THE INSTRUCTIONAL DESIGNER AND SELF-REGULATED LEARNING: AN ACTION RESEARCH APPROACH TO INCREASING INSTRUCTIONAL DESIGNER PROFESSIONAL READINESS TO SUPPORT SELF-REGULATED LEARNING IN ONLINE HIGHER EDUCATION

A Dissertation

Presented to

The Faculty of the Department of Library Science and Technology

Sam Houston State University

In Partial Fulfillment

of the Requirements for the Degree of

Doctor of Education

---

by

Heather Lynn Vermilio

August 2022

THE INSTRUCTIONAL DESIGNER AND SELF-REGULATED LEARNING: AN ACTION RESEARCH APPROACH TO INCREASING INSTRUCTIONAL DESIGNER PROFESSIONAL READINESS TO SUPPORT SELF-REGULATED LEARNING IN ONLINE HIGHER EDUCATION

by

Heather Lynn Vermilio

_____

APPROVED:

Donggil Song, PhD
Committee Director

Debra Price, PhD
Committee Co-Director

Nancy Votteler, EdD
Committee Member

Stacey L. Edmonson, EdD
Dean, College of Education

DEDICATION

To everyone that told me not to quit when I wanted to, which was all the time.

Thank you.

ABSTRACT

Vermilio, Heather Lynn, *Self-regulated learning: Instructional designer professional readiness to support SRL implementations in online higher education*. Doctor of Education (Instructional Systems Design and Technology) August 2022, Sam Houston State University, Huntsville, Texas.

The aim of this dissertation is to determine the professional readiness of instructional designers as they develop and implement online course elements that support student self-regulated learning development. The increasing popularity of online education amongst college students has created a rift between faculty and students. Faculty at this institution report students are exhibiting low motivation and are performing at lower levels than seen in previous semesters. This action research approached these concerns by providing instructional designers with an opportunity to collaborate with faculty to develop implementations and scaffolds to support SRL in online higher education courses. This research looked to answer the following questions: 1) How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in the online learning; 2) How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning; 3) What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly; and 4) What actions can be taken in regards to current practice to support SRL implementations in future semesters? Findings from this study suggest that instructional designers' professional readiness increases when designers are provided with hands-on opportunities to support SRL online implementations. The study also indicates that important relationships exist between implementation success and instructional designer/faculty relationships. Participants agreed that SRL should be more intentionally supported in

online courses at this university, and proposed actions to modify current practices to better support SRL.

KEY WORDS: Self-regulated learning; SRL; Instructional designer; Instructional design; Best practices; Higher education; Professional readiness

PREFACE

This research is original work completed by the author, H. Vermilio. All of the work presented henceforth in this dissertation was conducted at Sam Houston State University in Huntsville, Texas. The presented methods, participant roles, and data collection methods were approved by the Sam Houston State's Institutional Review Board (IRB).

TABLE OF CONTENTS

Page

DEDICATION III

ABSTRACT IV

PREFACE VI

TABLE OF CONTENTS VII

LIST OF TABLES XII

LIST OF FIGURES XIII

CHAPTER I: INTRODUCTION 1

- National Context 1
- Local Context 2
- Research Problem 3
- Research Questions 4
- Research Approach 4
- Research Cycles 7
- The Role of the Researcher 7
- Participants 8
- Research Significance and Application 9
- Theoretical Framework 9
- Limitations 11
- Definitions 13
- Summary 18

CHAPTER II: LITERATURE REVIEW 20

Self-Regulated Learning 20

Self-Regulated Learning Defined 22

Metacognition in Self-Regulated Learning 22

Adopted Framework: The Zimmerman and Moylan (2009) Cyclical Phase Model 23

Support and Challenges Related to Cyclical Phase Model 26

Section Summary 27

The Importance of SRL In Online Education 27

Defining Online Higher Education 28

Benefits of Online Education 29

Student Challenges in Online Education 31

Self-Regulated Learning in Online Education 33

Empirical Studies Supporting SRL Effectiveness in Online Education 34

Empirical Studies Supporting SRL Implementations and Scaffolds in Higher Education 35

Section Summary 38

The Instructional Designer: Supporting SRL Through Best Practices and Technology 39

Defining Instructional Design in Higher Education 39

The Instructional Designer in Higher Education 40

General Roles and Responsibilities of the Instructional Designer in Higher Education 41

Foundational Competencies of Instructional Designers Employed in Higher Education 42
The Importance of Faculty Relationships in the Support for Student SRL in Online Courses 43
Supporting SRL Through the Application of Design Best Practices 44
Instructional Designer Professional Readiness in Supporting Student SRL in Online Learning 48
Summary 49
CHAPTER III: METHODOLOGY 51
Research Questions 51
Research Design 52
Setting 54
Participants 55
Data Collection 56
Data Analysis 59
Quantitative Analysis 60
Qualitative Analysis 61
Procedures and Timeline 65
Trustworthiness 69
Communicating Action Research Findings 70
Summary 70
CHAPTER IV: FINDINGS 71
Qualitative Findings 71

Theme Analysis 73
Theme 1: Professional Readiness to Support SRL in Online Courses 74
Theme 2: Building Faculty Relationships in Support of SRL and Design Best Practices 88
Theme 3: Encouraging Student Empowerment in Support of SRL Skill Development 91
Quantitative Findings 94
Synthesis and Summary 96
CHAPTER V: DISCUSSION AND CONCLUSION 101
Overview of Study 101
Research Questions 102
Methodology and Theoretical Framework 102
Participants 106
Discussion 107
Summary of Results 121
Limitations 125
Study Implications 127
Recommendations 132
Suggestions for Future Research 134
Concluding Thoughts 137
REFERENCES 140
APPENDIX A 165
APPENDIX B 167

APPENDIX C 169

APPENDIX D 180

APPENDIX E 197

VITA 198

LIST OF TABLES

Table **Page**

1 Crosswalk of Online Course Design Rubric Supporting SRL Best Practices 45

2 Data Collection Methods 58

3 Braun and Clarke (2006) Six Phase Guide to Thematic Analysis 63

4 Timelines and Processes for Study 66

5 Results of the Wilcoxon Rank Test Pre- and Posttest Data 96

LIST OF FIGURES

Figure **Page**

1 Kemmis and McTaggart (1988) Action Research Spiral 6

2 Cyclical Phase Model of SRL, Zimmerman and Moylan (2009) Adaptation 24

3 Thematic Analysis Mind Map 64

4 Themes Emerging from Qualitative Data Analysis 73

5 Box Plot of Students Pre- and Posttest Scores 96

6 Braun and Clarke's (2006) Six-Phase Guide to Thematic Analysis 104

7 Tools Chosen by IDs to Support Cyclical Phases of SRL 111

CHAPTER I

Introduction

National Context

Online education is on the rise, with 29.7% of all students taking at least one distance education course while being enrolled at college (Allen & Seaman, 2015). This growth rate outpaces the overall growth of higher education, with over 70.8% of colleges listing online education courses as part of their long-term planning strategies (Allen & Seaman, 2015). Online course delivery provides unique opportunities to higher education institutions to address the needs of a continuously diversifying student population. It also allows universities to reach students that would have otherwise been excluded from higher education due to geographical location.

While online education provides a variety of advantages to online students, it also presents new challenges to both students and educators alike. The structure, format, course interactions, and even course elements differ from those of a face-to-face format (Bowers & Kumar, 2012; Wuensch et al., 2006). Learning styles significantly impact student knowledge acquisition in online courses (Rakap, 2010), and attrition in these courses is significantly higher than that of face-to-face delivery (Boton & Gregory, 2015; Canty et al., 2020). Faculty must learn how to effectively develop courses and deliver instruction in an eLearning environment, which when added to their growing list of duties, is no small feat.

To support faculty efforts, many universities are turning to instructional designers (IDs) to assist in the development and training necessary related to online best practices and delivery. The ID's roles within the college are numerous, with responsibilities

ranging from conducting student needs analysis, developing course design and instructional materials, and most importantly, collaborating with faculty to implement best practices surrounding online education (Kenny et al., 2005). Designers may also assume the role of change agent, working within universities to research, design, and implement new practices that best address the needs of a diversified student body (Godsall & Foronda, 2012). As universities continue supporting online students, particularly those post COVID-19, it will become more important than ever for instructional designers to reflect on course development and applied best practices while asking ourselves " Does this fit the needs of the students?" If not, how do instructional designers increase their professional readiness to face the challenges that this new demographic brings?

Local Context

This research inquiry was conducted at a medium sized southern university in the United States. The topic of the research was generated from faculty concerns that students were undermotivated, disengaged, and underperforming in online courses. Faculty from across campus disciplines had also reported concerns related to high online attrition rates, particularly after the COVID-19 pandemic. Suggestions were made within the designer community of practice that current course designs and approaches were not enough to support the needs of current students, and reflective actions were taken to ascertain whether current best practices within our department were fully supporting online university undergraduate students.

Research Problem

An initial review of current literature related to student motivation and online attrition led me to believe that students might be exhibiting these behaviors due to poorly developed self-regulated learning skills (SRL). Self-regulated learning is defined as one's ability to understand and control one's learning environment. At its core, self- regulation abilities include the following: goal setting, self- monitoring, self-instruction, and self-reinforcement (Harris & Graham, 1999; Schraw et al., 2006). Literature in the field suggested that student SRL could be developed through the inclusion of course scaffolds and implementations which supported SRL (Broadbent & Lodge, 2021; Jansen et al., 2019; Pérez-Álvarez et al., 2018; Saadati & Zeki, 2021; Wong et al., 2019). A wide range of eLearning tools and approaches, such as artificial intelligence scaffolds, course activities, and course assessment tools had all been applied in efforts to improve SRL, which is essential for online student success (Wong et al., 2019).

Since faculty and instructional designers work closely in the development and implementation of online courses at the university, it seemed logical that this issue be addressed collaboratively from both a faculty and instructional design perspective. SRL seemed to be a potential solution to faculty concerns over student disengagement, low performance, and motivation. I began considering how instructional designers might support SRL practices in current online learning courses, and whether we were professionally ready to do so based on current knowledge and competencies. This action research was implemented to determine current instructional designer's professional readiness to implement and support student SRL in online courses and provided an

opportunity to critically reflect on our current instructional design practices to determine what actions needed to be taken to better support the learner.

Research Questions

The following research questions were explored in this study:

RQ1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in online learning?

RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?

RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?

RQ4: What actions can be taken in regards to current practice to support SRL implementations in future semesters?

Research Approach

An action research methodology was adopted for this study. Action research is used across many disciplines, although it is most applied in educational research. Also known as participatory research, this methodology calls for a researcher to be insightful toward, and have a personal involvement with, the topic explored. It is a deliberate assessment of current practices and whether specific actions should be taken to improve performance (Kemmis & McTaggart, 1988). Strengths of action research include its flexibility related to researcher roles and its focus of impacting social change agency (MacDonald, 2012).

Action research was chosen over traditional methodologies based on several factors. First, I believed that changes may be needed to current practices to best serve the

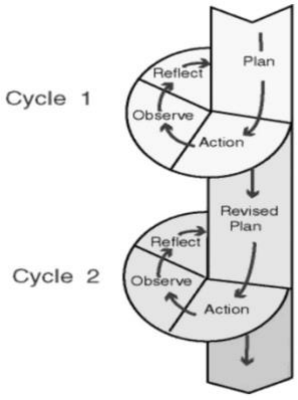
population of online undergraduates enrolled in eLearning courses at the university. Secondly, it was important that this research involve the instructional designer community of practice at the university and that their opinions and experiences were considered as part of this reflective practice.

Action research allows the researcher to participate with stakeholders in ways that other traditional research methods restrict. I wanted to interact with the ID stakeholders in a way that was open and invited their opinions as experts while still leaving room for my own observations. This methodology allowed me that flexibility which in turn, provided more authentic data and feedback from the participants. AR also allowed me to generate knowledge about a real-world issue within my community of practice and be able to work collaboratively with those stakeholders to suggests actions that could increase professional readiness as well as the effectiveness of current design practices.

Action research is cyclical in nature, wherein each cycle includes four stages: Plan, action, observe, and reflect. For the purposes of this study, a two-cycle action research model was adopted. These two cycles are conducted to determine an action plan's effectiveness. A constructed model of the two cycles can be seen below in Figure 1.

Figure 1

Kemmis and McTaggart (1988) Action Research Spiral



The first cycle of this study focused on data collected from an online SRL training provided to the ID participants. Current professional readiness of instructional designers to support SRL in online courses was determined from pre and posttest data from the courses which measured current and ending designer knowledge of SRL and SRL support in online course environments.

In cycle two, participants applied their SRL knowledge from cycle one to an actual target SRL implementation effort, one per designer. At the conclusion of the study, both cycle's data and actions were considered to develop a plan of action encouraging further study of current ID practices at the university and suggesting modifications to current adopted methods of online course development.

As part of my AR approach, both qualitative and quantitative data were collected and analyzed. By utilizing both types of data, I was able to develop a more comprehensive understanding of our current practices, as well as work with my stakeholders to determine further courses of actions. Mixed methods research produces a

more comprehensive picture of the research phenomena by allowing a researcher to collect and analyze both qualitative and quantitative data simultaneously (Creswell, 2009). The combination of both qualitative and quantitative data types establishes greater data reliability and validity in research (Zohrabi, 2013). Data collected included semi-structured interviews, group interviews, observations recorded in research memos, and pretest and posttest data from the cycle one SRL Online Training Course.

Research Cycles

In cycle one, instructional designers participated in an introductory SRL training which I created and tailored based on our current instructional design practices and core practice beliefs. To present the components and phases of SRL, the Zimmerman and Moylan (2009) Cyclical Phase Model was used as a framework for the training. Pretest and posttest data was collected from the participants during the course to determine whether their professional readiness to support SRL in online courses had increased from the training process. Also collected was course feedback through journal entries by the participants.

