University of Cincinnati

Date: 10/31/2017

I, Joan M Tunningley, hereby submit this original work as part of the requirements for the degree of Doctor of Philosophy in Educational Studies.

It is entitled:
Self-Regulated Learning and Reflective Journaling in an Online Interprofessional Course: A Mixed Methods Study

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UNIVERSITY OF CINCINNATI

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Self-Regulated Learning and Reflective Journaling in an Online Interprofessional Course: A Mixed Methods Study

A dissertation submitted to the Graduate School of the University of Cincinnati in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Educational Studies in the College of Education, Criminal Justice, and Human Services by Joan Mueller Tunningley

October 31, 2017

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Abstract

Online higher education has expanded extensively. Graduate health science disciplines have experienced significant growth in online education (Lytle, 2011). Applied patient practices benefit from technological tools for effective instructional formats. Unfortunately, the occupational therapy (OT) profession has not embraced the online education transition: The American Occupational Therapy Association ([AOTA], 2017) reported fewer than 10 percent of programs across the country offer more than 75% of their curriculum online. Given the shortages of OTs projected to continue across the country (Bureau of Labor Statistics, 2015a; Lin, Zhang, & Dixon, 2015) and the recent requirement for clinical doctoral preparation for entry level therapists by 2027, effective online educational could promote greater opportunities for future therapists. The purpose of this study was to investigate the relationship between reflective journaling (RJ) and self-regulated learning (SRL) and how to apply this information to online education for OT graduate students.

The self-determination theory ([SDT] Ryan & Deci, 2000) was the foundation for this study because students, particularly those in graduate online education programs, must be competent and self-directed for optimal success. SDT recognizes three basic human needs which are the foundation for motivation and behaviors (autonomy, competence, and relatedness). Self-regulated learning (SRL), a process by which students influence their academic success, involves goal setting and planning, selection and implementation of metacognitive and behavioral strategies for effective learning. Students must then evaluate the effectiveness of their strategies through self-reflection and adjust the strategies to best meet their academic goals. Schön (1983) applied self-reflection to professional practice which underscores reflective practice for increasing competence of health care professionals. The study context was an online, graduate,
interprofessional course across three semesters with 30 participants: 3 health administration, 19 nursing, and 8 OT. Interprofessional practice promotes collaboration across disciplines for positive patient outcomes.

A convergent parallel mixed methods study using quantitative data from three SRL surveys. The identical, convenience sampling provided 30 reflective journal (RJ) entries as qualitative data for the thematic analysis. RJs were quantized as the dependent variable for the study. Statistical analyses for correlation results between SRL and RJ found a strong correlation between surveys and a weak positive relationship to RJ. A regression analysis of the SRL subscales on RJ identified only prior GPA, not SRL subscales, as a predictor of RJ (supporting Broadbent & Poon, 2015). The quantitative results indicated the SDT based SRL survey (W-BNS by Van den Broeck, et al. 2010) correlated to the other SRL surveys. The thematic analysis of RJ confirmed depth of content learning and a connection between self-regulated practices (planning, organizational and metacognitive strategies) and collaborative learning tasks within the online course.

Implications for online OT education were provided, based on the integration of these study results as well as the author’s extensive OT practice experiences and over ten years as an OT educator. Reflective practices promote content learning and should be explicitly taught and practiced. Collaborative learning tasks promote engagement in online courses.

*Keywords: Self-regulated learning, self-reflective journal, interprofessional education, graduate students, occupational therapy education, mixed methods*
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Acknowledgement

I could not have accomplished this learning process without the dedicated, insightful
guidance of many professors in this Education Studies program. First, I want to thank my chair,
Dr. Kay Seo, for her repeated reviews of the drafts and guidance for my studies and especially
during this dissertation process. You have taught me a great deal about the patience and process
of writing. Thank you Dr. Marcus Johnson for the thought provoking discussions on motivation,
learning strategies; for introducing me to self-regulate learning; for your support and interest in
how I was thinking about the application of these processes. And many thanks also to Dr. Chris
Swoboda. Without you, I would not have had the confidence to pursue the quantitative aspects
of this study. Your diagrams and visuals promoted my comprehension of the study design and
statistical implications when words were not working. At various times across this process, each
of you have offered the support or push that I needed to complete the next draft for this
dissertation. Thank you for believing in me.

There are many other professors who made significant contributions to my learning. Dr.
Vicki Plano Clark: thank you for introducing me to mixed methods and the value of pragmatism.
Dr. Connie Kendall Theado: thank you for the structure for writing and for appreciating the
writing process. Dr. Janet Zydney: thank you for introducing me to educational design research
and a collaborative online course. Dr. Lisa Vaughn: thank you for the varied action and
qualitative research processes, especially the group level assessment process. Dr. Gail Headley:
thank you for your patience with my questions about statistics, and your model for dissertating.
Jiaqi Zhang: thank you for your ongoing questioning to guide me to figure out and document the
statistical analyses for this study. Dr. Larry Schankman: thank you for the practical experience of
implementing SRL and SDT into an online course. At the time, I didn’t even recognize the
process. Listing several individuals is bound to leave out others, please know my appreciation expands well beyond those listed. My deep appreciation to the peers who have been my support network during this process: Lori, Laura, Tracy, Heather, Zach, Ben, and many others who have given me ideas and promoted my love of learning.

Sincere appreciation goes to my friends and coworkers who supported me in many ways along through this journey. Cindy and Sandi (for the dinner breaks and listening to me rambling); Carol, Janet, and Vickie (my walking buddies, talking about everything along the way); Janice and others who listen and shared many precious aspects of life. Thank you to my coworkers, especially Barb with the most positive attitude and intuition for teaching who helped keep me afloat. To Joanne and Leah for your help with this qualitative research. To Carol for the ongoing encouragement and to Claire and Stacia for your support. Many thanks to the student participants, without you this research would be without merit or meaning.

My deepest support came from my family, and thus my greatest appreciation. My parents instilled a love of learning, inquiry and problem-solving, and recognition that with dedication and determination you can accomplish anything. To my siblings for your encouragement. To my two sons, James and John, who have taught me so much about life, joy, appreciation, and perseverance. Thank you for your love, some distractions, and for believing in me. James, much appreciation for your time in formatting this document. To my daughter-in-law, Leah, offering support and reminding me to find balance. And most significantly, to my husband, Dennis for picking up all of the pieces, propping me up, and patiently waiting for this process to be complete so we can take time to enjoy each other once again. You all believed in me when I questioned myself and gave me the time to complete this process. Thank you!
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Chapter 1: Introduction

Health professionals are one of the most valuable resources which impact the quality and availability of healthcare services. Unfortunately, a shortage of professionals in many healthcare fields affects health and wellness globally (Crisp & Chen, 2014; World Health Organization [WHO], 2006). Rehabilitation services, including physical, occupational, and speech therapies, are experiencing severe shortages in the United States (Levanon, Cheng, & Paterra, 2014; Lin, Zhang, & Dixon, 2015; Raymond, Demers, & Feldman, 2016) and were identified among the most rapidly growing healthcare fields (Levanon et al., 2014; Lin et al., 2015). According to the Bureau of Labor Statistics, the outlook for occupational therapy jobs is expected to show a 27% growth between 2014 and 2024 (Bureau of Labor Statistics, 2015). Levanon et al. reported occupational therapy assistant positions will grow as much as 40% in the decade beginning 2012: constituting one of the most significant growth areas within the entire job market.

The number of occupational therapists has not kept pace with the growth in the field. Lin, Zhang, and Dixon (2015) anticipate a severe shortage in eight of the 13 western states by 2030. Employers are reporting difficulty filling open occupational therapy (OT) positions with over half of the postings remaining unfilled for 6 months (Powell, Kanny, & Ciol, 2008). Shortages are more significant in some geographic regions, as an example, the Healthcare Association of New York State (2013) reported up to 19% vacancies in occupational therapy positions in Nassau and Suffolk counties in New York. Varied agencies have differing ways to report the future of the OT profession, yet all are predicting the shortage of occupational therapists will continue for the next 15 to 30 years. Unfortunately, the availability of OT services effects individuals with disabilities across the lifespan from infants to centenarians; in settings including neonatal intensive care, schools, nursing homes, hospitals, and personal residences. As
an occupational therapist for over 30 years, this researcher has witnessed the shortage first hand: as a therapist receiving unsolicited recruitment contacts several times per week; as a manager attempting to fill open positions with qualified professionals; and currently as an educator with students who are conditionally hired to fill vacancies before they even graduate.

**Online Education in Occupational Therapy**

The obvious solution was to increase the workforce of occupational therapists by educating and licensing more therapists. Online OT education programs may contribute as a partial solution through programs in remote locations implementing much of the curriculum via online education (Hollis & Madill, 2006; Mu et al., 2014). Recent research identified advantages of online education including: 1) ease of accessibility through reliable Internet services, 2) flexibility for students to complete coursework around their other personal or professional responsibilities, 3) ability for students to individualize the pace for work completion within the course guidelines, and 4) options for students to review and repeat content for deeper learning (Cook et al., 2008; Gardner et al., 2016). While the percentage of online educational opportunities for other healthcare professions has grown consistently in the past decade (Lytle, 2011), OT programs continue to offer limited online courses (Accreditation Council for Occupational Therapy Education [ACOTE], 2016).

Despite the potential benefits of online education, faculty express concerns about the quality and effectiveness of online education (Allen & Seaman, 2013; Bol & Garner, 2011). One significant challenge often noted by faculty was how to provide hands on learning for performance-based skills in online programs. A systematic review of effectiveness of physical therapy online education including performance skills found satisfaction with video-based student submissions demonstrating practical skills but studies were inconclusive on the
efficiency of the students’ skill performance (Mącznik, Ribeiro, & Baxter, 2015). Occupational therapy education could mirror physical therapy education approaches for practical performance-based skills or implement content learning in online programs while highly experienced clinicians instruct lab sections in locations with concentrated lab learning modules (similar to continuing education schedules for one week lab learning).

Moreover, lowered student retention and program completion rates plague online versus traditional educational programs (Bol & Garner, 2011). The national accreditation agency requires OT programs to post rates for retention, completion, and license exam passage for potential students to compare program quality prior to enrollment. Thus, program effectiveness directly influences enrollment and therefore the programs’ financial stability. With a mere ten percent of the entry level OT degree programs offering more than one quarter of their coursework online and no 100% online accredited OT programs as of December 2015 (ACOTE, 2016), OT students are limited to traditional courses for the majority of their coursework. Research to assess the effectiveness of online OT graduate education (Doyle & Jacobs, 2013; Hollis & Madill, 2006; Mu, Coppard, Bracciano, & Bradberry, 2014; Trujillo, 2007) was extremely limited with further research sorely needed. The current OT education research did not address student retention as a success factor. Educational research linked online academic achievement and persistence with self-regulated learning (SRL) (Artino & Stephens, 2009; Cho & Shen, 2013; Heyman, 2010; Johnson, Taasoobshirazi, Kestler, & Cordova, 2014). Research in OT education should investigate SRL for OT students.

**Self-regulated Learning and Self-reflection**

In addition to academic achievement, researchers have shown that learners who are self-regulated are better able to apply their knowledge to practice (Schunk & Zimmerman, 2008;
Zimmerman, 2008). There is a significant need for online educational opportunities which incorporate self-regulated learning strategies for student success in healthcare fields (Cook et al., 2008; Cutting & Saks, 2012; Petty, 2013). Self-regulated learners develop a plan to meet their educational goals, select and apply learning strategies, and monitor the process for optimal learning outcomes (Artino, 2008a; Pintrich, 1999; Schunk & Zimmerman, 2008; Zimmerman, 2008). Studies of graduate students in online courses found a strong connection between self-regulated learning and academic achievement (Artino & Stephens, 2009; Wang, Shannon, & Ross, 2013). The monitoring process of SRL involves self-assessment, reflecting on the effectiveness of the strategies, and modifying the strategies as needed for effective learning outcomes.

Self-reflection is a key component in the assessment phase of SRL (Zimmerman, 2000). According to Zimmerman, SRL theorizes that self-reflection provides the learner with the opportunity to assess their knowledge against their desired goal of the learning task. If the acquisition of content knowledge met the learner’s expectation, they will most likely continue to apply the same effective metacognitive self-regulated strategies. If the student assessed that their content knowledge fell short of their expectation, the student could modify their metacognitive, environmental, and motivational strategies, to implement other strategies which better meet their educational goal (Williams, Gerardi, Gill, Soucy, & Taliaferro, 2009).

Interestingly, self-reflective journals are one method commonly used in online courses to document self-reflection and depth of learning. In a review of 11 articles on reflective journals, Dyment and O’Connell (2011) found the connection between journals and “deep reflection for higher education students is undeniable” (p. 82). By reflecting on the learning content, students can assess the depth of their understanding of the topic. In self-reflective journaling the student
reviews their content knowledge to provide a written response to an open-ended prompt. Self-reflective journaling, designed to promote deeper reflection on the learning content, could relate to SRL (Kuiper & Pesut, 2004). Based on the literature, it is not clear if these written self-reflective journals tap into the self-directed, metacognitive learning strategies of SRL or the self-reflective process for assessment phase of SRL.

**Purpose of the Study**

There is a significant discrepancy between the OT workforce and the needs of current and future individuals with disabilities, injuries or illnesses (Lin, Zhang, & Dixon, 2015; WHO, 2006). The limited OT online educational options (ACOTE, 2016) could expand while maintaining graduate students’ academic success and promoting persistence using SRL strategies (Artino & Stephens, 2009; Cutting & Saks, 2012; Petty, 2013). Furthermore, according to the researcher’s professional experience, self-reflective journaling in online courses relates to SRL through the self-reflective process. This study investigated the relationship between reflective journaling and SRL from multiple perspectives in the context of a 100% online collaborative interprofessional (IP) course. The instructional design for this online course involving intense group interactions incorporated electronic collaborative strategies.

The purpose of this research study was to understand the relationship between self-regulated learning (SRL) and reflective journaling (RJ) among graduate health science (particularly OT) students in this online IP course. Moreover, to probe how these two constructs, RJ and SRL, complemented each other in an online context. This study quantitatively compared graduate students’ self-reflective journal entries from the course with self-report SRL ratings. The qualitative strand of the study identified themes among the students’ self-reflective journal entries related to course content and SRL constructs. Using a convergent parallel design
(Creswell & Plano Clark, 2011), this study merged thematic analysis with the statistical analysis to holistically provide a greater understanding of the relationship between SRL and self-reflection.

**Research questions**

The primary research questions focused on a deep understanding of the relationship between SRL and reflective journaling in the context of an online IP course. All research questions applied to graduate students in the course. The order of listing quantitative aspects prior to qualitative was maintained throughout this paper to provide consistency for the reader and was not intended to represent timing or priority.

**Overarching question.** What is the relationship between SRL and RJ of graduate students in an online interprofessional course and how do complimentary RJ text content contribute to understanding this relationship?

**Quantitative questions.**

QN1. How does SRL relate to RJ?

Secondary quantitative question: Quan 1a: How did the three SRL tools relate?

QN2. To what degree do SRL predictor variables (subscales) influence RJ?

Secondary quantitative question, if the data suggested a potential covariate:

Quan 2a: Does the discipline group membership moderate the effect of SRL on RJ when controlling for a covariate?

**Qualitative questions.**

QL1. What SRL phases or components (i.e. subscale concepts) are evident from the RJ entries?
QL2. What themes emerge from reflective journal entries which indicate depth of knowledge or enhanced content learning?

Integration (MMR) questions.

MMR1. Merging complimentary findings, what are the implications of the relationship between RJ and SRL for online education of OT graduate students?

Context: Online Interprofessional Course

The online IP course was selected for several equally important reasons. Interprofessional collaboration had recently been added to accreditation standards for most health science professions (Zorek & Raehl, 2013). Interprofessional education requires integrated education of students from two or more healthcare disciplines to increase students’ understanding of each other’s roles and thus emphasizes collaborative teaming for complex patient care (Centre for the Advancement of Interprofessional Education, 1997). Online interprofessional course methods were found to be effective to reduce barriers, such as scheduling and differences in educational backgrounds across healthcare professions (McKenna et al., 2014; Myers & O’Brien, 2015; Reeves et al., 2013; Solomon et al., 2010). The 100% online IP collaboration course was utilized as the context because prior research had confirmed OT online education was effective for IP content (Hanna et al., 2013; Luke et al., 2009; Miers et al., 2007; Waterston, 2011). Additionally, this course was selected because of the researcher’s prior positive academic and clinical experiences with IP collaboration. As a therapist, the implementation of team-based IP care provided far greater benefits for clients. The outcomes of integrated, team-based services exceeded the sum of each independent discipline-specific care plan. Lastly, recent research had investigated whether the collaborative nature of IP education promotes SRL through the interactions between team members providing feedback (or reflecting
back) to teach other (Lumma-Sellenthin, 2012; Mann, Gordon, & MacLeod, 2009). Congruent with the support of these recent findings, the interprofessional collaboration course offered a unique research context for the study of self-reflective journaling and SRL.

**Defining Key Terms**

The following terms are defined to operationalize the meanings for this study and to reduce the potential confusion due to definitions which differ across disciplines. These terms are presented alphabetically so the reader can refer back to this list as needed at any point throughout this study.

*Collaborative learning* models are approaches to learning which are broadly focused on the cooperative or collective abilities of students to work together to solve problems. This is typically accomplished through groups of learners working together to share the process of clarifying the problem and analyzing potential solutions from multiple perspectives. The instructor in these models stress the “social interaction and collaborative learning” (Brown, Collins, & Duiguid, 1989, p. 40). Instruction designed for students to be collaborative may include self-reflective or peer-reviewed assessments as a means to enhance learning or self-regulation (Dabbagh & Kitsantas, 2005; Hmelo-Silver et al., 2008). Computer-Supported Collaborative Learning (CSCL) utilizes computer-based collaborative strategies to promote the collaboration between learners (Hoardley, 2010). While the context for this study was an online format, details of the CSCL were not the focus of this study. Thus, the broader definition was utilized to emphasize the importance of collaboration in IP practice.

*Convergent parallel design* is a mixed methods research design performed at approximately the same time, giving equal priority to the collection and analyses of quantitative and qualitative methods (Bryman, 2006, Creswell & Plano Clark, 2011; Greene, Caracelli, &
Graham, 1989). These findings are then converged to provide clarification or to enhance the understanding of a phenomena.

Constructivism is the theoretical basis for many current educational practices which fosters that individuals construct their own knowledge through active engagement in structured learning activities, experiences, interactions, and reflecting on how these concepts connect to build further knowledge (Crotty, 1998; Driscoll, 2005; Neuman, 2011; Trujillo, 2007).

Instructional design (ID) is the planned, sequenced process to analyze instructional concerns, and design, develop, apply, and manage instruction to address specific learning objectives within a given context (Branch & Kopcha, 2014; Dick, Carey, & Carey, 2009; Fenrich, 2008; Reiser, 2012). ID focuses on efficient and effective methods for optimal educational outcomes. To attain such outcomes, the instructional design model selected should match the educational content and context (Branch & Kopcha; Reigeluth, 2012).

Interprofessional (IP) education is the practice of educating healthcare students together, to break down the disciplinary silos between professions, promoting education for collaboration among health related students to enhance the quality of patient care. “Interprofessional education was invoked to modify reciprocal attitudes and perceptions, to cultivate mutual respect and to explore ways in which collaboration could be made real” (Barr, Hammick, Koppel, & Reeves, 1999, p.534). According to the Canadian Interprofessional Health Collaborative report (2010), “Interprofessional collaboration is the process of developing and maintaining effective interprofessional working relationships with learners, practitioners, parents/clients/families and communities to enable optimal health outcomes” (p.8). Additional authors state clearly “IP education occurs when students from two or more professions learn about, from, and with each
other to enable effective collaboration and improve health outcomes” (WHO, 2010; Barr, Freeth, Hammick, Koppel & Reeves, 2006, p. 75) [emphasis added].

*Interprofessional practice* is the integration of professional skills across disciplines involving collaboration, mutual respect, and coordination of care for health and wellness services to a wide range of patients. This integration of care is generally focused on both social and health aspects of wellness for carryover to natural settings and populations. Ethical and evidence-based best practices and resolution of intervention differences for patient-centered practice are critical considerations for interprofessional practice (Interprofessional Education Collaborative Expert Panel [IPEC], 2011).

*Journaling* can be completely open ended similar to a diary or can be structured with prompts. For this study, journal entries were an assigned, written, reflective responses to a prompt at the end of each module for the online course. The assignment was submitted electronically with a suggested length was approximately 200 words. Grading for the online course was separate from the rubric scoring for this study. The course grading was based on meeting the timeline for the submission, responding to the prompt, relationship to course content/readings/personal experiences, and grammatical accuracy. The study rubric was based on a combination of the recommendations for measuring reflective journals by Powell (1989) and Koole et al. (2011).

*Mixed methods research (MMR)* for this concurrent, convergent study is: A single study which intentionally integrates the valuable contributions from quantitative and qualitative research for a better interdisciplinary understanding of the complexities of a phenomena within a defined social context to develop innovative implications (Creswell & Plano Clark, 2011; Johnson, Onwuegbuzie, & Turner, 2007; Plano Clark & Ivankova, 2016; Shannon-Baker, 2015).
Metacognition is commonly considered thinking about thinking. This process involves retrieving information from memory, reviewing, critically evaluating, and reflecting on that information to develop a greater understanding or to use this information for problem-solving, practical applications, or creative learning endeavors (Livingston, 2003; Martinez, 2006). Metacognition involves higher order thinking and intentional concentrated effort to enhance cognitive processing by implementing strategies to promote memory, attention, and learning (Livingston, 2003).

Occupational therapy (OT) is a health science profession which “enables people of all ages to live life to its fullest by helping them promote health, and prevent – or live better with – injury, illness, or disability” (American Occupational Therapy Association, n.d., para 2). Occupational therapy practitioners provide individual or group interventions to promote improved performance in physical, mental, and/or social skills to more fully engage in desired daily living tasks.

Online education is education which is delivered 80 to 100% electronically with connections to a learning management system, Internet accessible resources, and typically utilizing instructional technologies to support the learning process for students. This instructional method can include synchronous (information exchanges which are in real time) or asynchronous (information exchanges which are not completed at the same time, typically through written or audio recorded messages which allow for delayed responses) (Palloff & Pratt, 2013; Smith & Brame, n.d.). Electronic tools can include audio and/or visual content for lectures, video recording for demonstrations, collaborative documents or presentations, video conferencing, electronic gaming, assessment methods, social media, and instructional feedback (Lavin, Beaufait, & Tomei, 2008). The online course described in this study was 100% online.
with face-to-face conferences between the instructor and students provided for office hours if requested by the student.

**Pragmatism** is a philosophical or paradigmatic perspective which integrates both empirical and practical aspects for an “explicitly value-oriented approach to research” (Johnson & Onwuegbuzie, 2004, p.17) focused on the answers rather than the methods (Creswell & Plano Clark, 2011). Pragmatism recognizes the value of combining inductive and deductive reasoning to answer complex questions from multiple perspectives for unique solutions.

**Reflection** is a process which involves intentionally reviewing and contemplating information about a phenomena or event in an investigative manner, often leading to metacognitive processes, greater understanding of your own thoughts or actions, re-shaping future actions, or developing a framework to view future experiences. The reflective process in clinical contexts utilizes a constructivist approach to building capacity, enhancing skills and improving competence (Schön, 1987).

**Self-reflection** involves critically reviewing one’s own perceptions, actions, and reactions for the purpose of insight and/or self-improvement (Mann, Gordon, & MacLeod, 2009). Lyons (2009) elaborated on existing definitions from Dewey and Schön: “Three major approaches have been identified: reflective inquiry as a mode of thinking; as a way of knowing in action; and, as critical interrogation of the social and political contexts of learners and learning that might suggest actions to follow” (p. 20) [emphasis added by this author].

**Self-regulated learning (SRL)** is a deliberate process to plan, monitor, and regulate strategies and efforts for learning, contributing to academic achievement. SRL involves a cyclical process in which learners purposefully plan, monitor implementation, and assess their metacognitive strategies for positive learning outcomes. The phases of the process are delineated
as pre-learning, within the learning process, and post-implementation which cycles back to revise the planning if needed for academic success. Pintrich’s (1999) definition “SRL is defined as the strategies that students use to regulate their cognition (i.e., use of various cognitive and metacognitive strategies) as well as the use of resource management strategies that students use to control their learning” (p. 459). Zimmerman (2008) defined SRL as “the degree to which students are metacognitively, motivationally and behaviorally active participants in their own learning” (p. 167) (italics added for emphasis). The combination of these definitions recognizes the internal contemplation, active selection and implementation of strategies for controlling the progress of, and environment for, effective learning. Self-reflection and revision of the strategies is critical for the success of SRL.

These definitions will provide clear review of the information within this study. The next chapter will present the conceptual framework and theoretical foundations for this study, followed by a review of current literature on each of the significant topics.
Chapter 2: Conceptual Framework and Foundations

The interconnected constructs to increase the number of occupational therapy practitioners are complex as depicted in Figure 2.1. The chapter provides the philosophical foundations which influenced this research study including constructivism and pragmatist paradigms, followed by the theoretical constructs of self-regulated learning (SRL) and self-reflection. Next, this chapter reviews the conceptual literature in the context relevant to occupational therapy online education. Specifically, literature reviews included (a) SRL in online education, (b) self-reflection in the education of health science professionals including the utilization of online reflective journaling, and (c) occupational therapy (OT) online education.

Researcher’s Perspective

The philosophical and theoretical foundation for this research study are closely tied to the assumptions and personal experiences of this researcher. My instructional experiences have been primarily constructivist (Driscoll, 2005; Ormrod, 2012; Trujillo, 2007; Wilson, 2012); where learning has been rich with authentic opportunities, valuing personal experiences, embedded in active and interactive learning tasks to forge stronger learning and deepen understanding.

Growing up, my family instilled a deep respect for knowledge and practical experiences. When faced with problems, I was encouraged to combine deductive and inductive perspectives for creative resolutions. As a novice occupational therapist, a perceptive colleague commented on my pragmatic clinical reasoning approach to develop solutions for my clients. For me, seeing multiple perspectives, per the pragmatist view, was the most logical approach to answering questions. These perspectives have influenced my instructional pedagogy, my course design, and informed the foundation for the design of this research study.
Constructivism Foundation

Constructivism is the paradigm that knowledge is constructed by each individual as they understand their experiences and interactions with others (Driscoll, 2005; Neuman, 2011). Constructivism focuses on active engagement of the learner, building learning as students “make sense of their experiences” (Trujillo, 2007, p. 163), and reflect how concepts connect. This view, permeated the educational models of the past century (Driscoll, 2005). Crotty (1998) considered constructivism as an epistemological foundation for knowledge development based on experiential opportunities rather than innate abilities or absolute truths. Sociocultural theory, a social interaction based constructivist view, has been attributed to the work of Vygotsky (Ormrod, 2012; Savery & Duffy, 1995). Experiential opportunities for constructivist learning are enhanced by social interactions for collaborative learning (Driscoll, 2005; Jonassen, 2000;
Savery & Duffy, 1995). Both constructivist and sociocultural theories benefit from learning activities designed within interactive contexts (such as those utilized in the context of this study). Driscoll indicates that the learning goals of constructivism include self-regulation and mindful reflection (p. 384). Pintrich (2000) recognized the constructivist, experience-based foundation for goal-setting in SRL. Reigeluth (2012) applied the constructivist paradigm to collaborative education using authentic tasks in an online context. The collaborative online educational context for this study used constructivist and sociocultural foundations as students from varied healthcare disciplines share in the knowledge construction through healthcare scenario-based learning experiences using IP student groups to simulate IP practice teams.

Constructivist principles (Driscoll, 2005) included in the IP course design were collaboration with social negotiations, control or ownership of the learning, and “self-awareness ‘reflexivity’ ” (p. 394). Interprofessional education and collaborative learning approaches endorse mutual or shared goals, group interdependence, constructive peer evaluations, accountability to the group and favorable conflict resolutions (Belge, Can, & Boz, 2016; Driscoll, 2005; Love, Dietrich, Fitzgerald, & Gordon, 2014; Ormrod, 2012). Computer-supported collaborative learning (CSCL) integrated online and collaborative learning with constructivist, sociocultural and cognitive theories to support deep learning of concepts (Ewing & Miller, 2002). The context of this study was a collaborative online course design using case scenarios, problem solving, and peer reviews as collaborative learning tasks (Persico, Pozzi, & Sarti, 2010) via groups representing IP teams.

**Pragmatist Foundation**

Pragmatism formed the foundation for the study design: seeking knowledge through multiple means of inquiry, collecting both subjective and objective data, and applying practical
knowledge from authentic experiences to develop a deeper understanding of a concept (Christ, 2009; Creswell & Plano Clark, 2011). Morgan (2007) indicated the contributions of personal experience to research which respects this researcher’s background in this study as an advantage of pragmatism. The pragmatist ontology balances “singular and multiple realities” (Creswell & Plano Clark, 2011, p. 42) with the concept of searching for one holistic answer despite these multiple perspectives (Teddlie & Tashakkori, 2009). Morgan (2007) emphasized the importance of the communication processes for shared meanings within pragmatism. This study also drew from the shared meanings from various constructivist instructional models to develop an IP learning context using collaborative (Hannafin, Hannafin, Land, & Oliver, 1997) and situated learning models (Brown, Collins, & Duguid, 1989). Interprofessional researchers have supported collaborative, social learning approaches in online educational contexts (Clark, 2006; Hean, Craddock, & O’Haloran, 2009; Howell, 2009).

**Theoretical Constructs**

Three theoretical foundations for self-regulated learning were presented with a comparison of these theoretical constructs. Additionally, the theoretical background for self-reflection from the reflective practitioner perspective was provided.

**Self-regulated learning.** In 1986, self-regulated learning was identified as a “new approach to the study of student academic achievement” (Zimmerman, p. 307). This approach investigated how students were able to maintain attention, and structure their own learning practices to improve their academic success. Bandura (1991) described SRL for academic achievement as an “intentional and purposive” (p. 248) process consciously implemented by the learner to plan their approach, implement strategies and then assessed their outcomes to either (a) continue the successful interventions or (b) revise their tactics. In addition to academic
achievement, self-regulated learners demonstrate higher motivation, lower levels of anxiety, and less procrastination (Park & Sperling, 2012; Schunk & Zimmerman, 2008). Scholars have varied definitions for self-regulation of learning, based partially on their theoretical perspective of this concept (Butler & Winne, 1995; Cook & Artino, 2016; Schunk & Zimmerman, 2008).

**Social cognitive theory.** In the social cognitive theory, Bandura emphasized the impact of self-efficacy on SRL while, contrary to current control-value theory, placing lesser emphasis on the influence of emotions and affective states (Bandura, 1991). Mastery experiences which can form self-efficacious beliefs were considered essential to SRL from the social cognitive perspective (Pajares, 2008). Self-efficacy effects one’s agency, the belief you have control over events (Schunk, Meece & Pintrich, 2014), which impacts the ability to select and implement strategies. Self-efficacy and SRL are correlated as “students who are high in self-efficacy use more effective self-regulatory strategies” (Zimmerman & Schunk, 2008, p. 11). Moreover, agency influences behavior, affect, and self-regulation. Bandura (1978) applied the triadic reciprocal determinism with three influences on human behavior: personal (cognitive), behavioral (motoric, observable), and environmental (physical and social contexts) to SRL.

