personal lives. Based on her study of 27 adults studying in engineering degree program, Jezegou found that when online courses imposed fixed structure regarding its schedule, the students willingly managed and adjusted their life routines to comply and meet their online course schedules. When the course schedules were more open and flexible, the students would then set their own study schedule around different events and circumstances of their professional and personal lives. Similarly, when online courses offered the freedom to choose the methods, sequence, and tools of communication and collaboration in the learning process, the students would proactively create their own informal structure of learning to support and optimize their individual learning process. As such, Jezegou noted, “these students were capable not only of grasping the liberties of choice offered to them by the teachers, but also of creating, individually and collectively, the informal conditions that develop a situation conducive to their distance learning” (p. 197). It is likely that for adult students in the current study, as with adult students in Jezegou’s study, employing various self-regulated behaviors and strategies based on their course and learning needs were the essential elements that facilitated these students’ success when learning in online environment.
This third conclusion focused upon the various strategies of online adult learners in supporting their online studies. The adults’ strategies reflected the amalgamation of efforts to achieve success and balance in the multiple worlds of online adult learners. By using a variety of SRL strategies, the adults created their own unique process of interweaving their complex world of adult roles and responsibilities and their online learning academic demands into comprehensive and successful learning experience. Strategies were focused not only on the cognitive aspects of their learning, but also on the students’ attempts to be in control of their motivation and behaviors while learning online. As a matter of fact, the most efficacious and effective strategies were those matched and adjusted to meet their specific learning situations or individual needs.

**Summary of Key Conclusions**

This study explored the self-regulatory beliefs and actions of adult undergraduate students who were learning online. Based on key findings, three conclusions were identified and discussed in relation to the key theoretical framework. First, this study identified a motivational influence of the adult students’ beliefs related to their goal commitments, perceived abilities to learn online, and perceived abilities to a responsible learner on their online self-regulation. Second, the study concluded that adult students’ online self-regulatory process was adaptive in nature. Third, adult students suggested they used a variety of strategies to support their online studies based on the expectations of their online courses, individual learning needs, as well as their multiple role demands. Based on the key
conclusions and findings, implications for theory, practice, and recommendations future research were delineated and presented in the following section.

**Implications and Recommendations**

The findings of this study contributed to a broader and deeper understanding of the beliefs and actions associated with adult students’ self-regulation while learning online. This section highlights implications and recommendations for research and practice in areas of self-regulated learning and online distance education, with a focus on the adult student population.

**Implications for Theory**

Findings of this study lend support to Zimmerman’s (1989; 2000) self-regulated learning (SRL) theoretical model. Study findings reflected many similarities that are parallel to the concepts and ideas as theorized in Zimmerman’s SRL model. As proposed by Zimmerman’s model, the interactions of various personal, behavioral, and environmental factors uniquely shaped and influenced individual’s SRL. While the current study did not fully and specifically explore the connections and links between these three general domains of SRL, there were themes that emerged from the findings that broadly correspond to the elements that were described in Zimmerman’s (1989) theoretical model.

At the same time, the study findings also noted some discrepancies regarding specific elements that has been favored by Zimmerman (1989; 2000) in theorizing his SRL model. In conceptualizing its goal components, the model privileged a specific type of goal orientation belief, known as the mastery or intrinsic related goals (see Pintrich, 2000). Learning goals
that were intrinsically oriented, such as learning for personal growth, self-enrichment, or for the sake of knowledge, were viewed as the essential goals that motivates SRL among students (Zimmerman, 2000; 2002). While this study found some evidence in the findings to support this view, further exploration on the adult learners’ goal beliefs also revealed the coexistence and parallel importance of their extrinsic related goals. This study recognized that extrinsic-oriented goals, such as learning to get good grades, to attain better job prospects or career advancement, as well as family-related motivation, were also significant for these adult students. Because support for extrinsic goals was not recognized in Zimmerman’s model, the current study utilized the view of self-determination theory (SDT) (Deci & Ryan, 2000; Ryan & Deci, 2000) to explain the complexity of adult students’ goal-related beliefs and its motivational impact to their SRL. According to the SDT theory, the co-existent of intrinsic and extrinsic goals can be a valuable source of motivation in student’s learning, as long as these goals were self-endorsed and enacted with a full sense of volition and choice by the learners (Deci & Ryan, 2000; Ryan & Deci, 2000). Thus, including the extrinsic related goals into the SRL model has relevant implication to the theory, particularly for SRL research concerning the adult student population. Accordingly, future studies should consider the SDT theory as an additional or alternative framework for understanding adult students’ goals as the source of their motivation in SRL.