At the conclusion of the training, a group interview session was held. Participants reflected on their SRL developed knowledge and began to devise individual plans to work with faculty stakeholders to support student SRL development through the application of ID best practices and eLearning tools and navigation.

In cycle two, instructional designers worked on developing SRL competencies by working with a faculty member to complete a course implementation that supported student SRL development. The designers then reflected on these actions and experiences during subsequent individual and group interview sessions. A final set of interviews

looked to determine whether ID's felt that SRL implementations and supports were worth pursuing in future courses. Designers also discussed the highlights and challenges related to their experiences supporting and implementing SRL in online courses. Suggestions for a plan of action to support future implementations were proposed by study participants, and highlighted the importance of training and stakeholder buy-in.

The Role of the Researcher

For the purposes of this study, I accepted the dual roles associated with the action researcher. Within action research, the researcher can assume both the role as researcher and as implementer of the study (Trondsen and Sandaunet, 2009). The duality of researcher's role contributes to knowledge generation as well as fosters a sense of study ownership amongst participant stakeholders.

The duality of the researcher's role in this study does create opportunities for bias. Since the researcher is so ingrained in AR practices, there is always the potential that the researcher may accidentally influence their community of practice or be influenced by their opinions rather than the data. The interpretivist approach adopted in this study looked to alleviate bias by focusing the research more towards increasing validity than reliability or transferability. Steps were taken to reduce bias, including researcher reflection on previous bias and assumptions throughout the duration of the study. These methods are outlined further in chapters Three and Four.

Participants

Four instructional designers employed at the focus university were recruited to participate in this research. All participation was voluntary, and participants received no monetary or gift incentives for their participation. To qualify for this study, the

participants met the following criteria: (a) must have held at least a bachelor's degree in instructional design or in a related field, (b) must have been employed currently as an instructional designer within online higher education at the institution, (c) must have had at least two years' experience as an instructional designer, and (d) must have been part of the targeted community of practice.

Research Significance and Application

Action research is systematic inquiry that generates knowledge in an educational context. In relation to this study, AR allowed stakeholders an opportunity to reflect on our current practices, consider research available in the field, and to apply SRL in a controlled fashion within our own environment. The collaborative nature of ID work at this university requires a certain transparency and reflection not only amongst us, but within our community of practice. This research allowed IDs to analyze our current practices while reflecting on how those practices impacted not only course design, but faculty relationships with the instructional designer. These insights evolved into a proposed plan of action developed through the feedback and insights of ID stakeholders, with calls for change agency and management to support SRL in future online course developments.

Theoretical Framework

Zimmerman defines Self- Regulated Learning as students becoming "metacognitively, emotionally, and behaviorally active participants in their learning process" (Zimmerman, 1989, p. 329). Pintrich and Zusho (2002) build on this definition, by stating that SRL is "an active constructive process whereby learners set goals for their learning and monitor, regulate and control their cognition, motivation, and behavior,

guided and constrained by their goals and the contextual features of the environment" (p. 64).

Pintrich highlighted the importance of motivational factors as it related to student learning, but also focused on emotional aspects of learning. Models such as Hadwin et al. (2011) identify three modes of SRL in collaborative settings. These include self-regulation (SRL), co-regulation (coRL), and shared regulation (SSRL). Each of these modes represents a single learner's metacognitive, motivational, emotional, and behavioral actions when engaging with other group members in collaborative work.

Cyclical Phase Model (2009) was the most relevant to my study due to its long history of adoption in educational SRL research and its alignment with current designer practices within the university. Zimmerman's Model of SRL establishes three phases that students advance through as they cognitively engage with a task. These include a forethought phase, performance phase, and self-reflection phase. In each phase students interact and assess the task as they actively participate in the learning process (Zimmerman & Moylan, 2009).

Whereas previous models developed by Zimmermann were more simplistic, the 2009 model included new metacognitive and volitional strategies as students cycled through the performance phase. These changes aligned with vital components of the Online Course Design Rubric and seemed to provide a more recognizable bridge between SRL and current practices for the study's participants.

Limitations

Action research has several advantages, including improvement of practice, the generation of new educational knowledge, and reflective opportunities to consider the efficiency of one's current practices. Action research also presents certain limitations. One such limitation related to this study was small sample size. Because the study only focused on my college, the population size of IDs in the university was only fifteen. A sample of four, combined with the nature of the problem researched, limited the generalizability of this study.

Researcher bias was also a limitation of this study. Due to the unique nature of the role of the researcher in AR, a certain amount of bias should be acknowledged. Knock (2005) suggests that there is a tendency for an action researcher to be over-involved in their own research, which makes the study heavily subjective. When personal bias enters the research, this can impact the researcher's data and analysis processes and procedures. To combat this, researcher bias was kept to a minimum through research journals, reflections, and note keeping. However, due to my role within the university at the time of this study, certain biases towards faculty-ID relationships were still present during the study's run time.

Time was a limitation. This study was conducted over two semesters. However, due to the length of this action research, two participants previously recruited for the study had to be excluded from the data as they left the university before the study's conclusion.

Finally, while this study did allow ID stakeholders to analyze a current problem at our own university, this action research made little advancement of knowledge to the

field. However, it did provide some meaningful insights related to instructional designer readiness and faculty-ID relationships that could be excellent research focuses for future studies.

Epistemology and Assumptions

This research study adopted an Interpretivism approach. This philosophy suggests that we can only interpret the truth rather than measure it (Kreiner et al., 2009). I applied this philosophy to four sets of assumptions for the purpose of this study.

Ontological Assumptions

There were multiple social realities which surrounded instructional designers and influenced their unique relationships with faculty during the development and support of online higher education courses. It was more important for the researcher in this study to capture the perceptions, meanings, relationships, and experiences of the participants than to advance the idea of a singular reality.

Epistemological Assumptions

The experiences of the ID stakeholders working in the university were fully understood through the combination of quantitative and qualitative data. Personal and group interviews were particularly key to the researcher's comprehensive understanding of the processes, ideas, and experiences of the ID.

Axiological Assumptions

The questions presented in this research were influenced by the researcher's own experiences, beliefs, and worldviews. Researcher bias was present and needed to be considered and reflected upon. The experiences, beliefs, and worldviews of the ID

stakeholders engaged with those of the researcher to deepen the analysis of the problem while developing more complex solutions to it.

Methodological Assumptions

The use of qualitative research methods was essential for a deep understanding of the problem. Semi-structured individual and group interview data allowed the researcher a much richer understanding of their experiences in the field.

Definitions

The terminology listed below are important operational definitions related to this study:

Cyclical Phase Model of SRL

Initially introduced by Zimmerman in 1989, this model of SRL presents student learning and metacognitive development using cyclical phases that the student cycles through as they face various learning tasks. Since its initial debut, the model has undergone several iterations. This study focuses on the current Cyclical Phases Model of SRL, developed by Zimmerman and Moylan in 2009. The model consists of three phases: Forethought, Performance, and Self-reflection. Students exhibit various behaviors and cognitive activities as they pass through each phase.

Development

This is the process in which faculty and ID begin to collaborate to build an online course for implementation. ID's will utilize the Online Course Design Rubric as a guiding document to work with faculty to create curriculum, formative and summative assessments, and activities for the course.

Faculty-ID Relationships

This is the unique working relationship between instructional designers and the faculty. Throughout this relationship, designers work with faculty to develop and support their online courses. This may include development, curriculum, lesson planning, training, and troubleshooting.

Higher Education

This represents education that goes beyond American Grade Twelve. The university offers a four- year, six-year, and eight-year degree plan. This study focuses on undergraduate students; included are Freshman- Senior levels enrolled at the college as students.

Implementation

Implementation is operationally defined as execution of “pushing” an online course’s content from the course development to the student. We sometimes refer to this as a “go live” date. Instructional designers worked to combine pedagogically sound activities and assessments with eLearning tools which supported SRL to increase their professional readiness to support SRL in online course offerings at the university.

Instructional Designer (ID)

This is operationally defined as an individual who applies "systematic methodology (rooted in instructional theories and models) to design and develop content, experiences, and other solutions to support the acquisition of new knowledge or skills" (Association for Talent Development [ATD], 2022). At our university, instructional designers work to build Faculty- ID relationships to work in tangent to develop and deliver high quality online course work within an LMS system.

Instructional Design Knowledge

Instructional designer knowledge includes an understanding of facts related to instructional design, design best practices, online learning best practices, and andragogy. This study also explores the instructional designer's practical understanding of self-regulated learning, SRL supporting best practices, and tools which can support student SRL development in the online course environment.

Instructional Design Competencies

Instructional designer competency is defined as the designer's capability to apply their knowledge of SRL key concepts and Zimmerman and Moylan's (2009) Cyclical Phase Model to develop implementations and supports within the eLearning environment that encourage the usage and development of student SRL skills. The designer's ability to successfully master these competencies is used as a measurement of professional readiness to support SRL in online university courses.

Learning Management System (LMS)

A learning management system (LMS) is a software or series of software utilized in the implementation and delivery of higher education courses. These systems often come with a variety of tools that are used to enhance the online learning environment. They differ from Learning Experience Platforms (LXP) as LMS rely heavily on push learning where content is delivered directly to the learner whereas LXPs work on pull learning and entice users to engage in more personalized and collaborative content.

Learning Management System (LMS) Tool

A tool which is part of the learning management system that can be used to present or assess instructional materials. Examples include Blackboard Journal tool, Blackboard Grade Center, and ePortfolios.

Metacognition

Originally coined from Flavell (1979) as "thinking about thinking" (p. 906), Metacognition is an active process in which students plan, monitor, assess, and understand one's performance. This differs from self-regulation where students control emotions and behaviors (Fox & Riconscente, 2008). In self-regulated learning (SRL), students apply both metacognitive practices and self-regulation to the task of learning.

Navigation

Navigation refers to the general structure and transitional components of a course. In terms of best practices, course navigation should derive from the course syllabus and schedule. Navigation may also include organizational structures and sequencing built into an online course.

Online Course

A course that is delivered electronically through devices such as smartphones, desktops, or laptops. Courses are identified as online if at least 75% of the content is delivered asynchronously in the Blackboard LMS. This is interchangeable used with eLearning course and distance education course within the study.

Professional Readiness

These are essential characteristics and knowledges needed to work as an instructional designer. These include knowledges related to learning theory, adult learning, LMS systems, online tool application, and course navigation and creation. In relation to this study, the professional readiness of instructional designers was determined by examining designer implementations and determining how their knowledges and competencies worked to support SRL through best practices and LMS eLearning tool adoption and navigational elements.

Self-Regulated Learning (SRL)

SRL is a cyclical task in which students plan, monitor, and reflect on their performance. It is self-directive in process represents when students translate their mental abilities into tangible learning skills.

Semester

A 15-week period that separates the learning period into segments. This research took place over two full 15-week semesters between August 2021 and May 2022.

SRL Online Training

A two- week training course provided to instructional designer participants at the beginning of this research study. It provided a cursory introduction to instructional designers and defined SRL and the main behaviors and motivations as defined by Zimmerman and Moylan (2009) Cyclical Phase Model. The designers were also provided with research examples of how SRL had been supported in online courses at other universities.

Student Empowerment

This term refers to a student accepting agency to make decisions about how and when they learn. Students are authorized to assess, monitor, and reflect on their learning and make changes to their learning to help them gain mastery of the content. Empowered learners have higher motivation to complete course tasks and assessments and find the results of those tasks more meaningful (Mukadam, 2020).

Support

An instructional designer may support a course throughout a semester. This includes developing or altering activities or assessments within a course, creating guidelines and rubrics, troubleshooting, and providing guidance to faculty concerning online best practices. As it relates to this study, ID's may apply this concept as they work with faculty to implement SRL enhancements within live online course offerings.

Summary

This action research explored whether SRL enhancements should be adopted into current ID practices. During this research, participants enrolled in SRL Online Training to increase their professional knowledge and readiness as it related to SRL within online courses. After training was completed, designers tested their professional readiness to support SRL by collaborating with faculty to develop and support an SRL implementation within an online course. The designers recorded this process, its benefits, and its challenges. They discussed whether they believed SRL to be a potential solution to current faculty concerns related to student motivation and performance. A second question as to whether additional implementations and support surrounding SRL should be pursued in future courses was also explored.

Four additional chapters are included in this research. Chapter Two is a comprehensive review of available literature that focuses on SRL practices in online courses and instructional design methods that support student SRL development. Chapter Three discusses the methodology of this research in detail. Chapter Four provides a detailed account of the data collected via qualitative and quantitative methods. Finally, Chapter Five provides an analysis of the data and an interpretation of the findings of this research.

CHAPTER II

Literature Review

The purpose of this action research is to explore the professional readiness of instructional designers to implement and support SRL through the implementation of eLearning tools, navigation, and best practices within college-level online courses. This research presents four questions for exploration: 1) How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in online learning; 2) How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning; 3) What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly; and 4) What actions can be taken in regards to current practice to support SRL implementations in future semesters?

Chapter Two is a review and synthesis of the literature as it relates to the research questions above, with the information organized into three major sections: (a) a thorough review of self-regulated learning definitions, theories, and its benefits and challenges of Cyclical Phase Model; (b) an overview of online higher education and the benefits and challenges of SRL in supporting student online course success, (c) the instructional designer's professional readiness to support student SRL through the application of online best practices.

Self-Regulated Learning

Student enrollment in online education is steadily increasing at universities in the United States (Allen & Seaman, 2015; Wang et al., 2013). Digitization of learning assets and increased acceptance of the rigor of online learning has encouraged growth in online

graduate and undergraduate populations, with many students seeking out flexible and time-saving solutions that provide them more autonomy than that of the traditional face-to-face course (Allen & Seaman, 2015; Fedynich, 2013; Rogers et al., 2003). Global events, such as the COVID-19 outbreak has also contributed to the increase in online course enrollments, with more than 73% of students reporting enrollment in at least one online course during the 2020 semester (The National Council for State Reciprocity Agreements [NC-Sara], 2021).