Early definitions of the social cognitive view of SRL recognized the relationship of motivation to the self-regulation process which thus influenced goal setting, self-monitoring, self-reaction (Bandura, 1991) and social interactions (Zimmerman, 1986). The SRL phases of “forethought, reflective self-appraisal, and self-reaction” (Bandura, 1991, p. 282) were modified slightly when Zimmerman (2002) postulated the SRL phases: forethought phase; performance phase, which encompasses maintaining control of self and tasks with metacognitive monitoring; and a self-reflection phase. The self-reflection phase maintained Bandura’s self-reaction and added self-judgement. The sociocultural theoretical basis for SRL (closely related to the social
cognitive theory) replaced the individual or personal aspect with social supports for student’s active engagement in the learning and regulation process (Schunk & Zimmerman, 2008). In this study, the IP collaborative online course required active social engagement of students in a context that was unfamiliar to many of the participants.

Recent developments in SRL have explored socially co-regulated learning, combining social cognitive and Vygotskian sociocultural views (Azevedo, 2015; Järvelä & Hadwin, 2013; Järvelä, Järvenoja, 2011; Järvelä, Järvenoja, Malmberg, Isohätälä, & Sobocinski, 2016; Lumma-Sellenthin, 2012; Panadero & Järvelä, 2015). These researchers investigate effective self-regulation through online collaboration, similar to the collaborative IP learning context for this current study.

**Expectancy-value and control-value theories.** Expectancy-value theory postulates the individual’s perception of their capabilities (expectancies) and the value (perception of significance of the concept or task) as predictive of the learner’s motivation, engagement, and academic success (Schunk, Meece, & Pintrich, 2014). Connecting this to SRL, learners’ exert more effort and recursively apply strategies if they perceive the value and believe they are capable of success. Pekrun’s (2006) control-value theory integrated emotions, cognition and motivation with the expectancies which strengthened the connection to SRL. Artino’s research (Artino, 2008b; Artino, Holmboe & Durning, 2012; Artino & Stephens, 2009) migrated from the social cognitive to the control-value perspective to examine the relationship of negative emotions (boredom, frustration) and online learner satisfaction to persistence. Strengths of this theory are the connection to real life with students implementing cost-value decisions: the complexities of values include how affect influences task value, and the impact of expectancy on success (self-fulfilling prophecy that believing in success contributes to success).
Pekrun, Fenzel, Goetz and Perry (2007) combined the expectancy-value theory with achievement emotions to identify the impact of emotions and control on learning outcomes. These authors compared influence of emotions on “cognitive resources, motivation, use of strategies, and self-regulation versus external regulation of learning” (p. 16). Furthermore, Pekrun et al. indicate positive emotions associated with learning as well as the social cognitive strategies (metacognitive, behavioral, and environmental) contributed to increased SRL.

**Self-determination theory.** Ryan and Deci (2000) applied the basic human needs principles of self-determination theory (autonomy, competence, and relatedness) to behavior and learning emphasizing internalized regulation for motivation. Self-determination theory (SDT) proposes that SRL requires intrinsic motivation with self-direction from the learner to implement strategies to meet these basic needs, promote well-being, and academic success (Cook & Artino, 2016; Reeve, Deci, & Ryan 2004; ten Cate, Kusurkar, & Williams, 2011). Behavioral regulation was considered autonomous when it was driven by the individual’s interests and values (Reeve, Ryan, Deci & Jang, 2008). To increase student success, “educators can promote learner autonomy through focus on SRL” (Baird, Kniola, Lewis, & Fowler, 2014, p. 147).

The need for competence within SDT transfers well to health care professionals (ten Cate, et al., 2011). Competence leads the learner to performance quality and to “seek out and master optimal challenges” (Reeve, Deci, & Ryan, 2004, p. 36). For health science students, high performance standards facilitate motivation and encourage life-long learning, required of professional licenses. Brissette and Howe (2010) reported higher quality patient interactions as well as academic outcomes for physicians trained with a SDT model. Social relatedness was noted in classroom strategies which implement SDT (Reeve, et al., 2008; ten Cate, et al, 2011).
Social relatedness was also observed in online education when collaborative web-based tools were implemented with student’s self-selection of the tool.

The approach to integrate SDT and collaborative strategies was a foundation for the context of this study. Self-determination theory aligns with the autonomy of online education (Chen & Jang, 2010; Duffy & Azevedo, 2015), and the electronic opportunities for social interactions and co-regulation. In the current study, the SDT foundation matched the healthcare professional’s typical autonomous practices which require competent intervention(s) to meet the needs of patients, yet balanced with the team relationships (relatedness) of IP collaboration (Cook & Artino, 2016; Zimmerman & Kitsantas, 2005). The interprofessional online course context emphasized collaboration between professionals for optimal patient outcomes, consistent with research by VanRyzin, Gravely, and Roseth, 2009.

In practical terms, SDT was structured within this course instruction beginning with explicit learning task directions transitioning toward more self-directed learning tasks. Per the situated cognitive educational model, worked models for assignments fit well with the SDT perspective to provide learners with a sample of the desired outcome promoting competence. Students needed to use self-determination during structured instruction and apply critical thinking and problem solving to complete academic tasks. Instructors provided scaffolded, timely feedback to support the student learning. “Teacher-regulated activity matures into coregulated activity as students internalize the teacher’s way of planning, monitoring, and evaluating” (Reeve et al., p. 238-239). Per SDT, SRL progresses from a socially supported model, to a co-regulated activity, to an autonomous self-directed learning experience. Belonging and competence are embedded in the social interactions, and co-regulation required for online team projects in the IP course context for the study. The collaborative learning group
assignments in the context of this study were designed to incorporate the relatedness concepts from SDT.

Pintrich (2004) described the phases of SRL as generally time-sequenced but not strictly linear: Phases were flexible allowing for changes in the direction and timing as needed. In contrast to Zimmerman’s (2002) three phases, SDT aligns with four phases described by Pintrich (2004): First, forethought, planning, and activation (Pintrich, 2004; Stefanou, Stolk, Prince, Chen, & Lord, 2013), second monitoring, third a phase of control, fourth reaction and reflection.

**Commonalities across self-regulated learning theories.** The commonalities across the theories (Cook & Artino, 2016) are self-belief in your competence to succeed, value or interest in the learning, the attributions, and the interactions with other learners. The MSLQ self-report tool (Pintrich & De Groot, 1990), demonstrated a blend of SRL theoretical backgrounds. All theoretical perspectives consider the self-regulative process to be cyclical and iterative. Researchers agree the process begins with planning, including knowledge of the task expectations and implicit or explicit goal setting. All agree, accomplishing the goals requires the self-regulated learner to select and implement metacognitive, behavioral, and environmental strategies. For SRL to be effective, the learner must self-reflect, assess and compare their progress with standards (implied or explicit) and adjust their strategies for successful learning and achievement. The universal self-reflective component of SRL was the primary focus of this research study. The first qualitative research question hypothesized the reflective journal entries could reveal the phases of students’ SRL.

Metacognitive strategies reinforce self-efficacious beliefs, using rehearsal, elaboration, summation, and review (Aksan, 2009; Aronson, 2010; Zimmerman, 1989). The behavioral strategies promote success through time management, implementing extrinsic motivation
strategies, and by controlling one’s emotions during studying. The environmental strategies are important for traditional students and particularly for online students such as the ease of access to educational resources, organization of the physical environment, reducing distractions, and the availability of social supports or responsiveness of peers/instructors for collaboration or direction. The second quantitative research question hypothesized predictor variables would influence reflective journaling scores.

**Self-reflection.** Most health science professions refer to Schön’s (1983) work as a foundation for self-reflection. Schön viewed self-reflection as the critical tool through which an individual applied a contemplative thought process to learn from a personal experiences. If the learner can review the task or scenario, the learner has the opportunity to consider aspects that were successful and what potential changes could improve the outcome. When this internal review occurs during the actual experience, it is considered reflection-in-action. This allows the learner to make revisions in situ for improved outcomes. While this is feasible, it generally requires a more advanced learner and high levels of flexibility of thinking, thus it is generally observed only in mature, experienced practitioners. More common for students is prospective or retrospective review of a scenario. Reflection-on-action, which can occur as the individual plans for the activity or after the authentic experiences, can promote learning and facilitate enhanced skills for a subsequent experience. These reflections, consistent with constructivist experiential learning models, implement metacognitive iterative processes, contributing to improved professional applications. Schön (1987) recommended the reflective process begin as a process for instructors to reflect on the design of instruction (reflection-on-action) and the interactive nature of reflection between student and the coach’s [instructor’s] guidance.
Sandars (2009) described reflection for medical education as a “metacognitive process that creates greater understanding of self and situations to inform future action” (p. 685) and notes the critical role of reflection in self-regulation. Sandars summarizes reflection having three components: “planning, doing and review” (p. 685) which are very similar to the forethought, performance, and reflection stages of SRL (Zimmerman, 2002). An effective therapeutic relationship requires a clinician who listens to the patient’s perspective and then applies reflective practice to individualize interventions to best meet the patient’s needs (Cohn, Boyt Schell & Crepaeu, 2009; Sandars, 2009; Trujillo, 2007). The clinician must also incorporate reflection as a means to analyze the effectiveness of interventions for their varied patients. By scrutinizing patient outcomes, the clinician recognizes how to adjust the approach to optimize the patient’s outcomes (Aronson, 2010; Cohn, et al., 2009). Monitoring performance has been described similarly between reflective practice and SRL: to critically self-assess and reflect on the outcomes of the intervention (therapeutic or metacognitive strategies). If the self-reflection revealed outcomes below the desired standard, either the self-regulated learner or self-reflective practitioner would adjust their strategies to change the outcomes.

**Literature Review**

The literature review for this study investigated research of SRL in online education, self-reflection in the education of health science professionals, and OT online education. For each topic, search terms were entered into EBSCOhost with the selection of all 104 databases within the conglomerate search of EBSCOhost. EBSCOhost was selected for the range of journals within education and health-social services. EBSCOhost search limits were publication dates of 2005 to 2016, English language, and peer-reviewed journals. The publication dates were important for this study because there have been significant technological and pedagogical
advances in the past 12 years (Allen & Seaman, 2013) in online education. The search terms were the content topic (self-regulated learning, self-reflect*, reflective journal*, or occupational therapy), the second search term was online education or online learning. The asterisk was utilized to include derivatives of the word, such as reflected, reflective, or reflection. The titles were reviewed and article abstracts screened to determine appropriate resources related to this study. The primary investigator included only articles which represent nearly 100% online courses versus varied levels of blended coursework. The reviewed items were included if they reported new empirical research in higher education with priority for health science or education contexts and the most recent dates. Similar searches were also conducted through Google Scholar without the limitation of the peer-reviewed journals. Google Scholar searches identified many more resources. References for the included studies were reviewed which contributed several additional published studies.

**Self-regulated learning in online education.** Studies which met the criteria are included in Table 2 to indicate the methodology, number of participants, and data collection. Broadbent and Poon (2015) completed a meta-analysis of studies on SRL and academic achievement within online context. While this representation of existing research was not included in the table, their inclusion required a comparison group and thus the studies included in their publication overlapped with Table 2 only for Cho & Shen, (2013).

The majority of SRL in online education studies use self-report surveys within a quantitative methodology. Five of the 13 studies here and a higher percentage of those not included used the MSLQ (Broadbent & Poon, 2015) and two studies (included in this literature review) utilized the OSRLI. The qualitative studies supported the importance of the inductive approach for SRL but recognized the limited implementation. Within the stated criteria, none of
the studies implemented a mixed methods research design. Tsai, Shen and Fan (2013) reviewed online SRL studies between 2003 and 2012 and found a slightly different distribution by methodologies: 63% quantitative, nearly 20% mixed methods, 4% qualitative, and 13% other. Several of the studies supported the SDT theoretical foundation employed in this study (Artino & Stephens, 2009; Cho & Kim, 2013; Rakes & Dunn, 2010).

The findings from these studies primarily support the first two phases of SRL: forethought (goal setting) and performance (implementation of metacognitive or environmental strategies). Goal setting and organizing the plans for the first stage of SRL. Rakes and Dunn (2010) found that intrinsic goals along with effort regulation predicted SRL. Emotional regulation and achievement emotions were found to have a significant impact on SRL and academic success (Artino & Jones, 2013; Xu, Du, & Fan, 2013). None of the studies reported on self-assessment or self-reflection as contributors to SRL or reviewed self-reflection as a phase of SRL by Zimmerman (2000). The only two studies located which addressed the self-assessment or reflective phase were studies of elementary age children (Lubuhn, Zimmerman, & Hasselhorn, 2010; Lavasani, Mirhosseini, Hejazi, & Davoodi, 2011) and are not included in this study.

The influence of achievement-related emotions on learning, motivation and SRL was confirmed by Artino and Jones (2012) which supported the control—value theory of motivation. Negative emotions (frustration or boredom) were associated with lowered academic achievement, which reduced student success and SRL (Artino & Jones, 2012). In contrast, Xu, Du, and Fan (2013) investigated the positively related emotional regulation connected with group interactions for online success. Studies confirmed the number of prior online courses influences students’ confidence and success (Artino & Stephens, 2009; Wang, Shannon, & Ross, 2013; Xu & Du, 2013) and was thus included in the demographic information for this study.
Table 2.1.

Self-regulated Learning References

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Methodology</th>
<th>Participants</th>
<th>Data Collection Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Artino &amp; Jones</td>
<td>2012</td>
<td>Survey method, correlation with regression analysis</td>
<td>302 u/g students</td>
<td>49 item survey, 11 cognitive appraisal items, 3 subscales from Achievement Emotions Questionnaire (AEQ), 2 subscales of Motivated Strategies for Learning Questionnaire (MSLQ)</td>
</tr>
<tr>
<td>Artino &amp; Stephens</td>
<td>2009</td>
<td>Comparative analysis (t-test and logistical regression)</td>
<td>87 u/g + 107 grad students</td>
<td>MSLQ and Motivational engagement adapted from Wolters, (2003; 2004)</td>
</tr>
<tr>
<td>Barnard, Lan, Crooks, &amp; Paton</td>
<td>2008</td>
<td>Correlational study and path-wise analysis</td>
<td>434 students</td>
<td>24 item Online Self-Regulated Learning Questionnaire (OLSQ)</td>
</tr>
<tr>
<td>Barnard-Bak, Lan, &amp; Paton</td>
<td>2010</td>
<td>1: Latent class analysis to investigate profiles</td>
<td>Study 1: 279 students; Study 2: 197 students</td>
<td>24 item Online Self-Regulated Learning Questionnaire (OLSQ)</td>
</tr>
<tr>
<td>Cho &amp; Kim</td>
<td>2013</td>
<td>Quantitative survey, hierarchical regression model</td>
<td>407 students</td>
<td>Online Self-Regulated Learning Inventory (OSRLI)</td>
</tr>
<tr>
<td>Cho &amp; Shen</td>
<td>2013</td>
<td>Correlational study</td>
<td>64 students</td>
<td>OSRLI; MSLQ</td>
</tr>
<tr>
<td>Duff &amp; Azevedo</td>
<td>2015</td>
<td>Quasi-experimental; MANCOVA</td>
<td>83 u/g students</td>
<td>Revised Achievement Goal Questionnaire, Pre-test and post-test items</td>
</tr>
<tr>
<td>Järvelä &amp; Järvenoja</td>
<td>2011</td>
<td>Qualitative</td>
<td>16</td>
<td>Adaptive instrument, Videotaping, and Group interviews</td>
</tr>
<tr>
<td>Rakes &amp; Dunn</td>
<td>2010</td>
<td>Online Surveys, Multiple regression analysis</td>
<td>81 grad students</td>
<td>MSLQ &amp; Procrastination Assessment Scale – Students (PASS)</td>
</tr>
</tbody>
</table>
Wang, Shannon and Ross also indicated that student course satisfaction was predicted by SRL which theoretically support SDT concepts for autonomy and competence.

Implementation of strategies for successful SRL were empirically supported as follows, metacognitive techniques (Artino & Stephens, 2009; Cho & Shen, 2013; Cifuentes, Xochihuea, & Edwards, 2011; Wang, Shannon, & Ross, 2013), time management (Barnard-Bak, Lan, & Paton, 2010; Xu & Du, 2013), and environmental adjustments (Xu & Du, 2013). Help-seeking as a strategy to increase SRL and academic success was also supported by the work of Barnard-Bak, Lan and Paton; Xu and Du; and Su, Du, and Fan (2013). Additionally, specific attention to learning tools which promote either peer to peer or peer to instructor interactive exchanges were among the findings by several researchers (Cho & Kim, 2013; Cho & Shen, 2013; Järvelä & Järvenoja, 2011). In addition to the structured interactions, instructors promote success through timely, encouragement, scaffolding, and feedback to online learners (Artino & Stephens, 2009; Cho & Kim, 2013; Cifuentes et al., 2011; Duff & Azevedo, 2015). Broadbent and Poon (2015) found a preponderance of studies confirming varied levels of success through SRL strategies.

The current study included participant (student) voices through their reflective journal entries, to investigate such SRL concepts within the IP course context.

<table>
<thead>
<tr>
<th>Author</th>
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<th>Methodology</th>
<th>Participants</th>
<th>Data Collection Tools</th>
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</thead>
<tbody>
<tr>
<td>Wang, Shannon, &amp; Ross</td>
<td>2013</td>
<td>Survey instruments for Structured equation modeling</td>
<td>256 grad &amp; u/g students</td>
<td>Modified MSLQ, Online Technology Self-Efficacy Scale (OTSES), course satisfaction survey, final grades</td>
</tr>
<tr>
<td>Xu &amp; Du</td>
<td>2013</td>
<td>Cross-sectional survey data</td>
<td>150 grad students</td>
<td>40 minute study at the end of each semester</td>
</tr>
<tr>
<td>Xu, Du, &amp; Fan</td>
<td>2013</td>
<td>Multilevel modeling Survey Development</td>
<td>298 grad students</td>
<td>Researcher developed survey</td>
</tr>
</tbody>
</table>

*Note. u/g is undergraduate; grad is graduate students*
Barnard-Bak, Lan, and Paton’s (2010) profiles of the participants of two studies reported in this one publication approximately 40% of participants used SRL phases and strategies to their advantage. In their study, approximately 20% of the participants did not effectively implement SRL goal setting, strategies, and/or self-assessment. Super self-regulators were 9% in one Barnard-Bak et al. study and 20% in the other. Such super-regulators individuals may expend a significant amount of effort above the requirements to complete the course materials. The authors used the Online Self-Regulated Learning Questionnaire to assess SRL. The development of this tool, specific to online SRL from the perspective of interactions and emotional regulation, was an important contribution (Cho & Kim, 2013; Cho & Shen, 2013; Xu & Du & Fan, 2013).

**Self-reflection in the education of health science professionals.** The wealth of literature located for self-reflection for health science students was significantly reduced when the term online was added, resulting in several systematic reviews and 11 new studies which were obtained from 2005 to 2016. The most frequently cited systematic review of reflective practice in health professional education was by Mann, Gordon and MacLeod (2009). Mann et al. found 29 papers (1995 – 2005) which met their selection process. They found support for the positive relationship between reflection and deeper learning and that the “deeper reflective levels appeared most difficult to achieve” (p.603). None of the studies included by Mann et al. noted online models for reflection. Landy et al.’s scoping review (2016) found only six of 19 studies published before January 2013 which met their inclusion criteria for reflexivity, included online components. They found the majority of the studies were with nursing students and were published after 2008. Epp (2008) compiled a literature review specific to reflective journaling for nursing students from 1992 to 2006 which included nine studies, none of which reported online mechanisms for the journaling. McLeod, Barr and Welch (2015) completed an integrative
literature review (2004 – 2014) of self-reflective teaching practices in health sciences. In this review, researchers found a shift from written reflections to electronic reflective practices with online posts including blogs, discussion boards, and use of social media. While they noted this trend, they identified only two of 12 studies which were specific to online reflection practices. Additionally, they noted the reflection combined with clinical coursework was “crucial for students to integrate theory with practice” (p. 451).

Prior reviews (Mann, et al., 2009; McLeod, et al., 2015), identified primarily qualitative research on the topic of reflective learning. However, during the current investigation of online reflecting, the majority of the studies used quantitative research methodologies. Similar to prior reviews, this study involved nursing students more often than any other health science professional group (see Table 2.2). Although the pretest-posttest method for quantitative data was most prevalent, the instrument used varied widely with only two (Hanson & Alexander, 2010; Kember, McKay, Sinclair, & Wong, 2008) of the 11 studies which used the same quantitative tool (Kember et al., 1999) to evaluate the reflective practices.

Findings from these studies agreed with Mann et al. (2009) noting the positive relationship between reflective journaling and deep learning but with a small percentage of students reaching the deepest learning within these studies. Researchers found that online journaling was as effective as, or more effective than written reflective journaling (Hanson & Alexander, 2010; Ladyshefsky & Gardner, 2008; Smith & Trede, 2013). Not all studies used actual text from the journaling to gather reflective data. Smith and Trede used interviews to review reflective practice and obtain student perspectives versus the use of an online or written reflective journal while Findlay et al. (2011) used the Newcastle Reflective Inventories.
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<th>Participants</th>
<th>Data Collection Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bowland, Hines-Martin, Edward, &amp; Haleem</td>
<td>2015</td>
<td>Community-based research for service learning project</td>
<td>n=127 nursing and social work students = 6</td>
<td>Electronic narrative paper, Reflective journal, thematic coding</td>
</tr>
<tr>
<td>Canniford &amp; Fox-Young</td>
<td>2015</td>
<td>Quantitative portion of larger study, pretest-posttest</td>
<td>n=163 1st semester undergraduate nursing students in one program in Australia</td>
<td>Lasater’s rubric adaptation for this course</td>
</tr>
<tr>
<td>Duke, Grossman, Novack, &amp; Rosenzweig</td>
<td>2015</td>
<td>Quantitative pretest-posttest</td>
<td>n=240 3rd year med students, Drexel College of Medicine</td>
<td>Groningen Reflection Ability Scale and the Jefferson Scale of Empathy</td>
</tr>
<tr>
<td>Dunn &amp; Musolino</td>
<td>2011</td>
<td>Mixed methods research with pretest-posttest and journaling content analysis</td>
<td>125 graduate occupational and physical therapy students</td>
<td>Reflective Thinking (QRT) and Revised Study Process Questionnaire (RSPQ-2F)</td>
</tr>
<tr>
<td>Findlay, Dempsey &amp; Warren-Forward</td>
<td>2011</td>
<td>Comparison pretest and posttest</td>
<td>5 interns who completed 30 electronical or written NRIs</td>
<td>Newcastle Reflective Inventories (NRIs) and Newcastle Reflective Analysis Tool (NRAT)</td>
</tr>
<tr>
<td>Gummesson &amp; Nordmark</td>
<td>2012</td>
<td>Qualitative retrospective direct analysis study</td>
<td>32 physical therapy undergraduate students</td>
<td>Learning and Study Strategies Inventory (LASSI)</td>
</tr>
<tr>
<td>Hanson &amp; Alexander</td>
<td>2010</td>
<td>Qualitative methods to analysis existing textual content</td>
<td>28 dental and dental hygienist students</td>
<td>Coding scheme for critical reflection, reflection, understanding and habitual action per Kember et al., (1999)</td>
</tr>
<tr>
<td>Kember, McKay, Sinclair, &amp; Wong</td>
<td>2008</td>
<td>Quantitative protocol development</td>
<td>4 papers selected</td>
<td>Coding scheme for critical reflection, reflection, understanding and habitual action per Kember et al., (1999)</td>
</tr>
<tr>
<td>Kuklick, Gearity, &amp; Thompson</td>
<td>2015</td>
<td>Quantitative pretest-posttest of mixed methods research</td>
<td>19 coaching students</td>
<td>Self-Reflection and Insight Scale (SRIS) and Mezirow (1981) levels of reflection rubric</td>
</tr>
</tbody>
</table>
Studies of reflective journaling conducted across disciplines target students’ depth of learning (Dunn & Musolino, 2010; Hanson & Alexander, 2010) in their curricula with students able to meet all standards (Smith & Trede) by graduation and move forward as reflective practitioners. Most researchers agreed that reflection or reflective practice can be taught (Canniford & Fox-Young, 2015; Gummesson & Nordmard, 2012; Kuklick, Gearity, & Thompson, 2015; Ladyshewsky & Gardner, 2008; Smith & Trede, 2013). This important concept required consideration for this study given the multiple reflective journal entries required across a semester. Researchers recommended varied supports to develop reflective learning including social or peer supports (Ladyshewsky & Gardner, 2008; Smith & Trede, 2013), daily practice (Hanson & Alexander, 2010), self-directed practices (Gummesson & Nordmark, 2012). Duke et al. (2015) recommend a safe environment and coping with stressful situations to optimize self-reflections.

**Context:** Occupational therapy online education. The Accreditation Council for Occupational Therapy Education sets the standards and regulates occupational therapy (OT) education programs in the United States. Their report dated March 2017, noted that across the country only five of 172 accredited master’s degree programs offer between 75 and 100% of their requirements online. In the previous year, no accredited master’s degree programs were reported to be 100% online. Authors report that occupational therapy education can be provided through high quality online courses (Jacobs, Doyle, & Martin, 2013) and through online

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Methodology</th>
<th>Participants</th>
<th>Data Collection Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ladyshewsky &amp; Gardner</td>
<td>2008</td>
<td>Exploratory case study</td>
<td>38 4th year undergraduate PT students</td>
<td>Blogging content, thematic coding</td>
</tr>
<tr>
<td>Smith &amp; Trede</td>
<td>2013</td>
<td>Qualitative interviews</td>
<td>12 PT students</td>
<td>Journal content, thematic coding</td>
</tr>
</tbody>
</table>
opportunities for interprofessional collaborative courses (Myers & O’Brien, 2015; Prast, Frederick, Herlache-Pretzer, & Lachter, 2016; Shoemaker et al., 2011). The limited research which specifically investigates OT online programs indicate the potential for fully online OT programs (Doyle & Jacobs, 2013; Mu, Coppard, Bracciano, & Bradberry, 2014; Richardson, MacRae, Schwartz, Bankston, & Kosten, 2008). The methodology, participants and data collection tools for the empirical studies of new research on OT online education were presented in Table 2.3. While other authors (Hollis & Madill, 2006; Jacobs et al., 2013; Jedlicka, Brown, Bunch, & Jaffè, 2002, Mącznik, Ribeiro, & Baxter, 2015; Trujillo, 2007) reported positive recommendations for OT online education, they did not include new research results. Of the studies included, only two utilized the same standardized tool, the coding scheme based on Mezirow’s work and published by Kember et al., 1999 for data collection (Doyle & Jacobs, 2013; Mu et al., 2014). The other quantitative studies utilized researcher developed tools most related to educational outcomes.

Three studies (Myers & O’Brien, 2015; Prast, Herlache-Pretzer, Frederick, Gafni-Lachter, 2016; Shoemaker et al., 2014) reported implementation of online educational strategies and learning activities for IP education. These three studies provided detailed descriptions of the online aspects of the course they used for their context which was similar to the context for this research study. All of the IP studies reported positive outcomes of case-based opportunities for students’ engagement in IP planning and/or simulated learning experiences.

Of the four studies of OT discipline specific education, two of the studies were related to a specific course (Doyle & Jacobs, 2013; Griswold, Overson, & Benassi, 2017) while two of the studies were considering complete OT educational programs which were primarily online (Mu et al., 2014; Richardson et al., 2008). Doyle and Jacobs studied the relationship between students'
Table 2.3.

*Occupational Therapy Online Education*

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Methodology</th>
<th>Participants</th>
<th>Data Collection Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doyle &amp; Jacobs</td>
<td>2013</td>
<td>Exploratory pretest and posttest survey plus subjective participant report</td>
<td>8 OT students, post-professional online course</td>
<td>Kolb Learning Style Inventory; Visual, Aural, Read/Write, and Kinesthetic Questionnaire; Reflective assignment</td>
</tr>
<tr>
<td>Griswold, Overson, &amp; Benassi</td>
<td>2017</td>
<td>Within-subject comparison of question conditions</td>
<td>56 graduate OT students randomly assigned to experimental groups</td>
<td>Researcher developed course appropriate quizzes and exams</td>
</tr>
<tr>
<td>Mu, Coppard, Bracciano, &amp; Bradberry</td>
<td>2014</td>
<td>“Retrospective, between-group comparison”</td>
<td>94 graduate OT students (81 on-campus program, 13 from hybrid program)</td>
<td>National Board for Certification in Occupational Therapy (NBCOT) practice exam; Grade point average cumulative and each year; NBCOT pass rate</td>
</tr>
<tr>
<td>Myers &amp; O’Brien</td>
<td>2015</td>
<td>Qualitative study retrospectively reviewing educational outcomes; Quantitative trace elements</td>
<td>2 interprofessional (IP) courses for OT, PT, &amp; Speech Language Pathology (SLP) students</td>
<td>Qualitative data from written responses to self-directed learning; Electronic course management program’s trace tracking data for participation, &amp; peer negotiation.</td>
</tr>
<tr>
<td>Prast, Herlache-Pretzer, Frederick, Gafni-Lachter</td>
<td>2016</td>
<td>Quantitative study of educational outcomes</td>
<td>N=124 students in IP care conference responses; N=101 students for IP simulation responses</td>
<td>Program related survey of IP education using a 7 point Likert for the IP care conference and a 4 point Likert scale for the IP simulation.</td>
</tr>
<tr>
<td>Richardson, MacRae, Schwartz, Bankston, Kosten</td>
<td>2008</td>
<td>Online Survey (quantitative and qualitative questions), retrospective survey</td>
<td>N=49 (75% of online MOT post-professional program graduates)</td>
<td>Faculty created survey of satisfaction with 23 professional skills (5 point Likert); professional involvement since graduation; 4 open ended questions greatest accomplishments and program suggestions</td>
</tr>
<tr>
<td>Shoemaker, Beasley, Cooper, Perkins, Smith, &amp; Swank</td>
<td>2011</td>
<td>Qualitative study during simulation of standardized patient debriefing session</td>
<td>64 OT and PT students (IP course)</td>
<td>Miles and Huberman coding process: “underlying key terms, restating key phrases, creating clusters, and identifying themes” (Shoemaker et al., 2011, e-19.)</td>
</tr>
</tbody>
</table>
learning preferences and assignment style selection, found self-reported learning preferences did
not correspond with the selection of the assignment option or the online survey data. Griswold et
al.’s (2017) study provided a unique methodology for students to act as their own control, found
positive academic outcomes for quizzes and questions embedded within lecture captures.
Although focused on a single class, this study design was the most rigorous of all of the studies
included in this section. The study provided instructional design suggestions but did not include
reflective journaling, self-directed metacognitive strategy implementation, or SRL.