Students’ stories about how they engaged in online learning also suggested a dynamic process that was not only influenced by their learning environment, but their broader life involvement as adult students with multiple roles and responsibilities. For these students, the
focus of their self-regulation was on supporting and improvising their learning to meet specific academic demands of their online courses, as well as their unique needs as adult students. While aspects of Zimmerman’s (2000; 2002) SRL process provide broad understandings regarding the elements that were involved in their academic self-regulation, the essential SRL stages that Zimmerman presupposes in his model did not represent the process described by adult students in this study. Rather, findings suggest the adult students’ online self-regulatory process was adaptive in nature, and may take place more dynamically rather than systematically defined by phases. As such, future studies could explore the potentials of developing an alternative model or process that could better illuminate the adult students’ online SRL process.

Furthermore, because non-academic influences such as the adult roles involvement were not critically addressed in Zimmerman’s (2000, 2002) model, future research should seek to broaden this understanding. Alternative frameworks or additional theoretical lens should incorporate external, non-academic factors within the models of self-regulated learning. One alternative model was suggested by Ben-Eliyahu and Bernacki (2015), who proposed what they called the “integrated self-regulated learning (iSRL) model” (p. 2). Their iSRL model embraced the ecological perspective of situating SRL within the individual’s larger environment or broader life context. They suggested that SRL occurred in “hierarchically nested context” (p. 5) where individual’s self-regulation in specific learning tasks are nested and shaped by various ecological factors that broadly influenced in their lives (e.g. their home environment, family composition, school context, educational policies).
As such, Ben-Eliyahu and Bernacki’s ecological model may guide better understanding regarding the influence of adult student’s broader life context (i.e. work and family) on their SRL.

Furthermore, studies using the role theory (Home, 1997, 1998; Goode, 1960; Thompson, 2013) or boundary theory (Ashforth, Kreiner, & Fugate, 2000; Dunagan, 2012) may provide valuable insight for expanding the SRL model from the adult student’s point of view. These two theories focus on individuals’ behaviors as defined by their social role(s), mainly addressing how individuals experienced and managed their multiple roles in everyday life situations. Most of these research studies focus on the combination of the individuals’ work, family, and school responsibilities. Boundary theory, in more specificity, focuses on how individuals define the parameter and scope of their roles, and how they engaged in “boundary-crossing activities” (p. 472) to facilitate the transitions between these roles (Ashforth, Kreiner, & Fugate, 2000). Perspectives from these theories may extend and bridge understanding regarding the adults’ navigation of their multiple roles and its influence on their online SRL strategies.

This study also bridged the theoretical understanding of the social cognitive model of self-regulated learning (SRL) among adult learners in connection to the theory of self-directed learning (SDL). Self-directed learning (SDL) is one of the key theories in adult learning (Merriam, Caffarella, & Baumgartner, 2007). Both theories support the notion of active engagement and goal-directed behaviors among learners in supporting and directing their own learning. The focus of these two theories however, were influenced by different
school of thoughts. The foundation of SDL theory has a historical root in the humanistic perspective (Merriam, Caffarella, & Baumgartner, 2007). Therefore, the SDL theory has traditionally placed emphasis on the learner’s role and their personal attributes as the key influences supporting their self-directed learning actions. Meanwhile, Zimmerman’s (1989, 2002, 2002) SRL model considered the learner’s personal influences from a more cognitive understanding (e.g., metacognitive processes and motivational beliefs). As a social cognitive model, this model also assumed that learner’s self-regulated learning is “not determined merely by personal processes [influences]; rather these processes are assumed to also be influenced by environmental and behavioral events in reciprocal fashion” (Zimmerman, 1989, p. 330). This study found that Zimmerman’s social cognitive model of SRL has many resemblances with Hiemstra and Brockett’s (2012) revised model of SDL. This SDL model is known as the PPC (person, process, and context) model (Hiemstra & Brockett, 2012). This model was updated based on an earlier SDL model called the PRO (personal responsibility orientation) model (Brockett & Hiemstra, 1991). As opposed to the PRO model, which focused on the personal responsibility of an adult to perform their SDL efforts, the PPC model expanded the understanding of SDL to focus on the dynamic interrelationship between the person, process or the teaching-learning transaction, and the social context where the learning takes place. In particular, the updated PPC model highlighted the inclusion of context as one of its focal points in understanding SDL, which was not fully addressed in the previous PRO model. As noted by Hiemstra and Brockett (2012), “it is the inclusion of context as an equal partner that makes the PPC model distinct from the PRO model” (p. 158).
The similarity of these elements not only illustrated the conceptual links between the SRL and SDL theories in informing adults’ learning behaviors, but also provided potential theoretical implications for further development of SDL theory based in SRL understanding, or vice versa.