While the increase in online courses availability supplies new opportunities to post-pandemic students, the rise in online education course options has not always translated into a successful learning experience for students. High attrition rates and low student engagement continue to pockmark the face of online learning in higher education (Allen & Seaman, 2017; Levy, 2007). Student engagement is also found to be significantly lower in online learning environments than in face-to-face courses, with studies showing that students who has low engagement often performed poorer than those who engaged more regularly (Pazzaglia et al., 2016). Studies by Azevedo and Hadwin (2005) concluded that online students studying complex topics were not proficient in self-regulating their own learning. The lack of SRL skills in these students affected their learning, and the study found that these students did not gain conceptual knowledge or understanding of complex topics when they are not provided with SRL skill scaffolding and supports.

A potential explanation and solution to this issue relates to self-regulated learning, a cyclical process in which students plan, monitor, and reflect on their learning outcomes (Panadero, 2017). A multitude of studies have shown that increasing SRL in

students can help faculty fight low engagement and motivation, and that increased SRL correlates to lower levels of attrition in online courses (Balashov et al.,2018; Puzziferro, 2008; Zimmerman, 2000). In the following sections, SRL will be discussed, with an overview of its definitions and aspects, and models of SRL will be presented for consideration.

Self-Regulated Learning Defined

Self- regulated learning (SRL) is a conceptual framework that focuses on the cognitive, motivational, behavioral, and emotional aspects of student learning. Initially introduced to the field by educational psychologists Albert Bandura and Ted Rosenthal in the 1970's, SRL can be defined as a cyclical process in which students transition through periods of planning, self-monitoring, and self-reflection as they work towards a learning objective or as they achieve learning goals (Zimmerman, 2002). Since Bandura's initial identification of SRL processes, more than six additional models of SRL have been introduced to the field. Some of the most highly adopted models include Boekaerts Structural Model of SRL (1996), Boekaerts (2011) Dual Processing Model, Winne, and Hadwin SRL Model (1998), Panadero and Järvelä (2015) Socially Shared Self-Regulation Model, Efklides (2011) Metacognitive and Affective Model of Self-Regulated Learning, and Pintrich (2000) Model of SRL (Panadero, 2017).

Metacognition in Self-Regulated Learning

The terms metacognition and self-regulated learning were initially synonymous, with early adopters of the theory considering them as a unified process. Zimmerman later dispelled this belief and helped to establish the two as individual entities in 1989 with the first publication of Triadic Analysis of SRL (Zhang & Zhang, 2019; Zimmerman, 1990).

Metacognition is defined the student's awareness of their learning and progress, with Flavell (1985) defining metacognition as "any knowledge or cognitive activity that takes as its object, or regulates, any aspect of any cognitive enterprise…its core meaning is 'cognition about cognition" (p. 104).

Self-regulation is the process where students' inventory, evaluate, and reflect on their metacognitive skills as they work towards their goal or task (Ambrose, 2010; Panadero, 2017; Pintrich, 2003; Zimmerman & Schunk, 2001). It differs from metacognition in that it requires some degree of student choice to engage in strategies designed that help the student achieve the desired goal. SRL supports the development of metacognitive strategies, which aid students in complex problem solving, contributing to student academic success in face-to-face and online course work (Chen et al., 2017; Dinsmore et al., 2008; Pintrich, 1999). Self-regulated learners use metacognitive knowledge, metacognitive regulation, and metacognitive experiences to question and monitor their own learning as they approach and work towards the completion of learning tasks or goals (Flavell, 1979).

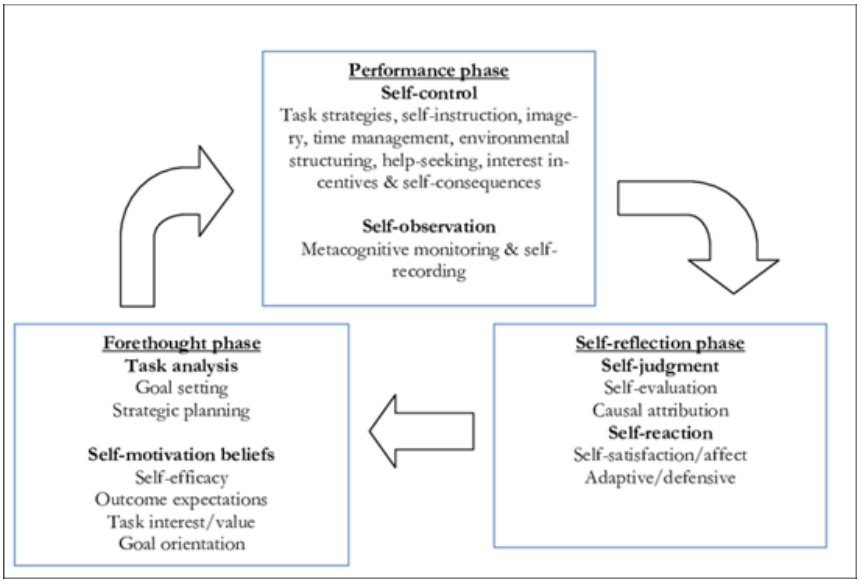
Adopted Framework: The Zimmerman and Moylan (2009) Cyclical Phase Model

This study adopts Zimmerman and Moylan's (2009) Cyclical Phase Model as its framework. This model, which presents a socio-cognitive perspective of learning, focuses on factors such as self-efficacy, motivation, and the importance of learner feedback (Nodoushan, 2012). Zimmerman and Moylan's (2009) model of SRL posits that students cycle through three phases while working towards their learning goals. These three phases are identified as forethought, performance, and self-reflection (Zimmerman &

Moylan, 2009). An illustration of the 2009 adaptation of the Cyclical Phase Model of SRL can be seen in Figure 2.

Figure 2

Cyclical Phase Model of SRL, Zimmerman and Moylan (2009) Adaptation



Note. Students transition through a series of stages as they self-regulate their learning. The three noted phases of this model include forethought, performance, and self-reflection. From "How Do Students Self-Regulate? Review of Zimmerman's Cyclical Model of Self-Regulated Learning" by E. Panadero, and J. Alonso-Tapia, 2014, *Anales de Psicología, 30*(2), p.452 (https://doi.org/10.6018/analesps). Copyright 2014 by the Servicio de Publicaciones de la Universidad de Murcia.

Forethought

The forethought phase is the initial phase of the SRL process. This phase allows learners to consider what actions they need to take to reach their goals. Task analysis, goal setting and strategic planning are common actions taken by the learner during this phase. Students may also develop timelines, set milestones, and ask clarifying questions

which help them answer “when will the work begin” and “what milestones should I meet to accomplish my goals?”

It is key that students understand how they are assessed and are supplied opportunities to reflect on their desired performance level to establish realistic timelines and goals as they plan to complete the task (Panadero & Alonso-Tapia, 2014; Zimmerman & Moylan, 2009). These actions help support self-motivation beliefs and help them frame their expectations related to performance level and task success. Students also develop beliefs about the learning purpose and how the tasks help them to achieve their overall goal. Faculty should work to encourage students to gather resources and fine tune learning goals during to support students cycling through this SRL phase (Panadero & Alonso-Tapia, 2014).

Performance

During the performance phase, students use the goals and strategies developed in the forethought phase to complete the task by practicing self- instruction and self-inventory. Learners mark their successes and failures throughout the performance process, revising their plans of action as they seek and receive feedback. This may include changing environmental factors, engaging in further self-learning, and modifying goals to better engage the task (Panadero & Alonso-Tapia, 2014; Zimmerman & Moylan, 2009). Self-observation and self-control are key factors of student success, and by engaging in research and self-inventory, students may recognize added resources are needed to meet their goals (Zimmerman & Moylan, 2009).

Self-Reflection

During this phase, learners are presented with opportunities to take a step back and critically evaluate their efforts in completing the assigned task. Students should consider their successes and failures and develop dialog for why certain elements were successful while others might have been less so (Panadero & Alonso-Tapia, 2014). Student reflections will generate emotions, both positive and negative. These emotions play a critical role in student motivation, with self-reflection acting to encourage or discourage student self-regulation moving forward (Panadero and Alonso-Tapia, 2014). Focusing student on their learning strategies during the process can help them towards achieving the learning outcomes and keep them motivated to succeed.

Support and Challenges Related to Cyclical Phase Model

A multitude of studies in educational and instructional design research have adopted Cyclical Phase model as a framework for their study. Major research studies that have adopted the Cyclical Phase Model include those by Cleary et al (2012) and DiBenedetto and Zimmerman (2010). The continual application of this framework adds literature to support its validity and reliability as it is applied in the field. SRL studies grounded in socio-cognitive theory are most visibly adopted in education, perhaps because these models of SRL comprehensively identify the learning and processes associated with student learning and possibly because their comprehensive explanation makes them easier to understand (Dignath et al., 2008). A quick Google search returned hundreds of educational studies that have confirmed the reliability of this model across multidisciplinary research. Zimmerman's framework is chosen for this study due to its

comprehensiveness and because the phases most closely align with the division of current design best practices at the university.

While the Cyclical Phase Model presents many strengths, it also has its weaknesses. According to Nodoushan (2012), current models of SRL are not comprehensive enough and do not accurately address the importance of social support systems and dyadic feedback in SRL. Panadero and Alonso-Tapia (2014) echo this notion, stating that Zimmerman's model does not discuss the importance of social factors in SRL. Also noted by Boekaerts (1999) is Zimmerman's lack of focus on the role of student emotion in SRL processes. Panadero and Alonso-Tapia (2014) argue that Zimmerman may not have discussed emotion's effect on SRL because of a lack of a direct method of measurement.

Section Summary

Online courses continue to grow in popularity. Students who have high SRL skills are more likely to be successful in online education (Gilbert, 2017). Self-regulated learning, or SRL, is a cyclical process in which students plan, monitor, and reflect on their performance as it relates to a learning goal. Zimmerman and Moylan's (2009) Cyclical Phases model establishes three phases: forethought, performance, and self-reflection. Self-regulated learning is of increasing importance in online education, as the modality presents challenges related to student motivation and attrition.

The Importance of SRL In Online Education

The importance of SRL in online education should not be underestimated, with research suggesting that self-regulated learning is an essential part of online student success (Samruayruen et al., 2013). Within the last two years, research related to SRL has

become even more critical as the COVID-19 pandemic has ushered in a spike in online enrollments (Cruz & Golom, 2020). While SRL offers a plethora of benefits to students when its properly develop, it has also brought with it significant challenges related to supporting student SRL development in online modalities. The following section works to define higher education as an online deliverable and discusses the differences between online learning and face-to-face learning. Research related to the impact of SRL on student motivation, learning, and attrition within the online environment is presented. Finally, challenges in supporting SRL are acknowledged, and questions as to how SRL can be supported in online higher education are considered.

Defining Online Higher Education

Online education is a flexible instructional delivery method in which learning materials are distributed to the learner via the internet. This allows students the ability to learn from any geographical location, so long as they have access to the internet and some type of electronic device. While commonly computers, devices used for online learning include laptops, cellular phones, eReaders, or any other mobile device. Students enrolled in online learning complete the course 100% virtually, with courses normally deploying both asynchronous and synchronous activities and learning aids for students to complete. In higher education, most institutions will use a learning management system (LMS) to host and facilitate content. Different universities may also adopt various definitions of online education, with some examples including correspondence or hybrid learning courses.

Sener states that “increased diversity [of online education] has complicated our ability to share research findings and best practices because we lack a shared set of

definitions to distinguish among the many variations on eLearning that have arisen" (Sener, 2015, p. 1). For the purposes of this study, online learning or eLearning classes met the following criteria: (a) all student activity within the course occurred in the online environment; (b) there were no required face- to- face meetings or on-campus responsibilities attached to the course; and finally, (c) that the student interacted with the course in three ways: with the content, with the instructor, and through collaboration with the other online students (Sener, 2015, p. 2).

Benefits of Online Education

Online learning presents numerous benefits to a diversified student body with unique academic needs and challenges, with four benefits recurring in the research most frequently. The first benefit is that online learning is highly flexible. Research conducted in 2017 found that 21% of students chose an online program due to its scheduling flexibility (Clinefelter & Aslanian, 2016), as the modality offers students the opportunity to work on their courses at a time and in a place that fits their schedule (Gilbert, 2015; Bowers & Kumar, 2015). The flexibility allows for students to pursue higher education while also being able to balance their careers and family responsibilities in a way that is compatible with the demands of their lifestyle (Bowers & Kumar, 2015). Gilbert summarizes:

> The need for flexible learning environments for potential learners who are hospitalized, have phobias linked to school environments, are single parents, have been expelled, are dropouts seeking to gain a diploma and many other specific cases have led to a growth in the amount of distance

learning courses and programs that are offered (Chaney, 2010 as cited by Gilbert, 2015, p.5).

Secondly, online education increases accessibility (Gilbert, 2015). International students benefit from online courses, with the modality granting greater access to learning opportunities once limited by geographical location. Students from "“small, rural, or low socioeconomic school districts” can also benefit by having equal access to quality education (Chaney, 2001, p. 21). Since students are less limited by location, students in online programs have the added advantage of being exposed to a broader range of perspectives than those of their face-to-face counterparts. Students who engage in online courses also can network with a diverse community of learners and tend to become more culturally aware from the experience. This can be a key benefit to work seekers, as company look for employees who can collaborate with people from around the world as they work to sell and innovate.

A third benefit is reduced educational cost. Because students do not live on campus or need to commute, online course costs can be significantly less for students enrolled in online courses (Paul & Jefferson, 2019). These increased use of Open Educational Resources by universities also help students save money by offering books and other materials free or at low cost to students (Weller et al., 2015). These savings appeal to students who would otherwise require more financial aid to help cover their material and housing expenditures.

Fourthly, students are exposed to modern technologies during the completion of their online coursework, which can be helpful to those entering the workforce. Online degrees require the students to utilize digital learning materials, tools, and software.