The final two studies of OT online education are both retrospective studies of students’
outcomes in OT educational programs which were more than 75% online. Mu et al. (2014)
compared graduates of their on campus and hybrid OT entry-level masters’ programs. The
outcomes showed no statistically significant differences for either group on the National Board
for Certification in Occupational Therapy Exam (a nation-wide standardized practice exam
required for the state OT practice license). Richardson et al. (2008) used a researcher-created
survey of satisfaction and measured professional involvement of graduates resulted in positive
outcomes from their highly online OT entry-level master’s program. These two isolated studies
formed the basis for this researcher’s platform on the potential that fully online OT programs
could increase the OT workforce to reduce the shortage.

Conclusion

The constructivist philosophy with pragmatist paradigm constituted the foundation for
this study of SRL and self-reflection in the context of one higher education online course. The
SDT basis for SRL aligned best with the health science curricula, student participants, and course
context for this study. Text data collected from students’ work was utilized to indicate any
themes which support the social cognitive or expectancy-value theories. Schön’s reflective
learning approach was similar to the self-reflective process of SRL: It applied here to health science students. The literature review provided support for SRL in online learning, using primarily the MSLQ self-report questionnaire as the tool to collect quantitative data for comparison of students’ academically related outcomes. Despite SRL typically being divided into three phases, most of the literature has focused on the first two phases (forethought and implementation). Despite the apparent success of self-regulated learners in online learning environments, little published research was found on how self-regulated learners self-assess or self-reflect on the effectiveness of their learning strategies to continue or adapt their strategy implementation.

The scant research available supported online learning educational experiences for IP and OT education including case-based learning, discussion tools (learning management supported discussions or wikis for peer to peer exchanges), and the use of a variety of electronic media for collaborative group activities. Limited research was available on electronic self-reflective journaling. The studies which were implemented found electronic reflective journals to be at least as effective as handwritten journals. OT education has scarce literature with an even more limited selection for online education. The seven OT education studies included in the literature review covered vastly different aspects of OT education. Educational experiences and academic preparation of this researcher included online courses which supported the development of the context for this study.

Literature on higher education which could confirm the influence of the self-reflection or self-assessment phase on SRL (also noted by Broadbent & Poon, 2015) could not be located by this researcher. Given the iterative process described in the theories of SRL, this gap creates a missing link in the SRL process. The literature review on reflective practice found limited
details of best practices for online journaling and limited means of measuring the quality of the self-reflective journals (Dyment & O’Connell, 2011). The most common tools for measuring self-reflective journaling were self-reporting mechanisms which pose construct validity and reliability concerns as measure for this component. Moreover, the online reflective learning literature has limited connections to self-regulation or self-determination (except Gummesson & Nordmark, 2012). This study intended to connect self-regulation from self-report surveys with self-reflective measures (both a rubric to rate the content of the self-directed student entries and the text analysis of the submitted entries). This study aimed to compare SRL and reflective journaling to provide insights into online self-reflective themes, reflective journal measures, and the relationship of SRL and self-reflection. The results could inform the effectiveness of reflective journaling in a variety of online courses. Additionally, the results could provide insights for online OT education.
Chapter 3: Methods

There is a shortage of occupational therapists to meet the needs of persons with acute or chronic conditions or disabilities (Bureau of Labor Statistics, 2015; Lin, Zhang, & Dixon, 2015, World Health Organization, 2006). Educating additional students through expanded online courses and programs (Doyle & Jacobs, 2013; Morgan & Gerney, 2012) could increase the number of OTs. Occupational therapy (OT) students must meet rigorous academic achievement guidelines to complete their education. Studies of other higher education students have shown self-regulated learning promoted academic success, particularly in online courses (Keyser & Viljoen, 2015; Shen, Cho, Tsai, & Marra, 2013; Wang, Shannon, & Ross, 2013; Xu & Du, 2013; Zimmerman, 2008). Self-reflection, a critical aspect of SRL, (Cho & Shen, 2013; Labuhn, Zimmerman, & Hasselhorn, 2010; Ramdass & Zimmerman, 2011; Zimmerman, 2002) has been linked to the OT profession (Cohn, Boyt Schell, & Crepeau, 2007).

This study focuses on self-reflection as a common concept of both SRL and RJ. Despite the theoretical connection between these constructs and the OT profession (Cohn, Boyt-Schell, & Crepeau, 2007) research to confirm this connection could not be located in the literature. The reflective practitioner enhances their competence through self-reflection. Reflective journaling, has been utilized in online education to enhance content learning through self-reflection of authentic learning experiences. Self-reflection has been identified as a key factor in these process: SRL, RJ, and reflective practice of competent occupational therapists.

The relationship between SRL and reflective journaling (RJ) in online courses has not been studied in the OT field. I envision self-reflection as a critical link in this relationship. This study focused on understanding this complex relationship within an interprofessional online course. Schön (1983) supported the importance of self-reflection not only for student education,
but for practitioner competence and lifelong professional learning (Skinner et al., 2015). The results of this study may benefit educators, health science students, instructional designers, and in the future, recipients of OT services. Additionally, the results should provide insights for online OT education.

**Purpose and Research Questions**

The purpose of this research study was to understand the relationship between SRL and RJ among graduate health science students in an online interprofessional course. Moreover, to probe how these two constructs, RJ and SRL, complement each other in this online context.

**Research questions.** All research questions apply to graduate students in an online interprofessional course. The sequence of listing quantitative details prior to qualitative is maintained throughout this paper for consistency of organization for the reader, not to indicate timing or priority.

**Overarching question.** What is the relationship between SRL and RJ of graduate students in an online interprofessional course and how do complimentary RJ text content contribute to understanding this relationship?

**Quantitative questions.**

QN1. How does SRL relate to RJ?

Secondary quantitative question: QN 1a: How did the three SRL tools relate?

QN2. To what degree do SRL predictor variables (subscales) influence RJ?

Secondary quantitative question, if the data suggested a potential covariate:

QN 2a: Does the discipline group membership moderate the effect of SRL on RJ when controlling for a covariate?

**Qualitative questions.**
QL1. What SRL phases or components (i.e. subscale concepts) are evident from the RJ entries?

QL2. What themes emerge from reflective journal entries which indicate depth of knowledge or enhanced content learning?

Integration (MMR) questions.

MMR2. Merging complimentary findings, what are the implications of the relationship between RJ and SRL for online education of OT graduate students?

Research Design

This study sought to understand the complex relationship between RJ texts and self-report SRL surveys for a single sample (Onwuegbuzie & Colling, 2007). Answering the overall question could not be completed through a quantitative or qualitative study alone, which led to the selection of a mixed methods research (MMR) design which integrated both strands (Creswell, 2012; Hesse-Biber & Johnson, 2013; Johnson & Onwuegbuzie, 2004; Tashakkori & Creswell 2007). Integrating these two complementary research perspectives deepened the understanding of this complex relationship (Bryman, 2006; Greene, 2007; Plano Clark & Ivankova, 2016). MMR legitimizes the implications for answers to the final research question by capitalizing on the strengths and minimizing the limitations of either methodology alone (Creswell, & Plano Clark, 2011; Tashakkori & Creswell, 2007). For this study, MMR was defined as a single study which intentionally integrated equally valued quantitative and qualitative research contributions to understand the complex relationship between RJ and SRL. This definition was based on interdisciplinary scholars as the study crosses health science and education disciplinary contexts: social inquiry (Greene), health sciences (Curry & Nunez-Smith, 2015), social sciences and education (Tashakkori & Creswell, 2007), and research methodologies
(Johnson, Onwuegbuzie, & Turner, 2007; Plano Clark, & Ivankova, 2016). While the quantitative and qualitative studies presented here have value, it is the combination of these two into a single complete analysis that provides strength and validity of the results.

**Convergent parallel MMR design.** A convergent parallel mixed methods design collects quantitative and qualitative data concurrently with equal priority to enhance the understanding and the relevance of the study interpretations (Creswell & Plano Clark, 2011; Greene, Caracelli, & Graham, 1989). To support the validity of the mixed interpretations, convergent parallel research designs maintain the integrity of each methodology with an initial data analysis from each strand. This study intends to use complementarity, which Greene (2007) defines as the use of two methods to study differing but related facets of the phenomena, synthesizing these facets for a deeper understanding. This study (depicted in Appendix A) merged the analyses of the quantitative correlational study with qualitative themes analyzed from students’ RJ texts to deepen the understanding of the relationship between SRL and RJ. The implications of this relationship may inform both concepts and provide insights for online education of OT graduate students.

**Context of study.** The setting for this study is a Midwestern mid-sized private university. This university solicited an increase in online course offerings at the time this study was conceived. The course designer and instructor was also the primary investigator (PI). The PI had nearly a decade of experience in interprofessional education prior to this study, including national training on interprofessional education through Team STEPPS® (Clancy & Tornberg, 2007; King et al., 2008), interprofessional student symposium experiences (Zucchero, Hooker, Harland, Larkin, & Tunningley, 2011), and participation in a national Health Resources and Services Administration (HRSA) grant to develop interprofessional learning experiences. In
preparation for the online course protocol, the PI attended the institution’s faculty training for online course conversion and completed graduate coursework in instructional design. The expertise of the PI in the interprofessional education content and the skills for the online instruction establish the basis for competent instruction within this study.

The interprofessional course, initially offered in a traditional format, was completely redesigned for a fully online section, which was included in this study. The course focused instruction on the academic content for IP core competencies from the Interprofessional Education Collaboration Expert Panel [(IPEC), 2011], providing students with structured learning experiences to implement interprofessional practice through a collaborative online model. To investigate the ability of graduate students to apply known SRL skills including self-reflection, direct instruction of SRL strategies or training for self-reflection were not included as course content. The online section incorporated self-reflective journaling for students to personalize content, and to support self-determination and academic success. Evidence of effective online interprofessional education (Hanna et al., 2013; Luke et al., 2009; McKenna et al., 2014; Solomon et al., 2010; Waterston, 2011) supported the transition from a traditional to an online course design. This study occurred during the initial three semesters this online section of the applied interprofessional collaboration course was offered at this university (Spring 2016, Fall 2016, and Spring 2017). The natural environment of this convergent parallel design enhanced the implications of results, informed RJ and SRL in this context, and contributed to the insights for OT online graduate education.

**Participants.** The health care programs for graduate nursing, OT, and health administration curricula have accreditation standards for interprofessional skills (Zorek & Raehl, 2013) which are addressed in the Applied Interprofessional Collaboration course included in this
study. Students with special education, psychology, and social work majors were also enrolled, particularly in the fall semester, but not included in the study. Multiple sections of the course were offered in the spring and fall semesters. There were traditional face-to-face course section(s) as well as the online section(s), allowing students to self-select their preferred course format. The students who self-selected enrollment in this online section, brought their prior experiences in online education, their personal perceptions and expectations of online courses. The sample included few, if any, students biased against online learning. The student body in the OT and nursing programs were heavily Caucasian females. Even with greater diversity from the health administration program, the sample for this study was expected to be heavily Caucasian females.

Students were recruited from one instructor’s (the primary investigator) online section of the interprofessional course to reduce differences between sections. To avoid coercion, an opportunistic sampling method (Onwuegbuzie & Collins, 2007; Teddlie & Tashakkori, 2009) with students self-selecting to participate was utilized. This sampling method affected the interpretations of the results. Onwuegbuzie and Collins suggested this non-random, opportunistic sampling was an acceptable method for studies which focus on obtaining insights within a specific context. Identical samples was used for quantitative and qualitative data (Collins, Onwuegbuzie, & Jiao, 2007; Onwuegbuzie & Collins) to support the valid interpretation of the merged analysis of both strands. Hertzog (2008) stated correlational pilot study sample sizes of 40 would indicate an association. Onwuegbuzie and Collins recommend a sample size of 82 for a research design correlational study for a .80 statistical power. Given the class size of 25 students, the population studied across three semesters was 75 students. Survey participation by 100% of the population was not realistic or practical (Collins, Onwuegbuzie, &
Jiao). A sample size of 35 would be 40% of the population and would be more practical. Selecting sampling size according to the statistical analysis, Creswell (2012) recommended “approximately 30 participants for a correlational study that relates variables” (p.146).

A sample size of 30 to 35 participants would be realistic for these three semesters but would result in an underpowered sample for the statistical analysis. Collins, Onwuegbuzie and Jiao (2007) considered this one of the most common challenges of quantitative strands of MMR. While this sample size is adequate for qualitative analysis, the discrepancy between the findings from the quantitative and qualitative results could complicate the merging of the data. This is the only fully online OT course offered at this university. Adding another semester is beyond the resources of this researcher. Adding another online course would confound the data and not provide the desired insights about OT online education. The decision was made to use the available sampling, despite the anticipated small size, including the quantitative analysis as exploratory results with cautious interpretation of these results.

Participants were recruited through an online course announcement (see Appendix B). Special education and social work undergraduate and graduate health service professional students were enrolled; however only graduate students over 18 years of age were included to align with the purpose and to comply with Institutional Review Board (IRB) approval. Research supports a learning process for RJ and phases of SRL, both of which could influence performance throughout the semester. Thus, only data collected during the final course module was included. One point of extra credit was offered toward the final grade for completion of the survey. For the extra credit to be equally available to all students, a short alternate assignment was offered for any student not participating in the study. The alternative assignment consisted of reading an article about SRL in healthcare and answering a five question quiz. Demographic
data were collected along with the survey instruments administered through Qualtrics online survey software. The survey began with the participant consent (see Appendix C) with three options: (1) to complete and submit the survey, (2) to close and exit the survey tool (not participate), or (3) to complete an alternate assignment.

Maintaining confidentiality of the participants from the researcher was imperative to avoid the impact of the power differential between the researcher (instructor) and the participants (students). Participation was recorded by a faculty member at another institution (per IRB approval). After all course grading was entered in the course management system and just prior to submitting final course grades, the instructor was provided the names of participants (without differentiating between students completing the survey from those completing the alternative assignment). The extra credit was then added to students’ final semester grades. Survey data was collected and de-identified for the study analysis after the semester grades were submitted. The IRB study protocol also approved the collection of data from assignments. Texts from the reflective journal course assignments were collected.

**Quantitative Study**

The quantitative portion of this convergent parallel MMR was a survey study. The methods for data collection and analysis were designed to answer these quantitative RQs.

QN1. How does SRL relate to RJ?

Secondarily, Quan 1a: How did the three SRL tools relate?

QN2. To what degree do SRL predictor variables (subscales) influence RJ?

Secondarily, Quan 2a: Does the discipline group membership moderate the effect of SRL on RJ when controlling for a covariate?
Quantitative instrument selection for self-regulated learning. Self-report surveys were used most often to measure SRL (Crede & Phillips, 2011; Roth, Ogrin, & Schmitz, 2016) despite the social desirability concerns which surround self-report measures. The assurances of the participant anonymity within this study may reduce the impact of social desirability (Furr & Bacharach, 2008). To increase the validity and reliability of measuring SRL, three established SRL instruments, representing each of the theoretical perspectives noted in Chapter 2, were utilized (as seen in Table 3.1 or by reviewing the full survey available in Appendix C). The self-report surveys correlated to RJ scores in QN1 were Motivation Strategies for Learning Questionnaire (MSLQ) (Duncan & McKeachie, 2005; Pintrich, Smith, Garcia, & McKeachie, 1991), Online Self-Regulated Learning Inventory (OSRLI) (Cho & Jonassen, 2009), and the Work-related Basic Need Satisfaction (W-BNS) scale (Van den Broeck, Vansteenkiste, De Witte, Soerens, & Lens, 2010). Specific subsections of these three instruments (noted in Table 3.2) were used as predictor variables for QN2.

Motivation Strategies for Learning Questionnaire (MSLQ). The MSLQ (Pintrich, Smith, Garcia, & McKeachie, 1993) was selected for this study as it is the most widely implemented SRL measure with strong internal consistency and reliability (Artino, 2005; Duncan & McKeachie, 2005). Moreover, the MSLQ has been implemented across a variety of contexts (Artino, 2005; Credé & Phillips, 2011; Dunigan & Curry, 2006; Eom & Reiser, 2000; Taylor, 2012) including online courses such as this study. This tool was designed using a social-cognitive perspective (Artino, 2005; Pintrich & De Groot, 1990). Investigation of the foundation for the MSLQ (Pintrich et al., 1993) included concepts of value, expectancy and affect (per the control-value theory, see Chapter 2). The MSLQ was designed to be used either in its entirety or by using the separate sections (Artino, 2005; Pintrich, Smith, Duncan & McKeachie) both of
Table 3.1.

**Self-regulated Learning Instrument Selection**

<table>
<thead>
<tr>
<th>Instrument</th>
<th>Instrument development</th>
<th>Description</th>
<th>Cronbach</th>
<th>Validity</th>
<th>Sample question</th>
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<tbody>
<tr>
<td>MSLQ (Pintrich, Smith, Garcia, McKeachie, 1993)</td>
<td>Purpose: “designed to assess college students’ motivational orientations and their use of different learning strategies for a college course” (p. 801); influences of value, expectancy and affect, 4 subsections in cognitive strategies, 1 subsection for metacognitive strategies and regulation, 4 subsections in student resource management. N=356, 4-year university students, Winter 1990. Extensive studies since.</td>
<td>Self-report, 7 point Likert (1=Not at all true of me, 7=Very true of me) Learning strategies section (in this study): Cognitive &amp; metacognitive strategies (31 items) Student resource management (19 items).</td>
<td>Ranged from α=.52 (help seeking) to α=.80 (critical thinking) (p. 808)</td>
<td>Predictive validity for academic achievement was reasonable (p. 801)</td>
<td>“good reliability in terms of internal consistency” (p. 811) Cognitive: When I study for this class, I practice saying the material to myself over and over. Resource self-management: I have a regular place set aside for studying.</td>
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<tr>
<td>OSRLI (Cho &amp; Jonassen, 2009)</td>
<td>Purpose: Develop tool to indicate the external factor of “human interactions dimension of SRL in asynchronous, online learning environments” (p. 117) Sample 1, N=220 (majority graduate students) Sample 2, N=195 4-year university students, Winter semester, 2007</td>
<td>Self-report, 7 point Likert (1=Completely untrue, 7=Completely true; 1=Not confident at all, 7=Completely confident) 28 questions total 4 sub-scales for affect/motivation; 3 sub-scales for interaction strategies</td>
<td>EFA: Sample 1 (N=220): total: α=.81 (p. 131) CFA: Sample 2 (N=195): total: α=.80 (p. 131)</td>
<td>Internal consistency estimates are from EFA factors .52 to .93 (p. 125 &amp; p. 128)</td>
<td>How true is the following statement for you in response to this course: I enjoy replying to other students’ postings. How confident are you when engaging in the following tasks: Ask a question to the instructor?</td>
</tr>
</tbody>
</table>
which were applied for this study. The two major sections of the MSLQ are motivation and learning strategies.

The learning strategies section used in this study included nine subsections as follows (with coefficient alphas as reported by Duncan and McKeachie, 2005). There are four cognitive strategy subscales: Rehearsal (α=.69), Elaboration (α=.75), Organization (α=.64), and Critical thinking (α=.80); one Metacognitive strategies for self-regulation subscale (α=.79); plus four resource management strategy subscales: Managing time and study environment (α=.76), Effort management (α=.69), Peer learning (α=.76), and Help-seeking (α=.52) (Duncan & McKeachie; Pintrich, Smith, Garcia, & McKeachie, 1993). For this study, the MSLQ was expected to correlate strongly with other SRL survey tools (Artino, 2005; Duncan & McKeachie, 2005; Roth, Ogrin, & Schmitz, 2016). Unfortunately, according to Roth, Ogrin and Schmitz (2016), the MSLQ “fails to assess post-action strategies such as self-reflection and regulation” (p.244). Therefore, the correlation between the MSLQ and RJ was anticipated to be lower than the OSRLI (see further information below) for QN1. For QN2, prior research suggested three
subsections from the MSLQ to predict RJ: Critical thinking subsection (Dyment & O’Connell, 2011; Koole et al., 2011; McLeod, Barr & Welch, 2015; Raterink, 2016), resource management subsection per Zimmerman (2008) due to the time and space management components, and effort management related to persistence (Crede & Phillips, 2011; Rakes & Dunn, 2010).

**Online Self-Regulated Learning Inventory (OSRLI).** The Online Self-regulated Learning Inventory (OSRLI) (Cho & Jonassen, 2009) was selected because of the instrument purpose to assess human interactions in online learning which aligns with the collaborative learning for this online learning context. Cho and colleagues incorporated metacognitive strategies and self-efficacy (related to social-cognitive theory) along with the emotion, expectancy, and interest from the control-value theory (Pekrun, 2006; Pekrun, Frenzel, Goetz, & Perry, 2007). The confirmatory factor analysis (CFA) for the OSRLI resulted in four affective motivational sub-scales with their reliability scores: “enjoyment of online human interactions \([\alpha=.93]\), self-efficacy for interactions with instructors \([\alpha=.76]\), concerns for interactions with students \([\alpha=.80]\), and self-efficacy for contributing to the online community \([\alpha=.85]\)” (Cho & Jonassen, p. 117) and three interaction strategies sub-scales: writing strategies \([\alpha=.86]\), responding strategies \([\alpha=.60]\), and reflection strategies \([\alpha=.51]\). Only two empirical studies implementing the OSRLI were located (Cho & Kim, 2013; Cho & Shen, 2013). Dr. Cho (personal communication, June 9, 2015) granted written permission for the use of this tool.

This instrument was expected to compare moderately to highly with RJ (QN1). As a predictor variable, the reflection strategies subsection was expected to predict RJ (although the low Cronbach alpha could reduce this outcome). Enjoyment of human interaction subsection was also expected to be a predictor variable for RJ (Cho & Jonassen, 2009; Pekrun, 2006) because of the interactive aspect of health services and reflective practice. The OSRLI correlated
with motivation, and interaction (behavioral) strategies as did the MSLQ. Therefore, both tools are anticipated to perform similarly for QN1.

**Work-related Basic Need Satisfaction (W-BNS) Scale.** The Work-related Basic Need Satisfaction (W-BNS) scale (Van den Broeck, Vansteenkiste, De Witte, Soerens, & Lens, 2010) was selected because it is directly based on the self-determination theoretical perspective with the three subsections representing the basic needs from the theory: autonomy, competence, and relatedness. This 18 item scale was studied on a large sample size of employees in a variety of positions using a five point Likert scale. For this study, the survey wording was adjusted to course work rather than employment with reference to student peers rather than coworkers. The W-BNS scale reported acceptable reliabilities of .81, .85, and .82 for the three subsection respectively (Van den Broeck et al., 2010, p. 993). While this study was utilized to estimate employee need satisfaction, the authors recognize the connection to “motivational energy” (p. 997) and self-regulation. The criterion-related validity compared the three subsections with the environmental aspects and employee functioning levels yielding a good fit.

The W-BNS was expected to correlate with the other two SRL instruments moderately and also with the RJ (QN1). To maintain consistency with the MSLQ and the OSRLI for participants’ ease of responses and for statistical analysis, Dr. Van den Broeck provided permission (personal communication) for use of the W-BNS with the original five-point Likert scale converted to a seven-point Likert scale. The W-BNS data contributed to the measure of SRL for all quantitative research questions (QN1 and QN2). Since this tool had not previously been documented for SRL, each of the three subscales were implemented for the exploratory regression as potential predictor variables of RJ (QN2). Given the self-determination theoretical
the W-BNS was anticipated to correlate at least moderately with RJ (QN1) and to contribute positively to the prediction of RJ outcomes (QN2).

**Quantitative instrument selection for reflective journaling.** Reflective journaling (RJ) was measured using a rubric combining Powell’s (1989) application of the Levels of Reflectivity (Mezirow, 1981) with the “Operational indicators of the reflection process” (Koole et al., 2011). While Boud (2001) identifies concerns over grading reflective journals due to the level of doubt and questioning which can be the foundation of reflection, the RJ from this course were graded per an academic rubric for topic-centered content, synthesis of prior content/reading/personal experiences, timeliness, and grammatical accuracy. Separate from the academic grading, the rubric for the study was applied after grades were submitted.

**Self-reflection in reflective journal entries (SrRJE).** “The very nature of reflective practice makes its quantification challenging” (Mann, Gordon, & MacLeod, 2009, p. 615). The SrRJE was developed for use in this study to quantitize (Teddlie & Tashakkori, 2009) the text data of the journal entries collected in this study. The PI searched across other health science and education studies for an established, a single, valid self-reflection tool. Researchers used various tools to measure self-reflection (Grant, Franklin & Langford, 2002; Mezirow, 1985; Powell, 1989) with confounding issues for validity (Dyment & O’Connell, 2011; Findlay, Dempsey, & Warren-Forward, 2011; Koole et al., 2011).

Two existing tools were combined as most applicable for this study to optimize the validity (see Appendix D) when assessing the level of the reflection, insight, and reflective outcomes (Koole et al., 2011; Kuklick, Garity, & Thompson, 2015; Mezirow, 1985; Powell, 1989; Richardson & Maltby, 1995). The most frequently used foundation for measuring reflective practice was Merizow’s (1981) Levels of Reflection (Dyment & O’Connell, 2011)
which were modified four years later by Powell. Thus, the Powell (1989) guidelines for the measurement of reflectivity constituted the first section of the rubric for this study. A more recent measure of the reflective process by Koole and associates (2011) based on Boud, Keogh, and Walker (1985) was selected for the second section of the rubric for this study. Each of these two sections for the SrRJE originally had stepped criteria between one and six. For the SrRJE, these were added together resulting in a potential range of 2 to 12 points on the SrRJE.

This quantitative measure was used to represent RJ for data of all of the quantitative questions for this study. This researcher anticipated a positive relationship between SRL and the RJ rubric ratings. The RJ – SRL was anticipated to be moderated by prior academic success (grade point average). Predictor subscales (see Table 3.2) were reviewed for each SRL scale comparing the results of RJ to the sub-sections of the three SRL instruments (QN2).

**Quantitative data collection.** All participant data was downloaded from Qualtrics and de-identified with a single letter and a numeral. The first character of the identification code was a letter which indicated the semester the participant was in the course (A = Spring 2016, B = Fall 2016, C = Spring 2017). The second character(s) was a numeral assigned to each participant in that semester. For example B11 was the 11th participant from the Fall 2016 semester. The quantitative data collection included demographics, three SRL surveys (collected via Qualtrics Survey software) and self-reflective journal entries (downloaded from the course assignments).

**Demographics.** The demographic data were collected within the SRL survey administered through Qualtrics. The demographic data were gathered to describe the participants and as a secondary analysis to determine if discipline membership (nursing, healthcare administration, or occupational therapy) moderated the relationship between SRL and RJ. Gender and ethnicity were collected for description purposes only: groupings of substantial
size to use for statistical analysis were not anticipated. Small representation from any of the
disciplines would decreases the statistical potential for discipline to contribute to any moderating
effect. While the vast majority of students in the classes from OT and nursing programs are
Caucasian females, ethnicity and gender demographics were included to assure the sample is
representative of the student populations in these programs. Disciplines and prior GPA results
were used with SRL and RJ scores to answer the secondary question QN 2a (moderators for the
relationship between RJ & SRL). The demographic variables were also used for the overall
question regarding the meaning of the relationship for online course and to develop the
implications of the relationship to OT education (research question MMR1).

**Self-regulated learning.** The SRL self-report surveys were collected and downloaded
from Qualtrics after all three semesters were completed. The SRL surveys do not have
standardized scores or norm referencing. SRL self-report survey results were scored as one point
for the lowest level of SRL and seven points for the highest level SRL for every item on each
scale (MSLQ, OSRLI, and as modified for W-BNS). The participants’ total scores for each
survey was the mean of all of the Likert scores for all items completed (with reversals per survey
authors for specified questions). The participant SRL full survey scores were utilized to
determine the association for research question QN1 (relationship between RJ and SRL). If
these three SRL surveys are assessing SRL as a single factor, they should show a higher positive
correlation in the response.

Subscale scores were a calculated mean for each of the identified subscales to answer
QN2 (prediction of subscales of SRL for RJ scores, see Table 3.2). The study intended to
separate the participant SRL scores by discipline for comparisons for the secondary quantitative
question about group membership. None of the SRL tools are anticipated to impact the qualitative portion of this study described later in this chapter.

Table 3.2.

*Subscales and Reasons for Inclusion in Multiple Linear Regression*

<table>
<thead>
<tr>
<th>Survey Tool</th>
<th>Subscale</th>
<th>Reason for inclusion</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSRLI</td>
<td>Enjoyment of human interaction</td>
<td>Items for positive emotions and satisfaction support motivation which is linked to SRL</td>
<td>Pekrun, 2006, Cho &amp; Jonassen, 2009</td>
</tr>
<tr>
<td>OSRLI</td>
<td>Reflection strategies</td>
<td>The items were metacognitive and cognitive strategies to promote reflection should relate to reflective journaling.</td>
<td>Cho &amp; Jonassen, 2009</td>
</tr>
<tr>
<td>MSLQ</td>
<td>Critical thinking (cognitive strategy)</td>
<td>Critical thinking was the highest of the learning strategy scales for correlation to final course grades.</td>
<td>Pintrich, Smith, Garcia, &amp; McKeachie, 1993.</td>
</tr>
<tr>
<td>MSLQ</td>
<td>Resource management</td>
<td>Time and study environment adjustments had a positive effect on SRL. Time management was noted in participants’ reflective journals.</td>
<td>Zimmerman, 2008</td>
</tr>
<tr>
<td>MSLQ</td>
<td>Effort management</td>
<td>Effort regulation includes persistence. Highly correlated with academic outcomes.</td>
<td>Crede &amp; Phillips, 2011; Rakes &amp; Dunn, 2010</td>
</tr>
<tr>
<td>W-BNS</td>
<td>Autonomy</td>
<td>Autonomy is supportive of self-regulation and important for independent thinking for interprofessional collaboration.</td>
<td>Chen &amp; Jang, 2010; Ryan &amp; Deci, 2000</td>
</tr>
<tr>
<td>W-BNS</td>
<td>Relatedness</td>
<td>Interactions are often included with relatedness which is critical for working on a team.</td>
<td>Cusack et al., 2012; IPEC, 2011</td>
</tr>
<tr>
<td>W-BNS</td>
<td>Competence</td>
<td>Competence is important for healthcare providers.</td>
<td>IPEC, 2011; Ng et al., 2012</td>
</tr>
</tbody>
</table>
**Reflective journaling.** The reflective journal entries from each participant for the final module were downloaded from the course database and identified per the code system described previously for the Qualtrics data. SrRJE rubric was calculated blindly from the participants’ reflective journal entry for the final module of the course, resulting in an interval score between two and twelve. The reflective journal ratings for two participants were calculated by this researcher. To establish reliability of the SrRJE for this study, another instructor independently rated these two entries. The two raters compared ratings, discussed and resolved any differences for these two entries. The two raters then scored an additional entry to attain an inter-rater reliability. This process continued until a minimum interrater reliability of .80 was reached. When reliability has been met, the researcher completed all further ratings.