**Implications for Practice**

The findings of this study offer practical implications for supporting adult students’ learning and their self-regulatory process in online distance education courses. A broad overview of the findings suggests that adult students valued having flexible and personalized learning that meet their varied needs as adult students. Access and flexibility of online education are especially valuable to them to ease conflicts in managing their multiple roles (Home, 1998). Providing online courses with flexible but clear scheduling, diverse learning approaches, and varied learning resources and support are the general elements that were most valued by adults in their online courses.

Furthermore, being aware of the adult students’ beliefs and actions when learning online offers practical implications for rethinking ways to develop and support their self-regulation in online course. Various research has demonstrated that self-regulated learning positively affects learning outcomes in online learning environments (Artino, 2007a; Barnard, Paton, & Lan, 2008; Puzziferro, 2008; Yukselturk & Bulut, 2007). Having clear and specific understandings of key aspects of the adults’ online self-regulatory process may help online educators refine their instructional practices and guide instructional designs.
The range of SRL strategies that were reported in this study indicate that adults’ online self-regulation can be supported from three key areas: their cognitive learning, their motivation to learn, and their management of online study tasks and resources. At the same time, the influences of their broader life context and challenges of their adult role involvements are also important aspects that must be recognized in parallel to their learning. Designing online courses for adult students should be based on the following recommendations:

1) Recognize that adult students typically have varied prior experience and educational background as an online learner. Course design should incorporate the following items:

i. Optional online orientation module at the beginning of online course can be valuable for returning adults or beginner online adult learners to start familiarizing and planning for their online coursework learning.

ii. Instructor may provide pre-assessment related to the course subject to help adults assess their prior background and knowledge in preparation to learning the course.

iii. Instructor may encourage learners to explore and share their prior knowledge and/or real-life experiences related to the course content. This background exploration can be incorporated as a topic of online discussion early in the semester, and the information may provide instructors with valuable cues to
adjust their upcoming course content or activities to be more relevant with the adult students’ background.

2) Goals are a valuable source of motivation for these adult students. Study findings revealed that all participants had specific interests and needs that they wished to fulfill in their learning. The act of goal setting provides individuals with a sense of direction to guide and self-regulate their actions towards the goal pursuits (Lathan and Locke, 1991). Course design suggestions to support their goal setting include:

i. To create an online platform where learners can articulate and share the goals that they wish to achieve in the course. Goals may include the grade they wish to achieve, or specific knowledge, understanding, or skills that they expect to obtain from the course.

ii. In addition to specifying their goals, learners may be asked to create a specific and detailed action plan to achieve those goal(s) (Harris, Lindner, & Pina, 2011). In developing their action plan, learners should be encouraged to evaluate the nature of the course to determine what specific tasks or resources are needed to be completed to achieve their goal. Their action plans can also be personalized to meet the adults’ personal and/or professional goals by linking the course learning outcomes to applicable real-life practices.

iii. Establish clear expectations regarding the course objectives, requirements, and components and elements for successful completion of the course. This
information is particularly valuable for adults whose goals are related to attaining desirable grades or performance in the course.

iv. Provide immediate and constructive feedbacks so that adults can be aware of their learning progress towards their goals. Offer opportunity for them to improve on their progress.

3) Recognize that adult students often have limited resources and time availability that they can devote to their studies because of their multiple role commitments. Thus, they heavily relied on effective time planning to organize their time and study schedules around their life commitments. Course design suggestions that can support their time planning include:

i. Provide well-organized and clear scheduling of all course timetables and deadlines in advance, preferably before or at the beginning of the semester. This information is critical for adults when planning time for their studies. Also, do communicate any changes in course schedules as soon as possible.

ii. When developing an online course schedules or activities, do minimize requirements for synchronous participation or fixed time commitments for online adult students. Most adults value flexible scheduling in online courses because it allows them to organize their study needs around their life commitments. Thus, having a time-specific requirement within the online course may limit or constraint their participation. Instead, instructors may
want to define their online course schedule more loosely or set deadlines within a specified time frame.

iii. When possible, consider designing smaller modules or breaking up the course content or activities into smaller chunks that can be accomplished in a lesser time frame.