Students must also troubleshoot common issues and learn how to communicate in a digital environment. Exposure to new tools and the development of troubleshooting skills are marketable in today's workforce and may help students acquire jobs or promotions post-graduation (Bowers & Kumar, 2015).

Student Challenges in Online Education

While online learning has provided students with direct access to learning, it has also presented challenges. A serious challenge is that of attrition, or how often students drop out of an educational program before completing it. Online courses have 10-20% higher attrition than face-to-face courses. Attrition is often a “result of the interactions between student and program characteristics” (Gilbert, 2015, p. 13) suggesting student social, technological, and motivational needs are not being effectively supported in online courses (Bawa, 2016; Herbert, 2006).

Social Factors

Building a social structure in an online course can be challenging. Students require a safe learning environment and benefit from social engagement with other students (Cho & Cho, 2014). Online courses can leave students feeling isolated and disconnected from their peers, faculty, and course materials. More than 70% of students reported a lack of community as a significant weakness of online learning (Song et al., 2004). It is up to the instructor to help foster these communities by presenting clear expectations that foster a safe and collaborative learning environment. Modeling of positive community behaviors such as open communication, positive and constructive feedback, and practicing netiquette help support the development of healthy learning communities that support student social needs.

Technological Factors

By nature, online courses require a certain amount of technical understanding and skill. While digital natives may be more familiar with technologies such as cellphones and video games, it does not mean that they are proficient with digital educational tools (Prensky, 2001). Overestimating a student's readiness to use a technology is a costly mistake that can lead to increased attrition and lower student satisfaction (Ng, 2012). Instructors should consider this when developing online courses and consider how navigation and tool inclusion may impact student success. A student should not need advanced computer skills to be successful in a typical online course.

Motivational Factors

Motivational factors and attrition can often be intertwined, with low student motivation significantly contributing to higher attrition (Boton & Gregory, 2015). The modal differences of online delivery require students to be self-directed. In online courses, delivery of materials is often student guided rather than faculty-led (Paul & Jefferson, 2019). Students will still interact with their instructor and peers, but students must take responsibility for their own learning and engagement (Broadbent & Poon, 2015). Successful students must be motivated to self-learn within this course environment. Student misconceptions of online learning impact motivation, as many students believe online learning will require less of them and will be easier to complete because it is more flexible and less work than face-to-face courses (Bawa, 2016). Faculty may find that supporting self-regulated learning skills in their online courses may increase motivation in students, thus impacting attrition.

Self-Regulated Learning in Online Education

Self-regulated learning is the "self-generated thoughts, feelings, and actions that are planned and cyclically adapted to the attainment of personal goals" (Zimmerman, 2000, p. 14). Students cycle through three phases: forethought, performance, and self-reflection. During each phase students work to set goals, reflect on their learning, self-evaluate, and monitor the progress as it relates to the learning task (Zimmerman, 2000). In higher education, an expectation exists that students are more autonomous and in being so, need to control their own learning process (Edisherashvili et al.,2021; Zimmerman, 2000). The structure of these courses differs from those in K-12 environments, and more often employ "high stakes" tasks (e.g., tests, interviews, preparing for the job). Many students enter college without the necessary motivational, behavioral, or cognitive skills to manage their own learning, leading to increased student anxiety and lowered motivation. Factors such as the pandemic have further exasperated the issue, with face-to-face students suddenly shifting into an online environment (Gallagher & Palmer, 2020; Sulisworo et al.,2020).

Studies conducted on self-regulated learning in higher education have increased within the last decade, with many studies calling for further support of SRL in online classrooms (Edisherashvili et al.,2021). Research related to SRL spans a broad list of topics, with some studies focusing on the benefits of SRL holistically to others which examine specific areas of SRL as they relate to online education. This research adopted a more holistic approach to SRL and focused on how designers could increase their professional readiness to support student SRL development. To do this, the research

focused on how designers implemented SRL supports within online courses, with a particular focus on eLearning tool adoption and navigational elements.

Empirical Studies Supporting SRL Effectiveness in Online Education

Studies conducted on SRL in online learning environments have found heightened student academic achievement from applying SRL strategies, particularly those of time management, metacognition, and effort regulation strategies (Azevedo & Aleven, 2013; Broadbent & Poon, 2015). Increases in student motivation, setback avoidance, learning achievement, and lowered attrition have been identified as benefits of increased SRL in online learners (Corno, 1994; Zimmerman & Schunk, 2011). Below, three studies related to the impacts of SRL learning are addressed.

Research conducted by Broadbent and Poon (2015) examined the relationship between nine SRL strategies and online student success. They found that a correlation existed between academic success and the SRL skills of metacognition, time management, effort regulation, and critical thinking. Later research conducted by Lin et al. (2017) surveyed 466 online high school language learners. Findings corroborated those from Broadbent and Poon's (2015), finding that SRL strategies were the only significant predictor directly associated with student academic success, perceived student success, and student satisfaction.

Puzziferro’s (2008) study of 800 online graduate students found that students who were better at self-regulating their own learning had higher retention rates than those who did not. He also found that these students had higher grades than those with lower SRL skills. He posited that their increased success was due to how these high SRL students managed their own learning.

Azevedo and Hadwin's (2005) study reported that students studying difficult or complex topics online were not adept at regulating their own learning. Students that were not given SRL support were found to lack conceptual understanding of topics which were more challenging. However, students that were proficient in SRL were much more successful in developing an understanding of challenging topics.

Empirical Studies Supporting SRL Implementations and Scaffolds in Higher Education

A students SRL competency is defined by a multitude of factors. A learner's social experiences play heavily into their ability to accomplish SRL (Zimmerman, 1989). Environmental factors also play a role, and SRL knowledges and skills can be taught to students through the implementation of strategies and scaffolds that support their individual traits as a learner (Azevedo & Cromley, 2004).

However, creating an SRL supportive environment is easier said than done. How do faculty support SRL skill development in a highly diversified learning community? Interventions and scaffolding have been found to support the development of SRL skills in online learning (Rowe & Rafferty, 2013). Below is an analysis of five studies which presented increases in student SRL skills based on a learning implementation or inclusion of SRL scaffolds or implementations within their online learning courses.

Chang (2007) examined the impact of student self-monitoring on learning outcomes in freshman enrolled in online English courses. Students were divided into a control and intervention group. Students selected for the intervention group were provided with a web-based, self-monitoring writing prompt which they were prompted to complete once they logged into the course. To complete this task, students recorded the

time, place, and person(s) of whom they studied with. Student were then asked to estimate their performance on their lesson posttests. Students were also asked to consider their scores and adjust their studying to improve future scores.

The prompt was intended to help students cycle through the phases of self-regulated learning. Students were asked to plan and record their study habits (forethought), complete testing and evaluate their learning (performance), and reflect on their scores and adjust their habits to improve their scores (self-reflection). The control group did not receive the prompt and was just asked to complete the course activities and lesson post testing. Chang's collected results found that the self-monitoring prompts has a significant effect on learning outcomes; Students who partook in the intervention group scored higher than those who did not.

Bannert et al. (2009) explored the learning outcomes of college students in an educational media course. During the study, students were divided into two groups. The treatment group was asked to participate in a computer-based training on why to use metacognitive strategies and how they could be beneficially applied to student learning. At the conclusion of the training, the students then completed a task that required them to study theories of multimedia and to collaborate with other students to teach them what they had learned. During the learning task, students in the treatment group were provided with a document outlining all the metacognitive activities from their previous training, which was to be used as a teaching prompt. It was found that students in the intervention group academic performance was significantly higher than those of the control group in terms of recall, knowledge, and transferability of the task.

Kauffman et. al (2011) investigated the effectiveness of monitoring prompts and note taking methods in online psychology courses. Specifically, Kauffman et.al looked to determine note taking conditions that were most effective for information collection in online courses and which methods might influence student achievement. To conduct the study, 130 students were asked to collect notes from a website using an outline, conventional, or matrix note taking tool. A second experiment collected notes from 119 students from a larger set of learning material data using convention, outline, or matrix note taking tools. Fifty percent of the students also were provided with learning prompts designed to encourage self-monitoring behaviors. Results from both experiments suggested that the matrix note taking tool was the best for collecting and organizing the information students had collected. This tool also correlated with increased student achievement levels. Results from experiment two found indicated that the self-monitoring prompts provided to 50% of the students had a significant positive impact on student achievement and note taking.

Hu and Driscoll (2013) examined the effects of an implemented SRL strategy training on student achievement, motivation, and strategy use in an online community college course. In this mixed methods study, 21 undergraduate students were enrolled in a web based SRL strategy course. Eight students were placed in the treatment group while 13 were left in a control group. Participants included 18 freshman and 3 sophomore students. Students who were part of the treatment group participated in a two-part SRL strategy training including an online SRL strategies tutorial and a web-based interactive strategy using online questionnaires. The control group did not receive this training. The study found that the two-part training increased students' overall course performance on

long-term tasks. Students in the treatment group also reported increased levels of self-satisfaction and were more persistent in task completion than those of the control group.

Jansen et al (2020) explored the effects of SRL interventions implemented in Massive Open Online Courses, also known as MOOCs. To conduct these interventions within an asynchronous environment, researchers developed a series of videos outlining SRL practices and provided them to a control group of adult students. Instructions and suggestions on how students could utilize these practices in their online learning endeavors was provided to the treatment group. The results of the study suggested that these SRL interventions were successful in encouraging student SRL as well as positively impacting student course completion rates.

Section Summary

SRL is a conceptual framework that focuses on the cognitive, motivational, behavioral, and emotional aspects of student learning. Zimmerman and Moylan (2009) posit that students complete self-regulated learning in a cyclical process divided into three phases. These phases include forethought, performance, and self-reflection. During each phase, students address motivations and complete behaviors that help them achieve their learning goals (Zimmerman & Schunk, 2001).

Self-regulated learning is especially important in online higher education as students who rate highly in SRL skills show increased levels of motivation, satisfaction, and academic achievement in their online courses (Broadbent & Poon, 2015; Corno, 1994 Zimmerman, 2011). Several studies emphasize the importance of teaching SRL in online higher education, with many researchers conducting course implementations and developing SRL scaffolding opportunities to encourage student success (Azevedo &

Hadwin 2005; Bannert et al., 2009; Rowe & Rafferty, 2013)**.** The next sections address SRL as it pertains to online learning, and how online best learning practices and tools can be integrated into online courses to support student SRL skill development.

The Instructional Designer: Supporting SRL Through Best Practices and Technology

Instructional designers employed in higher education fill a unique role within the university system, bridging the gap between student and faculty expectations of online learning. Designers also facilitate the development and implementation of innovative online educational experiences which support best design practices and encourage student success. These innovations also create opportunities for change agency, in which instructional designers are uniquely positioned to implement, manage, and lead changes that are necessary to a designer's abilities to effectively support students and faculty within their roles (Schwier & Wilson, 2010). The final sections of this paper look to define instructional designers, what are their roles in higher education, and how do they support practices such as SRL through design best practices and technology within the college online environment.

Defining Instructional Design in Higher Education

Instructional design (ID) is the systematic process of designing, developing, and implementing pedagogically sound education materials. Instructional design is sometimes confused with curriculum design; the difference being that curriculum design outlines what a student will learn while instructional design decides how a student will learn it. While the approaches to instructional design vary, ID practices typically are learner-forward, goal-oriented, and driven by research and data.

The establishment of instructional design as a field is rooted in educational psychology, teaching, training. The first instructional designers collaborated to develop aviation training materials during WWII (Reiser, 2001). One key to the success of the training was the inclusion of modern technologies of the time to better engage the soldiers. Another was application of learning science and pedagogical practices, which used data to drive decisions related to training best practices (Reiser, 2001).

Instructional design has undergone several significant shifts during the last eighty years, with educational learning approaches, societal shifts, and modern technologies revolutionizing instructional design into the digitized world. Through the application of instructional design practices, instructional designers can collaborate with faculty and institutional stakeholders to support student skills, such as SRL, to maximize student success and retention in the online classroom.

The Instructional Designer in Higher Education

Instructional design is the development of learning experiences and materials that encourage students' acquisition of knowledge and skills. The best instructional design practices leave students not just an understanding of the knowledge, but also the ability to apply that knowledge to real world situations. To support these practices, instructional designers apply systematic methodologies to design, develop, implement, and support content, experiences, and materials that support student success (Ritzhaupt & Kumar, 2015).

The first instructional designers were psychologists, educators and trainers recruited during World War II to create training and assessment materials for the US military (O'Malley, 2017; Reiser, 2001). Today the pandemic and the rapid adoptions of

new educational technologies has increased the employment of instructional designers by colleges and universities. Instructional designers are often paired with faculty to develop online courses. However, their presence can also be seen across a multitude of campus departments and offices (Campbell et al., 2009; Kumar & Ritzhaupt, 2017).

In 2016, an estimated 13,000 instructional designers were employed in higher education (Intentional Futures, 2016), and more are estimated to be employed today post pandemic (Dumulescu et al., 2021). Instructional designers in higher education come from a variety of backgrounds. In a survey of 863 higher education instructional designers, 72% reported to have some training related to education while 28% had backgrounds in other fields, including "mechanical engineering, aquaculture, divinity, or business" (Intentional Futures, 2016, p. 6). Instructional designers are highly educated and trained, with 32% of responding instructional designers reporting to hold a Ph.D. or equivalent (Intentional Futures, 2016).

General Roles and Responsibilities of the Instructional Designer in Higher Education

Instructional designers primarily work to design, develop, and evaluate online courses. However, designers wear many hats and are often required to assume additional roles within their institutions. In addition to development, instructional designers frequently develop and delivery training to educate both faculty and students about the demands of online education. One-on-one consultations with faculty are also a widespread practice as designers work with staff to support their technological and pedagogical needs (Beirne & Romanoski, 2018; Intentional Futures, 2016).

The practice of instructional design is rooted in both collaboration and research. Effective instructional designers analyze student data and then apply best practices which will best support the learner. Designers must also communicate with non-academic staff, faculty, administrators, librarians, and other university stakeholders to relay and assess student needs, support university stakeholders, and encourage change agency (Ritzhaupt et al., 2021).