**Quantitative data analysis.** All statistical analyses were completed through the Statistical Package for the Social Sciences (SPSS®) version 24 (IBM, 2016). This program was selected as most research in the OT field read by this investigator utilized SPSS. Descriptive demographic information was calculated first. Descriptive statistics were calculated and diagramed with histograms for visual inspection of discipline, gender, and ethnicity. For age, and GPA central tendencies (mean and standard deviations) were planned. Distribution and central tendencies were calculated for SrRJE and each of the SRL survey results. The reliability of all SRL instruments (MSLQ, OSRLI, and W-BNS) (with reversed items appropriately reversed for the rating) was determined using Cronbach’s alpha. If Cronbach’s alpha results were above 0.7 (Bland & Altman, 1997; Lomax & Hahs-Vaughn, 2012), parametric inferential statistical analysis would utilize SRL mean scores as a continuous scale. For Cronbach’s alpha scores substantially below 0.7, non-parametric data analyses procedures would be utilized. The statistical analysis of Likert responses via parametric statistical analyses was acceptable for
researchers in education and health science disciplines (Carifio & Perla, 2008; Sullivan & Artino, 2013; Vogt, 2007). Vogt (2007) calls the use of Likert scales for quantitative data “approximately interval” (p. 90) because they are not interval but are beyond ordinal when applied to groups of items versus singular questions.

Prior to any statistical analyses, missing data was reviewed with consideration of best practices to analyze the data with the highest integrity to account for any missing data. Visual inspection and application of theoretical frameworks for the missing data were considered. Missing demographic data was reviewed separately from missing SRL survey data. Due to the small sample size anticipated, missing data would seriously impact any implications. Because RJ was measured with a single researcher-developed tool, participants with missing RJ data (reflective journal not submitted) were eliminated from the study. Limitations were noted, including effects of the opportunistic sampling method, the self-report surveys for SRL scores, and the combination of two prior ratings for the RJ score.

**Quantitative analysis, statistical assumptions.** Assumptions were checked for independence, normality, linearity, homogeneity of variance, fixed X, and non-collinearity. The study design was intended to maintain the independence for several reasons. First due to the rigor of these professional programs, students would only have one major. Secondly, it is unlikely that students compared answers because (a) the directions stated to complete each answer with your initial response versus spending time contemplating the answer, (b) completion of the Qualtrics survey was not dependent on an accuracy score but reflects a personal perspective, and (c) online students were likely to study in separate locations. The homoscedasticity could be investigated through the Levene’s test in SPSS and normality would be investigated with the skewness and
kurtosis residuals or the Q-Q plots. For the statistical determinations, an alpha of 0.05 was applied and generally accepted in educational research (Lomax & Hahs-Vaughn, 2012).

**Quantitative analysis QN1.** After determination for meeting the assumptions, correlations were generated between the dependent variable of SrRJE score and each of the SRL scores using the Pearson’s correlation (as long as Cronbach’s alpha was overall greater than 0.7) or Spearman’s correlation (if Cronbach’s alphas were below 0.7 for any of the full SRL scales). These correlations answered the research question on the relationship between SRL and reflective journaling rating (QN1). Additionally a principle component analysis or factor analysis of these three instruments would be prepared if the three SRL scales had vastly differing results. Secondarily, the relationship of the three SRL tools noted in the Pearson’s correlation will be discussed.

**Quantitative analysis QN2.** QN2 asks, ‘To what degree do SRL predictor variables (SRL subscales) influence RJ?’ A multiple linear regression analysis was employed to determine the influence of SRL on RJ (dependent variable) via the following SRL subscale predictors: OSRLI Enjoyment of human interaction (OSRLI-EJ), OSRLI Reflection strategies (OSRLI-Rfs), MSLQ Critical thinking (MSLQ-CT), MSLQ Resource management (MSLQ-Rm), MSLQ Effort management (MSLQ-Eff), W-BNS Autonomy (WBNS-A), W-BNS Relatedness (WBNS-R), and W-BNS Competence (WBNS-C). These subscales were selected based on prior research which indicated the strength of the subscales as indicators for aspects theoretically indicated to link with self-reflection (see Table 3.2 for specific reasoning for including each subscale in these analyses). Given assumptions were met, the correlational coefficients were calculated. Given the small sample size and the number of predictor subscales
with each full scale, it was necessary to run an initial exploratory multiple regression and then a stepwise regression analysis.

If a covariate is suggested from the regression analysis of QN2, and the membership of the participants across the discipline groups is reasonable, an analysis of the effect of discipline plus SRL on RJ will be analyzed using an ANCOVA. Yusuf (2011) linked self-efficacy and self-regulated learning strategies with cumulative GPA. It is feasible this study could also link GPA to SRL survey results. If the prior statistical analyses indicate a role of GPA with SRL, it would suggest investigating the influence of discipline on a potential covariate interaction.

**Qualitative Study**

The qualitative study provided the participants’ important voices to answer these two qualitative RQs.

QL1. What SRL phases or components (i.e. subscale concepts) are evident from the RJ entries?

QL2. What themes emerge from reflective journal entries which indicate depth of knowledge or enhanced content learning?

**Qualitative data collection and processing.** The qualitative data collection, coding, and intercoder reviews were identical for both QL1 and QL2. The data source was the full text of the RJ completed in the final module of the semester for each of the 30 participants. Online RJ entries were collected from the electronic submissions for the course self-reflection assignment (see Appendix E for the prompts). Several authors noted that self-reflection was an acquired skill (Canniford & Fox-Young, 2015; Gummesson & Nordmard, 2012; Kuklick, Garity, & Thompson, 2015; Ladyshewsky & Gardner, 2008; Smith & Trede, 2013). Therefore, to reduce RJ discrepancies across the semester, RJs were only collected from the final week of the course.
Reflective journal entries for this study were a response to a prompt involving three to four related questions about the learning from this online course. Similar to an interview, the questions within the prompt are connected with the data. For this study, the use of the final course prompt allowed students to reflect back across the course to optimize their ability to relate the interprofessional content learned.

Craft (2005) found self-reflective writing practice versus judging the reflection by grading the product better supported reflective writing for nursing students. In contrast, in a study with 30 nursing students, Richardson and Maltby (1995) found that analysis and feedback for reflective diary entries was more effective. The online course for this study employed a rubric to grade students’ submissions based on timeliness, appropriate writing conventions, relationship to the content, and indication of a personal connection to encourage students to invest effort for their reflective journal entries with minimal weighting to impact their grade as long as their work met these basic criteria. Specific feedback from the instructor was provided to further the reflective nature of the learning for each submission. No explicit teaching of how to write self-reflections was included in the course.

The reflective journal entries of the participants were downloaded. The researcher de-identified all entries using a code book to obtain additional data from the learning management system if needed for context. All references to names of the author or peers in the course were removed and replaced with lettered placeholders (i.e.: Aaaa, Xxxx). The 30 RJ text entries were uploaded into MAXQDA® version 12 (VERBI Software, 2017), a computer-assisted qualitative data software programs to promote organization and processing of the data, ease of coding, individual participant analysis and memos, and cross participant analysis and memos. The RJ
entries were electronically submitted as a course assignment which provided exact participant text-based data. Electronically copying the text reduced the potential for transcription errors.

**Qualitative coding.** The first step for qualitative data analysis was to read the data taking notes from the researcher’s perspective on the content of the data (Maxwell, 2013; Plano Clark & Creswell, 2015). A three-cycle coding process (see Table 3.3) was crafted to implement approaches from several methodologists (Creswell, 2014; Miles, Huberman, & Saldana, 2014; Maxwell, 2013; Plano Clark & Creswell, 2015). The three cycles were:

1) Cycle 1: Exploratory coding began with predetermined coding (Plano Clark & Creswell, 2015) from the SRL theoretical perspective and knowledge of interprofessional standards. Secondarily, in vivo coding (Creswell, 2012; Miles et al., 2014) was included in cycle one.

2) Cycle 2: Process coding which included emotion/values coding and holistic coding (Miles et al., 2014). This cycle captured the personal context of the coded segments.

3) Cycle 3: Descriptive pattern coding (Miles et al., 2014) summarize each participants’ voice across the coded segments and provides an initial review across participants to uncover the patterns within the full dataset.

The coding process was structured in an iterative manner incorporating review of data, reviewing the coded segments, considering alternate perspectives, and then revising the codes as needed. The code book which resulted from this entire process included clear definitions for each code and explanations for code changes. Coding in MAXqda® was adjusted as needed for the increasing clarity as the iterative coding process continued.

**Qualitative intercoder agreement.** Member checking for credibility at the end of the semester was not feasible for this study because reflective journal entries are by definition,
dynamic and change with additional knowledge and life experiences. Credibility was established with two intercoder agreement check points (Creswell & Plano Clark, 2011; Plano Clark & Creswell, 2015). Intercoder agreement involved “comparing coding among several coders . . . using a predetermined coding scheme” (Creswell & Plano Clark, 2011, p. 212). Two review coders with the following credentials were recruited: (a) licensed occupational therapist, (b) doctoral prepared, tenured, or tenure-eligible, faculty member, (c) doctoral or post-doctoral level experience with qualitative research, and (d) willingness to complete the review pro bono.

The first inter-coding process was completed in conjunction with Cycle 2 (process level) between the emotion/values coding and the holistic coding. The intercoder review was included at this point to check the credibility of the codes developed by the PI. The PI and the review coder compared coding on a minimum of 25% of the entries. An iterative process ensued to eventually obtain an intercoder agreement “within the 85-90% range” (Miles et al., 2014, p. 85) (emphasis added).

The second level of intercoder agreement was implemented at the end of Cycle 2. This credibility check was designed to review code limitations, to discuss each coder’s interpretations, and to begin to review patterns for Cycle 3. Again, both the PI and the review coder compared results on a sample of at least 25% of the entries. Per Miles, Huberman and Saldana (2014), coding “definitions become sharper when two researchers code the same data set and discuss their initial difficulties” (p. 84). Using a rival explanations process together the PI and the review coder resolved differences and discussed potential patterns. Completion of the second interceding process was expected to finalize basic coding definitions for the PI to then complete Cycle 3 (Patterns) and the analysis for the study.
Table 3.3.

*Coding Cycles for Qualitative Findings*

<table>
<thead>
<tr>
<th>Cycle &amp; Name</th>
<th>Coding description (source)</th>
<th>Purpose of inclusion</th>
<th>Procedure implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle 1. Exploratory</strong></td>
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</tbody>
</table>
| Cycle 1a. Predetermined | Anticipated codes from the literature review and background for the phenomena of this study (Plano Clark & Creswell, 2015). Also known as a priori coding (Creswell, 2014, p. 185). | Provide the context to answer RQs related to interprofessional course content and phases or concepts of SRL. Creswell (2014) cautions against blanket use of this method without attention to participants’ voices. | 1. Read all entries for the random initial sample of ten participants  
2. Code with interprofessional content (IPEC, 2011) and SRL phases and concepts  
3. Write notes to define codes |
2. Identify participants’ word selection.  
3. Highlighted recurring words or phrases. |
| **Cycle 2. Process** | | | |
| Cycle 2a. Emotion and values | Per Miles, Huberman, and Saldana (2014), emotion coding “provides insight into the participants’ perspectives, worldviews, and life conditions” (p.75). Values coding reflects “values, attitudes, and beliefs” (p.75) of the participants, relates their personal importance. | Reflective process involves internal review from participant’s own perspective which relates to prior personal experiences or importance and can connect to prior emotional responses (Schön, 1983). Thus emotion and value coding are clearly connected to reflective process. | 1. Reread entries to identify content laden with personal values, emotions, or beliefs.  
2. Note words which indicate the strength of the feelings and personal value within these segments.  
3. Assign weights to the level of emotions or values from the participants’ perspectives. |
<table>
<thead>
<tr>
<th>Cycle &amp; Name</th>
<th>Coding description (source)</th>
<th>Purpose of inclusion</th>
<th>Procedure implemented</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cycle 2. Process (continued)</strong></td>
<td></td>
<td></td>
<td>1. Revise coding as needed to incorporate context.</td>
</tr>
<tr>
<td>Cycle 2b. Holistic</td>
<td>Holistic coding involves large unit of data to obtain an overall feeling and general idea (Miles et al., 2014). Creswell (2014) considered the holistic account as an attempt to understand the issue from a larger perspective.</td>
<td>Identify the intent of the participants’ perspective by looking at longer segments to use the context to gain the meaning. The wide holistic view was intended to balance the narrow perspective of in vivo coding.</td>
<td>2. Memo overall meanings for each entry. 3. Redefine the code definitions and delimitations in light of the contexts.</td>
</tr>
<tr>
<td><strong>Cycle 3. Descriptive patterns</strong></td>
<td></td>
<td></td>
<td>1. Read coded segments across participants. 2. Complete cross-case analysis (Creswell, 2013) using MAXqda® 3. Utilize a matrix (Miles, et al., 2014) to re-analyze and prepare for identifying patterns.</td>
</tr>
<tr>
<td>Cycle 3. Patterns</td>
<td>Creswell (2013) notes that describing categories “Aggregating the text …into small categories” (Creswell, 2013, p. 184) and “review the coded segments being pulled together” (p. 295)</td>
<td>To identify the patterns of the codes across participants and accurately reflect the participants’ meanings in the most parsimonious coding possible. This cycle allowed for additional attention to the content and depth of the entry.</td>
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</table>

**Qualitative data analysis.** The coding process, as the beginning of the analysis for this qualitative study, utilized the same procedures for QL1 and QL2. The PI used if-then and rival explanations (Miles et al., 2014) as a means to check assumptions throughout the data analysis. The patterns provided a categorical level of analysis across codes and participants. The code book and visual representations developed during coding Cycles 1, 2 and 3 were useful tools for analyzing the codes and the process (Miles et al., 2014; Plano Clark & Sanders, 2015). Next, thematic analysis occurred by reflecting on the codes and the patterns which emerged at the end of the coding, and using memos to analyze “multiple perspectives” (Creswell, 2012, p. 250) and
constant comparisons (Plano Clark & Creswell, 2015). Memos (also known as notes or jottings) have been recognized by many qualitative methodologists to record the researcher’s thoughts, conceptual considerations, and initial responses to the data (Creswell, 2012; Creswell, 2013; Maxwell, 2013; Miles et al., 2014).

**Qualitative analysis for QL1.** The qualitative analysis reviewed codes which aligned with SRL theories, phases, or metacognitive practices participants employed which represented self-analysis or self-reflection to identify evidence of SRL self-reflection. Due to the content, simultaneous (or dual) coding was anticipated: “with two or more different codes to a single qualitative datum, or the overlapped occurrence of two or more codes” (Miles et al., 2014, p. 81). The dually coded segment intersections were analyzed with memos to develop greater understanding of each code and each participant’s perspective. Analysis of patterns within individuals was followed by an analysis across individuals and across codes to identify patterns within the RJ for SRL theoretical or phase concepts. Emerging themes were expected to provide insight to answer QL1.

**Qualitative Analysis for QL2.** The themes were used to answer research questions QL2 emerged regarding course content understanding and interprofessional practices. Memos were used to compare individual participant’s understanding of the IP content and their ability to utilize self-reflection for their understanding. An iterative process reviewed each individual participants’ submission again with the final coding definitions, and recorded memos for each participants’ overall focus and any substantial discrepancies. Memos were labeled for each individual as a means of aggregating similarities and recognizing patterns. Analysis also occurred through iterative review of the codes and across participant RJs. Thematic analysis would be applied to determine emerging themes.
Mixed Methods Merging

Merging the complementary facets gathered in the quantitative and qualitative strands was the focus of this study. After the quantitative and qualitative data were analyzed separately, this convergent parallel study design compared the results across the variables to converge the information for deeper interpretations and greater understanding of self-reflection in SRL and RJ (Creswell & Plano Clark, 2011). The reflective journal entries were analyzed in the qualitative methods and in the quantitative methods which compared the RJ to SRL via a quantitized rubric developed by this researcher. These analyses were merged to answer the overarching research question (What is the relationship between SRL and RJ and how do complimentary RJ text entries contribute to understanding this relationship). Further investigation into the three survey instruments was attempted for additional insights for the MMR1 question (What are the implications of the relationship between RJ and SRL for online education of OT graduate students?).

“Integrating quantitative and qualitative data into one coherent whole that will be analyzed and interpreted simultaneously as a single data set” (Collins & O’Cathain, 2009, p. 6) was the purpose of this MMR interpretation. The quantitative analysis compared RJ results for the varied demographic participant groups. Data for the qualitative strand collected concurrently, was merged with the quantitative data so coded participants thematic analysis were used to understand the quantitative data. Separating the qualitative results and themes by the demographic data was attempted to reanalyze results to determine if any themes emerged to explain the quantitative outcomes from any of the comparisons between the SRL and reflective journal entries.
The merged analyses were combed for insights or explanations for the differences in the correlation of the RJ and the participant mean SRL score. Table 3.4 provides an example of a joint display format where the column headings are the dimensions of the study (i.e.: specific dimensions emerged with the integrated analysis) (Plano Clark & Sanders, 2015) for the matrix used in the MMR analysis. The quantitative and qualitative findings are provided in separate columns with an additional column for the mixed methods interpretation of the content within that row. This interpretation on the same row as the variable provides a clear display to facilitate an understanding of the results and integration completed for this complex study. This display would be helpful to answer research question MM1 for the insights generated from the relationship of reflective journaling to SRL for future online course design. The analysis is projected to inform instructors about ways to improve self-reflective journaling to align it better with SRL.

Table 3.4.

*Joint Display of Qualitative and Quantitative Results and Interpretations Example*

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>Quantitative findings</th>
<th>Qualitative findings</th>
<th>Mixed methods interpretations</th>
</tr>
</thead>
<tbody>
<tr>
<td>SDT: need for autonomy</td>
<td>High self-reflective journal scores</td>
<td>Deep learning</td>
<td>Deep learning is evident when intuitive &amp; aligns with ↑ journal scores.</td>
</tr>
<tr>
<td>Specific metacognitive strategies</td>
<td>Summarizing</td>
<td>“all together...”</td>
<td>Most frequent metacognitive strategy was…</td>
</tr>
<tr>
<td>Self-reflection in context</td>
<td>Effort</td>
<td>“worked best when...”</td>
<td>Time and effort resulted in optimal learning…</td>
</tr>
</tbody>
</table>

*Note.* All information in this table is theoretical, not actual findings of this study.
Comparisons were made between all participants’ qualitative themes and quantitative statistics. The mixed methods results expanded the knowledge base for implementing self-reflective journaling as a support to SRL in online courses. This integration of the data for analysis expanded the understanding of the contribution of self-reflective journaling as a component of self-regulated learning. Other visual displays which combine qualitative and quantitative data could also facilitate analysis and interpretation of the data.

**Summary of Methods**

The convergent parallel mixed methods study of the relationship between SRL and RJ was conducted within the context of an online graduate course for interprofessional collaboration. The study included 30 – 35 students from health administration, nursing, and occupational therapy and occurred during three semesters from January 2016 to May 2017. The quantitative data included three instruments and RJ outcomes measured with a rubric based on works by Mezirow (1981), Powell (1989), and Koole et al. (2011). Quantitative analysis began with a Pearson Correlation of SRL and RJ. Additional investigation of the contributions of specific aspects of SRL or demographic moderators were completed using regression and ANCOVA. The qualitative data was the RJ text data which participants submitted. The qualitative analysis included three cycles of coding (exploratory, process, and patterns), two intercoder analyses, and thematic development using multiple perspectives and constant comparison. The mixed methods study data was merged and re-analyzed both single method segments of this study. The analytic integration combined complimentary results and the meta-analysis to interpret implications for online graduate education of occupational therapists.
Chapter 4: Results

This convergent parallel mixed methods study sought to understand the relationship between self-regulated learning (SRL) and reflective journaling (RJ) among graduate students in an online interprofessional course and to probe how these constructs complemented each other. This chapter includes the findings beginning with the participants’ demographic data, the quantitative and then qualitative data collection, and the respective statistical and thematic analyses. This chapter concludes by merging the data for implications of the SRL – RJ relationship for online education of occupational therapy (OT) graduate students. The data for the quantitative strand were collected from three published SRL surveys through Qualtrics Online Survey Software and a rubric for RJ. The data for the qualitative strand were obtained from the participants’ text-based responses to reflective journal prompts within an online interprofessional graduate course.

The sequence of quantitative and then qualitative information was maintained throughout this chapter for consistency. As a concurrent study, quantitative and qualitative data were collected within the last week of the course in each semester. The PI completed the analyses consecutively. The qualitative data (inductive reasoning process) occurred prior to the quantitative data (deductive reasoning process) to avoid bias for the inductive reasoning. The context for the study was an online section of the Applied Interprofessional (IP) Collaboration course offered for students in healthcare and social services professional programs. Healthcare administration, nursing, and OT curricula required this course for graduate students.

Sample Description

The study design specified identical samples for the quantitative and qualitative data (Collins, Onwuegbuzie, & Jiao, 2007). The study was conducted in Spring 2016, Fall 2016, and
Spring 2017 at one private Midwestern university. Enrollment in the spring semesters included students from healthcare administration, nursing, and OT programs. The fall semester included students in nursing and special education programs. The maximum course enrollment was 25 students per semester; (one student was over-ridden into the Spring 2016 semester) resulting in a bounded population of students (N = 76) in the online section.

Participants. The participation criteria were graduate students over 18 years of age, enrolled in the online section of the Applied Interprofessional Collaboration course. The Institutional Review Boards for both the university where the researcher was pursuing a doctorate degree and the university offering this course approved this study. Chapter 3 reviewed the steps implemented to prevent coercion of students (as a protected population) since the primary investigator was the course instructor (Onwuegbuzie & Collins, 2007; Teddlie & Tashakkori, 2009). Participation was voluntary, incentivized with one point of extra credit. Although all students had the option to complete an alternate assignment for the same incentive, none of the students in any of the semesters elected to do so. The instructor was not privy to the participation status of any students until after all final course grades were calculated. Reflective journal entries were a standard course assignment for all students.

The study design accepted a small sample size of 30 to 35 participants (see Participants in Chapter 3 for more details) as an exploratory level for this research project. Thirty-five students agreed to participate representing 46% of this bounded population. The 35 volunteer sample were reduced to 30 participants as follows. Students were excluded from the study if they did not submit the reflective journal assignment and complete the survey during the final module of the course (missing RJ: n = 2, both Spring 17). One participant in the special educator discipline (Fall 2017) was excluded because this study intended to analyze differences across health related
disciplines. To increase the completeness of the available dataset, participants who missed more than two items on the survey were excluded (n = 2, one Spring 16 and one Spring 17). Although the sample size was small, it represented an adequate number of participants per variable for quantitative analysis of demographic variables for discipline and prior GPA, but not age, gender or ethnicity (Austin & Steyerberg, 2015).

Demographics from the participants (see Table 4.1 and Figure 4.1) confirmed the vast majority were Caucasian (96.7%) females (93.3%), as projected and consistent with the OT students in these semesters (96% Caucasian females). A recent study by the American Occupational Therapy Association [AOTA] (2015), reported the demographics of the profession were predominantly female (90.9%) and Caucasian (85.3%). The AOTA established recruiting efforts for a more diverse workforce. The sample was disproportionate for gender and ethnicity,

Table 4.1.

*Participants’ Self-reported Data: Descriptive Statistics (N = 30)*

<table>
<thead>
<tr>
<th>Demographic Total (percentage)</th>
<th>Spring 2016 n=10</th>
<th>Fall 2016 n=10</th>
<th>Spring 2017 n=10</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>28 (93.3)</td>
<td>9</td>
<td>10</td>
</tr>
<tr>
<td>Male</td>
<td>2 (6.7)</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>29 (96.7)</td>
<td>10</td>
<td>9</td>
</tr>
<tr>
<td>African American</td>
<td>1 (3.3)</td>
<td></td>
<td>1</td>
</tr>
<tr>
<td><strong>Discipline</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nursing</td>
<td>19 (63.3)</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>8 (26.7)</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Health Administration</td>
<td>3 (10)</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>Semester Totals</strong></td>
<td>30 (100)</td>
<td>10</td>
<td>10</td>
</tr>
</tbody>
</table>
even greater than the national population for the OT profession, which resulted in only three
participants who were not Caucasian females.

The participants’ were primarily nursing (63.3%), followed by OT (26.7%), then health
administration (10%). The participants’ disciplines were not equally representative of the
students in each of the semesters. For example, the participants in Spring 2017 included five of
the nine nursing students enrolled in the course (55.5%), four of nine OT students (44.4%), and
one of six health administration students (16.7%). Given only 50% of the participants responded
to the demographic question of age, the representativeness of this partial data was unknown.
Therefore, age was excluded from any analyses. For statistical analysis, demographic variables
without adequate representation or sample size were also excluded from the analyses [ethnicity
(non-Caucasian), gender (non-female)].

Figure 4.1. Histograms of Demographic Variables: Gender, Ethnicity, and Discipline.

**Missing Data.** Given the small sample size, the completeness of the available dataset was
critical. For the demographic data, there was one unanswered cell of data: One student reported
“idk” [I don’t know] in response to her prior GPA. In addition to this one cell of missing
demographic data, there were seven cells of missing data in the surveys. Scrutiny of these cells (see Table 4.2) was as follows. No cells of the 28 items across the 30 participants on the OSRLI were missed. For the MSLQ (50 items across 30 participants), one participant was missing a response to two items (2 cells) and three other participants were missing one item (3 cells). Analysis of these five missing data cells revealed three cells were from MSLQ Resource management of time and space subscale (8 items for 30 participants; 3/240 cells). One missing cell was from MSLQ Critical Thinking subscale (5 items for 30 participants; 1/150 cells). The Table 4.2.

*Missing Data*

<table>
<thead>
<tr>
<th>Participant</th>
<th>Survey item (% of test)</th>
<th>% of survey total</th>
<th>Subscale item (% of subscale)</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>None</td>
<td>0%</td>
<td>None (0)</td>
</tr>
<tr>
<td>B11</td>
<td>MSLQ 38 (0.067)</td>
<td></td>
<td>Critical thinking (0.667)</td>
</tr>
<tr>
<td>A4</td>
<td>MSLQ 52 (0.133)</td>
<td></td>
<td>Resource management of time and space (0.012)</td>
</tr>
<tr>
<td>B20</td>
<td>MSLQ 52 (0.133)</td>
<td>0.33%</td>
<td></td>
</tr>
<tr>
<td>C6</td>
<td>MSLQ 70 (0.067)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B20</td>
<td>MSLQ 76 (0.067)</td>
<td></td>
<td>Not included in subscale analysis</td>
</tr>
<tr>
<td>C6</td>
<td>W-BNS 9 (0.14)</td>
<td></td>
<td>Competency (0.011)</td>
</tr>
<tr>
<td>A15</td>
<td>W-BNS 10 (0.14)</td>
<td>0.37%</td>
<td></td>
</tr>
<tr>
<td>Total all surveys</td>
<td></td>
<td>0.24%</td>
<td></td>
</tr>
</tbody>
</table>
fifth missing cell was from a subscale which was not included in the analysis for the predictor variables.

On the W-BNS, two items had one piece of missing data, each from a different participant (2 cells out of 18 items for 30 participants; 2/540 cells). These two missed cells were both in the W-BNS Competency subscale (2/180 cells). All other subscales had complete data. In total, the instrument data from these 30 participants’ responses to 96 questions (total of 2880 cells) left only seven cells empty, resulting in less than one quarter of one percent (0.0024) missing data. Review of these items did not establish a visually obvious or theoretically related pattern to these missing data. Individual missing data appears to be missing at random. Missing data was calculated with pairwise deletion to maintain the N=30 for all other data (Laerd, 2015).

**Quantitative Data**

The quantitative data was collected and analyzed using inferential statistical analyses calculated via the Statistical Package for the Social Sciences (SPSS®) version 24 (IBM, 2016). In the order on the Qualtrics Survey Tool, the self-reported survey included 28 questions for the Online Self-Regulated Learning Inventory (OSRLI) (Cho & Jonassen, 2009), the 50 questions of the learning strategies section (numbered 32 to 81) of the Motivation Strategies for Learning Questionnaire (MSLQ) (Pintrich, Smith, Garcia, McKeachie, 1993), and the 18 items from the Work-related Basic Need Satisfaction scale (W-BNS) (Van den Broeck, Vansteenkiste, De Witte, Soerens, & Lens, 2010) (see Chapter 3 for Instrument selection for SRL). The Cronbach’s alpha for this study for the OSRLI, the MSLQ section, and the W-BNS were .924, .962, and .884 respectively. These results indicated a high level of reliability for this sample (Bland & Altman, 1997). Data was prepared including reverse scoring for appropriate items of each survey prior to calculations. Per the instruments’ protocols, the total scores for each
participant on each survey instrument were calculated as the mean of the Likert scores for all items completed for that instrument with similar calculation of subscale scores.

The RJ dependent variable was the score calculated from the rubric applied to the participants’ reflective journal entries (SrRJE, see Chapter 3, Instrument selection for reflective journaling). The distribution of the scores ranged from three to 11 on a scale of 2-12 (see Figure 4.2). The independent variables included SRL scores from three instruments and selected subscales from each scale. The measures of central tendency and the Cronbach alpha statistic for reliability are provided for all of these variables (SRL surveys and for the SRL subscales) which were analyzed for QN2 (see Table 4.3). The reliability (Cronbach alpha) was acceptable (above .70) (Bland & Altman, 1997) for all variables except the OSRLI Reflection strategies subscale (Cronbach $\alpha = .491$).

Figure 4.2. Frequencies and distribution of RJ scores. No RJ scores of 2, 5, or 12 were obtained
Table 4.3.