4) Recognize the impact of the adults’ role involvements on their learning process and its broad influence of their SRL. At times, adults may need support and resources that extend beyond their academic needs. Suggestions to support their varied individuals needs as adult students include:

   i. Create a psychologically safe and supportive learning environment within the online platform for adults to express their concern and challenges related to being an online adult student. Building a learning environment on the foundations of clear expectations, trust and care, closeness and cohesion, mutual respect, and a democratic space of equals were the elements that are associated with a sense of psychological safety among learners in an online environment (Woodcock, Sisco, and Eady, 2015).

   ii. Communicate willingness to negotiate deadlines or offer alternative schedules to help minimize their time and life schedule conflicts.

   iii. Encourage adult students to communicate their individual needs and seek help by creating an online open online communication environment through
various communication tools such as emails, chats, instant messaging, as well as more traditional form of contacts (phone or campus address).

iv. List supportive resources and services from the university and the larger community that can be helpful to adult students in the course website.

More recommendations for supporting specific online self-regulation skills using various Web-based pedagogical tools can be found in Dabbagh and Kitsantas (2004) and Dettory and Persico (2011). Additionally, Nilson (2013) also offers valuable and elaborate guidance for integrating various components of self-regulated learning into instructional course designs.

**Recommendations for Future Research**

This study provided inductive insights into the adult students’ self-regulatory process while learning online. Because SRL is a complex phenomenon composed of many sub-processes (Boekaerts, 1999; Schunk, 2001), this study was unable to explore all the aspects of the adults’ online SRL. Instead, the findings broadly highlighted several areas of SRL that emerged as important for this specific group of student population, involving their key motivational beliefs, adaptive SRL process, their varied SRL strategies, as well as the broader influence of their multiple role involvement on their SRL. Future studies may wish to explicate the key areas identified in this study more thoroughly, or explore other areas of SRL among adult students that have not been critically addressed in this study.

This study also expanded the understanding of SRL by using adult samples. Findings from this study provided insights on how adult undergraduate students described their
engagement in SRL while learning online. Future research can further contribute to this area of research by replicating this study in various ways. Several recommendations include getting a larger or more diverse sample of online adult students from other types of postsecondary institutions (e.g. community or vocational colleges). There is also a need for studies which examine the adults’ SRL development and changes over a semester long course or throughout the duration of their online program. Understanding from these studies could explicate fuller understanding regarding the dynamic nature of the adults’ online SRL process. A similar study may also be explored from an international perspective. For example, future research may consider exploring the potentials of broader cultural and contextual influences of international online learning environments in shaping the international learners’ SRL. According to Hess (1994), the understanding of cross-cultural learning is an effort to gain insight into how culturally different people engage in learning behaviors by examining their differences in everyday values and practices.

Findings of this study also relied heavily on self-report data from the students, which means the trustworthiness of the data were depended on the participants’ ability to reflect and recall their key SRL processes during the interviews. Future research may wish to strengthen their data sources by expanding the method of data collection. For example, in addition to self-report data, Jeske, Backhaus, and Robnagel (2013) suggest analyzing the learners’ navigation patterns using their online logging information to yield a fuller understanding of the learners’ online self-regulatory behaviors. Additionally, observations from instructors and/or tutors can also be incorporated as additional perspectives when examining SRL, such
as those exemplified by Cornelius and Gordon (2008) in their study on adult learners’ use of flexible online resources in a blended learning program.

Chapter Summary

This study explored the self-regulatory process of adult undergraduate students learning in online credit courses. In analyzing their experiences, themes emerged describing the online adult students’ beliefs and actions that were associated with their self-regulatory process. Based in key findings, three conclusions were presented and discussed in this chapter.

First, the study concluded that adult students’ desire to self-regulate while learning online was motivated by key personal beliefs related to their goal commitments, perceived abilities to learn online, and perceived abilities to be a responsible learner. Secondly, the study found that adult students’ online self-regulatory process was adaptive in nature. Third, this study identified adult students’ use of a variety of key SRL strategies to meet the expectations of their online courses, their individual learning needs, as well as their multiple role demands.

Following the conclusions, implications for theory, practice, and research were offered to impart the study’s contributions to the literature. Future studies were encouraged to fully expand the complex understanding of self-regulated learning among online adult learners in higher education institutions.
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APPENDICES
APPENDIX A

IRB Consent Form

North Carolina State University

INFORMED CONSENT FORM for RESEARCH

Title of Study:
Exploring the self-regulated learning strategies of the adult undergraduates in online credit courses

Principal Investigator
Nur Aira b Abd Rahim

Faculty Sponsor (if applicable)
Dr. Carol E. Kasworm

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to be a part of this study, to choose not to participate or to stop participating at any time without penalty. The purpose of research studies is to gain a better understanding of a certain topic or issue. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher(s) named above.