Foundational Competencies of Instructional Designers Employed in Higher Education

Much like their organizational roles, competencies of instructional designers vary based on the needs of their organizations (Intentional Futures, 2016; Ritzhaupt et al., 2021). Competencies noted in research related to instructional design include the ability to conduct needs assessments and analysis, project management, deciding the needs of a target audience, content and criterion analysis, curriculum development, instructional media development, knowledge and application of instructional strategies, training, and technology support (Beirne & Romanoski, 2018; Intentional Futures, 2016; Kang & Ritzhaupt, 2015; Ritzhaupt et al., 2021). While these competencies are important to designer success, soft skills are aguably considered the most imperative for designer success. The most critical competency required from an instructional designer is strong communication skills (Kang & Ritzhaupt, 2015). Instructional designers who do not possess this competency will struggle as a designer in higher education.

The Importance of Faculty Relationships in the Support for Student SRL in Online Courses

The continued growth of online enrollments has left many faculty in a position where teaching online is no longer encouraged, but required (Stern, 2004). This presents a challenge to many faculty, who are unfamiliar with online teaching methodologies, approaches, and delivery. Faculty frustration in these situations is further worsened by an expansion of faculty responsibilities, which leaves little time for faculty to research and consider online technologies or best pedagogical practices (Kagima & Hausafus, 2001).

Instructional designers rate collaborating with faculty as one of their toughest challenges (Intentional Futures, 2016), and name instructor "buy in" as a major barrier to supporting online best practices. Without buy in from the faculty, instructional designers find it difficult, if not impossible, to implement and support course changes. Efforts to do so without faculty agreement can lead to resentment and conflict (Intentional Futures, 2016). Designers must strike a delicate balance of acknowledging faculty concerns and fears while still advocating for the implementation of online best practices (Beirne & Romanoski, 2018). The best way to do this is through clear communication and the development of trust within faculty-ID relationships. Instructional designers sometimes work for years developing these relationships to a point that will support instructional change.

Designers are specially trained to assess student learning and then to work with faculty to implement best practices which best support the learner. In the case of supporting SRL, online instructors may not be familiar with SRL or of ways to promote the development of SRL skills in their online courses (Wandler & Imbriale, 2017).

Instructional designers who have developed strong collaborative relationships with their faculty are more likely to be successful in sharing knowledge related to SRL and best practices and tools which support student SRL development. This knowledge, combined with faculty trust, allows instructional designers to work with faculty to make informed decisions about how SRL can be supported without faculty losing their course autonomy (Beirne & Romanoski, 2018; Intentional Futures, 2016).

Supporting SRL Through the Application of Design Best Practices

Instructional designers collaborate with faculty to design, develop, and support online course offerings. In the process, designers work to apply best practices in online offerings with instructional architecture, learning tasks, and eLearning tools.

The Online Design Course Rubric acts as a guidebook of online instructional best practices. Inspired by the Quality Matters Rubric, the Blackboard Exemplary Courses Rubric, and the Chico State Course Development Rubric, the Online Course Design Rubric is used to guide designers and faculty in the course development process. The rubric highlights instructional design best practices recognized for increasing learning effectiveness and student success. The rubric consists of five sections: course information, course content, course navigation, collaboration and communication, and assignments and assessment. These five categories are further sorted into competencies necessary for effective course delivery.

The rubric's identified best practices can help inform the instructional architecture, tool selection, and applied strategies that should be implemented for student success. The rubric is divided into three categories: in progress, established practice, and exemplary practice. Instructional design and teaching practices listed under the

Exemplary category of the rubric can be implemented to directly support the development of SRL skills in online learning. Using this rubric as a guideline, instructional designers can openly communicate to faculty how effective online best practices support student completion of tasks, allows them to demonstrate skill and content proficiency, and provides them with opportunities to reflect on their own learning (Johnson & Davies, 2014).

Table 1 illustrates the three phases of Zimmerman and Moylan's (2009) Cyclical Phase Model and how each phase can be supported through by the Online Course Design Rubric identified exemplary practices. A full version of the Online Course Design Rubric can be found in the appendices of this paper.

Table 1

Crosswalk of Online Course Design Rubric Supporting SRL Best Practices

Zimmerman's Cyclical Phase	**Processes and Subprocesses of Phase**	**Self-Motivation Beliefs**	**Online Course Design Rubric Best Practices to Support SRL**
Forethought Phase	**Processes:** Task Analysis **Sub-processes:** Goal setting and planning	Self-efficacy, outcome expectations, task value/interest, goal orientation	**Course Organization:** Clearly defined syllabus, strong instructional architecture deriving from syllabus, learning objectives measurable and written from the student's perspective, presentation of a course calendar or outline. **Supporting Technologies:** Instructor welcome videos, quizzing tool (syllabus or welcome quiz), calendar

Zimmerman's Cyclical Phase	Processes and Subprocesses of Phase	Self-Motivation Beliefs	Online Course Design Rubric Best Practices to Support SRL
			Tool, Blackboard survey tool (helpful in identifying student goals for the course and student expectations in the course), Clear Navigation through sidebar organization and use of Blackboard folders and items.
Performance Phase	**Processes:** Self-Control **Sub-processes:** help seeking, resource collection, task setting and analysis, self-teaching, imagery creation, time management, time, and environmental structuring	Self-observation, metacognitive monitoring, self-recording	**Navigation:** Chunking of course materials, logical progression of content, students are provided with a lesson plan or outline of a unit, students are provided with due dates or goal dates, navigation has supporting resources such as library or writing center. **Assessments:** Pre and post testing, assignments, assignments are varied and allow students to collaborate, research, and develop multimedia, academic integrity methods as a means of student learning and reflection, self-reflective activity inclusion. **Multimedia Content:** How to videos, lecture videos, additional resources delivered through multimedia.

Zimmerman's Cyclical Phase	Processes and Subprocesses of Phase	Self-Motivation Beliefs	Online Course Design Rubric Best Practices to Support SRL
			Communication: Instructor-student feedback, feedback utilizing rubrics/ grade center tools, synchronous sessions, student-to-student communication. **Supporting Technologies:** Zoom, journal tools, Blackboard LMS tools, Kaltura, Turnitin, use of folders and sidebar, calendar tool, embedded librarian resources, all class and small group discussion, wiki, third party tools (Grammarly, e-texts).
Self-Reflection Phase	**Processes:** Self-Judgment **Sub-processes:** self-evaluation, causal attribution	Self-reaction, self-satisfaction, adaptive inferences	**Communication:** Opportunities for faculty and/or student feedback synchronously or asynchronously, clear communication of Student Learning Objectives (SLO). **Assignments and Assessments:** Journal assignments, self-reflective assignments, use of rubrics, drafting and editing. **Supporting Technologies:** Blackboard Journals, rubric tools, Zoom, feedback in grade center.

Instructional Designer Professional Readiness in Supporting Student SRL in Online Learning

Instructional designers also play a unique role within the university dynamic and collaborate with numerous university stakeholders to exchange ideas and practices that support change on an individual and systematic level (Campbell et. al, 2006). In conjunction with faculty, instructional designers work to create learning environments that support student SRL skills through the development and support of instructional architecture, integration of digital tools, and by applying online best practices in course development. Designers also support both students and faculty through research, training, and troubleshooting during course implementation.

Online tools and technologies are shown to be highly effective in promoting SRL skills in online instructional settings (Johnson & Davies, 2014). However, not all technologies and practices are created equal. Changes to educational practices and the adoption of innovative technologies impact instructional design. Societal events, such as the COVID-19 pandemic, have also impacted instructional designer practices as they work to accommodate new learner profiles (Suryaman & Mubarok, 2020).

Instructional designers must be professionally ready to support both the students and the technology to deliver highly effective online course offerings (Sharif & Cho, 2015). An instructional designer's professional readiness is dependent on a designer's understanding of how social and technological factors are influencing the field. Designers can increase their designer competence through professional development, but many IDs lack the resources or time to attend necessary training (Sharif & Cho, 2015). Professional readiness is also dependent on reflective practice, as instructional designers consider

situational influences in deciding a course of action that best supports both the faculty and the learner (Lachheb & Boling, 2021). Much like professional development, opportunities to implement reflective practices are often restricted by money and time. These challenges have limited the designers' abilities to reflect on whether current practices are supporting student SRL skills or to seek training in how SRL can be best supported in eLearning environments.

To increase professional readiness, this research provided instructional designers an opportunity to both attend professional development and reflect on their current practices to determine their impact on student motivation and success. Designers attended a two-week SRL online training to increase their knowledge and competencies related to the benefits and support of SRL practices in online higher education. Participant designers were then given an opportunity for reflective practice by implementing and supporting student SRL through design best practices and eLearning tools. Finally, instructional design stakeholders reflected on their current practices, and considered whether changes needed to be made to support student motivation and lower attrition through purposeful scaffolding and support of student SRL skills. At the conclusion of this study, designers developed an action research plan to address their findings.

Summary

Chapter Two addressed the professional readiness of instructional designers to support student SRL in online higher education. Specifically, this literature review introduced self-regulated learning and the Cyclical Phase Model (Zimmerman & Moylan, 2009), explored research related to the benefits of SRL in online higher education, and finally discussed the instructional designers’ professional readiness to support the growth

of student SRL skills through the adoption of digital tools and the application of instructional design best practices. Chapter Three addresses this study's action research methodology and the qualitative and quantitative data collection and analysis methods.

CHAPTER III

Methodology

The purpose of this action research was to determine the professional readiness of the instructional designer to support student self-regulated learning. This research focused on the following four research questions: 1) How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in online learning; 2) How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning; 3) What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly; and 4) What actions can be taken in regards to current practice to support SRL implementations in future semesters?

This section details the elements of this action research including the setting and participants of this study, data collection methods and themes, procedures, timelines, data analysis, and methods applied to assure the rigor and trustworthiness of the data. A plan of action to communicate the findings of this action research to stakeholders within my community of practice is also presented.

Research Questions

Four research questions were posed in this study:

RQ1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in the online learning?

RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?

RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?

RQ4: What actions can be taken in regards to current practice to support SRL implementations in future semesters?

Research Design

Action research (AR) is a systematic reflection of one's current practices. It is conducted in hopes that the findings of the reflective process will increase the effectiveness of those practices or update current processes (Ivankova, 2014; Mertler, 2016). The methodology emphasizes collective inquiry and reflection to encourage individual or systemic change (Baum et al., 2006; Kemmis & McTaggart, 1988). While AR is adopted across research disciplines, it is most often seen in educational research.

Manfra and Bullock (2014) posit that action research helps to bridge the gap which exists "between theory and practices and encourage[s] practitioners to engage in innovative practices" within their own work or learning environments (p.161). Researcher role flexibility and the AR's focus on inciting change within the researcher's practice made it an appealing methodology for this dissertation. I made use of the researcher's dual role and was able to participate in this study as both researcher and ID. In my role as researcher, I developed and delivered training, conducted research on SRL, and acted to set up stakeholder roles and goals. As an ID, I participated in discussions, observed, assessed, reflected on practices and processes, and collaborated with stakeholders within my community of practice.

Action research is a method to help people "investigate and change their social and educational realities by changing some of their practices which constitute their lived

realities" (Kemmis & Wilkinson, 1998, p.21). In this study, AR provided opportunities to reflect on current instructional design practices to determine whether changes were needed to support student SRL more directly in online learning. These observations and findings were then considered and interpreted from the unique perspectives of the ID participants. These experiences then informed their opinions, choices, and actions as they interacted with faculty.

The Kemmis and McTaggart (1988) Action Research Spiral was applied to this research study. This model is of AR takes place in two cycles; each cycle including four phases: Plan, action, observe, and reflect. In the first cycle, designers completed an online training introducing them to SRL. I observed their progress throughout the course and collected test data as they progressed throughout the course. After they completed the course, designers reflected on their learning with other stakeholders and provided feedback about the training course. These reflections were used in the planning phase of cycle two.

In cycle two, participants used their knowledge and reflections from Cycle one to develop, implement, and support SRL in online courses. I asked the designers to record their reflections and observations as they worked throughout the semester on their implementations. Designers were also interviewed both individually and within a group setting throughout the semester to provide opportunities to reflect on their observations. At the conclusion of the semester, final interviews were conducted to determine whether instructional designers (a) felt they had increased in professional readiness to support SRL; (b) what LMS tools and navigation they had used in support of online student SRL

development; and (c) What actions could or should be taken to support student SRL in future online courses.

Setting

This action research was conducted at a medium sized university in the southern United States. The current student population is approximately 23,000 students, with one in four students enrolling in at least one online course during their degree plan (K.Tew, personal communication, January 6, 2022). The university is unique in that it employs a department of instructional designers who collaborate with faculty to develop and support all university online course offerings. From this department of sixteen designers, a sample of four instructional designers was chosen for this study.

Once the sample was chosen, all activities related to the study were complete either synchronously or asynchronously in an online format. The SRL training course was delivered through Blackboard, and all data related to the course was secured there. Group and individual interviews were also conducted virtually using Zoom. An outlook calendar was sent through the university's secure email system to participants with the Zoom information and a password to arrange these meetings. The room was password protected and included a waiting room for security purposes.

In total, the study was conducted over a two-semester period. Cycle one was a three-week duration during the fall semester. During this time, participants completed their SRL training. Cycle two spanned fifteen weeks of the spring semester. Designers utilized reflections from cycle one to develop, implement, and support student SRL development in chosen online courses during the second cycle of this study.

Participants

The university at the center of this research employs a department of instructional designers who collaborate with faculty to develop and support all university online course offerings. This department employs sixteen instructional designers, or N=16. Given the niche demographic, purposive sampling was utilized to choose participants. This type of sampling is non-probability sampling that allows a researcher to select a sample based on certain criteria, such as the characteristics of the study, a study's objectives, or participant knowledges concerning the area of research (Etikan et al., 2016). All participants were actively employed as instructional designers at the university for the duration of this study. The criteria met by all eligible participants was that they (a) must have held at least a bachelor's degree in instructional design or in a related field, (b) must have been employed currently as an instructional designer within online higher education at the institution, (c) must have had at least two years' experience as an instructional designer, and (d) must have been part of the targeted community of practice.