Central Tendencies and Reliability for Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Subscale</th>
<th>No. of items</th>
<th>Mean</th>
<th>Std. deviation</th>
<th>Cronbach Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSRLI</td>
<td></td>
<td>28</td>
<td>4.95</td>
<td>.872</td>
<td>.924</td>
</tr>
<tr>
<td></td>
<td>Enjoyment of learning</td>
<td>17</td>
<td>4.90</td>
<td>1.382</td>
<td>.918</td>
</tr>
<tr>
<td></td>
<td>Reflections</td>
<td>3</td>
<td>5.05</td>
<td>1.043</td>
<td>.491</td>
</tr>
<tr>
<td>MSLQ</td>
<td></td>
<td>50</td>
<td>4.82</td>
<td>.9201</td>
<td>.962</td>
</tr>
<tr>
<td></td>
<td>Effort regulation</td>
<td>4</td>
<td>5.72</td>
<td>1.092</td>
<td>.784</td>
</tr>
<tr>
<td></td>
<td>Critical thinking</td>
<td>5</td>
<td>4.61</td>
<td>1.103</td>
<td>.772</td>
</tr>
<tr>
<td></td>
<td>Resource management (Time &amp; Space)</td>
<td>8</td>
<td>5.42</td>
<td>1.078</td>
<td>.848</td>
</tr>
<tr>
<td>W-BNS</td>
<td></td>
<td>18</td>
<td>4.88</td>
<td>.946</td>
<td>.884</td>
</tr>
<tr>
<td></td>
<td>W-BNS – R</td>
<td>6</td>
<td>4.43</td>
<td>1.121</td>
<td>.690</td>
</tr>
<tr>
<td></td>
<td>W-BNS – C</td>
<td>6</td>
<td>5.79</td>
<td>.990</td>
<td>.891</td>
</tr>
<tr>
<td></td>
<td>W-BNS – A</td>
<td>6</td>
<td>4.43</td>
<td>1.343</td>
<td>.830</td>
</tr>
<tr>
<td>SrRJE (RJ)</td>
<td></td>
<td>1 score</td>
<td>7.17</td>
<td>2.260</td>
<td>n/a</td>
</tr>
<tr>
<td>Prior cGPA</td>
<td></td>
<td>1 score</td>
<td>3.76</td>
<td>.231</td>
<td>n/a</td>
</tr>
</tbody>
</table>

Note. SrRJE is the Self-reflection in Reflective Journal Entries score (see Appendix D) also referred to as RJ

Assumptions. For greater readability of this quantitative section, the assumptions required for inferential statistical analyses have been combined. The dependent variable for each statistical procedure was the reflective journal (RJ) scores (SrRJE). Independent variables and statistical procedures were determined by each research question (RQ). The assumption requirements for each RQ differed per the procedure. By combining information on all assumptions here, the reader can then attend more easily to the findings which are reviewed by RQ. The assumptions are addressed in the following order: independence of variable, normality,
Independence. All inferential statistical analyses require the assumption for independence of observation. Determination for this assumption was structured in the study design (see Chapter 3, Quantitative analysis, statistical assumptions). Each of the participants was represented in only one grouping per criteria and were not expected to influence other participants. Students in online courses generally study in separate or distant locations. To answer question QN2, further support for the independence for the multiple linear regression (MLR) was provided by the independence of residuals assumption indicated by the Durbin-Watson score of 1.777 (approximately 2 indicates there is not a correlation between the residuals per Lomax and Hans-Vaughn, 2012) (see QN2 for interpretation and Table 4.5).

Normality. The assumption of normality for the dependent variable (RJ) was required for inferential statistical procedures completed for this study. The normality of the dependent variable for the relationship analysis of QN1 was confirmed by visual inspection of the histogram plotting the regression of standardized residuals for RJ as seen in Figure 4.3. Shapiro-Wilk test of normality for dependent variable of RJ scores with independent variables of SRL (this represents the mean of the three SRL survey tools [OSRLI, MSLQ, W-BNS]), and GPA (this represents prior cumulative GPA on a 4.0 scale) supported this assumption [F (6) = .927 p = .554]. The q-q plots for the expected versus observed values of the SRL tools supported the normality assumption (see Figure 4.3). For the regression analysis for QN2, support for the normality assumption for the predictor variables was provided through inspection of the q-q plots for the subscales analyzed (OSRLI: Enjoyment of learning, Reflection strategies, MSLQ: Critical
Figure 4.3. Assumptions for normality. From upper left, these graphs indicate (a) frequency histogram for RJ score of the regression of standardized residuals, (b) normal q-q plot of mean scores of OSRLI, (c) normal q-q plot of mean scores of MSLQ, and (d) normal q-q plot of mean scores of W-BNS.

thinking, Resource management, and Effort management, and W-BNS: Autonomy, Relatedness, and Competence.

**Linearity.** The assumption for linearity was required for the statistical analyses for each of the quantitative RQ. This was indicated by scatter plots for each of the SRL survey instruments (independent variables) on the x-axis and the RJ score (dependent variable) on the y-
A regression line inserted for each scatter plot depicted a linear relationship as seen in Figure 4.4. For QN2, the multiple regression, the linearity was also supported by the scatter plots for the residuals for the subscale variables (see Appendix F). For the secondary covariate analysis, the linearity was noted in the plots of RJ and the independent variables (SRL, GPA, and discipline) as illustrated in Figure 4.5.

Figure 4.4. Assumption for linearity: SRL instrument scatter plots. Top left depicts OSRLI total survey mean to RJ score, top right MSLQ total survey mean score to RJ score, bottom left W-BNS total survey mean score to RJ score, bottom right is the mean of all three of the SRL instruments to RJ score.
**Homogeneity of Variance.** The assumption for homogeneity of variance was needed for both QN2 and the ANCOVA as a secondary analysis. The Levene test was calculated for RJ by the SRL survey subscales to establish homogeneity of variance. The Levene test for dependent variable of RJ scores with independent variables of SRL (mean of the three survey tools), GPA, and discipline supported this assumption \[ F (2, 26) = .148, p = .863 \]. Homoscedasticity was acceptable for these statistical analyses.

*Figure 4.5:* Assumption for linearity of covariates (SRL and GPA) and discipline membership.
**Fixed X.** This assumption applied to predicting variables utilizing a MLR and ANCOVA for analysis of variables or covariates. This assumption was accepted as the data did not include any extrapolation or interpolation of values (Lomax & Hahs-Vaughn, 2012) beyond the data presented for any of the analyses.

**Collinearity.** The assumption for collinearity, needed to establish non competing variables for the MLR analysis of the subscale variables for predicting RJ scores was examined using the variance inflation factor (VIF). Although interpretation of the VIF ranges from below ten (Lomax & Hans-Vaughn, 2012; Laerd, 2015) down to two, several authors suggest between two and three (Allison, 2012; Frost, 2013; Zurr, Ieno, & Elphick, 2010) resulted in a target of 2.5 for this study. The noncollinearity was determined by VIF scores of OSRLI – EJ (2.385), WBNS – Autonomy (2.065), and MSLQ – Critical Thinking (1.777). All VIF were below 2.5 and thus accepted as indicative of noncollinearity.

**Homogeneity of regression slopes.** To determine the effects of covariates by discipline membership for the secondary question, using an ANCOVA, the homogeneity of regression slopes was determined by the test of between-subjects effects noted in the ANCOVA table for the interaction effect of the independent variables SRL by discipline [F (2) = 1.515, p = .245] and the independent variable prior GPA by discipline [F (2) = 2.502, $p = .490$], although results were nonsignificant, acceptance of the assumption for homogeneity of slopes was indicated.

**Quantitative research question QN1 findings.** The first quantitative question seeks to identify how SRL related to RJ using a Pearson correlation. The statistical procedure analyzed responses for each self-report SRL survey on a seven-point Likert scale entered as a continuous scale, which is considered an acceptable practice for health and social science research (Carifio & Perla, 2008; Sullivan & Artino, 2013; Vogt, 2007).
To answer QN1, a Pearson Product-Moment correlation coefficient (see Table 4.4) was computed to analyze the strength of the relationship between mean scores on each of the three surveys for SRL (OSRLI, MSLQ, and W-BNS, see Appendix C) and RJ scores per the SrRJE rubric (Appendix D). The assumptions for this analysis (independence of observations, normality, and linearity) were acceptable (see Assumptions section, this chapter). Prior cumulative GPA was added to this correlation to include the relationship of prior academic success with the other variables, SRL and RJ. The hypothesized relationship between SRL and RJ could be either positive or negative thus leading to a two tailed analysis. The strongest correlation (see Table 4.4 for results of the Pearson correlation coefficients) was between OSRLI and MSLQ with a positive correlation coefficient of .75, and statistically different from zero ($r = .750, n = 30, p < .0005$). The correlation between W-BNS and MSLQ was also positive .64, and statistically different from zero ($r = .641, n = 30, p < .0005$). The correlation between W-BNS and OSRLI was positive .57, and statistically different from zero ($r = .570, n = 30, p = .01$). Furthermore, the RJ scores were positively correlated with the prior cumulative GPA and

Table 4.4.

**Pearson Correlation between SRL Instruments and RJ Results**

<table>
<thead>
<tr>
<th></th>
<th>OSRLI Mean (n=30)</th>
<th>MSLQ Mean (n=30)</th>
<th>W-BNS Mean (n=30)</th>
<th>Prior cum. GPA (n=29)</th>
<th>RJ Score per Rubric (n=30)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSRLI Mean</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSLQ Mean</td>
<td>.750**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>W-BNS Mean</td>
<td>.570**</td>
<td>.641**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prior cum. GPA</td>
<td>-.006</td>
<td>.223</td>
<td>.130</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>RJ score per Rubric</td>
<td>.189</td>
<td>.194</td>
<td>.267</td>
<td>.573**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation is significant at the 0.01 level (2-tailed)
statistically different from zero ($r = .573, n = 29, p = .01$). However, the relationship between RJ and SRL instruments, at the heart of this question, was as follows: OSRLI ($r = .189, n = 30, p = .318$), MSLQ ($r = .194, n = 30, p = .304$), and W-BNS ($r = .267, n = 30, p = .154$). The weak positive correlations between RJ and SRL surveys as noted, which was not statistically significant at $\alpha = .05$ level.

**Interpretation.** The Pearson correlation results between RJ and SRL were not statistically different from zero indicating insufficient evidence with this small sample size to reject the null hypothesis of a correlation equal to zero at the alpha = .05 level of significance. Although the results did not reach a statistically significant level, evidence of a small (Cohen, 1988) positive relationship was evident as follows: between RJ and W-BNS at $r = .267$ as well as a small positive relationship between RJ and OSRLI of $r = .189$ and MSLQ of $r = .194$ with $n = 30$ for each. Prior GPA was statistically significantly related to RJ only ($r = .573, n = 30, p = .001$) but not statistically significantly correlated to any of the SRL measures. This represented a moderate correlation effect (Cohen, 1988) between prior GPA and RJ.

In response to the secondary question (QN 1a) for the relationship between the survey tools, the Pearson correlation resulted in a strong positive correlation (Cohen, 1988) between all three of the instruments of SRL in this study. Along with the strong Cronbach alpha scores noted for these instruments in this study, this suggests reliable, strongly correlated survey tools. The relationship between the OSRLI and the MSLQ had previously been reported (Cho & Jonassen, 2009). According to the literature reviewed by this researcher, the relationship between the W-BNS and either the MSLQ or the OSRLI had not previously been identified.

**Quantitative research question QN2 findings.** To determine if any of the subscales of the SRL surveys predicted RJ, a multiple linear regression was completed. The data were
screened for violations of assumptions including “(a) independence, (b) homogeneity, (c) normality, (d) linearity, (e) fixed X, and (f) noncollinearity” (Lomax & Hans-Vaughn, 2012, p. 671) with reasonableness for these concepts as noted in the section on Assumptions. The null hypotheses tested were that the multiple $R^2$ was equal to zero and that the regression coefficients or slopes were equal to zero.

The initial exploratory multiple linear regression utilized an enter approach with the dependent variable RJ score, pairwise analysis for missing data (resulted in $n=30$), and predictor variables for the eight subscales identified from prior research: OSRLI- Enjoyment of learning (EJ), OSRLI-Reflections (Rfs), MSLQ-Effort (Eff), MSLQ-Critical Thinking (CT), MSLQ-Resource management (Rm), W-BNS-Relatedness (W-BNS-R), W-BNS-Competence (W-BNS-C), and W-BNS-Autonomy (W-BNS-A), (see Table 3.2 for information on selection of these subscales) without including prior cumulative GPA as a variable (see Table 4.5). Discipline was not entered into the regression analysis due to a very small representation of health administration students within the sample ($n = 3$).

A second regression analysis utilized a forward sequential method to determine which of the predictors could provide the greatest significance in a parsimonious model. This statistical procedure included RJ as the dependent variable with the predictor variables including all of the subscales suggested by prior research (OSRLI-EJ, OSRLI-Rfs, MSLQ-Eff, MSLQ-CT, MSLQ-Rm, W-BNS-R, W-BNS-C, W-BNS-A), and the prior cumulative GPA (Table 4.5). A stepwise regression approach was also attempted with groupings of the targeted subscales by SRL instrument to determine if there would be an influence beyond the prior GPA if subscales were grouped by their SRL instrument. Thus, the three subscales for the W-BNS were entered, then the two selected subscales for the OSRLI, then the three selected MSLQ subscales. The stepwise
Table 4.5.  

*Multiple Linear Regressions, RJ by Subscales, Two Models*  

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R square</th>
<th>Adjusted R Square</th>
<th>F change (Sig. p value)</th>
<th>df 1</th>
<th>df 2</th>
<th>Durbin Watson</th>
<th>Unstandardized B Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Enter: subscales without GPA</td>
<td>.420</td>
<td>.177</td>
<td>-.137</td>
<td>.563</td>
<td>8</td>
<td>21</td>
<td>2.011</td>
<td>4.263</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(p = .796)</td>
</tr>
<tr>
<td>2. Forward or Stepwise Method subscales + GPA, Model result GPA alone</td>
<td>.573</td>
<td>.329</td>
<td>.304</td>
<td>13.224</td>
<td>1</td>
<td>27</td>
<td>1.777</td>
<td>5.611</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(p=.001*** )</td>
</tr>
</tbody>
</table>

Note. Subscale predictors: OSRLI-EJ, OSRLI-Rfs, MSLQ-CT, MSLQ-Eff, MSLQ-Rm, W-BNS-R, W-BNS-C, W-BNS-A. * Probability is significant at the .05 level, ** Probability is significant at the 0.01 level, *** Probability is significant at the 0.001 level

analysis of these subscales in groups by SRL instrument resulted in the same model as the forward sequential method, without any statistical significance of the predictor variables on the variance of RJ scores.

*Interpretation.* The first model using the enter method for identified subscales (see model 1, Table 4.3) did not result in a statistically significant indicator of RJ from any of these subscales, F change (8, 21) = .563, p = .796. The variance explained (R^2 = .177) indicated less than 2% of the variation of RJ could have been predicted by all eight of the subscales together. The findings had insufficient evidence to reject the null hypothesis for one or more of the subscales to predict the variance in the RJ.

The forward and stepwise sequential regression results were identical (see model 2, Table 4.3) indicated a significant proportion of the total variation in RJ was predicted by prior GPA, F
(1, 27) = 13.224, p = .001. The unstandardized partial slope (5.611) and the standardized partial slope (0.573) were statistically significantly different from zero (t = 3.637, df = 27, p = .001). The variance explained ($R^2 = .329$) indicated approximately 33% of the variation in RJ was predicted by prior cumulative GPA. None of the subscales contributed to the RJ variances to a statistically significant degree above and beyond the prior GPA. G* Power (Faul, Erdfelder, Lang & Buchner, 2007) was utilized to calculate effect size ($f^2 = 0.49$) indicating GPA had a large effect (Cohen, 1988; Soper, 2017). This indicated the regression coefficients for the null hypothesis are statistically significantly different from zero only for prior cumulative GPA.

The secondary quantitative question “Does the discipline group membership moderate the effect of SRL on RJ when controlling for a covariate (i.e.: prior GPA) was investigated with an ANCOVA. This analysis of covariate was completed only in an exploratory manner due to the unequal membership group sizes and the small sample size. The assumptions of independence of observations, normality, linearity, homogeneity of variance, and homogeneity of slopes. The results of the ANCOVA (see Table 4.6) suggest a statistically significant effect of the covariate, prior GPA, on RJ scores (the dependent variable) [$F$ prior GPA (1, 19) = 11.962, $p$ = .003] with a large effect size noted (partial $\eta^2 = .386$, observed power = .906). Discipline membership did not show a statistically significant effect on RJ scores [$F$ Discipline (2, 19) = .574, $p$ = .573].

The results of the ANCOVA suggest the RJ scores do not differ by discipline groups when the SRL scores are controlled for prior GPA. The RJ scores differed to a statistically significant effect by prior GPA when controlling for discipline. The statistically significant effect and strong power (partial $\eta^2$ prior GPA = .386) suggests that over 38% of the variance in
the RJ can be accounted for by prior GPA. This must be considered cautiously due to the small sample size, disparate group sizes, and only having three health administration participants.

Table 4.6.

**ANCOVA Table: Tests of Between-subjects Effects**

<table>
<thead>
<tr>
<th>Source</th>
<th>Type I Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corrected Model</td>
<td>66.082a</td>
<td>9</td>
<td>7.342</td>
<td>2.176</td>
<td>.074</td>
</tr>
<tr>
<td>Intercept</td>
<td>1549.793</td>
<td>1</td>
<td>1549.793</td>
<td>459.201</td>
<td>.000***</td>
</tr>
<tr>
<td>Mean of 3 SRL</td>
<td>3.306</td>
<td>1</td>
<td>3.306</td>
<td>.980</td>
<td>.335</td>
</tr>
<tr>
<td>Prior GPA</td>
<td>40.371</td>
<td>1</td>
<td>40.371</td>
<td>11.962</td>
<td>.003 **</td>
</tr>
<tr>
<td>Discipline</td>
<td>3.877</td>
<td>2</td>
<td>1.938</td>
<td>.574</td>
<td>.573</td>
</tr>
<tr>
<td>Discipline * Mean of 3 SRL</td>
<td>10.228</td>
<td>2</td>
<td>5.114</td>
<td>1.515</td>
<td>.245</td>
</tr>
<tr>
<td>Discipline * Prior GPA</td>
<td>5.003</td>
<td>2</td>
<td>2.502</td>
<td>.741</td>
<td>.490</td>
</tr>
<tr>
<td>Error</td>
<td>64.125</td>
<td>19</td>
<td>3.375</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1680.000</td>
<td>29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corrected Total</td>
<td>130.207</td>
<td>28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Dependent variable is RJ
* Probability is significant at the 0.05 level, ** Probability is significant at the 0.01 level, *** Probability is significant at the 0.001 level

**Qualitative Findings**

The convergent parallel design maintained the integrity of the full qualitative study prior to merging the results for the mixed methods meta-analysis. The purpose of the qualitative analysis was to determine evidence within RJ entries of SRL components and depth of content knowledge. The qualitative analysis included three cycles of coding followed by thematic analysis of the text entries to capture the participants’ voice within the authentic course context.
QL1. What SRL phases or components (i.e. subscale concepts) are evident from the reflective journal entries?

QL2. What themes emerge from reflective journal entries which indicate depth of knowledge or enhanced content learning?

**Qualitative data results.** The qualitative dataset was downloaded directly from the RJ entry submitted in the final course module from each of the 30 participants. The data was read several times before coding. The RJ entries varied widely. The length of the entries ranged from 126 to 569 words. Although the mean length differed notably by discipline: health administration was 187.7 words, nursing was 315.5 words, and occupational therapy was 207.1 words. At the conclusion of the three cycles for coding, the difference between the content was further evidenced by a dispersion of coded segments ranging from 7 to 41 per RJ entry. The 30 journal entries contained a total of 694 coded segments. Each code was identified between two and 125 times as presented in a word cloud depicted in Figure 4.6.

![Word cloud of the codes. Depicts relative frequency by font size.](image)
**Qualitative coding results.** Coding the data for a qualitative study was an important initial step of the analysis process. The predetermined exploratory codes for Cycle 1a (see Table 4.7) related to reflective practice were based on the Interprofessional (IP) Core Competencies (Interprofessional Education Collaborative Expert Panel [IPEC], 2011). Predetermined codes which related to SRL were obtained from the literature and theoretical perspectives for SRL (noted as code 1a. Exploratory: Predetermined cycle in Table 4.7). In this exploratory coding cycle, in vivo codes (the actual words from the participants) were added to this list for codes (as indicated by + for each new code, as noted in Table 4.7 for the coding progression). Many of the in vivo codes overlapped with the predetermined codes. The code “depth” was identified only three times by in vivo coding but was significant for the content regarding RJ for this study. As depth did not integrate with the other concepts, it was one indicator of how the in vivo coding was riddled with misinterpretation. The in vivo “feel” code was the most convoluted. In vivo coding also noted errors because of the colloquial versus affective meanings included within the in vivo feel code. The lexical derivatives of feel, such as “feel like…,” did not indicate affective or emotional meaning but rather represented a cognitive processing or reflective component for the topic. For example, participant A14 (female OT) wrote, “I feel like I have learned so much” which reflects a cognitive process. Participant B15 (female, nurse) wrote, “I feel like we all have some compromise and have the same end goals…” which represents a reflective component in this segment of the RJ.

For the second cycle involving process coding, the emotion/value approach was applied. Miles, Huberman, and Saldana (2014) described emotion coding as providing “insight into the participants’ perspectives, worldviews, and life conditions” (p. 75) which represented an excellent alignment with RJ. However, these text entries included personal perspectives which
### Qualitative Coding Progression

<table>
<thead>
<tr>
<th>Coding Cycle</th>
<th>Codes added</th>
<th>Code revisions</th>
<th>Development</th>
</tr>
</thead>
</table>
| 1a. **Exploratory:** Predetermined | - Ethics  
- Interprofessional practice  
- Roles  
- Responsibilities  
- Communication  
- Teams  
- Teamwork  
- Collaboration  
- Patient outcomes | + Planning/goal setting  
+ Metacognition  
+ Strategies  
+ Time/space management  
+ Changes in space  
+ Reflecting  
+ Respect  
+ Client outcomes  
+ Feelings  
+ Autonomy  
+ Relatedness  
+ Competency | Some codes overlapped  
Some codes were not used at all |
| 1b. **Exploratory:** In vivo | + Communication  
+ Collaboration  
+ Respect  
+ Roles  
+ Team  
+ Reflect  
+ Feel  
+ Time management  
+ Patient | Remove redundant codes.  
Feel like typically did not reflect affective content. | Difficulty with in vivo coding because application across participants did not appear to have the same meaning. |
| 2a. **Process:** Emotion/Values | *My experience...  
*From my perspective  
*I really liked it when... | No changes in coding. | Unable to weight the codes across participants. |
| 2b: **Process:** Holistic | - Roles  
- Depth  
- Transformation  
- Reflection  
- Affect/Feelings  
- Patient outcome  
- Collaboration  
- Team  
- Communication  
- Respect | Change feel to affective content through contextual clues.  
Intercoder review increased agreement by lengthening coded segments to include context. | Narrowed down the codes from cycle 1a, 1b, and 2a with clear definitions for each code. |
| 3. **Patterns** | - Reflection-Transformation  
- Team-Roles  
- Communication-Respect  
- Collaboration-patient outcomes | | Depth seemed to relate to the overall aspect of reflection, yet was seldom specifically coded. Feelings and affect related to several patterns. |

*Note: Codes added indicated with +*
were strongly connected to course content and were void of worldviews or life conditions. The design for the value coding was to weight the attitudes and affective components evident in the RJs. This aspect was not clearly evident in the RJ entries. While this again would represent a strong connection to self-reflection, the evidence was not present. Given the limits of the emotion/values coding for this sample, holistic coding (Miles, Huberman, & Saldana, 2014) was used as the primary process coding for this study. The holistic coding clarified the code definitions by expanding the coded segments (see Table 4.8) to assure the context was included.

The third coding cycle was the development of patterns as noted in Table 4.7. This coding process incorporated the intercoder reviews presented in the next section. Reviewing the coding stripes in MAXqda® provided visualization for the overlaps of codes and suggested other coding patterns. Figure 4.7 provides a screen shot of MAXqda® data for three paragraphs from one participants’ RJ (exact RJ text is blurred by a transparent rectangle to protect the anonymity).

**Figure 4.7.** Patterns emerge from code overlaps. A cropped screenshot of MAXqda® code stripes (colored code labels) indicate the participant’s identified coded segments in the center column which overlap to varying degrees. The actual text data which appeared to the right was blocked to protect the participant’s anonymity.
anonymity of the participant). The middle of the figure shows the colored code stripes which supported the emergence of the Cycle 3: Patterns coding. The coded segments were also reviewed across participants using the coding analysis features within MAXqda®. A matrix was developed that compared the coded segments and the code overlaps. Additionally, the intercoder reviewed the matrix for this coding cycle. The four most frequently dually coded segments which emerged as patterns after this coding process were (1) reflection-transformation, (2) team-roles, (3) communication-respect, and (4) collaboration-patient outcome.

**Qualitative intercoder findings.** Two levels of inter-coder reviews were implemented to establish the credibility of the coding. After Cycle 2a: emotion/values coding, a review coder (see Appendix H for intercoder agreement request) used the coding descriptions from Cycle 1 to code ten randomly selected RJs. The reviewer and the PI had a low agreement (approximately 30%) on the initial RJ scored by the reviewer. Codes were clarified and the agreement with the PI’s coding increased to approximately 60% for the remaining nine RJs. The PI and inter-coder met to discuss the results, expand the code definitions, and review each coder’s interpretations. The outcomes were (a) clearer definitions for each code (see revisions in blue font on Table 4.8), and (b) increased length of coded segments by the PI to capture the participants’ contextualized meanings. Another RJ was coded by the reviewer and the PI resulting in a 95% interrater agreement. The PI incorporated revisions into the holistic coding to continue the coding process.

Prior to the pattern coding, a second level of inter-coder agreement for ten RJs was completed. Results from the PI and this intercoder were compared in a matrix table (see Appendix I). The interrater agreement between the PI and the second reviewer was approximately 75% throughout a ten RJ sample. Using rival explanations, the PI and review coder discussed coding differences to reach a consensus for finalized code definitions. Coding
### Qualitative Code Definitions: Examples and Influences from Inter-coders

<table>
<thead>
<tr>
<th>Code (abbreviation)</th>
<th>Definition</th>
<th>Sample text indicators</th>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affect/Feelings (Feel)</td>
<td>This involves the affective feelings or emotional content. It is <strong>not</strong> necessarily all uses of the word “feel” or phrase “feel like”.</td>
<td>“comfortable”, “attitude”, “empowered”</td>
<td></td>
</tr>
<tr>
<td>Collaboration (Coll)</td>
<td>Indicates when individuals were not only working together but were integrating their efforts through consensus or agreement or working out a joint plan/intervention with more than one discipline.</td>
<td>“compromise”, “coordination”, “balanced workload”</td>
<td>Must be beyond the basic level of adding items into a single document.</td>
</tr>
<tr>
<td>Communication (Comm)</td>
<td>Indicated listening, written, or verbal exchange of information or strategy for such communicative exchange.</td>
<td>“heard”, “listen”, “discussed”</td>
<td></td>
</tr>
<tr>
<td>Depth</td>
<td>Indicates the participant recognizes in themselves a deeper level of understanding or ability to apply knowledge from deeper perspective.</td>
<td>“greater understanding”</td>
<td></td>
</tr>
<tr>
<td>Patient outcomes (pt out)</td>
<td>Shows an effect on patient (or student for educators) outcomes, including a single individual or a group of individuals as patients/clients/students.</td>
<td>“patient”</td>
<td></td>
</tr>
<tr>
<td>Personal transformation, planning for future (Trans)</td>
<td>Indicated the writer is looking at how they changed, how they plan to change, OR will change based on something that happened or their learning. Indicated an observable behavior or action.</td>
<td>“I have learned”, “Now I”</td>
<td>More than thinking about change, needs to involve doing, action orientation.</td>
</tr>
<tr>
<td>Respect (Res)</td>
<td>Indicating the writer's respect for another profession, another student, or another perspective. Can include statements of respect for the work of another professional without including the word respect. Can also indicate the opposite (a significant lack of respect for an action or another professional).</td>
<td>“respect” “accountability”</td>
<td>Caution not to read into the participants' meaning without supporting context noted.</td>
</tr>
</tbody>
</table>
differences arose primarily from overlaps (simultaneous or dual coding) (Miles et al., 2014) of topics with intersecting definitions from various scholars.

As noted with Cycle 3, the dually coded segments had a strong influence on patterns. Dual coding was most notable for reflection and transformation. After reviewing definitions for reflection (Mezirow, 1996; Taylor, 1997) the conceptual overlap with transformation should have been anticipated. Reduced confusion between these codes was accomplished by expanding the code definition regarding the timing for reflection versus intentions for change process for transformation. Similar dual concept discernment occurred for “collaboration” versus “team” and for “team” versus course “groups”. The resolutions of the differences in coding between the PI and the inter-coder led to final revisions to the code definitions.

In sum, the two inter-coders contributed to the credibility of the coding process in two important ways. First, this process clarified and defined limitations for the codes. Secondly, confirming the dual coded segments as reasonable and appreciating the overlap as part of interprofessional and reflective practice. The data generated insights which formed the foundation for Cycle 3: pattern coding reviewed in the prior section.

Qualitative thematic analysis. Creswell (2012) noted, “themes are similar codes aggregated together to form a major idea in the database, they form a core element in qualitative data analysis” (p. 248). The recursive analysis through the coding process (including the inter-coder reviews for credibility) provided this core element for the thematic analysis of this study. Memos were written following several steps of the coding analysis beginning with intra participant analysis as part of the in vivo coding for Cycle 1a. The analysis for holistic coding at Cycle 2b included documenting memos which holistically represented each participant. Analysis across individuals for Cycle 3 included memos which looked at the patterns across participants.
and across the SRL and IP contexts. The memo results (see Appendix J) were reviewed iteratively with rereading the coded segments. The memos were specifically included to support the emergence of themes. For this study, the themes provided a different perspective from the Cycle 3 pattern codes. The thematic analysis aligned with the answers to QL1 and QL2.

**Qualitative research question QL1 findings.** SRL phases which were evident in the RJ provided meaningful insight into participants’ learning strategies. Indicative of the forethought phase, one female nursing participant stated, “the goal centers around what is best for the patient/student.” An example (male, health administration) of the metacognitive strategy for the performance phase was “successful collaboration takes effort, effective communication, and flexibility.” Insightful statements, such as (female, OT) “allowed me to identify my own strengths, as well as some weaknesses” were evident of the self-reflection phase of SRL. The emotional content of the journal entries most often provided personal evidence of the connection with the learning process ranged from (each word taken from different female, nurse participant) “frustrated” to “empowered” to “confident.” The following codes were evidence of the SRL phases as noted in the RJ entries: reflection, transformation, affect/feeling, and coded segments for patient outcomes which related to patient goals or metacognitive processes.

The components (subscales) of SRL evident in the RJ were broader. The reflective strategies subscale of OSRLI was clearly connected with the code reflection and with the overlapping transforms code. RJ coded segments for respect, collaboration, and communication, such as (female, nurse) “communication, respect, teamwork, and compassion to get quality group work done” aligned with interaction components across each SRL survey: in OSRLI, the, Enjoyment of online human interactions subscale, the relatedness subscale of the W-BNS, and MSLQ’s peer learning and help-seeking subscales. The patient outcome and team codes aligned
with the self-determination theoretical theme for competence (W-BNS survey). Time management, organization, and effort were mentioned in RJ entries as a female nurse noted, “forced me to have better time management skills and organization” related to the content of similarly titled MSLQ subscales.

The themes which emerged in support of the SRL phases or components were transformation and relatedness. The transformation theme supported the SRL phase of forethought with many participants projecting how they planned to use these skills in their future professional practice. Transformation also encompassed the SRL component to change behavioral strategies for more successful learning, such as time management. The relatedness theme emerged from RJ evidence and the relationship aspects noted within their affective responses. The SRL components which were most evident were emotional attachment to the learning and implementing behavioral strategies, such as organizational approaches. This formed the basis for the relatedness theme which aligned with the self-determination theoretical foundation for SRL.