What is the purpose of this study?
This study is interested in the actions or skills of learning (or specifically self-regulated learning strategies) that are used by the undergraduate students when learning online. Self-regulated learning strategies refer to the actions that students do to help them improve their learning process. This study is specifically focused on studying the SRL strategies of the undergraduate students who are 25 years of age and above (also known as the adult students).

What will happen if you take part in the study?
If you agree to participate in this study, you will be asked to

1. Engage in a debriefing session with the researcher, review, and sign this consent form which will take up to 20 minutes
2. Provide consent to audio taping of the interview, or decline when asked so that the researcher may take written note instead
3. Bring or email a list of relevant documents related to your previous online course, including a course syllabus, descriptions of weekly assignments or course project, assignment grading guidelines, and other related online course materials documents (a list of suggested documents will be provided to you)
4. Complete an introductory questionnaire prior to the interview, which should not take more than 10 minutes
5. Participate in one in-depth recorded interview (up to 90 minutes) in person. Time and place of this interview will be decided mutually between the researcher and you. The interview has to be in a public location (non-residential), and is ideally quiet and conducive for the conversation to take place (i.e. meeting room, library discussion room).
6. If you agree, the researcher will also ask you to review your interview transcript, which will be sent to you via email or mail within 4 weeks following the interview. The review should not take more than 30 minutes.
7. Have a brief follow up on transcription accuracy via telephone or email if needed, and should not take more than 15 minutes
Risks
The level of risk for participating in this study should be very minimal. Minimal risk here refers to risks that are no greater than those you ordinarily encounter in daily life (Code of Federal Regulations, 1995). However, please know that your participation is strictly voluntary. This means you may request to withdraw participation in this study at any time or skip any question that you do not wish to answer.

Benefits
You will not directly benefit from this research. However, by participating in this research, you will have a chance to reflect and voice your experience and contribute to the research. Your participation may also indirectly benefit adult students, particularly in the area of instructional design of future online learning.

Confidentiality
The information in the study records will be kept confidential to the full extent allowed by law. Hard copies data will be stored securely in the researcher’s private residence in a locked cabinet. Digital data will be stored in researcher’s personal computer and external hard drive that are password protected and only known to the researcher. No reference will be made in oral or written reports which could specifically identify you or link you to the study. You will NOT be asked to write your name on any study materials so that no one can match your identity to the answers that you provide. Instead, your representation in the study will be replaced by a pseudonym that is only known to the researcher. In the transcription, any mention of identifying names or information discussed in the interviews will be masked or replaced by pseudonyms. Any mention of another person’s name will be also be masked and de-identified. All of your data will be reported back using your assigned pseudonym that is only known to the researcher. You will only be asked to write your name on this consent form. Consent forms and a master listing of your name to your pseudonym, will be stored in a pass code protected computer. All identifiable study materials will be kept separate from the master’s list of pseudonyms.

Compensation
You will receive a $15 Amazon gift card as a compensation for your time, plus you will also stand a chance to win a brand new iPad mini. One winner will be drawn from the list of all participating students in this research study.

What if you are a NCSU student?
Participation in this study is not a course requirement and your participation or lack thereof, will not affect your class standing or grades at NC State.

What if you have questions about this study?
If you have questions at any time about the study or the procedures, you may contact the researcher, Nur Ain Abrahaim, at nlabrahaim@ncsu.edu, or 919-633-5584.

What if you have questions about your rights as a research participant?
If you feel you have not been treated according to the descriptions in this form, or your rights as a participant in research have been violated during the course of this project, you may contact Deb Paxton, Regulatory Compliance Administrator, Box 7514, NCSU Campus (919/515-4514).

Consent To Participate
“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may choose not to participate or to stop participating at any time without penalty or loss of benefits to which I am otherwise entitled.”

Subject’s signature ___________________________ Date ______________

Investigator’s signature ___________________________ Date ______________

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APPENDIX B

Email Request for Invitation to Participate in Research

Subject: Adult students needed as a research participant!

Hello!

I’m a Doctoral student from the College of Education at NCSU, looking for volunteers to participate in my research study. My research is especially focus on the adult undergraduates students (you!). I’m looking to study the actions or skills of learning (or specifically self-regulated learning strategies) that students do to help them improve their learning process in an online course setting. I’m mostly interested to learn about your experiences when learning online.

This study is especially important in providing insights on how to develop and design effective and supportive online courses for adult students in higher education. Your contribution will indirectly help the future adult students and improve their experience when learning online. Plus, you will be helping a fellow NCSU student earn her Doctoral dissertation degree!