Four designers who volunteered to participate in this study met all criteria and were accepted to the study (n= 4). An informed consent form, located in Appendix C, was required for each participant prior to participating in the study. As the researcher, I also completed an SRL implementation and recorded my thoughts and experiences to add to those shared by other designer participants within the study.

These instructional designers ranged from five to twelve years of experience in the ID field and hailed from multidisciplinary backgrounds, including business, education, and engineering. Three held master's degrees in various fields, and one was near completion of a master's degree. All participants were currently employed at the

university during their participation in this study. They also all worked with both undergraduate and graduate level courses and frequently collaborated with faculty on the development and support of those courses. The number of courses supported per semester ranged from ID, with a low of 82 and a high of 237 courses.

In cycle one, participants were asked to complete a two-week training on SRL. This training course included six modules with activities as well as pre and post testing for the participants to complete. At the completion of the course, the participants then went on to cycle two. During this cycle, participants collaborated with faculty to develop and implement SRL online course enhancements and support them during the fifteen-week semester course. During this stage, participants sat for both group and individual interviews at intervals throughout the semester to discuss their readiness to support student SRL, the tools utilized in doing so, and how SRL related to current ID best practices of course delivery and implementation. At the completion of cycle two, stakeholders came together to discuss current practices and develop an action plan outlining changes to future practices.

Data Collection

Both quantitative and qualitative data were collected during this study. In cycle one, participants were required to complete a two-week training course on SRL. This course was designed into five sequential modules that were adaptive released based on the participants actions and activities within the module. Pre and posttest assessments and reflection responses were recorded using the Blackboard Grade Center and were later downloaded into excel and then SPSS for analysis. Participant data was assigned an alias

name and then password protected. A Wilcoxon Rank Test and descriptive statistics were then generated and analyzed using SPSS.

Qualitative data in the form of journal reflections were downloaded from the Blackboard grade center into excel and then uploaded into Delve for thematic coding. The journals were optional for participants. Journals provide critical reflection opportunities for participants in qualitative research, and "may use journals to refine ideas, beliefs, and their own responses to the research in progress... and may offer the qualitative researcher yet another opportunity for triangulation of data sets at multiple levels..." (Janesick, 1999, p. 505). The first group and individual interviews were also conducted in cycle one. The interviews were recorded electronically with the permission of the participants using the Zoom Conferencing tool. Once the interviews were completed, these recordings were transcribed using Otter.AI. Then they were sent to participants for member checking. Once this was all completed, alias' were assigned to each set of participant data, and the data was uploaded into Delve and password secured. Otter.ai was chosen over Blackboard storage to further protect participants since Blackboard was found to be still accessible to a few individuals in close working conditions with potential participants. No interview was conducted without the verbal and/or written confirmed consent of the participant. As a final point of triangulation, researcher memos were used to capture any additional observations. These were stored in a notebook that was locked in a filing cabinet after each interview session.

Cycle two data was collected from two group interview sessions and one additional individual interview session. Both group and individual interview questions were semi-structured. These interviews were conducted and collected in the same

manner as those completed in cycle one. A detailed protocol of the interview method as well as the interview questions are in Appendix A.

In total, participants engaged in three group interview and two individual interview sessions. Individual interview sessions were to last 30-45 minutes, but some participants averaged closer to 50 minutes a session. Group interviews lasted approximately 1 hour. At the conclusion of each interview, the video sessions were transcribed using a paid version of Otter.ai transcription services. These transcriptions were completed using an AI bot, and once completed, were checked for accuracy. Any mistakes were corrected within the transcript. The transcripts were uploaded into Delve for thematic coding and analysis. Delve, a paid for qualitative research program, is designed for researchers to organize and code their qualitative data. A summary of all research collection methods is described further in Table 2.

Table 2

Data Collection Methods

Types of Information	Requirement of Research	Method
Demographic Information	Descriptive information regarding: Course load, number of years as ID, education level Work level classification (Graduate, undergraduate, special programs) Current work status at university Other background experience	Individual interview #1

Types of Information	Requirement of Research	Method
RQ 1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in the online learning?	Participant data regarding their level of professional readiness to support SRL in online courses. Baseline scores of knowledges of SRL before and after training course completion.	Pre and posttest scores, journals, Group Interview #1
RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?	Participant accounts and descriptions, ID recommendations concerning tools and navigation that supports SRL in online courses.	Group Interview #2, Individual Interview #1, Individual Interview #2
RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?	Participant examples and accounts of their implementations and examples of what methods they used to support SRL.	Individual Interview #2,
RQ4: How does the inclusion of self-regulated learning support online best practices related to instructional design?	Discussion of best practices and reflection on current best practices to determine future courses of action.	Individual Interview #2, Group interview #3

Data Analysis

Both qualitative and quantitative analysis were used to interpret the data collected in this study. Table 3 outlines the research questions, data sources, and analysis methods applied to the data collected in this study. A more comprehensive description of the qualitative and quantitative analyses can be found in Chapter Four.

Table 3

Research Questions as Related to Data Sources and Research Analysis Methodology

Question	Data Source	Analysis Method
RQ 1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in the online learning?	Pre and posttest data Group Interview #1	Descriptive Statistics Wilcoxon Rank Testing Thematic Analysis
RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?	Individual Interview #1, Individual Interview #2, Group Interview #2	Thematic Analysis
RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?	Individual Interview #2	Thematic Analysis
RQ4: How does the inclusion of self-regulated learning support online best practices related to instructional design?	Individual Interview #2, Group Interview #3	Thematic Analysis

Quantitative Analysis

Participants completed pre and post assessments in the SRL training course during cycle one. This assessment consisted of ten questions. The first five questions were multiple choice questions while the other five questions were short answer questions. The questions were equally scored at five points per question and recorded using the Blackboard Grade Center. At the conclusion of the SRL training course, this set of data was uploaded into SPSS. A Wilcoxon Signed Rank Test was applied to the data.

This nonparametric testing method requires four assumptions be met for the data to be valid. Assumption one is that the sample scores must be dependent observations of the cases; assumption two is that it assumes that these paired observations are randomly drawn; assumption three is that the measurements are continuous in nature; and finally, four, that the data must be of ordinal scale.

While Wilcoxon Signed Rank Tests are one of the simplest nonparametric measurements, the application of this testing to data can yield results otherwise impossible through parametric methods. A specific challenge related to this study was that of sample size. Since the original population was only sixteen, a sample of four seemed reasonable for this study as it would represent 25% of the overall target population. However, this small sample size also limited the application of dependent t-test analysis or ANOVA testing as there was not enough data points to support these types of analysis. Nonparametric testing offers several advantages in these situations because they make fewer assumptions related to the data and thus can be applied to small sample sizes (Whitley & Ball, 2002). While parametric testing would have increased the power of the pre and posttest data analysis, the Wilcoxon Rank Test was the most appropriate for the data and still allowed for hypothesis testing related to pre and posttest analysis of participants. A detailed analysis of this data can be found in Chapter Four.

Qualitative Analysis

Thematic analysis was adopted to examine the experiences of the instructional designers who participated in this research study. Qualitative inquiry provides a richness to the research and should be applied when a research problem arises that cannot only be solved through numbers, but also requires personal accounts or anecdotal accounts as

data (Creswell et al., 2006; Ivankova, 2014). Qualitative research approaches also "provide a complex detailed understanding of the issue... established by talking directly with people going to their home or places of work and allowing them to tell their stories... (Creswell, 2012, p. 40). Since research related to instructional designer individual experiences in support of adopted practices in higher education is lacking, it was important to give designers a voice and to highlight their experiences during the training and implementation cycles.

Thematic analysis of qualitative data is one of the most common forms chosen by researchers in qualitative data analysis. This type of analysis is a method that entails a researcher organizing the data and then searching across the data for repeated patterns or threads. The goal is to then use these themes to relate back to the research and apply them to the research problem or issue (Braun & Clarke, 2006). Thematic analysis is a method rather than a methodology, and because of this, this approach is flexible in that it does not need to be tied to a specific epistemological or theoretical perspective (Maguire & Delahunt, 2017). This made it particularly appealing for this study where interpretivism was adopted to consider participant individual experiences that informed their perceptions of their professional readiness.

While there are several approaches to thematic analysis, this study adopted Braun and Clarke (2006) Six Phase Guide as its framework for analysis. While the phases can move linearly forward from one phase to the next, this is not always the case with this type of analysis. Due to my data collection timeline, steps three, four, and five were repeated several times within a single data set.

Table 4

Braun and Clarke (2006) Six Phase Guide to Thematic Analysis

Steps of the Six- Phase Guide for Completing Thematic Analysis
Phase 1: Familiarize yourself with the data
Phase 2: Generate initial codes
Phase 3: Search for themes
Phase 4: Review the identified themes
Phase 5: Define the themes identified
Phase 6: Complete a write-up of your data.

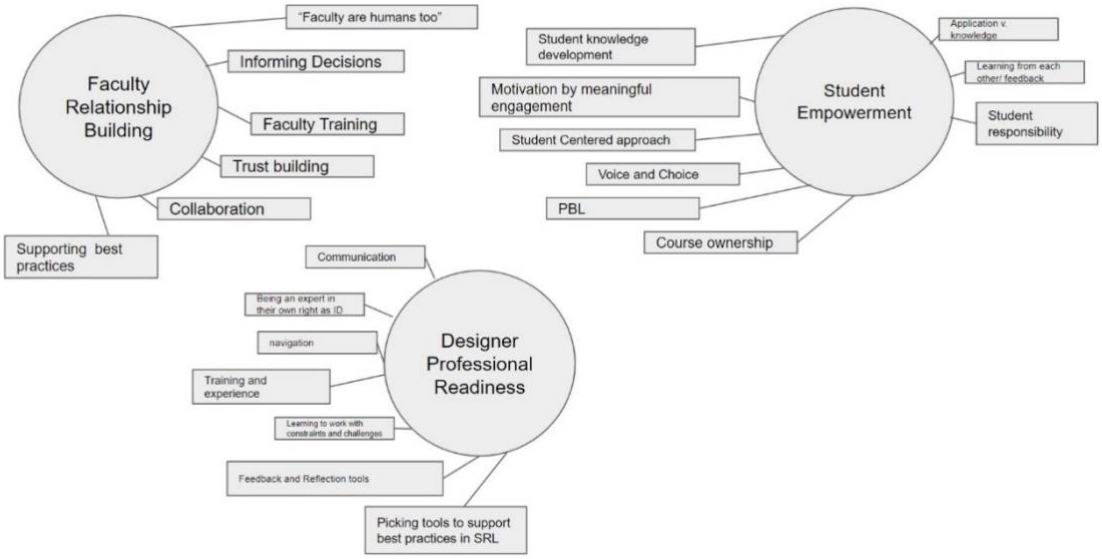
During the first phase of the process, all the transcripts were re-read several times to ensure familiarity with the data. Early notes were taken by hand on the printed transcriptions and some early impressions from the data were also notated in the form of research memos.

Once I became more familiar with the data and the transcriptions had been checked for accuracy, the data was uploaded into Delve to begin the process of line-by-line coding. A systematic approach was taken to coding in phase two, with interesting features of data being identified and then related back to the research questions (Braun & Clark, 2006; Maguire & Delahunt, 2017). The goal was to evaluate sizable portions of the data and then extract from them small meaningful pieces which supported the research questions. These chunks were then organized into codes and later into themes (Braun & Clarke, 2006). Initial codes included passages, quotations, phrases, and single words. In total, three group interviews, eight individual interviews (two interviews per each study participant), and twelve journal responses (three per participant) were included in the thematic analysis.

During phase four, I searched for themes within the data. A theme is a pattern that denotes something significant in the data related to the research problem or question (Braun & Clark, 2006). Final refinements and adjustments to themes were completed in phase five. The data was considered, with the codes helping to determine what the "essence of what each theme was about" (Braun & Clark, 2006, p. 92). A thematic map was made to visualize how the themes related to the research questions as well as to each other. Figure 3 is the final thematic map developed for this research study.

Figure 3

Thematic Analysis Mind Map



Three themes appeared in the data. This included (a) professional readiness of the instructional designer, (b) relationship building, and (c) student empowerment. Each of these themes will be discussed in detail in the following sections, representing phase six of Braun & Clarke's (2006) process. The goal of this stage is to "provide a concise, coherent, logical, nonrepetitive and interesting account of the story the data tell-within

and across themes" (Braun & Clarke, 2006, p. 93). A detailed explanation of the themes constructed from the analysis of the data as it relates to the four research questions associated with this study can be found in Chapter Four.

Procedures and Timeline

This research was conducted in three phases: (a) study approval and participant identification; (b) data collection, and (c) data analysis. Each phase and its timelines are shown Table 6.

Table 6

Timelines and Processes for Study

Phase	Procedure	Time Allotted
Phase 1. Participant identification and approval	1. Study proposal and approval by IRB Committee 2. Identification of potential candidates for study 3. Invitation to participate email sent to IDs in department 4. Verification of ID credentials and qualifications for study 5. Participant selection and confirmation 6. Participant Consent forms signed and approved as per IRB.	**Semester 1:** 2 weeks
Phase 2: Data Collection	**Cycle 1:** 1. SRL Course opened for participants 2. Participants completed course materials and activities 3. Collection of data from Blackboard 4. Group Interview #1 5. Individual Interview #1 6. Analysis of Quantitative Data 7. Transcription, member checking and alias coding of Qualitative data (Interviews and Journals) **Cycle 2:** 1. Group Interview #2 2. Individual Interview #2 3. Group Interview #3 4. Completion of data collection and transcription 5. Coding and analysis of qualitative data	**Semester 1:** 3 Weeks **Semester 2:** 15 Weeks
Phase 3: Data Analysis	Pre and posttest data a. Descriptive statistics a.Wilcoxon Rank Individual and Group Interview a.Review and transcribe a.Thematic analysis	**Semester 2:** 6 Weeks

Phase 1: Participant Identification

Participant identification began in late Summer of 2021. The sample chosen for this study consisted of four instructional designers who were at the time full time employees at the university. The population size was out of sixteen participants. All participants who volunteered for the course and met the participant requirements were sent an email explaining that they had been accepted to the study and were sent a link to a consent form built using Qualtrics. The participants were also sent a detailed email explaining the purpose and focus of the study and explaining the time and activities associated with their participation. Participants who agreed to these requirements and who signed the consent form were then enrolled into the SRL training course, which was open for participants to complete for two weeks in the Fall 2021 semester.