**Qualitative research question QL2 findings.** For QL2, the analysis was based primarily on understanding the interprofessional course content to analyze the depth of the participants’ RJs indicated by the codes: role, respect, team, collaboration, communication, and patient outcome segments. Examples of patient outcome codes which applied within the IP analysis included, (male, health administration) “each member of the team is essential to deliver the best possible care” and (female, nurse) “remembering that the care is about the patient should always be the focus.” The PI utilized memos to analyze potential interaction between participants and coded segments.
The overlap for these codes demonstrated IP content, noted by the weighted connections as seen in Figure 4.8. The strongest connection was between communication and team process. Team frequently overlapped with several other codes as follows. Team and roles: intersected 32 times; team and reflection: 32; team and patient: 23; team and collaboration: 18; and team and respect 12 occurrences. These intersections demonstrated enhanced, integrated content learning.

While “depth” was seldom coded, the evidence supported the participants’ enriched content learning by their frequent references to the course content. Individual participant memo labels (see Appendix J for full memo listing) emerged in groups of four to six participants, supported IP content as follows: Interprofessional (IP) and peers, IP and SRL with behavioral components, IP and metacognition, IP and affective or emotional impact, IP and value, and low

\[\text{Figure 4.8. Relationship of RJ intersected codes, indicating frequency by arrow weight. Patient outcome oval darkened because only half of these codes related to RJ, others primarily SRL.}\]
problem-oriented skills. These memo labels indicated SRL and IP content were strongly integrated. The low problem-oriented skills were noted for participants who indicated negative emotions without options to work toward a comfortable process with peers. Self-reflection is an opportune moment to identify concerns or problems and consider how to resolve such negative perceptions. However, the five participants in the memo grouping of low problem-oriented skills were all in the Fall 2016 semester. They did not indicate any level of self-analysis or self-reflection to resolve challenges faced by their teams. The two themes which emerged indicating the participants’ depth of understanding of IP collaboration were team-communication and respect (see Table 4.9).

**Qualitative interpretation for research questions QL1 and QL2.** Reviewing chunks of datum for “common threads in participants’ accounts” (Miles et al., p. 87) and inductive knowledge of the relationships between course content, SRL and self-reflection (noted in participant RJs) revealed the codes condensed into themes (see Table 4.9). The relationship between reflection and transformation from QL1 was evident at each level of analysis, forming transformation as the first theme (see rows one of Table 4.9). The second theme was relatedness indicated in row two. Supporting QL2, the third theme, team-communication, was evident in row three and four of Table 4.9. Respect, the fourth theme was noted by respect between individuals (performing their roles) and when collaborating with others for IP practice was noted in rows five and six.

To depict the final qualitative review, Figure 4.9 enters the QL1 and QL2 themes into a funnel indicating the depth involved with processing the themes to condense these processes to patient outcomes. This second primary theme was closely connected to the enhanced content learning. The second primary theme connected the enhanced course content knowledge to
Table 4.9:

*Coded Participant Exemplars: Grouped by Themes (QL1: Row 1 and 2; QL2: Row 3 – 6)*

<table>
<thead>
<tr>
<th>Theme</th>
<th>Code</th>
<th>Participant quote</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transformation</td>
<td>Transformation</td>
<td>• I have learned ... that members of the interprofessional team cannot be self-centered</td>
</tr>
<tr>
<td></td>
<td>Reflection</td>
<td>• I realize that in any aspect of my job I will have to work with others, and learning methods of improving this is always a good thing</td>
</tr>
<tr>
<td></td>
<td>Reflecton</td>
<td>• It allowed me . . . to understand the importance of taking the time to listen effectively to others and incorporate and identify the strengths of others.</td>
</tr>
<tr>
<td></td>
<td>Reflecton</td>
<td>• It allowed me the opportunity to critique myself</td>
</tr>
<tr>
<td>Relatedness</td>
<td>Feel</td>
<td>• Has made me less timid of interacting with these other professionals</td>
</tr>
<tr>
<td></td>
<td>Reflecton</td>
<td>• We are all very comfortable being honest with one another</td>
</tr>
<tr>
<td>Team-Communication</td>
<td>Team</td>
<td>• When everyone in the group is being heard through open communication and feels that their input is valued, the group runs more smoothly</td>
</tr>
<tr>
<td></td>
<td>Communication</td>
<td>• Emphasized the importance of being a good listener and effective communicator when completing client care and managing conflicts among the members of the care team</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The communication in this course has helped me be a more patient, understanding person since all schedules have to work together to find time to communicate</td>
</tr>
<tr>
<td>Collaboration</td>
<td>Communication</td>
<td>• Interprofessional teamwork can be accomplished through collaboration, communication, and shared decision making</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Collaboration in a practice setting has helped me understand how the care of the patient is affected based on the communication between the team members</td>
</tr>
<tr>
<td>Respect</td>
<td>Collaboration</td>
<td>Collaboration requires trust and respect.</td>
</tr>
<tr>
<td>Roles</td>
<td>Respect</td>
<td>I feel as though I have gained a newfound perspective and respect for other (non-nursing) professionals</td>
</tr>
</tbody>
</table>
participants’ insights on the IPEC core competencies for the Roles/Responsibilities Domain, the Interprofessional Communication Domain, and the Teams and Teamwork Domain (IPEC, 2011). The interprofessional collaboration concepts are also substantially related to the communication processes for effective teamwork. The data from the RJ related to second qualitative research question indicated a relationship between the interprofessional competencies for communication and team processes were noted through numerous coded segments (e.g., total coded segments were 86 for communication and 115 for the team code) (see Appendix G for the complete data frequencies).

Figure 4.9. Relationship of themes. Depth is indicated by the funnel which surrounds the themes.
Mixed Methods Merged Findings

Theoretically self-reflection has been identified as an important aspect of both RJ (McLeod, Barr, & Welch, 2015; Williams, Gerardi, Gill, & Soucy, 2009; Wood, 2013) and SRL (Cho & Shen, 2013; Labuhn, Zimmerman, & Hasselhorn, 2010; Ramdass & Zimmerman, 2011; Zimmerman, 2002). This study was designed to converge the results across a quantitative and a qualitative study of these two learning constructs (RJ and SRL) with identical samples. The mixed methods merged results from convergent quantitative and qualitative results was intended to deepen the understanding of the relationship of SRL and RJ. The implications, such as answering MMR 1 (What are the implications of the relationship between RJ and SRL for online education of OT graduate students?) are included in Chapter 5: Discussion. This section focused on the overarching question from the merged data (What is the relationship between SRL and RJ of graduate students in an online interprofessional course and how do complimentary RJ text entries contribute to understanding this relationship?). As planned, the mixed methods analysis began with a complete review of the data and analysis of the quantitative and qualitative studies, searching for the complimentary aspects of the prior analyses.

The mixed methods analysis included a review of the qualitative codes by discipline groupings for nursing and OT. The results were relatively consistent across these disciplines (see Table 4.10) indicating similar priority for these concepts across all participants. Health administrative students were not included in this analysis because of the extremely small sample size of only three participants. The quantitative results of this study were underpowered statistically, particularly for QN2. Thus, the raw data was reviewed to consider what relative strengths were evident on specific survey subscales. Using this comparison for quantitative results along with the qualitative data and analysis, two different constructs were evident
Table 4.10.

*Codes Sequenced by Frequency for All Participants versus Nursing versus OT*

<table>
<thead>
<tr>
<th>All participants</th>
<th>Nursing only</th>
<th>OT only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transform</td>
<td>Team</td>
<td>Transform</td>
</tr>
<tr>
<td>Team</td>
<td></td>
<td>Roles Reflection</td>
</tr>
<tr>
<td>Roles</td>
<td>Roles Reflection</td>
<td></td>
</tr>
<tr>
<td>Reflection</td>
<td>Transform</td>
<td>Team</td>
</tr>
<tr>
<td>Communication</td>
<td>Communication</td>
<td>Communication</td>
</tr>
<tr>
<td>Patient (client) outcome</td>
<td>Collaboration</td>
<td>Patient (client) outcome</td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
<td>Collaboration</td>
</tr>
<tr>
<td>Feelings (affect)</td>
<td>Patient (client) outcome</td>
<td>Feelings (affect)</td>
</tr>
<tr>
<td>Respect</td>
<td>Respect</td>
<td>Respect</td>
</tr>
<tr>
<td>Depth</td>
<td>Depth</td>
<td>Depth</td>
</tr>
</tbody>
</table>

between self-reflective journaling including the rubric scores and self-reflection for self-evaluation of successful implementation for SRL strategies. Both of these constructs for self-reflection are positively related to academic achievement.

The first construct was labeled *engaged for success*. The quantitative multiple regression identified four significant predictors of RJ: prior cumulative GPA, and the subscales for Autonomy, Critical thinking, and Enjoyment of learning. The final themes which emerged from the analysis of the qualitative text data relevant to SRL provided equally significant themes: Feelings (affect), Reflection, and Transformation. Furthermore, the final qualitative analysis included two IP related themes which complimented the quantitative data thereby contributing to the understanding of the intersection of SRL and RJ: Team and Communication. The review of the literature on SRL survey instruments, the development of self-reflection and the memos for
each journal entry were also conducted for this MMR analysis. Convergence was evident from the overlap of the questions from the SRL subscale predictors for the multiple linear regression and quotes from RJ texts exemplars were in the joint display of Table 4.11. This comparison resulted with an 18% lower score on the OSRLI-Reflection between the six participants with the fewest versus the most coded segments in their RJ entry.

The second grouping was labeled investment for reflection. A second comparison was completed for the MSLQ Effort subscale. This subscale was selected because researchers felt this subscale was a positive predictor for academic outcomes (Crede & Phillips, 2011; Dunigan & Curry, 2006; Wilson, 2006). The depth of investment from participants aligned well with the Effort subscale and the content review they included in their RJs. Additionally, self-reflection as a process which by definition, requires additional effort, deep metacognitive review, and consideration as the individual mentally reviews an experience. The Effort subscale was compared to the top versus bottom five participants with the combined longest RJ (i.e.: highest word count) and highest frequency of coded segments for their journal entries (see Figure 4.10). The result of this comparison noted the participants with the lowest RJ entries (shortest and fewest coded segments) scored 12.4% higher than the highest RJ entries for their MSLQ subscale for Effort. This may represent the participants’ consideration that they had invested effort for the RJ entries.

While team RJ themes and autonomy SRL components are connected, they are often considered opposites. The view of this researcher considers them complimentary rather than opposites. In order for an individual to make a significant contribution on a team, the professional must be a strong autonomous thinker. However, professionals initially exposed to interprofessional content for team cooperation view this as a merging of professions rather the
<table>
<thead>
<tr>
<th><strong>Multiple linear regression:</strong> Predictor SRL subscale questions</th>
<th><strong>Participant text-based data from RJ entries</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>I enjoy interacting online with other students in the course.</td>
<td><em>I mostly appreciated the chance to communicate with other professionals and really get their thoughts and opinions on topics.</em></td>
</tr>
<tr>
<td>I enjoy sharing my knowledge in my online interactions in this course.</td>
<td><em>I look forward to sharing innovative ideas from this class with my work team.</em></td>
</tr>
<tr>
<td>I enjoy sharing relevant personal experiences with students in this online course</td>
<td><em>I enjoyed their real-world examples of situations, and I enjoyed being able to share mine and get feedback on my role on a healthcare team.</em></td>
</tr>
<tr>
<td>I enjoy seeing discussions develop due to my posting</td>
<td><em>Having an additional accountability of letting everyone know that your message has been received has been helpful but it hasn’t been perfect</em></td>
</tr>
<tr>
<td>In this class, I often feel like I have to follow other student’s commands. (reverse)</td>
<td><em>As a group we devised a plan to make sure each facilitator would be a successful leader during their time of facilitating... I wanted her to be successful in the role, hence the co-facilitator.</em></td>
</tr>
<tr>
<td>The tasks I have to do for this class are in line with what I really want to do.</td>
<td><em>There are several insights that I have gained that I will continue to take to my practice.</em></td>
</tr>
<tr>
<td>Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives</td>
<td><em>I feel as though I have gained a newfound perspective and respect for other (non-nursing) professionals</em></td>
</tr>
<tr>
<td>I try to play around with ideas of my own related to what I am learning in this course.</td>
<td><em>Identifying each team member’s assertiveness has been important to understanding communication and engagement in team activities</em></td>
</tr>
<tr>
<td>I often find myself questioning things I hear or read in this course to decide if I find them convincing.</td>
<td><em>I realize that being the leader certainly does not mean that you have to do the work all yourself.</em></td>
</tr>
<tr>
<td>In this class, I feel forced to do things I do not want to do.</td>
<td><em>[The course] did offer an opportunity to self-reflect on my approaches to teamwork.</em></td>
</tr>
</tbody>
</table>

*Note. Reverse items were intended to measure the exact opposite (i.e. reverse the scoring for the item). Text examples correspondingly reflect reversed meanings.*
mutual respect for complex, complimentary care of strong interprofessional teams. It was not surprising that this depth was not evident in the participants’ reflective journals as these were primarily students without authentic professional practice experiences.

Some of the subsections for SRL tools were expected to correspond to the observed responses of participant RJ, such as the OSRLI reflection subscale. Comparing the scores from RJ to the specific tools did not result in statistically significant responses. This Cronbach reliability for this subscale of only 3 items was low and could explain the lack of statistically significant results. To compare this subscale with the RJ qualitative entries, the investigator compared the OSRLI subscale for Reflection scores from the quantitative data with participants with the lowest versus the highest number of coded segments for the RJ entry (see Figure 4.10).

Figure 4.10. Number of Coded Segments and Word Count per RJ. • represents word count (with orange y-axis indicators of the word count per entry), ♦ represents coded segments (gray y-axis indicators for the number of coded segments per entry). The x-axis represents the participants as numbers. Colors indicate discipline: Red = Health services administration, Blue = Nursing, Black = Occupational therapy.
The clearest connection between the qualitative RJ text analysis and SRL tools results was noted in the joint display (Table 4.11) with intersecting conceptual concepts for Feeling-Affect (text) and Enjoyment of Learning (OSRLI); Self-reflection (text) and Critical Thinking (MSLQ); Team (text) and Autonomy (W-BNS). While each of these paired concepts are connected, Figure 4.11 demonstrates that all of these concepts are interconnected and are bound together which influences academic success. Further convergence between themes from the text analysis and SRL scales or subscales by self-report surveys was based on interpretations which could not be confirmed with this sample. The constructs of engaged for success is embedded within the feeling and enjoyment of learning gear of this image. So too, investment for reflection is embedded within the self-reflection with critical thinking gear.

*Figure 4.11.* Paired themes for self-reflection within a sphere of academic success
Chapter 5: Discussion

This study investigated the relationship between self-regulated learning (SRL) and self-reflection of reflective journaling (RJ). The purpose of this research study was to probe how these two constructs, RJ and SRL, complement each other for graduate health science students in an authentic context of an interprofessional (IP) online course. As an OT educator and researcher, the most important mixed methods research (MMR) question was: What are the implications of this relationship for future online education of OT students? This chapter begins by briefly summarizing the quantitative and qualitative study findings along with their implications. Consistent with the convergent parallel research design, the merged findings and implications follow. Importantly, this chapter connects the results of this study with prior research, emphasizing the impact on the understanding of SRL and RJ for higher education, most specifically for OT graduate education. Additionally, this chapter will share personal reflections on the study, discuss limitations of this study, and suggest areas for further research, before closing with the conclusion.

Discussion of Results and Implications

Given the complex nature of MMR, the separate methods and merged methods results are summarized with implications followed by the significance of each. Per MMR, the significance of the merged data provided the basis for meta-inferences.

Quantitative study summary and implications. The quantitative study questions were:

QN1. Quantitative study summary and implications.

Secondary quantitative question: QN 1a: How did the three SRL tools relate?

QN2. How does SRL relate to RJ?
Secondary quantitative question, if the data suggested a potential covariate: QN 2a: Does the discipline group membership moderate the effect of SRL on RJ when controlling for a covariate?

In response to QN1, a Pearson Product Moment Correlation of the three SRL self-reported survey results and the RJ scores found a small, non-significant positive relationship between each SRL survey and RJ, with W-BNS having a very slight edge over the OSRLI or the MSLQ. The W-BNS, developed to measure relatedness, competence, and autonomy (self-determination theory [SDT] basic human needs) at the work place, was selected for the clear SDT foundation not reported for the other two SRL surveys. In answer to the question about a secondary correlation between the SRL tools, a strong positive statistical significance correlation was identified between MSLQ and both OSRLI and W-BNS (see Table 4.4). A moderate to strong relationship was found between W-BNS and OSRLI. The prior cumulative GPA score was added to the Pearson correlation, which indicated a moderate to strong correlation with the RJ rubric scores but a weak non-significant relationship with the SRL surveys.

Despite the small sample size, implications of these correlations suggest (a) weak relationship between RJ and the concepts of SDT measured in the W-BNS, (b) a strong positive relationship between the three SRL surveys, and (c) a strong positive relationship between prior GPA and RJ. Additionally, the difference in the results of the W-BNS compared to the clearly SRL based surveys (OSRLI and MSLQ) beckons a question of whether the W-BNS measures SRL or other motivational concepts which overlap with SRL and RJ but are conceptually separate.

As a foundation for QN2, prior research (see Table 3.2) indicated specific subtests of the OSRLI and the MSLQ aligned with SRL. The second quantitative research question investigated
the predictive value of eight separate subscales and prior cumulative GPA on RJ. The results of
the multiple linear regression indicated that prior cumulative GPA had a large effect size and predicted approximately 33% of the variance in RJ (F (1, 27) = 13.224, p = .001, R² = .329).
While prior GPA was expected to predict RJ, the results were stronger than anticipated. Using forward and stepwise analyses, none of the eight SRL subscales were found to statistically significantly predict the variance in RJ. While QN1 indicated a non-significant correlation between SRL and RJ, analysis of the separate subscales was hypothesized to provide an indication of subscale strength. Based on prior research which aligned subscales with SRL outcomes, the lack of significance of any of the subscales as predictive of RJ change was unanticipated. The small sample size along with the smaller number of questions per subscale most likely limited the statistical analysis for this question.

The secondary quantitative research question was intended to determine whether demographics (age, prior GPA, or discipline) moderated the relationship between RJ and SRL. The significance of prior GPA for the first two quantitative research questions led to investigate prior GPA as a covariate of SRL on RJ. An ANCOVA with RJ as the dependent variable, SRL tools as the independent variable with prior GPA as a covariate for group membership by disciplines provided insufficient results due to the small sample size. This would be an interesting future study with a larger sample size including equal sized groups.

Together these quantitative question results supported a strong relationship between prior GPA and RJ. Additionally, SRL subscales were not statistically significantly related to, or predictive of, RJ results. A small, non-statistically significant relationship between RJ and W-BNS a relationship between the SDT basic needs and self-reflection was found. Further research
to investigate the relationship between the SDT basic needs and self-reflection would inform this relationship in other settings.

The reflective journaling as the dependent variable across all of the quantitative analyses also requires further investigation. First, the RJ scoring was the combined use of two prior RJ scoring systems which had not previously been pooled. Secondly, the probes influence the outcomes of reflective writings and need to be investigated. Third, the participants’ prior education on written RJ was not assessed.

**Significance of quantitative findings.** The weak relationships between the SRL instruments and RJ and the moderate to strong correlation with prior cumulative GPA could relate to the small sample size or the reliability of the RJ rubric assembled by this researcher. The results of the Pearson correlation did not support the conclusion of nursing researchers, Kuiper and Pesut (2004), who suggested reflective practice was “inextricably linked …with the use of self-regulated learning” (p. 381). However, the Pearson correlation’s contribution to the literature the relationship between the MSLQ and the OSRLI with the W-BNS (when modified for student learning versus worker satisfaction). Within this small sample size, this study documented the moderate to strong positive relationship between the W-BNS and the MSLQ \((r = .641, n = 30, p < .0005)\) and the moderate positive relationship between the W-BNS and the OSRLI (moderate positive, \((r = .570, n = 30, p = .01)\). Prior research to compare these tools was not found.

The influence of the SDT on SRL in health science profession was supported by Cook and Artino (2016), Liu et al. (2014) and ten Cate et al (2011). Utilizing the W-BNS, this study also found a strong relationship which suggested that as the SDT’s basic human needs scores on the W-BNS (autonomy, relatedness, and competence) increase, so too do the scores for SRL as
measured by the traditional, highly recognized SRL tool (MSLQ) and a recent SRL tool designed to measure students’ online learning experiences (OSRLI). Support for the W-BNS as a measure for SRL is consistent with Reeve, Deci, and Ryan’s (2004) study of SDT as a “macrotheory of motivation” (p. 33) but would need significant additional research as this underpowered study can merely explore a topic; higher level research is needed to provide statistical significance.

The multiple linear regression model which suggested cumulative GPA as a predictor of 33% of the variance of RJ supports prior researchers investigating online learning (Artino & Stephens, 2009; Broadbent & Poon, 2015; Cho & Kim, 2013; Wang, Shannon, & Ross, 2013). The results of this study could not support findings of prior researchers connecting specific subscales (see Table 3.2) or connecting SRL to RJ (Kuiper & Pesut, 2004; Pintrich, 2004; Zimmerman & Schunk, 2008). In this small sample, the assumption for collinearity (all VIFs were less than 2.5) did not identify any of the SRL tools or the focused subscales as closely related enough to be measuring the same aspect of SRL (to the extent to be considered statistically significantly collinear). For this context, these measures each contribute uniquely to the multiple aspects of the complex process known as SRL. Further research could determine if similar results are found.

**Qualitative study summary and implications.** The qualitative study involved a constructivist stance to answer questions through an iterative analysis of the RJ text content. The qualitative research questions were:

QL1. What SRL phases or components (i.e. subscale concepts) are evident from the RJ entries?

QL2. What themes emerge from reflective journal entries which indicate depth of knowledge or enhanced content learning?
In order of the frequency of coding, the ten main codes which emerged from the analysis of the RJ text were transform, team, roles, reflection, communication, patient (client) outcome, collaboration, feelings (affect), respect, and depth. The code which most strongly evidenced the SRL phases was transform, as participant voices noted plans (forethought) to change their future professional practice and behavioral changes (performance phase) to improve time management or organizational strategies (Bandura, 1991; Pintrich, 2004; Zimmerman, 1986 & 2008). Participant statements within several codes (respect, collaboration, and communication) evidenced the subscales for SRL (enjoyment of interactions, peer learning, relatedness, and effort subscales). The transformation and relatedness themes emerged from the analysis of this first qualitative question.

The second qualitative question related to the depth of knowledge of the IP course content (Luke et al., 2009; McKenna et al., 2014). A review of the IP core competencies (IPEC, 2011) revealed that all of the codes were representative of the IP course content. The team-communication theme was the strongest evidence of the depth of knowledge of the IP course content. Secondarily, the participant’s text data for the respect, roles, and collaboration codes were also very strongly related to the IP core competencies reflecting depth of knowledge for the course content. Since the study design did not allow for an analysis of RJ entries from course participants who did complete the SRL surveys, it is difficult to determine if the participants had an “enhanced” outcome, per QL2, as that would imply a comparison to another group or to their prior learning outcomes. Neither of which were available within this study.

The RJ text data supported clear links to SRL phases and concepts within the SRL subscales. The depth of course knowledge which was indicated in the RJ data (Dyment & O’Connell, 2011) was encouraging as an educator. These results suggested the value of RJ as a
means for eliciting depth of course content knowledge and suggestive of the relationship between RJ and SRL.

**Significance of qualitative findings.** The codes, as the first level of analysis of the qualitative data, strongly represented the IP course content confirming prior research which recognized the value of reflective practices for depth of learning (Cohn, et al., 2009; Mann et al., 2009; McLeod, et al, 2015; Schön, 1987). Prior research also supported depth of IP knowledge through reflection in the works of Clark (2009), Luke et al. (2009) and McKenna et al. (2009). The first theme for the transformational aspect of reflective practice strongly evident throughout the qualitative study was consistent with prior research by McLeod et al. (2015), Schön (1987), and Powell (1989). The influence of communication and respect on team processes confirms the IP foundational research (Barr et al., 2006; Barr, Hammick, Koppel, & Reeves, 1999; Hean, Craddock, & O’Haloran, 2009; Reeves et al., 2009).

The significance of these findings for educational practices for OT graduate students suggests reflective journaling is effective for depth of content knowledge and that reflection is tied to transformation. While this study did not focus specifically on the collaborative model (Hmelo-Silver, Chernobilsky & Jordan, 2008; Persico, Pozzi & Sarti, 2010) for online learning for OT graduate courses, this educational model strongly aligned with the IP content (Howell, 2009; Myers & O’Brien, 2015; Prast, Herlache-Pretzer, Frederick, & Gavni-Lachter, 2016) and the format of the context for this study. The collaboration code in the qualitative study substantiated the importance of this concept. The effectiveness of incorporating reflective practice into collaborative online education, as evident in this study, should be a serious consideration for future online OT education.
**Mixed methods study summary and implications.** The mixed methods overarching question (What is the relationship between SRL and RJ of graduate students in an online interprofessional course and how do complimentary RJ text content contribute to understanding this relationship?) was analyzed through joint displays, and review of all prior analyses.

Two foundations for the quantitative data are important. Firstly, a broad foundation of strong prior research indicated the relationship between academic achievement and SRL was noted in this study for prior GPA and RJ (for example: Broadbent & Poon, 2015; Johnson, Taasoobshirazi, Kestler, & Cordova, 2014; Keyser & Viljoen, 2015; Liu et al., 2014; Zimmerman & Kitsantas, 2005). Secondly, this study provided a strong correlation of all three SRL surveys. Although quantitatively this study provided consistent support only between prior GPA and RJ, the qualitative results, through the analysis of the RJ text data, supported a positive relationship between SRL and RJ. In this study, academic achievement was indicated by prior GPA. Prior GPA was consistently statistically significantly linked to RJ.

The RJ text data strongly supported a depth of learning which is significant for participants’ future reflective clinical practice, potentially linking self-reflective capabilities of the RJ content with academic and future professional success (although this would require further research support). Self-reflection for RJ and SRL apparently related, was not strong enough to support a statistically significant association in this study. The RJ data provided evidence of a connection between SRL phases and components, particularly enjoyment of learning, resource management, critical thinking, autonomy, and relatedness. However, the lack of statistical significance in the quantitative study, indicates self-reflection for self-assessment of SRL may not be the same process as self-reflection within RJ or the SrRJE used for this study.
Merged mixed methods inferences. The most significant MMR question which has yet to be discussed was: Merging complimentary findings, what are the implications of the relationship between RJ and SRL for online education of OT graduate students? This MMR study was based on the assumption that the concept of self-reflection was consistent within SRL and RJ and furthermore related to OT reflective practice as a licensed professional.

The SDT foundation fits well with SRL and supports professional development for OT graduate students. Competence is extremely important as a basic human need per SDT and as a requirement for new OT graduates. Just two months prior to the presentation of this dissertation, the OT profession announced a change in the required entry level preparedness for new OTs from master’s level to clinical doctorate professional training as of 2027. The accreditation standards are currently being updated to increase the competence of novice practitioners. Interprofessional practice requires OTs to be confident and self-determined in their own professional skills in order to collaborate within an IP team. Autonomy and self-efficacy among OT practitioners supports the professional skills which they bring to the team.

Significance of mixed methods findings. The practical implications for OT education were developed by the multi-role of the PI as the instructor, a clinician, and researcher. OT student success was linked to self-reflection for depth of learning and for SRL. The dichotomy of the statistical lack of significance yet support of qualitative data led this author to agree with prior research by Aronson (2010), “Absent guidance and education about reflection, a majority of learners produce reflections which are largely anecdotes devoid of learning” (p 202). Implicit learning processes appear to be insufficient for the development of self-reflection in RJ writings even for graduate students in highly competitive health science programs. Some of the participants in the study revealed internalization of reflective writing skills as they clearly
relating a prior experience, thoughtful internal critique of their response, and insightful suggestions. Others demonstrated difficulty with problem solving or conflict resolution without direct guidance such as the five participants with memos identifying low problem-oriented skills (see Chapter 4, QL2 findings). Explicitly teaching the RJ process could benefit OT students during their education and on their path to being reflective practitioners. The variance across length, score and coded segments per RJ suggests that guidance for self-reflection is needed. Students need to know how to relate prior personal experiences to current course content in RJ entries to convey skilled self-reflection (Kuklick, Bearity, & Thompson, 2015; Richardson & Maltby, 1995). A detailed rubric for grading within the course (beyond timely, content related, and grammatically appropriate) would be a means to scaffold this skill. Aligned with the situated learning models, examples of appropriate RJ entries or peer review feedback could further scaffold self-reflective writing. Optimizing the RJ outcomes by investigating the best RJ prompts also needs to be investigated.

**Personal Reflections**

While the pragmatic, authentic context made this research study “real”, the complications of this context limited the statistical outcomes and implications. While the study design was intended to provide a complete 360 degree view of the participants’ perspective, additional interviews with participants after the course was completed would have provided further depth and explanation was missing in the final analyses. Alternatively, think-a-loud recordings during the written RJ could have also provided the insight of the participant about their thinking while completing the RJ assignments.

As an OT practitioner, I often benefited from the face-to-face practice lab instruction during continuing education programs. As an OT educator, I dream of fully online OT education
with opportunities for live feeds to headphones worn by students as they are implementing treatment with a client. This live practice guidance would provide in situ feedback to facilitate competence and development toward reflective practitioners. Schön reports reflection-in-practice as more advanced reflection but coaching (via technology and/or headphones) could facilitate this level of reflection. Currently, students utilize reflection-on-practice when they include prior personal experiences in their RJ submissions. While this encourages reflective practice, students do not have the expertise to recognize how changes in specific aspects of an intervention could improve patient/client outcomes. Thus, the in situ guidance would provide the greatest impact by allowing the treatment to unfold more naturally with authentic patient/client experiences. I envision this and other electronic educational strategies to support student success in future fully online OT education programs.

Each semester, throughout the courses which this OT educator has taught, students struggle with the planning, organization, self-discipline, and metacognitive skills to implement SRL. Thus, their view of self-reflection to assess their learning strategies is typically self-defeating because they are struggling with course content or lacking effective implementation of strategies for their academic success. Explicit recommendations and practice for personal goals within a course and pre-planning, personal self-direction, resource management, and metacognitive strategies to promote academic success are beneficial for many graduate students. Structured teaching and modeling self-reflection are important aspects for graduate student instruction. Integrating the key concepts of this study, SDT, SRL, and RJ (see Figure 5.1) supports my vision for online OT education. Self-determination theory provides the framework for the three basic human needs: autonomy, competence, and relatedness. The SRL phases contribute to the foundation with the stages for forethought for goal setting and planning;
performance which includes metacognitive, personal, and environmental strategies; and self-reflection which encompasses self-reaction and self-judgement (Bandura, 1991; Zimmerman, 2002). From this study, reflective educational practice for occupational therapists can also be considered with three components: Self-reflective processes, academic written expression, and combining knowledge and experiences in professional practice.