You have been identified as a potential research participant for my study because you met the following criteria:

- Currently enrolled as undergraduate at NCSU
- 25 years of age or above
- Completed at least 30 credit hours (Sophomore or above)
- Currently taking only distance education credit course(s) at NCSU for fall 2014 semester

If you considered yourself a nontraditional student, an adult student, a returning student, or a part-time students; have a self-supporting job and/or family dependents, and have taken at least two DE courses at NCSU prior to Fall 2014, I would like to speak with you. As a compensation for your time, you will receive a $15 Amazon gift card for participating, plus you will also stand a chance to win a brand new iPad mini (which would be great to help with your school work!).
If you choose to participate, you will be asked to:

1. Engage in a debriefing session, and complete the consent paperwork and introductory questionnaire, which may take approximately 15 to 30 minutes.

2. Participate in one face-to-face interview for up to 90 minutes. Time and place of this interview will be decided mutually between the researcher and you. You will also be asked to bring or email a course syllabus, and related online course materials (such as weekly assignments or course project, or grading guidelines for a specific assignment) as a background for discussion of your involvement in an online learning course.

3. Participate in a review of your transcription of your interview for accuracy purposes (optional). This transcribed interview would be sent to you by e-mail or postal mail. There may also be a brief follow up via telephone or email if needed. Both review of transcription and follow up should take less than 45 minutes.

**Total estimated time commitment: Not more than 3 hours for all of the above.**

All interested participants are kindly asked to contact the researcher at nbabdrah@ncsu.edu and provide me with your name, contacts, degree program, and number of credit hours that you have completed (an approximate will be sufficient). Do know that I will be willing to accommodate your schedule and drive to you within 30 – 45 miles from the NC State campus to meet with you.

Thank you so much for your interest. I’m looking forward to hearing from you.

**About the Researcher**

Aira Abdrahim is an international graduate student from Malaysia. She came to the US in 2008 and has completed her Master’s degree at NCSU in 2010. She is currently in pursuit of a Doctoral degree in adult education. Her research interests include:

- Online instructional strategies
- International adult education
- Cross-cultural learning

**Contact information**

Aira Abdrahim

nbabdrah@ncsu.edu (email)

919-633-5384 (call or text)
APPENDIX C

List of Suggested Course Materials

Dear participant, thank you for volunteering to participate in my research. I’m looking forward to meet and talk with you soon.

I’m providing you with a list of supplementary documents that you may email to me or bring to the interview session. If provided, these documents will be used as supplemental information to help me understand the context of your online learning courses. **This is an optional request and you are not required to bring any of these materials if you do not wish to.**

These documents are referring to class materials that are related to your previous online courses that you have taken as course credit at NCSU. We will mostly be talking about **ONE** online credit course that you feel strongly about, so please think of one course and bring the following document, as available:

- Course syllabus that typically includes the course description, course objectives, and course prerequisites or requirements;
- Description of weekly assignments and/or readings. These statements are usually the academic tasks that you need to accomplish weekly via your online course platform;
- Description of major assignments/projects or group work. These documents usually contain information about your assignments that are part of your online course requirements;
- Description of desired elements in an assignment/project for a grade. These documents are usually use by your instructor as a grading guideline to evaluate your assignments or project (also known as assignment or scoring rubric);
- Other class materials that you have found helpful in your online learning (i.e. information on additional readings, list of online resources or tools that can be used to support your online course learning)

If you have any question or unsure about any of the above, please do not hesitate to email me at nbabdrah@ncsu.edu, or call or text me at 919-633-5384. See you soon.

*Sincerely,*

Aira Abraham
APPENDIX D

Introductory Questionnaire

[Each participant will be asked to fill this out this introductory questionnaire before the researcher starts the face-to-face interview]

The purpose of this brief questionnaire is to gather basic background information about you that are relevant to the purpose and logistics of the study.

Before you proceed, please note the following:

1. **All questions are optional for you to answer.** Thus, only disclose information that you feel comfortable sharing.

2. **Please do not write your name anywhere in this document.** It is important that this form does not link to you in any way that is identifiable to others. Instead, I will assign an identifier that is only known to me when I collect this form back from you.

3. Please know that for all the information that you’ll be providing, I will ensure that it will be protected at the highest confidential level.

Please find the following demographic questionnaire for your kind perusal.