Phase 2: Data Collection

Data collection occurred during both cycles of the research study. In cycle one of the study, data was collected from the Blackboard SRL training course that I developed for the participant users. Specifically, journal reflections and pre and posttest data were collected from the course for analysis. The pre and posttest as well as the journal responses were administered to users through the Blackboard Journal and Quizzes and Tests tools, and the data was housed in Blackboard Grade Center until analysis, at which time it was downloaded first to Excel, assigned user alias', and then pre and posttest data was moved to SPSS for analysis. Journals were downloaded, formatted, assigned an alias, and uploaded to Delve. At the end of cycle one, group interview #1 was conducted and yielded the first of several sets of interview data. This data was transcribed using Otter.ai

and then uploaded into Delve for thematic analysis. Individual Interview #1 was also completed.

During cycle two of the study, individual interview #2 and group interviews #2 and #3 were conducted. Participants were presented semi-structured interview questions related to their experiences in implementing eLearning tools and navigation to support student SRL development in the online course format. Follow-up questions were sometimes added to clarify participant comments or to obtain greater detail about an event or topic. One individual interview session and two group sessions were recorded and transcribed using Zoom for business and Otter.ai. This made for a total of six transcripts for cycle two analysis. Transcripts were member checked for accuracy, and then uploaded into Delve for analysis.

Phase 3: Data Analysis

Data analysis was conducted over several months. Data collected in cycle one for pre and post testing were downloaded immediately following the conclusion of the SRL course. This data was analyzed via Wilcoxon Rank Testing and Descriptive Statistics. The first group interview and the journal entries were also downloaded, transcribed, and checked for accuracy. I applied phase one and two of Braun and Clarke's (2006) Thematic Analysis once I uploaded the transcription files to Delve.

In cycle two, I continued this process with the individual and group interview transcripts. Once all were completed, the data was coded, and themes were applied. A mind map was completed to visualize the themes, codes, and sub-themes. A detailed write up of the themes as they related to the research questions was then completed as part of the data analysis process. This write up is found in Chapter Four.

Trustworthiness

Establishing trustworthiness and accuracy within the research data is imperative to developing a clear understanding of the research topic (Mertler, 2017). A multitude of methods were applied in this research to ensure that the data was both rigorous and credible. These methods included thick rich description, triangulation, and member checking.

This research was a mixed method action research whereby both qualitative and quantitative data were obtained for analysis. Qualitative data included pre and posttest scores from the SRL training course while qualitative data was collected through journals, individual, and focus group interview sessions. This mixed methods approach and variation in the types of data supported data triangulation, which aids in increasing the validity of the research findings (Johnson et al., 2007).

Thick, rich descriptions were generated by the qualitative interview data. The purpose of the interviews was to explore the professional readiness of instructional designers to implement and support SRL in online courses. Direct quotations, detailed accounts of participant experiences, and their beliefs and perceptions around SRL and ID best practices were used to convey their realities of supporting SRL in online higher education courses.

Member checking was conducted for all individual transcriptions during the study. To do this, participants would be emailed an encrypted copy of their interview transcripts to check for accuracy. Once the transcripts were confirmed to be correct, they were uploaded into Delve for analysis. This process was chosen to increase the credibility of the qualitative data collected.

Communicating Action Research Findings

The purpose of this action research was to determine whether IDs were professionally ready to support student SRL with online development best practices and tools at a medium sized university in the southern part of the United States. I will share my findings with the participants in this study through email and virtual meetings. The findings will also be shared with university stakeholders and within my university ID community of practice. My hope is that this research will trigger change agency related to current best practices within my department.

Summary

Chapter Three outlined the methodology and procedures taken during this study. As a mixed methods approach, both qualitative and quantitative measures of data collection and analysis were outlined, and data rigor and credibility were considered. Chapter Four is an analysis of the data collected throughout this action research study.

CHAPTER IV

Findings

This research explored the professional readiness of instructional designers to support student SRL skill development in online higher education courses. Data collected during this mixed methods action research looked to answer the following research questions: 1) How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in online learning; 2) How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning; 3) What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly; and 4) What actions can be taken regarding current practices to support SRL implementations in future semesters? The next sections present the qualitative and quantitative findings of this research study. The first section presents a thematic analysis of the qualitative research data. The second section presents quantitative data analysis, including Wilcoxon Signed Rank Test results and an exploration of descriptive statistics as it related to pre and post testing data.

Qualitative Findings

Qualitative data for this study was collected through interview sessions with participants. Two types of interviews were conducted: group and individual. Data was collected and then a thematic analysis was applied to the data. The following represents the themes and categories that emerged during the thematic analysis process.

Description of Study Participants

Study participants were instructional designers employed at a medium sized southern university. To take part in this study, participants met the following criteria: (a) held a bachelor's degree or higher, (b) were a current instructional designer at the university, (c) had at least one year of experience as an instructional designer, and (d) worked with faculty in an academic department within the university at the time of the study. Pseudonyms have been assigned to the participants described below

Participant 1. Joy is a veteran instructional designer, having been with the university for four years. She holds a master's degree in education and has been in the industry for nine years. Joy manages over 100 courses per semester at both the undergraduate and graduate level.

Participant 2. Leah has been an instructional designer for three years. Leah has a master's degree in Instructional Systems and Design Technology. She holds many roles at the university and is involved with both academic and non-academic course development, working primarily with undergraduate courses.

Participant 3. Jane has been in instructional design for eight years. She has a strong education background. Jane holds a master's degree in education and added credentials in instructional technology. She works with approximately three hundred courses per semester, both undergraduate and graduate.

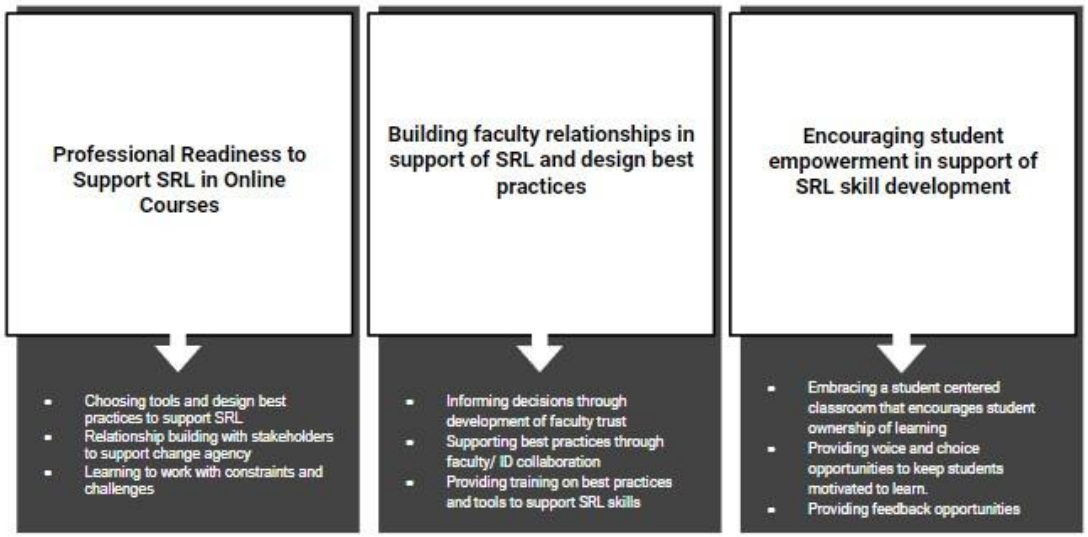
Participant 4. Stella has been in instructional technology for more than ten years. She supports approximately seventy-five courses per semester. Stella works mostly with undergraduate courses. She has a master's degree in a non-educational field of study.

Theme Analysis

Thematic analysis was adopted to analyze the data recorded from the four participants above. The data was derived from individual interview sessions, group interview sessions, and reflective journal entries and notes kept by participants during the research study. Thematic analysis is a method for describing data by constructing codes and themes and then using those themes to later interpret the data (Braun & Clarke, 2006). Qualitative data analysis yielded three major themes. These included (a) instructional designer professional readiness, (b) faculty relationship development, and (c) student empowerment. The following sections supply an analysis of each theme delineated from the data analysis. When describing participant feedback, participants will be referred to by their designated pseudonyms which were previously assigned above. Participant responses are presented verbatim from the transcriptions uploaded into the Delve analysis system.

Figure 4

Themes Emerging from Qualitative Data Analysis



Theme 1: Professional Readiness to Support SRL in Online Courses

A professionally ready instructional designer uses their specific knowledge and skills to improve the quality of higher education courses (Hart, 2020; Shaw, 2012). In the context of this study, the designers worked directly with the faculty to help them critically evaluate the needs of their learners and how those needs might be addressed through instructional design best practices supporting SRL. In doing so, designers also created open discussion related to eLearning tools and navigational elements that could be used to support student SRL development when paired with other online design best practices.

Since the needs of each individual course may be different from those of other online offerings, designers often adopt a reflexive practice approach in which their practices may change according to their environment and social contexts (Campbell et al., 2009; Cox & Osguthorpe, 2003). Variations amongst student demographics, faculty approach, and course content may require instructional designers to draw on different knowledge and competencies during eLearning course development and support depending on their experiences and professional environments (Campbell & Schwier, 2014). Designer experiences and social contexts may influence what designers identify as essential knowledge and competencies that dictate professional readiness.

Instructional designers discussed their professional readiness to support student SRL development in online courses. For the purposes of this study, professional readiness was defined as the essential knowledge and competencies needed to support student SRL skill development in online education courses.

The professional readiness of instructional designers was determined by examining designer implementations and evaluating how their knowledge acquisition from cycle one impacted their design competencies during the development and support of their online courses. Specifically considered were how instructional designers applied this knowledge to eLearning tool choice and course navigational elements. Throughout the Spring semester, designers completed course implementations. Throughout the process, participants were encouraged to share and evaluate their experiences and considerations of their professional readiness throughout the semester via group and individual interview sessions.

During interview sessions, participants identified specific knowledge and competencies that illustrated their professional readiness to support SRL. They also discussed how their knowledge of SRL influenced the development of new or expanded competencies related to supporting SRL in online design. In both individual and group interviews, participants expressed (a) how their professional readiness had been impacted by the training and implementation experience this research provided and (b) identified the competencies and knowledges they felt defined their professional readiness to support student SRL development.

Each of the four instructional designer participants identified the competencies and knowledge that they felt represented their professional readiness. They also discussed how they could increase their professional readiness to support SRL. Participant responses related to the development of professional readiness were segmented into four categories: (a) developing professional readiness through designer training and experience, (b) showing professional readiness through the adoption of SRL supporting

learning management system (LMS) tools, (c) professional readiness in adopting and implementing feedback tools, and (d) professional readiness to use course navigation to support student SRL.

Developing Professional Readiness Through Designer Training and Experience

Designer participants in this study discussed that their professional readiness to support SRL could be evaluated by their experiences in supporting SRL in live online higher education courses. Designers postulated that this could be ascertained by observing instructional designers as they worked with faculty stakeholders to develop and implement effective online courses that supported student SRL. Designers explained that the more they learned about implementing SRL scaffolding and supports in online courses, the more professionally ready they felt. Hands-on implementation of SRL boosted their professional readiness. Designers reported that the opportunity to implement and support SRL within an available course allowed them to observe student and faculty responses, which they felt would help them make more informed decisions the next time they implemented SRL supports. In an interview with Jane, she reflected on her experiences during this study. Jane spoke about the importance of both training programs and online learning in developing professional readiness, saying that as an instructional designer:

> You learn on your feet and take on the roles you need to...but the online training provided needed background knowledge too. I am more hands on, so I like the doing of it, [supporting SRL in course implementations] but from a doing standpoint, the training helps give you the tools to be successful at implementing it.

When each participant was asked to rate their professional readiness after the completion of the SRL training course, three of four designers felt slightly more confident of their professional readiness after participating. As a follow up question in the first group interview, I asked designers to rate their professional readiness to support SRL post-training. Two rated a six, one a five, and one a seven.

Post-implementation, the designers were again asked to explain how they felt in terms of their professional readiness to support SRL. Designers reported increased feelings of professional readiness post-implementation, with all four participants rating themselves an eight or higher on a ten scale to support SRL in future courses. Designers stated that the hands-on experience allowed them to apply new practices to real world experiences and thus increased proficiency in competencies and knowledge required to support SRL in the online environment.

Showing Professional Readiness Through the Adoption of SRL Supporting LMS Tools

When asked to define professional readiness in relation to the implementation of eLearning tools and navigational supports, participants reported that tools and navigation supporting reflection, critical thinking, and feedback were the most effective to support student SRL.

Participants in this study identified several LMS tools which they felt supported SRL when combined with instructional design best practices. During the first group interview session, discussion around tool adoption evolved into an impromptu brainstorming activity in which designers named tools they felt best supported SRL practices. Responses were varied, and included Blackboard tools, third party tools, VR,

social media, website building, and navigation. The following quotations are excerpts from group interview session #1.