Finally, I was honored to be the instructor for these participants and other students in the course. I learn much from students during each course I teach. I have learned a new respect for researchers by completing this study. I have gained a deeper understanding of the influence of instructional design, and instructional models. In hindsight, I would have had fewer iterative changes in the online course and I would implement several changed to enhance the sampling process. However, the core of this study continues to intrigue me. Self-reflection is at the core

Figure 5.1. Relationship of SDT – SRL – RJ
of recognizing successes and envisioning how changing the implementation of OT intervention strategies can make a positive difference in the patient/client’s outcome. Online education for OT students needs to emphasize self-reflection.

**Limitations**

This authentic context of this study promotes ease in developing practical applications. This context also fit well with mixed methods practices for natural settings (Plano Clark & Ivankova, 2016; Teddlie & Tashakkori, 2009). However, in light of course changes across semesters and the relationship of the course make up across disciplines, this IP online course was not optimal for a consistent platform needed for a quantitative study. In the iterations of the course across semesters, this study resembled an educational design research study (McKenney & Reeves, 2012). Two additional instructors for the fall semester and the confluence of the special education components were limitations for the course consistency and appeared to influence the RJ submissions of participants in that semester.

The sampling method for identical samples across both quantitative and qualitative studies was a relative strength (Collins, Onwuegbuzie, & Jiao, 2007) but the resultant small sample size significantly limited the statistical significance and effect size of the quantitative study. The ethical considerations for the sampling, given the power differential of the PI as the course instructor, were carefully followed. Unfortunately this design resulted in the lack of a control group and the small sample size of 30 participants. Furthermore, the sample unequally represented participants across the disciplines, and was not able to compare age groupings due to limited responses for this demographic. The sample was adequate for basic statistical comparison (i.e. Pearson correlation) but too small to show significant results for any of the SRL subtest results in the regression study.
The scoring for the RJ was also a limitation of this study. The SrRJE used in this study needs further investigation in a larger study and across various prompts. The prompts contribute to the success of the RJ entries. The RJ for this study were specific to the IP content and the information is not generalizable to other OT courses.

The social desirability, although not apparent, could have influenced the participants or reduced their efforts for the RJ entries. The incentive of one point of extra credit for participation could have been the driving purpose for contributing to the study versus an altruistic involvement. In hindsight, adding another spring semester of data could have added OT and healthcare administration participants and had a significant effect on the results of this study. Since this would have extended my doctoral studies and this study by at least an additional year, I selected to finish this study with the current sample. Thus, confirmation of the old saying, “Hindsight is 20/20”.

Another area of limitation involves the importance of the implications for OT online education. This context was an IP course due to the prior pedagogical support of OT online education for IP collaboration. This course did not require online instruction for psychomotor performance-based skills which are required for OT students. Complications for measuring practical skills confound online OT education were addressed in my personal reflections.

**Further Research**

This study has provided a positive support for the small body of knowledge for online OT education, yet the study has unanswered questions and has opened novel areas for further research. The most obvious future research would be to replicate this study with a larger sample size, within an OT specific course content, without changing anything within the course content across the study, and/or with performance-based skill requirements for the OT students.
Replicating this study with a control group for the same content in a face-to-face environment or with an experimental group receiving scaffolding and a control group receiving the scaffolding for self-reflection or SRL in the following semester. Further research on RJ in OT education would increase the applicability of the SRL to RJ connection.

Further research can continue to develop a deeper understanding of the similarities and differences between self-reflection in the context of SRL and reflective-practice. While this study confirmed a relationship between SRL and RJ, this study did not provide the depth of understanding that relationship that was anticipated. The impact of emotions on self-reflection may influence outcomes of either construct (SRL or RJ). This study did not objectively include an emotional or affective measure. The full text analysis of the self-reflective journal entries included evidence of the presence of emotions and/or affect in the themes but lacked the depth needed to further analyze this aspect of the study. Additionally, a deeper understanding of how to instruct students to use metacognitive skills for RJ responses and academic success would benefit health science graduate education across disciplines.

Online OT education needs further research on appropriate instructional design options for various aspects of the required content standards. The OT profession requires both medical and socially-based knowledge and practice skills. This poses a unique balance for instructional methods. Additionally, the current changes in OT education to transition entry level practice to Occupational Therapy Doctorate (OTD) prepared practitioners provides the perfect timing incentive to complete research on instructional design for OT education. Online opportunities are anticipated to expand with this change and are desperate for this research.

The relationship between W-BNS and SRL would benefit from further study. This study supported the relationship between the W-BNS and OSRLI and MSLQ via the Pearson
correlation. The multiple regression also indicated a potential influence of the W-BNS for RJ. It appears that W-BNS may hold promise as an indicator of reflective practice.

**Conclusion**

The convergent parallel study design allowed this study to promote significant outcomes by overcoming the weaknesses found in each strand alone. In this way, the MMR design was similar to IP practice where the sum of the whole is more impressive than any of the individual parts. This study suggests that further research and continuing to deepen the understanding of the self-reflective phase of SRL and the self-reflection on practice for RJ can support both processes (SRL and RJ) in OT education.

The qualitative aspect of this study clearly supported the benefit of self-reflection for depth of learning of course content. The quantitative contribution was the relationship between prior GPA and RJ. The merged findings focused on *engaged for success*, and *investment for reflection*. Investigating how these can fit into other OT courses would be helpful.

This study statistically supported the relationship of prior academic achievement (GPA) and RJ. With a small sample size, the results of this study cannot be generalized to other areas of OT or other health science education. The exact connection between SRL and RJs remains unclear. The complexity of SRL and RJ processes are extensive. It is the view of this researcher that studies which are not able to confirm the experimental hypothesis are important studies to share. Although the quantitative results did not indicate the relationship between SRL and RJ, the qualitative results did support the depth of content learning through RJ. Future course or curricular modifications, such as encouraging explicit SRL and RJ instruction could increase the skills in each area, educating an OT workforce with greater competence. With the changes in the near future for OT education, there is much additional research needed to investigate optimal OT
pedagogical approaches, SRL, and reflective practice. Studies with larger samples are valuable because they provide greater generalizability. Given the limited OT educational research even small studies, such as this, provide insights in specific contexts about complex concepts such as self-reflection in SRL and RJ.
References


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Convergent Parallel Design for SRL and RJ in Online Interprofessional Course

**Context (QUAN & QUAL)**

**Site:** Online Interprofessional Collaboration course, Private midwestern university

**Study:** Concurrent: Spring 2016, Fall, 2016, Spring 2017

**Sampling:** 30 graduate student volunteers, **Disciplines:** Nursing, Health Administration, OT

**QUAN**

**Procedures:**
- Shared knowledge format, Simultaneous analysis (Collins & O’Cathain, 2009)

**Legitimation:** (O’Cathain, 2010)
- Study integrity (design, and data)
- Interpretative rigor & utility

**Products:**

**Data collection (DC)**
- Demographics
- Completed SRL surveys: (OSRLI, MSLQ, W-BNS)
- SrRJE rubric (reflection level insight, reflective outcomes)

**Data analysis (DA)**
- Descriptive statistics
- Cronbach α; Pearson
- ANCOVA;
- Multiple linear regression

**Interpretation (I)**
- Descriptive statistics
- Inferential statistics

**Validity (V)**
- Reliability: Cronbach α and prior reviews SRL surveys, SrRJE inter-rater
- Statistics: Review of assumptions and missing data

**QUAL**

**Procedures:**
- Self-reflective journal each module

**Data collection (DC)**
- Self-reflective journal

**Data analysis (DA)**
- Enter data into MAXQDA
- Iteratively code data
- Memoing

**Interpretation (I)**
- Review of memoing, coding system, Intra- and inter-participant review

**Trustworthiness (T)**
- Inter-coder agreement
- Codebook of codes, Matrix of inter-coder reviews

**Products:**

**Inferences Graduate Education**

**Merge the Results**

**Notes:** SRL is Self-regulated learning, Surveys: OSRLI: Online Self-regulated Learning Inventory (Cho & Jonassen, 2009), MSLQ: Motivation Strategies for Learning Questionnaire (Pintrich & de Groot, 1990); W-BNS: Work–related Basic Need Satisfaction scale (Van den Broeck et al., 2010). Rubric: SrRJE: Self-reflection in Reflective Journal Entries (researcher-developed, see Appendix D).
APPENDIX B

Recruiting Announcement

Let’s make online learning environments at Xavier stronger! You can help!

Announcement: Participation in a brief survey to study self-regulated learning in online classes
The survey will be completed four times across this semester. The survey will require approximately 20 minutes of your time each time it is completed. You will earn 1% extra course credit each time you complete the survey. Your participation is completely voluntary and the instructor will not know whether you completed the survey or the alternate assignment. The participation points will be entered by a co-investigator, Dr. Marcus Johnson, a professor at University of Cincinnati. An alternate assignment (reading an article and answering a short quiz about the article) can be selected in place of the study participation for the same credit.

What? An invitation to a research study titled, “Examining Self-Regulation in an Online Learning Environment”. Joan Tunningley is completing this study in partial fulfillment of requirements for her doctoral studies at University of Cincinnati. The purpose of the study is to examine self-regulation measures and academic outcomes in an online learning environment. The study will include survey results and data from Canvas online course statistics for time and frequency of accessing components of this online course. The Canvas information will not be obtained until the semester has ended and all final grades have been submitted. All data collected will be de-identified prior to data analysis.

When/where? The study survey will be provided in an electronic format. If you choose to participate, you will be able to respond from any computer with internet access. You will be provided with an access to the survey or the alternate assignment via an internet link on Qualtrics. You will be asked to complete the survey within the stated timeframe (5 days). The survey will be completed four times across the semester. At each point, you will be asked to participate. The participation points will be entered by Dr. Johnson so the course instructor, Joan Tunningley, will not be aware of your choice to participate or complete an alternate assignment for the extra credit. Your responses will be de-identified prior to the data harvesting for analysis.

Who? You must be 18 years of age to participate. Your opinions and comments will not be linked back to you and any information from the surveys will only be reported in aggregate. Your participation is completely voluntary and you are not required to participate. There is no known risk for participating in this research study. Not participating will have no effect on current or future grades or services you may be entitled to from Xavier University. While I prefer that you participate in all surveys, you may elect to discontinue your participation at any time.

Email Joan Tunningley if you have questions about the study; tunningleyj@xavier.edu put ‘research’ in the title of the message. Email Marcus Johnson marcus.johnson@uc.edu if you have questions about consent and participation put ‘SR in OLE’ in the title of the message. Thank you!

Questions about the study:
The consent form (attached) has further details about this study. Your participation would be greatly appreciated. UC’s Institutional Review Board (IRB) has approved this study. Xavier University’s IRB has entered into an authorization/reliance agreement that makes the UC IRB the IRB of record, but that the Xavier University IRB still being apprised of all aspects of the conduct of the study. If you have any questions or concerns about this study, you may contact the UC IRB at 513-558-5259 or the XU IRB at 513-745-2870. Qualtrics Study link: [insert current link from Qualtrics]
APPENDIX C

Qualtrics Consent and Survey

Information Sheet for Research
University of Cincinnati
Department: Educational Studies
Principal Investigator: Joan Tunningley, Doctoral Student
Co-Investigator: Dr. Marcus Johnson, Assistant Professor

NOTE: Green font has been added to items which were “reverse scored” per the specifics of the instrument. Grey font indicates those items were unintentionally included in this survey and were deleted from analysis for this dissertation.

Title of Study: Examining Self-Regulation in an Online Learning Environment

Introduction:
You are being asked to take part in a research study. Please read this paper carefully and ask questions about anything that you do not understand.

What is the purpose of this research study?
The purpose of this research study is to examine self-regulation measures and academic outcomes in an online learning environment.

Who is doing this research study?
The person in charge of this research study is Joan Tunningley, doctoral student of the University of Cincinnati (UC) Department of Educational Studies and clinical faculty at Xavier University. Dr. Marcus Johnson of the department of Educational Studies will de-identify all research data so Joan Tunningley will not know which students participated in the study. There may be other people on the research team helping at different times during the study.

Who will be in this research study?
- This study is designed for between 20 and 60 student participants
- You may be in the study if you are a student at Xavier University in Occupational Therapy, Nursing, Social Work, Psychology, Special Education, or Health Services Administration enrolled in the Online Interprofessional Collaboration Experience course.
- You must be at least 18 years of age.

What will you be asked to do in this research study, and how long will it take?
You will be asked to complete an online survey four times during the semester. Each survey will about 20 minutes. The research survey will be completed using any computer connected to the Internet.

Are there any risks to being in this research study?
• It is not expected that you will be exposed to any risk by being in this research study.
• You may skip any questions on the survey you do not want to answer.
• To reduce any concern about possible coercion of students by the instructor, Dr. Johnson will de-identify all surveys and online class information before Joan Tunningley receives it.

Are there any benefits from being in this research study?
You probably will not receive any benefit from being in this study. But this study might increase your awareness of how you use your time in online courses.

What will you get because of being in this research study?
Students who participate in the study will receive 1% course credit toward their final grade for each survey completed plus 1% if you complete all 4 surveys, up to a total of 5% if you complete all four surveys.

Do you have choices about taking part in this research study?
If you do not want to take part in this research study you may receive the same course credit as the survey (1% each) by completing an alternative assignment (a reading and a short online quiz).

For each of the four survey release weeks, you will have the option of completing the survey or the alternative assignment worth 1% course credit. You may choose to participate in the alternate assignment option for any part of the study. You will receive up to the possible total of 5% if you complete one option each week they are available.

How will your research information be kept confidential?
• Information about you will be kept private by separating your name from your survey responses and online course information.
• Your instructor will not be provided any information that can link any particular responses to any particular student.
• Your information will be kept on a password protected computer in a locked office at UC for 3 years; after which it will be deleted by co-investigator, Marcus Johnson.
• The data and results obtained from this study will be combined with other research information in the dissertation process for Joan Tunningley.

Agents of the University of Cincinnati or Xavier University may inspect study records for audit or quality assurance purposes.

What are your legal rights in this research study?
Nothing in this consent form waives any legal rights you may have. This consent form also does not release the investigators, the institutions (University of Cincinnati and Xavier University), or their agents from liability for negligence.

What if you have questions about this research study?
If you have any questions about this research study, contact Joan Tunningley at tunningleyj@xavier.edu or 513-745-4252.
The UC Institutional Review Board reviews all research projects that involve human participants to be sure the rights and welfare of participants are protected.

If you have questions about your rights as a participant, complaints and/or suggestions about the study, you may contact the UC IRB at (513) 558-5259. Or, you may call the UC Research Compliance Hotline at (800) 889-1547, or write to the IRB, 300 University Hall, ML 0567, 51 Goodman Drive, Cincinnati, OH 45221-0567, or email the IRB office at irb@ucmail.uc.edu.

Xavier University’s (XU) IRB has entered into an authorization/reliance agreement that makes the UC IRB the IRB of record. Xavier University’s IRB is being apprised of all aspects of the conduct of the study. You may contact the XU IRB at 513-745-2870.

Do you HAVE to take part in this research study?
No one has to be in this research study. Refusing to take part will NOT cause any penalty or loss of benefits to which you would otherwise be entitled. You may start and then change your mind and stop at any time. To stop being in the study, notify Dr. Marcus Johnson by email and put “SR in OLE” in the subject line. You can withdraw from the study at any time, for any reason without penalty.

Agreement:
I have read this information and have received answers to any questions I asked. I give my consent to participate in this research study.

Print this page if you would like a copy for your records.

Consent:
By selecting “I agree” and providing your name on the online survey, you confirm that you have read the above information and give your consent to participate in this research study.

BY COMPLETING THE ONLINE SURVEY YOU INDICATE YOUR CONSENT FOR YOUR ANSWERS AND COURSE INFORMATION TO BE USED IN THIS RESEARCH STUDY.

Q2 Consent: By selecting “I agree” and providing your name below, you confirm that you have read the above information and give your consent to participate in this research study.
☐ I Agree (1)
☐ I Disagree (you will be redirected to an alternative assignment) (2)
☐ If you do not want to participate in the research survey or the alternate assignment, please Exit NOW. (3)

If you do not want to parti... Is Selected, Then Skip to End of Survey
Q3 Please provide your name below to confirm your consent. Your name is required in order to give course credit and to collect the right information from the course's online statistics. Your name will be separated from the rest of your survey, to maintain confidentiality.

[type in name here]

Q4 What is the primary institution you are enrolled at?

- Xavier University (2)
- University of Cincinnati (1)
- Other (3) ____________________

Q5 Please indicate which online course you are enrolled in.

- HESA 602 (Applied Interprofessional Collaboration) (1)
- MOCT 779 (Applied Interprofessional Collaboration) (3)
- NURS 779 (Applied Interprofessional Collaboration) (2)
- Other (4) ____________________

Please respond to the items below to the best of your ability. There are no right or wrong answers. It is not necessary to dwell on the questions too long, rather provide your honest best reply and move on to the next question.
How true is the following statement for you in response to this course? Select 1 indicates the statement is completely untrue for you. Selecting 7 indicates the statement is completely true for you. These items are from the Online Self-Regulated Learning Inventory (Cho & Jonassen, 2009).

<table>
<thead>
<tr>
<th></th>
<th>Completely Untrue (1)</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (6)</th>
<th>Completely True (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>I enjoy interacting online with other students in the course (1)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>2.</td>
<td>I enjoy reading other students’ comments about my postings. (2)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>3.</td>
<td>I enjoy sharing my knowledge in my online interactions in this course. (3)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>4.</td>
<td>I enjoy providing help to other students via my online interactions. (4)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>5.</td>
<td>I enjoy replying to other students’ postings. (5)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>6.</td>
<td>I enjoy sharing relevant personal experiences with students in this online course. (6)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>7.</td>
<td>I enjoy seeing discussions develop due to my posting. (7)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>8.</td>
<td>I am concerned about being misinterpreted by other students. (8)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>9.</td>
<td>I am concerned that my posting might be disregarded by other students in this course. (9)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>10.</td>
<td>I am concerned about being negatively judged by other students. (10)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
<tr>
<td>11.</td>
<td>I am concerned about hurting other students’ feelings in my online interactions. (11)</td>
<td>☐</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☒</td>
<td>☐</td>
</tr>
</tbody>
</table>
Q16 Please respond to the items below to the best of your ability. There are no right or wrong answers. It is not necessary to dwell on the questions too long, rather provide your honest best reply and move on to the next question. How confident are you when engaging in the following tasks? 1 indicates you are Not confident at all when you complete the task. 7 indicates you are completely confident when you complete the task. These items are from the Online Self-Regulated Learning Inventory (Cho & Jonassen, 2009).

<table>
<thead>
<tr>
<th></th>
<th>Not confident at all</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (6)</th>
<th>Completely confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>12. Ask for help from the instructor whenever it is necessary. (8)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>13. Ask a question to the instructor. (9)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>14. Share my honest feelings with the instructor about the course. (10)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>15. Contribute to the development of an online community. (15)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>16. Initiate a topic for discussion. (16)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
<tr>
<td>17. Post a relevant question. (17)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td></td>
</tr>
</tbody>
</table>
Q17 Please use the following 1-7 rating scale to indicate the degree to which you feel the statements are true of you. Selecting 1 = Never true for you; 7 = Always true for you. There are no right or wrong answers. It is not necessary to dwell on the questions too long, rather provide your honest best reply and move on to the next question. How true is the following statement about your responses within this course? These items are from the Online Self-Regulated Learning Inventory (Cho & Jonassen, 2009). (Corrected column rating 6 to = 6 pts, column 7 = 7 points)

<table>
<thead>
<tr>
<th>Q</th>
<th>Statement</th>
<th>Never True</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (7)</th>
<th>Always True</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>Before I post my message, I read it again to make sure the message correctly states what I want to say.</td>
<td>(1)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Before I post a message, I consider how to present my ideas clearly.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>I regularly check this online course to keep up to date on course activities.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>I check others’ postings to evaluate my own comprehension of the material.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>I rarely interact online with others to make sure I understand the course content.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>When I write an online message, I try to organize my thoughts as much as I can.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>I check my spelling and grammar before posting.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>I respond to others’ postings or emails in a timely manner.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>I wait to post until just before I am required to do so.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>When I see others’ online requests for help, I try to help them.</td>
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<tr>
<td>28</td>
<td>I use others’ postings to help organize my own thoughts about the course.</td>
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</table>

Q18 Please use the following 1-7 rating scale to indicate how often you feel each statement is true of you. Selecting 1 = Never true of me; 7 = Always True. There are no right or wrong answers. It is not necessary to dwell on the questions too long, rather provide your honest best reply and move on to the next question. These items are from the Online Self-Regulated Learning Inventory (Cho & Jonassen, 2009).
<table>
<thead>
<tr>
<th></th>
<th>Never True <strong><strong>1</strong></strong> (1)</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (6)</th>
<th>Always True <strong><strong>7</strong></strong> (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Prior to working on the task, I create a plan to complete a given assignment. (1)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>b. I willingly adapt my learning styles to meet the course expectations. (2)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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<tr>
<td>c. Prior to submitting an assignment, I evaluate it according to the criteria provided by the instructor in the rubric. (3)</td>
<td>○</td>
<td>○</td>
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<td>○</td>
<td>○</td>
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<tr>
<td>31. Considering the difficulty of this course, the teacher, and my skills, I think I will do well in this class. (31)</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
<td>○</td>
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</tbody>
</table>
Q25 Think of this course or your expectations for this course. It is not necessary to dwell on the questions too long, rather provide your honest best reply and move on to the next question. Please respond to the best of your ability. Use the scale below to respond to each item. These are questions from the Motivated Strategies for Learning Questionnaire, Pintrich et al., 1991. Selecting 7 indicates that the statement is VERY true of you. Selecting 1 indicates that the statement is NOT at all true of you.

<table>
<thead>
<tr>
<th></th>
<th>Not at all true of me</th>
<th>1 (1)</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (6)</th>
<th>Very true of me</th>
<th>7 (7)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32. When I study the readings for this course, I outline the material to help me organize my thoughts. (32)</td>
<td>〇</td>
<td>〇</td>
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<tr>
<td>33. During class time I often miss important points because I’m thinking of other things. (33)</td>
<td>〇</td>
<td>〇</td>
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<tr>
<td>34. When studying for this course, I often try to explain the material to a classmate or friend. (34)</td>
<td>〇</td>
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<tr>
<td>35. I usually study in a place where I can concentrate on my course work. (35)</td>
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<tr>
<td>36. When reading for this course, I make up questions to help focus my reading. (36)</td>
<td>〇</td>
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<tr>
<td>37. I often feel so lazy or bored when I study for this class that I quit before I finish what I planned to do. (37)</td>
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<tr>
<td>38. I often find myself questioning things I hear or read in this course to decide if I find them convincing. (38)</td>
<td>〇</td>
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<td>39. When I study for this class, I practice saying the material to myself over and over. (39)</td>
<td>〇</td>
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<td>40. Even if I have trouble learning the material in this class, I try to do the work on my own, without help from anyone. (40)</td>
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<tr>
<td></td>
<td>Not at all true of me</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>4 (4)</td>
<td>5 (5)</td>
<td>6 (6)</td>
<td>Very true of me</td>
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<td>41.</td>
<td>When I become confused about something I’m reading for this class, I go back and try to figure it out. (41)</td>
<td>○</td>
<td>○</td>
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<tr>
<td>42.</td>
<td>When I study for this course, I go through the readings and my class notes and try to find the most important ideas. (42)</td>
<td>○</td>
<td>○</td>
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<td>43.</td>
<td>I make good use of my study time for this course. (43)</td>
<td>○</td>
<td>○</td>
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<td>44.</td>
<td>If course readings are difficult to understand, I change the way I read the material. (44)</td>
<td>○</td>
<td>○</td>
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<tr>
<td>45.</td>
<td>I try to work with other students from this class to complete the course assignments. (45)</td>
<td>○</td>
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<td>46.</td>
<td>When studying for this course, I read my class notes and the course readings over and over again. (46)</td>
<td>○</td>
<td>○</td>
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<td>47.</td>
<td>When a theory, interpretation, or conclusion is presented in class or in the readings, I try to decide if there is good supporting evidence. (47)</td>
<td>○</td>
<td>○</td>
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<td>48.</td>
<td>I work hard to do well in this class even if I don’t like what we are doing. (48)</td>
<td>○</td>
<td>○</td>
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<td>49.</td>
<td>I make simple charts, diagrams, or tables to help me organize course material. (49)</td>
<td>○</td>
<td>○</td>
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<tr>
<td>50.</td>
<td>When studying for this course, I often set aside time to discuss course material with a group of students from the class. (50)</td>
<td>○</td>
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<tr>
<td></td>
<td>Not at all true of me</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>4 (4)</td>
<td>5 (5)</td>
<td>6 (6)</td>
<td>Very true of me</td>
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<td>51.</td>
<td>I treat the course material as a starting point and try to develop my own ideas about it. (51)</td>
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<td>52.</td>
<td>I find it hard to stick to a study schedule. (52)</td>
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<td>53.</td>
<td>When I study for this class, I pull together information from different sources, such as lectures, readings, and discussions. (53)</td>
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<td>54.</td>
<td>Before I study new course material thoroughly, I often skim it to see how it is organized. (54)</td>
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<td>55.</td>
<td>I ask myself questions to make sure I understand the material I have been studying in this class. (55)</td>
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<td>o</td>
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<td>56.</td>
<td>I try to change the way I study in order to fit the course requirements and the instructor's teaching style. (56)</td>
<td>o</td>
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<td>57.</td>
<td>I often find that I have been reading for this class but don’t know what it was all about. (57)</td>
<td>o</td>
<td>o</td>
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<td>58.</td>
<td>I ask the instructor to clarify concepts I don’t understand well. (58)</td>
<td>o</td>
<td>o</td>
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<td>59.</td>
<td>I memorize key words to remind me of important concepts in this class. (59)</td>
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<td>60.</td>
<td>When course work is difficult, I either give up or only study the easy parts. (60)</td>
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<td>61.</td>
<td>I try to think through a topic and decide what I am supposed to learn from it rather than just reading it over when studying for this course. (61)</td>
<td>o</td>
<td>o</td>
<td>o</td>
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<td></td>
<td>Not at all true of me</td>
<td>2 (2)</td>
<td>3 (3)</td>
<td>4 (4)</td>
<td>5 (5)</td>
<td>6 (6)</td>
<td>Very true of me</td>
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<tr>
<td>62. I try to relate ideas in this subject to those in other courses whenever possible. (62)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<tr>
<td>63. When I study for this course, I go over my class notes and make an outline of important concepts. (63)</td>
<td>⬜️</td>
<td>⬜️</td>
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<tr>
<td>64. When reading for this class, I try to relate the material to what I already know. (64)</td>
<td>⬜️</td>
<td>⬜️</td>
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<td>65. I have a regular place set aside for studying. (65)</td>
<td>⬜️</td>
<td>⬜️</td>
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<td>66. I try to play around with ideas of my own related to what I am learning in this course. (66)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<tr>
<td>67. When I study for this course, I write brief summaries of the main ideas from the readings and my class notes. (67)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<tr>
<td>68. When I can't understand the material in this course, I ask another student in this class for help. (68)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<td>69. I try to understand the material in this class by making connections between the readings and the concepts from the lectures. (69)</td>
<td>⬜️</td>
<td>⬜️</td>
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<td>70. I make sure that I keep up with the weekly readings and assignments for this course. (70)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<td>71. Whenever I read or hear an assertion or conclusion in this class, I think about possible alternatives. (71)</td>
<td>⬜️</td>
<td>⬜️</td>
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<tr>
<td>72. I make lists of important items for this course and memorize the lists. (72)</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
<td>⬜️</td>
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<td></td>
<td>Question</td>
<td>Rating Scale</td>
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<td>73.</td>
<td>I attend this class regularly.</td>
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<tr>
<td>74.</td>
<td>Even when course materials are dull and uninteresting, I manage to keep working until I finish.</td>
<td>4 (4)</td>
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<tr>
<td>75.</td>
<td>I try to identify students in this class whom I can ask for help if necessary.</td>
<td>5 (5)</td>
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<tr>
<td>76.</td>
<td>When studying for this course I try to determine which concepts I don’t understand well.</td>
<td>6 (6)</td>
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<tr>
<td>77.</td>
<td>I often find that I don’t spend very much time on this course because of other activities.</td>
<td>7 (7)</td>
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<tr>
<td>78.</td>
<td>When I study for this class, I set goals for myself in order to direct my activities in each study period.</td>
<td>1 (1)</td>
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<tr>
<td>79.</td>
<td>If I get confused taking notes in class, I make sure I sort it out afterwards.</td>
<td>2 (2)</td>
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<tr>
<td>80.</td>
<td>I rarely find time to review my notes or readings before an exam.</td>
<td>3 (3)</td>
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<tr>
<td>81.</td>
<td>I try to apply ideas from course readings in other class activities such as lecture and discussion.</td>
<td>4 (4)</td>
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<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

Q19 The following questions are from Van den Broeck et al., 2010. Please use the following 1-7 rating scale to indicate the degree to which you feel each statement is true of you. Selecting 1 = not at all true of me; 7 = very true of me.
<table>
<thead>
<tr>
<th></th>
<th>Not at all true of me</th>
<th>2 (2)</th>
<th>3 (3)</th>
<th>4 (4)</th>
<th>5 (5)</th>
<th>6 (6)</th>
<th>Very true of me</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I don't really feel connected with other people in the course. (1)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>2</td>
<td>When I'm logged in to any section, I feel part of a class. (2)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>3</td>
<td>I don't really mix with other people in the course. (3)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>4</td>
<td>When I'm in the course, I can talk with people about things that really matter to me. (4)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>5</td>
<td>I often feel alone when I am interacting with my colleagues. (5)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>6</td>
<td>Some people I work with are close friends of mine. (6)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>7</td>
<td>I don't really feel competent in the course. (7)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>8</td>
<td>I really master my tasks in the course. (8)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>9</td>
<td>I feel competent in the course. (9)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>10</td>
<td>I doubt whether I am able to execute my responsibilities properly. (10)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>11</td>
<td>I am good at the things I do in the course. (11)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>12</td>
<td>I have the feeling that I can even accomplish the most difficult tasks in the course. (12)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>13</td>
<td>I feel like I can be myself in the course. (13)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>14</td>
<td>In the class, I often feel like I have to follow other people's commands. (14)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>15</td>
<td>If I could choose, I would do things in class differently. (15)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>16</td>
<td>The tasks I have to do in class are in line with what I really want to do. (16)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>17</td>
<td>I feel free to do my work the way I think it could best be done. (17)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
<tr>
<td>18</td>
<td>In the class, I feel forced to do things I do not want to do. (18)</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
</tr>
</tbody>
</table>
Demographics
Q6 Age (use the slider to indicate your age in years).
______ Years (1)

Q7 Gender
☐ Male (1)
☐ Female (2)
☐ Prefer not to answer (3)

Q8 Year in College
☐ Senior (4)
☐ Graduate: Master's program (3)
☐ Graduate: Doctoral program (5)

Q9 Academic Major (i.e. Secondary Education - Mathematics, Nursing, Athletic Training, etc.)