**A. Personal demographic information**

1. Please share your gender ______________

2. Please share the year that you were born ______________

3. Please share your marital status ______________

4. Do you have children at home? Yes No

   If you answered yes, please share the number of children that live with you ______________

   From the above number, how many of them are less than 18 years old? ______________

5. Which of the following best describes your current employment status?
   - [ ] Employed full time
   - [ ] Employed part-time
   - [ ] Others (please specify) ______________
B. Academic related information

1. Please share your program major ______________
2. Where do you currently live?  On-campus  Off-campus (please describe) ______________
3. Please share total credit hours that you have taken to-date. Alternatively, you can also list your current undergraduate classification (sophomore, junior, or senior) ______________
4. Prior to Fall 2014, how many online courses have you successfully completed at NCSU?

B. Contact preferences

1. What is the contact method that you prefer? List the following in numbers according to your preferences:
   • Call
   • Text
   • Email

Other, please specify ______________

2. What is the best time and day to contact you?

3. If you voluntarily agree to review your interview transcription for accuracy, please state how do you like to receive the transcription
   □ By mail
   □ By email

Thank you so much for completing the introductory questionnaire.

For researcher’s use only

Participant Reference Number:
Date & time of interview:
Assigned pseudonym
APPENDIX E

Interview Guide

GENERAL PROCEDURES

For each interview, please record the following details:

- Interview date & location
- Interview start & end time
- Participant reference number & pseudonym as assigned by the researcher

For each interview, please perform the following steps

1. Begin by briefly introducing the researcher and thanking the participant for his/her time
2. Review and sign the consent form
3. Present the purpose of the interview again, as follows:

The purpose of this interview is to learn about actions strategies that you used when studying and completing your online coursework. Self-regulated learning is defined as actions that you took to regulate, control, and evaluate your own learning and behavior during a learning process.

4. Proceed to debrief the participant on the following points:
   a. During the interview, please feel free to seek clarification from me should any of the interview questions seem unclear to you. Remember, there are no right or wrong answers. I’m interested to hear about your process when learning online based on your experiences and using your own words.
   b. You also have the right to decline from answering any question should you wish not to answer it. Kindly let me know so that I can move on to the next question.
   c. In order to protect the privacy of others, please refrain from using full, identifiable names when answering the interview questions. In any response where you may need to mention other people, you may use a general description like “my friend” or “my instructor” rather than the name of that particular person.
   d. If you request to view the interview questions prior to the interview, please note that the questions will not necessarily be asked in the same order as they appear below. In addition, I may ask you to elaborate on or clarify your answers or statements.
   e. This interview will be digitally recorded. You have the right to decline from being recorded, and know that the recording can be stopped at any time at your request. If you decline from being recorded or ask to stop the recording, the researcher will then opt to take notes during the course of the interview.
f. You have reviewed and signed the consent form prior to this interview, and understand all the procedures that will take place during the course of this research.

5. Proceed into the interview.

INTERVIEW GUIDE

Part 1 (Open-Ended Interview Questions)

OPENING QUESTIONS:

1. First of all, I like to understand how you came into the undergraduate program at NCSU. Could you briefly describe what’s your process been like?
2. What is the main reason that makes you want to come back / pursue a Bachelor’s degree?
3. How do you describe yourself as a student?
4. Other than being a student, tell me about your other responsibilities in life? What else do you do (job/family/others)?
5. Going into this degree program as a nontraditional student, is there any unique experience or perspective that you bring with you?

RESEARCH QUESTION #1: What key beliefs do adult students hold about themselves as online learners?

1. At this point in your study, how well do you think you have been doing so far in all your online courses?
2. What is your typical day (*or week) consists of in terms of accounting for both your job (and/or family) and also schoolwork?
3. As a student who is also working at the same time, what it’s like to be in your shoes? *As a student who also has a family to take care of, what it’s like to be in your shoes?
4. What aspect of your online learning that you value the most?
5. What aspect of your online learning that challenged you the most?
6. Can you describe one subject or course where learning online has been successful to you?
7. Can you also describe one subject or course where learning online has been a disappointment for you?

RESEARCH QUESTION #2: How do adult students describe their engagement in the online learning process?

1. How is this degree relates to your short and long terms goals?
2. In terms of learning online, what do you feel are your strongest academic skills?
3. On the other hand, what would be an area that you would like to improve when learning online?
4. What is your target or goal like in completing each of your online courses?
5. Outside from school, what kind of support that you get from people around you in your learning process?
6. Within the department and the program that you are in, what kind of support that has been most helpful to you?
7. Do you make contact and work together with any other students from your online courses?
8. While learning online, have you encountered any frustrating situation before? Describe what happened. How do you handle the situation?

RESEARCH QUESTION #3: What strategies do adult students use to support their online learning?

1. In average, how much time do you spend working on your online coursework every week? Do you allocate a block of time, or do you work until all your online tasks are finished?
2. Have you encountered a situation in the past year or so, where you have conflicted situation involving your work or family matters and your school deadlines or exams? What’s the situation like? What did you do in that situation?
3. Think about one major course assignment that you did very well. Can you describe to me the assignment and walk me through your entire process of getting that assignment done?
4. In a case where you have multiple assignments due at the same time or week, how do you handle that situation?
5. When you have a lot of learning materials or tasks to cover more than usual in a single week, how do you prioritize?
6. Think about one final exam that you did very well and received a good grade for a particular online course. Can you share with me the strategies that you use to study for that particular exam?
7. Can you think of a situation where you were trying to get something done for your online course, but experienced some difficulty or feeling disconnect in what you are trying to do. Describe the situation to me. Describe what did you resorted to do.

[insert think aloud questions (see Part 2) as relevant to the individual learners]

CLOSING QUESTIONS:

1. Think about the first time you ever took an online course. How comfortable were
you with using computer and Internet to learn online? How do you feel about it now?
2. Compared to the first time you took an online course, what have you done differently since in terms of your study strategies?
3. In talking about your online learning experience as a whole, what metaphor would you use to describe your experience? (This may also pertain to RQ1)
4. In your own opinion, what are the good practices or habits that students should have when taking online courses?
5. If you have a colleague, who is also a nontraditional student like yourself, who would like to take an online course for the first time, what would be your advice to them?

Possible probes that will be employed as needed

Would you explain that in details?  Was this your first experience of this kind?
Give me an example.  What was the main challenge?
Why is it important to you?  What was the outcome of that situation?
Why did you decide to do that?  What did you learn from this situation?
Has anything change since?
Part 2 (Think-aloud protocol)

The following learning situation that will be selectively asked depending on the component of their online courses:

1. **Online posting**

Imagine that you are sitting in front of your computer, and you are about to post a response to a discussion posted by your course instructor. Tell me how did you approach the task, what did you do in order to find something meaningful to add into the discussion?

2. **Streaming video lectures**

You are currently getting ready to watch a video lecture of your online class. Describe where do you usually go to engage in this lecture. What are the other things that you usually have or bring with you? How did you know that you understand the content of the lecture?

3. **Online exam**

Think about one final exam that you did very well and received a good grade for the course. Can you share with me the strategies that you use to study for that particular exam?

4. **Self-paced tutorials or practice modules**

One of the things that your online course offered to supplement your learning is a self-paced tutorial in every topic. This is an optional component, but you choose to engage with it anyway. Tell me the reason why you found this to be important for you and how do you go about it.

5. **Group work or collaborative assignments**

You have been assigned a group assignment as part of your online course requirements. Describe to me what’s the process like, how do you get connected with the other members of your group, and how do you contribute to your group work?

6. **Individual course assignments**

Think about one major course assignment that you did very well. Can you describe to me the assignment and walk me through your entire process of getting that assignment done?
APPENDIX F

Research Invitation Flyer

Are You An Adult Student Taking Distance Ed courses at NC State?

If yes, you may be eligible to participate in my dissertation research. Each voluntary participation will receive a $15 Amazon.com gift card, plus a chance to win a brand new iPad mini.

What is the study for?
The main purpose of this study is to understand your online learning experiences in DE courses at NC State, with special attention given to your unique learning situation as adult learners.

You are eligible to participate if you checked all the following:
- Currently enrolled at NCSU as an undergraduate, with Sophomore standing or above
- 25 years of age or older
- Have a self-supporting job (either full or part-time) OR have family dependent(s) OR both
- Took only DE courses for Fall 2014 semester, AND have taken at least two DE courses at NC State between the period of Fall 2013 to Fall 2014.

What will I have to do if I choose to participate?
In a single one-to-one session, you will be asked to (1) complete a research paperwork; (2) complete a rubric assessment for DE courses that you have taken at NCSU; (3) and participate in one interview session with the researcher (typically takes about 45 – 60 minutes of your time). Optional requests include: (1) to bring a course syllabus and class material for the DE courses that you took, and (2) to participate in a review of your interview transcription.

Expected time commitment: Up to 150 minutes (2.5 hours) per completing all study activities including the optional requests. Please know that I will do my best to accommodate your schedule and location of your convenience.

For More Information, please contact the researcher:
Aira Abrahaim at nbabrah@ncsu.edu or (919)633-5384 (call or text)

www.PrintableFlyerTemplates.net