Q10 Ethnicity
☐ Caucasian (1)
☐ Hispanic/Latino (2)
☐ Native American (3)
☐ Black/African-American (4)
☐ Asian (5)
☐ Pacific-Islander (6)
☐ Other (7) ____________________

Q11 How many credit hours are you enrolled in this academic term?
☐ 4-7 (1)
☐ 8-10 (2)
☐ 11-14 (3)
☐ 15 + (4)

Q12 How many online courses have you previously completed? (note: any course in which instruction occurred online with no more than 2 face-to-face course sessions.
☐ 0 (1)
☐ 1 (2)
☐ 2 (3)
☐ 3 (4)
☐ 4+ (please indicate number) (5)

Q13 What was your cumulative GPA at the end of the previous semester?
☐ _____ On a 4 point scale. (1)

Thank you for your participation in this survey! If you have any questions or comments, please use the box below. Select ">>" button to complete this survey.

After reading the article, select the best answer to the following questions:

Q26 Self-regulation was shown to be effective to increase daily living skills in post stroke patients for task performance that
- Required accuracy in motor skills (1)
- Required accuracy in cognitive skills (2)
- Required both motor and cognitive skills (3)
- Only when coupled with mass-practice of the motor components of required task (4)

Q27 The authors set up a RCT for this study. What measures were used in the pre-test and the post-test to document the client change?
- Observation of the patient's skills during activities of daily living which were categorized for quantitative measures of the tool (1)
- Qualitative review of self-care and daily living tasks (2)
- Self-report survey (similar to the Canadian Occupational Performance Measure) of self-regulated (3)
- FIM (self-help skill measure), motor and cognitive functions using the Fugl-Meyer Assessment, the abbreviated mental test, and the Color Trails Test to check attention. (4)

Q28 Which of the following best describes the self-regulatory intervention provided?
- Self-management training to alleviate problems in executive function (2)
- Self-awareness training to identify and solve problems followed by self-reflection and task performance (3)
- Using modifications to the task and the environment to decrease distractions (4)
- Planning and sequencing the steps needed to complete the task and using illustrated steps to complete the task (5)

Q29 According to this study, clients with which of the following deficits could decrease the effectiveness of implementing a self-regulatory strategy of intervention?
- Post stroke with significant balance impairments (1)
- Post stroke with significant cognitive impairments (2)
- Post stroke with limited to no active movement of the arm (upper extremity) (3)
- Post stroke clients with dysphagia (4)

Q30 Which of the following billing categories would be most accurate to reflect the self-regulated intervention strategies described by this study?
- Cognitive performance intervention (1)
- Neuromuscular facilitation (2)
- Daily living skills training (3)
- Motor learning (4)
Alt Reading #2 Read Kuiper, Murdock & Grant, 2010. While this article refers to a study involving nursing students the content related to self-regulation applies to graduate health science students in many disciplines. Copy and paste the link to read: Library Access: http://p2048-libproxy.xu.edu.nocdbproxy.xavier.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=105068823&site=eds-live&scope=site

Select the single best answer to the following questions.

Q31 The higher number of practical hours may promote self-regulation and greater competence because
- The student had the opportunity to see a wider variety of patients (1)
- The student had more opportunities to interact with other professionals (2)
- The student had the opportunity to use metacognitive self-evaluation strategies in practice (3)
- The students in the longer practical hours had higher qualified preceptor models (4)

Q32 This study found that reflective journaling
- Fosters critical thinking and application of the concepts (2)
- Improves achievement and attitudes (3)
- Supports self-regulated learning (4)
- Choice a and b above (1)
- All of the above (6)

Q33 During analysis, personal interactions and communication were considered part of
- Metacognitive strategies (1)
- Behavioral self-regulation (2)
- Environmental self-regulation (5)
- Self-efficacy (3)

Q34 When comparing 60 clinical hours to double that time, the study found
- Extended clinical hours promoted greater behavioral self-monitoring (1)
- Student independence in longer clinical options affords the students greater time to reflect (2)
- Reflective journaling was most beneficial for the shorter clinical hours (3)
- There is no difference in self-efficacy between 2 students in 60 or 120 hour clinical programs (4)

Q35 The significance of metacognitive skills for self-regulated learning is
- Metacognition involves the use of self-evaluation strategies (1)
- Metacognition is thinking about reflections (2)
- This study did not support a relationship between metacognition and self-regulatory learning (3)
- Metacognition is less important than goal setting or reflective learning for self-regulatory learning (4)


Select open in new tab to Read this study or if needed, copy & paste to read article: http://p2048-libproxy.xu.edu.nocdbproxy.xavier.edu/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=89058231&login.asp&site=ehost-live&scope=site

Select the single best answer to the following questions.

Q36 In this article, three concepts of “theory of planned behavior” by Ajzen were identified to contribute to a person’s attitude. Which of the following is NOT one of those concepts?

- The power of control beliefs (1)
- Evaluation shapes behavior (2)
- Individual's perception of other's norms (3)
- Respective behavior of outcome beliefs (4)

Q37 Which of the following was reported as a cognitive aspect of self-regulated learning in this article?

- Self-awareness (1)
- Self-efficacy (2)
- Self-evaluation (3)
- Self-image (4)

Q38 In this study by Lumma-Sellenthin, which variables showed a relationship to attitudes toward groups and metacognitive measures?

- Personal work experience in health services (5)
- Gender (6)
- Parents' socio-economic status (7)
- Location of university program (Germany vs. Sweden) (8)

Q39 Which of the following conclusions were supported by this study?

- Age does not correlate with practical experience or self-regulated learning (1)
- Motivation for complex learning is not related to social expectations (2)
- Without clinical practice, students do not develop an interest in cooperation among healthcare professionals (3)
- Students with parents in healthcare had high expectations toward group learning (5)

Q40 Which of the following did NOT correlate with self-regulated learning?

- Experience within health services (1)
- Problem-based curriculum (2)
- Gender (3)
- Age (4)
Alternate Rdg 4 Select the single best answer for each of the following questions.

This article considers how do differences among learning styles affect the outcomes of interprofessional education. Additionally, are motivated and self-regulated learners more collaborative interprofessional practitioners?


Open this article by right clicking on the link below or copying the link into a new window.


41. For which learning characteristic did nursing students score higher than medical students?
   ⊗ Critical Thinking (5)
   ⊗ Study environment management (6)
   ⊗ Extrinsic goal orientation (7)
   ⊗ Help seeking (8)

Q42 Which of the following benefits of interprofessional education are NOT noted in the Salamonson article?
   ⊗ Greater leadership for team outcomes (1)
   ⊗ Improve collaborative and quality of care (2)
   ⊗ Mutual understanding between professions (3)
   ⊗ Preparation to work in challenging healthcare environments (4)

Q43 Which of the following is a true statement of the results of Salamonson's study?
   ⊗ Higher levels of motivation among nursing students than medical students (2)
   ⊗ Nursing students were less likely to endorse peer learning than medical students (3)
   ⊗ Communication skills is not an appropriate topic for interprofessional education between nursing and medical students (4)
   ⊗ No sociodemographic differences between the medical and nursing students (5)

Q44 When nursing students with high GPA were compared to medical students, which of the following variables shifted closer together?
   ⊗ Extrinsic goal orientation (1)
   ⊗ Age and gender gaps (2)
   ⊗ Peer learning and help seeking (3)
   ⊗ Time and study management scores (5)

Q45 In this article, Salamonson et al. define self-regulated learning as including all of the following EXCEPT
   ⊗ Active, constructive process (1)
   ⊗ Collaborative group process (2)
   ⊗ Learners set goals for their own learning (3)
   ⊗ Learners monitor and control their motivation (4)
APPENDIX D

Self-reflection in Reflective Journal Entries (SrRJE) Rubric

**Reasoning:** Use Powell version of Mezirow with minor mod (invert 3 & 4 per Koole et al., 2011 re: sequence & adjust 2 to awareness of feelings per student’s perspective, Richardson & Maltby, 1995). Provide criteria (Kuklick, Bearity, & Thompson, 2015) and examples of such (see Richardson & Maltby).

From Powell, p. 827: “This was intended by Mezirow to refer to the individual’s feelings but was strongly felt here to be more appropriately applied to the awareness of the patient’s feelings by the nurse in view of the helping relationship between the two. The final levels therefore became:

1. **Reflectivity** — awareness, observation, description (reflection)
2. **Affective reflectivity** — awareness of feelings (subject’s) (reflection, change to student’s per Richardson & Maltby, 1995)
3. **Discriminant reflectivity** — assessment of decision making process, or evaluation of planning or carrying out of nursing care (insight because of assessment process) (Adjust professional)
4. **Judgemental reflectivity** — being aware of value judgements and the subjective nature of these (reflection because related to awareness; I would reverse 3 & 4 for levels)
5. **Conceptual reflectivity** — assessment of whether further learning is required to assist in decision making (insight)
6. **Theoretical reflectivity** — awareness that routine or taken-for-granted practice may not be the complete answer, obvious learning from experience or change in perspective” (last phrase makes this reflective outcome)

Based on the following levels of the reflective process (Koole et al.):

- **Reflection** is considered description, identification, & awareness
- **Insight** is analysis, assessment, metacognitive review
- **Reflective outcome** is synthesis for conclusions and to make changes and prompts action (Powell, 1989)

**Operational indicators of the reflection process (Koole, et al., 2011, p. 5. Table 2, p. 5)**

<table>
<thead>
<tr>
<th>Aspect of the reflection process</th>
<th>Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reviewing the experience (reflection)</td>
<td>1. The ability to describe an event/situation adequately.</td>
</tr>
<tr>
<td></td>
<td>2. The ability to identify essential elements and to describe own thoughts and feelings.</td>
</tr>
<tr>
<td>Critical analysis (insight)</td>
<td>3. The ability to ask searching questions.</td>
</tr>
<tr>
<td></td>
<td>4. The ability to answer searching question and being aware of the frames of references in use.</td>
</tr>
<tr>
<td>Reflective outcome (same)</td>
<td>5. The ability to draw conclusions.</td>
</tr>
<tr>
<td></td>
<td>6. The ability to describe concrete learning goals and plans for future action.</td>
</tr>
</tbody>
</table>

Rate this tool on the highest indicator noted in the written reflection (not all lower levels need to exist). **Blue font** is my input about for these items.

**Scoring:** Score each reflection based on the both scales. Use only whole numbers for scoring. If reflection represents two categories (sequential) use higher score; if two categories more than one point difference, use average. Add number of points from Powell’s leveling (with 3 scored as 4 points, and 4 scored as 3 points) and from Koole et al.’s process. Total score is out of maximum of 12 points.
APPENDIX E

Prompts for Reflective Journaling

Spring 2016: For all reflective journal entries: Grading for personal reflections are based on completion, timeliness, thoughtfulness and personal insight with a maximum of 50 points.

Module 1: After reviewing the IPEC CC for values & ethics and your professional Code of Ethics, analyze which statement may be the most difficult for you to embrace. Write a personal reflection on which IPEC CC VE statement is most difficult for you and why. Approximately 100 - 200 words would be reasonable to complete this self-reflection.

Module 2: How comfortable are you with the overlap for your profession? When have you experienced overlap and what was the outcome?

Module 3: How did your communication style and/or flexibility impact your role for the interprofessional communication narrative assignment? Also reflect on how your communication during your group activities for the past 2 modules impacted (improved or hindered) the team process?

Module 4: After you have taken the listening and communication quizzes from Mind Tools and completed your communication evaluation using your team communication tool, consider what would benefit your communication skills within an interprofessional team. Your team effectiveness impacts your client outcomes. Formulate a plan for how you can improve one aspect of your communication or listening skills and convey that in your journal response. Mind Tools has many resources and communication strategy suggestions using http://www.mindtools.com/page8.html. You may choose to select one tool that could help you in a category that you feel is a weakness that you can strengthen or you may identify another strategy and plan for your growth. You are more likely to implement your plan and to make successful changes in your professional communication if your plan is detailed, realistic and specific.

Module 5: Reflect on your feelings as a member of a team that you have been on in the past. This can be anything from a team at a workplace to a sports team to an experience on an educational or healthcare team. Identify how you felt when a conflict arose on the team. What was your behavior or response to the conflict? Imaging you return to the situation, describe a different behavior or response you could demonstrate. Describe how this change would impact the outcome.

Module 6: For your journal this week, think back to the full course and take time to reflect on what you have learned. Then answer the following. Has this course transformed your attitudes about other professionals? If so, how? If not, what do you think could change your opinion of the time and effort to work closely on a team with other professionals? What part of this course will likely have the greatest impact on your future professional practice?
APPENDIX F

Assumptions for Multiple Linear Regression

Linearity noted for each residual plot:
## APPENDIX G

Participant Data for RJ Coded Segments

<table>
<thead>
<tr>
<th>Ptc. Code</th>
<th>Collaboration</th>
<th>Communication</th>
<th>Respect</th>
<th>Roles</th>
<th>Team</th>
<th>Patient Outcome</th>
<th>Feelings</th>
<th>Reflection</th>
<th>Transformation</th>
<th>Depth</th>
<th>Code sum</th>
<th># words</th>
<th>Prior GPA</th>
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</table>

**Sum** 32 86 24 104 115 39 35 104 120 3 662

H=187.7; N=315.5; O=207.1

Red Font is Health Administration
Blue Font is Nursing
Black Font is OT
APPENDIX H

Intercoder Agreement Request

I am interested in determining intercoder agreement, defined as “comparing coding among several coders...using a predetermined coding scheme” (Creswell & Plano Clark, 2011, p. 212). These reflections are from the Applied Interprofessional Collaboration (IPC) course across three different semesters. The reflective journal prompts vary across these segments. Thus, the responses will differ significantly between participants. For my study, the importance is to look at the content related to the course (IPC), the insights or reflective abilities, and the feelings identified within the reflections. Patient outcomes are also noted as a function of the IPC process. The following codes are thus suggested:

- **Role** (related to any specific profession or individual, OR role on an interprofessional team)
- **Respect** (indicating the writer’s respect for another profession, another student, OR another perspective)
- **Communication** (indicated listening, written, or verbal communication exchange OR strategy for such communicative exchange)
- **Team process** (this involves indications for teaming process, procedures or products)
- **Collaboration** (indicated when individuals were not only working together but able to come to a consensus or agreement or worked out an plan/intervention which integrated more than one discipline)
- **Self-reflection** (indicated self-reflection, development of insight about a process, showed specific consideration beyond learning or an impression of a topic)
- **Affect/feelings** (this involves affective feelings or emotional content, it is not necessarily all uses of the phrase “feel like”)
- **Patient outcomes** (pt out) (shows a positive effect on patient outcomes, including a single individual or groups of individuals as patients)
- **Personal transformation/planning for future** (indicated the writer is looking at how they changed, how they plan to change, OR will change based on something that happened or their learning)

The colors are used if desired by selecting the color within Microsoft Word® for text colors (e.g.: orange is the top theme color, others are along the bottom for text colors) or the underlined portions of words can be used in the margins if that is easier for you.

APPENDIX I

Intercoder Agreement with Inter-Coder 2, Comments and Questions

Intercoder agreement w I-C2, Comments/questions

Impression: Agreed that much of this sample is transformative. That was random per selection of journal entries, not necessarily representative of full data. I think almost the entire sample is Team.

All coders had multiple codes for much of the sample. I hand entered lines for the full transcript after I received the intercoder results so that I could align between your responses and mine. I did mine on the computer using differing colors of fonts with many sections that represented multiple codes.

I-C2’s page to line reference: P1=L1-22; P2=L23-45; P3=L46-66; P4=L67-89; P5=90-112; P6=113-134; P7=L135-155; P8=L156-164

All coders had difficulty with the differences between transformative and reflection. The actual definitions of these two concepts overlap to varying degrees depending on the source. You and I often varied between these two concepts without one set pattern of which one of us used which code (Trans or Ref). Most both were unanimous.

Reflection vs. Transformation:

<table>
<thead>
<tr>
<th>Lines</th>
<th>PI Trans</th>
<th>I-C2 Trans</th>
<th>PI Ref</th>
<th>I-C2 Ref</th>
<th>PI Both</th>
<th>I-C2 Both</th>
<th>Potential explanations</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
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<td>“understand &amp; learn” as Ref? Yes</td>
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<td>39</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td>X</td>
<td></td>
<td>“insights” as Ref? BOTH</td>
</tr>
<tr>
<td>49-50</td>
<td>X No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>I-C2 see Team OK as Trans if not prior knowledge for participant, PI assumed &amp; thus TOO FAR, No</td>
</tr>
<tr>
<td>53-54</td>
<td>x</td>
<td>X</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>“most important” = Ref? Trans only</td>
</tr>
<tr>
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<td>x</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>“better insight” as Ref? Learned = Trans, Insight = Ref Thus Both</td>
</tr>
<tr>
<td>67-68</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>PI see Team below OK</td>
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<tr>
<td>69-70</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>I-C2 see Team below OK</td>
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<tr>
<td>76-80</td>
<td>x</td>
<td>x</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
<td>“own strengths...weaknesses”= Ref Yes</td>
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<tr>
<td>81-83</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td>“critique myself” as Ref? Yes</td>
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<td>93</td>
<td></td>
<td>x</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
<td>Current vs future thus not Trans? BOTH because CHANGE (as Trans) AND SCHED &amp; TIMING as Ref</td>
</tr>
<tr>
<td>128-130</td>
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<td>X</td>
<td>X</td>
<td>No</td>
<td>No</td>
<td></td>
<td>“try to understand diff. viewpoints” = Ref only</td>
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<tr>
<td>139-140</td>
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<td></td>
<td>x</td>
<td>X</td>
<td>X</td>
<td></td>
<td>“biggest impact” = Ref? Thinking = Ref, plus Trans for full segment</td>
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### Potential explanations (continued)

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<th>I-C2 Trans</th>
<th>PI Ref</th>
<th>I-C2 Ref</th>
<th>PI Both</th>
<th>I-C2 Both</th>
<th>Potential explanations</th>
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<tr>
<td>144-145</td>
<td>x</td>
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<td></td>
<td>x</td>
<td>x</td>
<td>“being aware” or “priorities” = Ref?</td>
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<td>154</td>
<td>x</td>
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<td></td>
<td>x</td>
<td>x</td>
<td>“changed my perception” should be ref as coding</td>
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<tr>
<td>157</td>
<td></td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
<td>“I realize that...” adds Ref</td>
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<tr>
<td>160-162</td>
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<td></td>
<td>x</td>
<td>No</td>
<td></td>
<td>PI see Team below</td>
<td></td>
</tr>
</tbody>
</table>

You & I had differing coding at times for **Team vs. Collab**.

<table>
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<tr>
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<th>PI Team</th>
<th>I-C2 Team</th>
<th>PI Coll</th>
<th>I-C2 Coll</th>
<th>PI Both</th>
<th>I-C2 Both</th>
<th>Potential explanations</th>
</tr>
</thead>
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<tr>
<td>15</td>
<td>x</td>
<td></td>
<td>x</td>
<td>X</td>
<td>x</td>
<td>Coll due to balance?</td>
<td></td>
</tr>
<tr>
<td>23-24</td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
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<tr>
<td>25</td>
<td>x</td>
<td></td>
<td>X</td>
<td>x</td>
<td></td>
<td>I-C2 ok</td>
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</tr>
<tr>
<td>35-36</td>
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<td></td>
<td>X</td>
<td>x</td>
<td></td>
<td>I-C2 ok</td>
<td></td>
</tr>
<tr>
<td>92-93</td>
<td></td>
<td></td>
<td>X</td>
<td>x</td>
<td></td>
<td>PI error: missed should be Coll</td>
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<tr>
<td>121</td>
<td></td>
<td></td>
<td>x</td>
<td>X</td>
<td></td>
<td>I-C2 error: missed Coll?</td>
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<td>x</td>
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</tr>
<tr>
<td>141</td>
<td></td>
<td></td>
<td>x</td>
<td>X</td>
<td></td>
<td>Both as Comm, I-C2 delete dbl code for:</td>
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<tr>
<td>152</td>
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<td></td>
<td></td>
<td>x No</td>
<td></td>
<td>PI as Comm</td>
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</table>

**Team** code was often a multiple coded section. We had differences as follows.

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<th>I-C2 no Team</th>
<th>Potential explanations</th>
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<tr>
<td>7</td>
<td>x</td>
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<td>PI=Pt Out PI revised ok</td>
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<tr>
<td>20-21</td>
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<td>x</td>
<td>“our current methods were working” = team</td>
</tr>
<tr>
<td>22</td>
<td>Remove</td>
<td>x</td>
<td>“everyone the opportunity” = team group process not working together outsider looking in, not dynamic process</td>
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<tr>
<td>49-50</td>
<td></td>
<td>x</td>
<td>Remove PI = Comm + Res outsider looking in, not dynamic process</td>
</tr>
<tr>
<td>53</td>
<td>Remove</td>
<td>x</td>
<td>“working on healthcare team” outsider looking in, not dynamic process</td>
</tr>
<tr>
<td>60-62</td>
<td>Remove</td>
<td>x</td>
<td>“mock team meeting”, “inform my group” team here is the setting</td>
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<tr>
<td>69</td>
<td>X ADD</td>
<td>Comm &amp; T</td>
<td>PI=Pt Out (JE as part of full content for teamwork next line Y)?</td>
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<tr>
<td>86-87</td>
<td></td>
<td>x ADD</td>
<td>“working in a group” yes TEAM</td>
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<tr>
<td>96-99</td>
<td>X ADD</td>
<td></td>
<td>“my group ... both groups” Yes Team</td>
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<tr>
<td>123-125</td>
<td>x</td>
<td>Remove</td>
<td>“amount of prof” ≠ Team (Is this a reverse scoring?) ok</td>
</tr>
<tr>
<td>126-127</td>
<td>x</td>
<td>Remove</td>
<td>“different professionals” ≠ Team (Also, is this a reverse scoring?) ok</td>
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<tr>
<td>161-164</td>
<td>X ADD</td>
<td></td>
<td>PI as ref (noted above in trans/refl chart) add Team OK</td>
</tr>
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</table>
Feel: Line 30+ “comfortable being the leader” Does this constitute feeling? OK Line 105-106: States “feel” but this seems more Trans to me. OK Feel could be on line 107 as I interpret “more comfortable” as feeling OK. Thoughts? See below. Stick with definitions – strictly, code adequate length for meaning

Overall question: When a word for a code is used as the object of a sentence, does that lessen the clearness of the word being a code for that sentence? This could relate to the word being a passive recipient of the action of a prior coded word in the sentence and thus not be considered a code for that sentence. Does this make any sense? In general as long as the passage makes sense. Yes, when recipient don’t code.

I-C2 & PI had close coding to begin the process. When able to come to agreement on all aspects of the sample, it was not necessary to repeat the process for scoring a second sample.

PI & I-C1 had more differences in the initial coding. We accepted my definitions and interpretations as accurate for the coding as this was my study. However, without a complete mutual understanding about the coding, it was beneficial to have a second coding plan to accomplish the desired level of inter-coder agreement.
APPENDIX J

Level Two Memos for Each Participant from MAXqda ®

Dissert RJ & SRL Working files - Memos

A16-#6 Journal
Joan T, 7/3/2017, □
Document: A16-#6 Journal

Collaborating, would prefer not online, the OT niche, pt centered approach

C9-#6 Journal
Joan T, 7/3/2017, □
Document: C9-#6 Journal

Communication, expanded knowledge of roles & IP view

B9-#6 Journal
Joan T, 7/3/2017, IP & Peers
Document: B9-#6 Journal

Control with support to passive leader, open assertive communication, accommodations for success,

B5-#6 Journal
Joan T, 7/3/2017, Low, problem oriented
Document: B5-#6 Journal

Control, Ineffective for teaming

C11-#6 Self Reflection
Joan T, 7/3/2017, IP & Affect/emotions
Document: C11-#6 Self Reflection

Emotion: Not appreciated, frustrated, not want to dwell on negatives, difficulties – distance, cope when not “my way”

Team: noted concerns (met w/o her, peer as low performer), develop relationships, lacked accountability

Roles: increased knowledge of OT
C7-#6 Journal
Joan T, 7/3/2017, ♦ IP & Affect/emotions
Document: C7-#6 Journal

Emotional (confidence, empowered, strong collaboration), Insights from other professions, collaboration → pt outcome

A4-#6 my transformation journal
Joan T, 7/3/2017, ♦
Document: A4-#6 my transformation journal

Enjoyed, communication more than speaking, communication can be difficult but very important.

A6-#6 Journal- Transformation
Joan T, 7/3/2017, ♦
Document: A6-#6 Journal- Transformation

Enjoyment, Prior benefit of teamwork, communication (especially discussion posts), depth: roles

B6-#6 Journal
Joan T, 7/3/2017, ♦ IP & SRL Beh (organiz/time mgt)
Document: B6-#6 Journal

Imbalance of power, communication difficulties but efforts to improve, time management difficulties

Communication
Joan T, 7/3/2017, ♦
Code: Communication

Indicates listening, written, or verbal communication exchange OR strategy for such communicative exchange; “heard”, “speak”

Reflection
Joan T, 7/3/2017, ♦
Code: Reflection

Indicates self-reflection, development of insight about a process, showed specific consideration beyond learning or an impression of a topic. Sometimes cued by “I think” in relation to reasoning, or “I realize”, “I have come to understand”. Can include looking from the past to the present with deeper understanding.) “I feel as though…”, Changes based on cognitive processing (thinking), “strength” or “weakness” in relation to self.
**Collab**
Joan T, 7/3/2017, Code: Collab

Indicates when individuals were not only working together but able to come to a consensus or agreement or worked out a plan/intervention which integrated more than one discipline. “Compromise”, “collaborate”, sometimes “worked well together”, “coordination”, particularly in group B maybe “balance”, or “equity (of participation”, “shared workload”.

**Respect**
Joan T, 7/3/2017, Code: Respect

Indicating the writer’s respect for another profession, another student, OR another perspective. Can include statements of respect for the work of another professional without the word respect. Can include the opposite, i.e.: lack of respect. “accountability”, “respect”

**B3-#6 Journal**
Joan T, 7/3/2017, Low, problem oriented
Document: B3-#6 Journal

Inequity, want control, procrastination, communication problems slightly improving

**C6-#6 Journal**
Joan T, 7/3/2017, IP & SRL Beh (organiz/time mgt)
Document: C6-#6 Journal

Inside look at roles, better time management, organization

**A14-#6 journal**
Joan T, 7/3/2017, IP & Peers
Document: A14-#6 journal

Interaction based

**Feelings**
Joan T, 7/3/2017, Code: Feelings

Involves affective feelings or emotional content, it is not necessarily all uses of the phrase “feel like”. Includes “comfortable”, “I feel…”, “my attitude”, “empowered”.

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**Team**
Joan T, 7/3/2017, Code: Team

Involves indications for teaming process, procedures or products, group processes, ("teamwork", sometimes “work together”). Does NOT include only team setting or focus of separate individual professionals.

**C4-#6 Journal**
Joan T, 7/3/2017, IP & Metacog
Document: C4-#6 Journal

Links collaboration with communication and team processes. Links team to holistic pt outcome. Importance to collaboration. Members NOT self-centered. Metacognitive: flexible. Apply learning to communication for positive outcomes.

Metacognitive: flexible.

**C12-#6 Journal**
Joan T, 7/3/2017, IP & Affect/emotions
Document: C12-#6 Journal

More confident to collaborate. More aware. > understand of HSA & nursing role.

**A15-#6 Journal Transformation**

More confident, roles & responsibilities

**C1-#6 Journal**
Joan T, 7/3/2017, Document: C1-#6 Journal

No communication or team, focus on advocacy and new perspective of OT for pt outcomes, self-reflect on roles, especially for OT

**B20-#6 Journal**
Joan T, 7/3/2017, Low, problem oriented
Document: B20-#6 Journal

Not lowest but still noted difficulties with communication, working toward a solution, inequity of workload.
**Transform**
Joan T, 7/3/2017

Code: Transform

Personal transformation indicating changes or planning for the future. Indicated the writer is looking at how they changed, how they plan to change, or how will change based on something they learned or that happened in the course. Differentiated from reflection because of an indication for actions or doing versus thoughts or perceptions in reflective process. Includes "I have learned..." "Now I,..." "In my future practice..."

**B17-#6 Journal**
Joan T, 7/3/2017, Low, problem oriented
Document: B17-#6 Journal

Poor communication, inequity of performance → poor team approach, blaming, one non-communicator,

**C13-#6 Reflection**
Joan T, 7/3/2017, IP & Value
Document: C13-#6 Reflection


**B2-#6 journal**
Joan T, 7/3/2017, Low, problem oriented
Document: B2-#6 journal

Power imbalance due to aggressive vs. passive members. Poor communication. Not team oriented or collaborative.

**C18-#6 Journal**
Joan T, 7/3/2017, IP & Value
Document: C18-#6 Journal

Prior value of IP, value in resources

**A8-#6 Journal**
Joan T, 7/3/2017, IP & Peers
Document: A8-#6 Journal

Reflection strong! Refreshing review of IP, Teamwork & collaboration priority every day, “critique myself”, work with variety of students’ backgrounds.
A13-#6 Journal
Joan T, 7/3/2017, IP & Affect/emotions
Document: A13-#6 Journal

Reflective! Communication, respect, compassion, collaboration for pt care. Conflict resolution, two teams,

B11-#6 Journal
Joan T, 7/3/2017, IP & Metacog
Document: B11-#6 Journal

Reflective, highly structured - numbered input, worked together, effective communication,

Roles
Joan T, 7/3/2017
Code: Roles

Related to any profession or individual, or role on an interprofessional team (e.g.: “facilitator”, “leader”). When naming healthcare profession or team role for a profession, the information must describe or infer a specific role task, not simply name the profession.

B14-#6 Journal
Joan T, 7/3/2017
Document: B14-#6 Journal

Role differences btw nurse & educator, engagement

C19-#6 Journal
Joan T, 7/3/2017
Document: C19-#6 Journal

Separate roles on a team without evidence of collab. Communication

B7-#6 Journal
Joan T, 7/3/2017, IP & SRL Beh (organiz/time mgt)
Document: B7-#6 Journal

Separate work together not “team”, group is challenging, time management, communication problems

Pt Outcome
Joan T, 7/3/2017
Code: Pt Outcome
Shows an effect (usually positive) on patient outcomes, including a single individual or groups of individuals as patients/clients. Can also show an effect on a student in a classroom for group B participants.

**A17-#6 Journal**
Joan T, 7/3/2017, IP & Peers
Document: A17-#6 Journal

Struggle, learned a lot, difficult to navigate “group work” @ distance, importance of all members of team (including pt)

**A11-#6 Journal Entry**
Joan T, 7/3/2017, IP & SRL Beh (organiz/time mgt)
Document: A11-#6 Journal Entry

Time, managing conflicts for team & pt outcomes

**A3-#6 My Transformation**
Joan T, 7/3/2017
Document: A3-#6 My Transformation

Unequal contributions, respect nurses & HSA, communication.

**B15-#6 Journal**
Joan T, 7/3/2017, IP & SRL Beh (organiz/time mgt)
Document: B15-#6 Journal

Working on open communication, sharing opinions, time management, honesty

**Memo 1**
Joan T, 7/1/2017
Document: A8-#6 Journal (2)