Joy stated:

> Journals, developing wiki pages, blog posts/blogging sites can all be used. I think social media is also an area we can turn too. Using social sites like Twitter, Facebook, LinkedIn, etc., even outside chatrooms like Discord, Trello, or Slack, could help in that a) students need to think before they post, b) people can interact requiring them to respond/defend accordingly, and c) it provides an area where students can practice digital literacy and citizenship through communicating, fact checking, and expanding their perceptions.

Leah added that "students benefit from building online websites or portfolios using external tools. This could be a long-term project set with goals that help students cycle through the phases of SRL." Stella had ideas related to hands on learning activities and focused on the importance of student research:

> Generating newsletters, constructing games through game development software would be good... really anything that requires research, development and QA would serve well to support SRL. Using library tools would also be really helpful for generating research skills.

Finally, Jane focused on the importance of supporting reflection practices, stating that, "I think student reflection type things-journals, ePortfolios- those things would be the most helpful technologies we could employ to help students build SRL skills."

In cycle two, participants were asked to meet for a second and third group interview. During these interviews, inquiry around professional readiness was again

presented for discussion. Designers were also asked about LMS tools that they adopted to support SRL in online courses during the implementation. The adopted eLearning tools for SRL were different than the tools brainstormed by instructional designers. When asked about the differences between the brainstormed ideas and the implemented tools, participants commented that the differences could be attributed to (a) what best practices were implemented to support SRL and (b) what tools faculty were most comfortable adopting. Joy reflected:

> I came in with next to no knowledge about what SRL was. And now I feel like not only do I have the knowledge, I have the skills to support it. I brainstormed in the beginning with a support system of people that I can bounce ideas off of. And that's-- that makes it a lot easier to do. Later, I realized that some faculty may not be OK with those ideas. Being a capable designer means taking the knowledge you have and using it to make the course approachable for students. Sometimes that leads you to make choices about what you choose—faculty have to be able to do it [use the tool].

In all four cases, instructional designers reported choosing tools based on faculty comfort level. Tools that were most frequently adopted to support SRL were divided into two general categories. These included external and internal feedback tools. Navigational course elements generated a third category.

Professional Readiness in Adopting and Implementing Feedback Tools

Both internal and external feedback are essential to the SRL process. A study conducted by Chou & Zou (2020) found that students often exhibit poor internal and external feedback processes, finding that students lacked the skills needed to

appropriately assess themselves, set realistic goals, or to stay motivated. However, when feedback is integrated with online learning best practices, it supports SRL skill development in students (Chou & Zou, 2020; Leggett et al., 2017). Instructional designers reported both internal and external feedback tools as essential to student SRL development. Leah shared the following about feedback in online courses:

> ...They [the students] go through it self-paced for the most part, [completing] auto-graded items. It's not enough. They need feedback so that they know where they stand. I mean, if you're going to build the course, then you need to make sure that you cover all the bases when it comes to feedback as well. Without it [feedback] it's just a mess.

Instructional designers adopted a wide range of tools to create both external and internal feedback opportunities for students.

External Feedback Tools. Supporting external feedback by combining ID best practices with LMS tools was commonly highlighted by designer participants as essential for student SRL development. Leah stated, “We [designers] need to talk about feedback. We need to talk about scaffolding. We need to talk about...assessment measures being continual and making sure that there is continual feedback coming from both faculty and student perspectives.”

External feedback has been shown in research to facilitate the development of student SRL skills (Azevedo and Hadwin 2005; Butler & Winne, 1995; Chou & Zou, 2020). External feedback comes from sources outside of oneself, such as teachers, mentors, or peers (Chou & Zou, 2020) and encourages student self-monitoring. By delivering information to students about their progress, faculty and peers create a window

of opportunity for students to generate internal feedback about their progress and whether that progress will allow them to accomplish their tasks or goals (Chou & Zou, 2020).

Instructional designers suggested various tools to encourage the generation of external feedback. Discussion boards, rubrics, Turnitin feedback (both automatic and faculty created), peer review through the Groups Tool, and the use of Grade Center Feedback tools were identified by participants as tools adopted to support SRL in their implementation courses. When designers were asked which tools they would implement in future courses, all four responded that reflexive practice would drive their decisions, but that Discussion Boards and Turnitin Feedback Tools would be a top consideration. Designers listed faculty comfort levels with technology, faculty willingness to adopt the tool, and student assessment findings as major considerations in determining which tools are best to implement in online course offerings.

Internal Feedback Tools. Internal feedback occurs when a student identifies a gap or discrepancy between their current learning outcomes and their overall goals (Chou & Zou, 2020). Once this is identified, students can then engage in self-regulated processes, such as self-monitoring, to determine what actions need to be taken to close the gap existing between current knowledge and future goals (Butler & Winne, 1995; Chou & Zou, 2020). While external feedback tools varied amongst designers, Journals and ePortfolio were unanimously named by designers as eLearning tools which could be implemented to support student internal feedback.

The use of the Blackboard Journal tool was identified as an internal feedback tool and appeared sixteen times in interview data as an important SRL support tool. The Blackboard Journal tool allows faculty to present a prompt to students in a confidential

space. The information that the student shares within the journal tool can be shown to other students through setting options but is most used to facilitate discussion between the student and the faculty member. Students can also review previously recorded content throughout the semester to reflect and assess their learning.

Designers reported choosing the journal tool because it encouraged students to self-reflect and self-monitor their learning, supporting performance and self-reflection phases of the Cyclical Phase Model. It was also noted that the Journal tool was easy to use and presented a simple behavior adjustment for faculty rather than a complex one. Stella reflected that "finding opportunities to turn traditional feedback into a reflective, or self-critique component is a good easy transition into…giving the students accountability for their own reflection, rather than relying on things like just the feedback option."

Jane explained how they adopted a journal tool to address a faculty reported problem. The faculty was unhappy with student discussion posts, which they found to be superficial and repetitive of other students' comments. She recommended the journal tool to the faculty, and then supported the conversion from discussion to journal tool throughout the semester. Jane recounted that:

> [The instructor] had a discussion tool they were not happy with. [Instructor] was having them do discussions, but the kids weren't really reflecting on the questions...they were just copying everyone else. I helped [them] transfer from discussion to journal. I thought a journal was good because the students were doing some reflections then. I got it set up. Then I made sure that [the professor] could use it. They [the instructor] seems to be happy with the results. The kids [students] seem to have a better grasp on what

> they were reading. They were reflecting on it rather than regurgitating what everybody else wrote.

Leah also shared her experience of supporting student reflection through the pairing of instructional tools, commenting “I have a faculty [member] who does journals or vlogs as they go through, and they kind of amass knowledge about a topic to where at the end of it, they [the students] put it all together into a progress video simulation kind of thing.”

Three of four designers also identified ePortfolios as a support for student internal feedback processes. A curated ePortfolio presents student work and supplies evidence of a student's learning progression over time. Some commonly included items found in ePortfolios are documents, essays, blogs, multimedia such as recordings or audio, demonstrations, or presentations. However, anything that helps students reflect on their learning progression can be included in the collection.

Several research studies suggest that SRL can be supported by ePortfolio tools. Alexiou and Paraskeva (2009) implemented ePortfolios in an undergraduate computer science program. The ePortfolio tool was implemented and data assessed throughout a spring semester. The study suggested ePortfolios could be implemented as a scaffolding approach for SRL. Data generated from the study supported that process of students structuring their own portfolios encourages the growth of student SRL and increased student engagement in the course. Joy shared her personal ePortfolio experiences, reflecting that:

> Having students take the time to put into their own words and plan out what they should be doing by “X” date, then “Y” date, etcetera. To take the time

> to put into their own words what they are expected to do, learn, perform, and how they think they will be most successful is a major key component. The students must read, reflect, and plan accordingly.

Šliogerienė (2016) conducted research on ePortfolio use in English Language courses and found that student reflection on previous work increased student self-assessment and monitoring. It was also suggested in this study that the analysis of student ePortfolios as a reflective practice also increased academic progress and helped to foster student SRL in relation to self-appraisal.

Participants noted the positive effects of implementing ePortfolios in online classes or on a programmatic level. Jane designed and supported an ePorfolio implementation during the study. She spoke about the structure of her journal implementation:

> I have helped create this portfolio assignment that [instructor] requires from their students. I have helped them break it down into four parts, with part one being that they explain in their own words what they are expected to learn and be able to do by the end of the course. For them to express what methods of instruction work best for them be in face-to-face, examples, video instructions, so forth. This also allows for me and the faculty to plan or attempt to provide instruction in the different manners they say they need. In part two students select three to five examples of their work and a reflection explaining why they got the grade they did. Part three is seven-ten examples with at least three being examples of not their best work. Reflection now needs to happen on what they could do to improve the work.

> Finally, part four requires reflection about the course overall, how it did or did not meet their expectations. Ways that they could have done better in the course... What could the teacher do to help them learn the content?

While this implementation was successful, other designers weighed in on the challenges of supporting ePortfolios in online courses. The most common challenge instructional designers reported was lack of faculty buy in to ePortfolios. Stella highlighted these challenges when discussing her implementation. She commented, "...I try to encourage [the faculty] but they don't want to do that [use ePortfolios], because a lot of them don't want to do the portfolios, because it does take work to grade them."

Instructional designers also identified time constraints as an issue with ePortfolios, as they take considerable time for the faculty and ID to design and to support within the online environment. Course size also presented a challenge related to ePortfolio adoption, as increased enrollment numbers require significantly more time to provide personalized feedback. Participants recommended that designers and faculty who wish to use ePortfolios in support of SRL should consider incremental checkpoints to both encourage student task management and to reduce grading time.

Professional Readiness to Use Course Navigation to Support Student SRL

Students' effectiveness in the process of SRL is influenced by their environment and goal motivations (Gonzalez, 2013). Instructional designers can support SRL courses by working to provide students with environments conducive to student self-monitoring and metacognitive practices. A factor which impacts the useability of the online environment is course navigation. Navigation refers to the general structure and

transitional components of a course. In terms of best practices, course navigation should derive from the course syllabus and schedule.

Designers at the university use the Online Course Design Rubric as a framework for developing course navigation. The rubric is split into two categories: course organization and course information. Course information includes the syllabus and schedule. Syllabi should highlight major tasks and assessments, identify due dates and checkpoints, and present learning expectations. The syllabus should also provide students with an understanding of the course delivery, deliverables, and schedule. Joy mentions that, "...If your faculty are starting with a syllabus, and are utilizing the rubric correctly, they have a structure that should allow the students to be able to go through the course in an organized fashion, which is part of that forethought and planning."

Instructional designers reported supporting SRL through navigational elements within the course. The first was through a clear presentation of the syllabus and schedule by creating a direct link to this document via the Blackboard sidebar links. Designers stated that they presented the schedule in two ways for which students to access: a digital copy which was embedded within a Blackboard Item and a downloadable PDF copy placed as an attachment. This was done to increase access to mobile only students.

Providing students with both a syllabus and schedule were identified as key elements in supporting student task management and self-monitoring. Some designers opted to use adaptive release tools to encourage students to advance in a particular order or to require student task completion before advancing. Stella reported

> As far as the navigation, … I think the way that we built the course was very systematic. The students had to meet certain criteria and submissions before

> they could advance, but it was paced to how they wanted to do it. We use that adaptive release feature to say…if you if you did these things, you can move forward, and you can-- you can set these things up, and it kind of built in a checklist for them.

Course chunking was identified as a navigational tool to support SRL. Chunking refers to an organization method in which related content is grouped together in a singular location for students. Participants stated that effective online courses needed to be organized, and that this could be supported through folders, sidebar navigation items, and modules. For two implementations, instructional designers reported that folders were used to chunk materials into (a) units or (b) weekly materials. Stella, who conducted a navigation related implementation commented on her experiences with the folder tool. “We [the faculty and designer] talked about folder structure and stuff and then chunked the lectures and assignments. We broke it down by weeks... that seemed to help them [the student] make sense of it all.”

During the chunking process, three of four designers reported adding learning objectives or learning outlines at the beginning of chunked content, whether it be in folder or module format. This strategy was of particular focus to one instructional designer involved in STEM course development, who asserted that a “well-structured learning objective is really important to students because we have to know where we're going. And so, we're starting with clear expectations, clear learning objectives. That's the beginning part. They need to know what we expect from them.”

Theme 2: Building Faculty Relationships in Support of SRL and Design Best Practices

Faculty-ID relationships are considered a cornerstone of successful online course development (Moskal, 2012). These relationships require respect, empathy, and trust. Collaborating with instructional designers has been shown to increase faculty technology skills and knowledge of online teaching methodologies and best practices (Bawa & Watson, 2017; Wagner & Hulen, 2015). It also can lead to "superior knowledge construction, outcomes, and products" (Bawa & Watson, 2017, para. 4), making it valuable for instructional designers to understand how to form and maintain these relationships. In turn, interactions with the faculty can increase professional readiness for instructional designers by strengthening their andragogical and cognitive learning expertise (Bawa & Watson, 2017). Within theme two, two categories emerged: (a) building trust with faculty and (b) supporting faculty through training.

Building Trust with Faculty

Participants reported that the development of faculty relationships allowed for dissemination of information related to SRL and SRL support. Faculty who trusted their instructional designers or had long standing working relationships with them were reported by designers to be more likely to be open minded about changing aspects of their course or teaching approach to support SRL skill development in their students. One designer commented on their experience with a new faculty member that did not support SRL implementations in their course. Jane shared:

> When they don't trust you, they're not going to listen to you-- they're not going to be open to trying new things…it's not happening and when it

> doesn't, the students' education suffers... it's just horrible. It was a disappointing and frustrating experience on all accounts."

Leah added to this by stating that, "You have to build those relationships so that they trust you and that you're not just trying to give them something more to do." Without strong relationships with faculty built on trust, instructional designers will not be successful in implementing SRL scaffolds or supporting strategies. The best way to integrate SRL, designers argued, is to have clear and open communication with faculty, address faculty concerns with compassion, and then develop a plan with the faculty member that supports SRL within their specific online course.

Supporting Faculty Through Training

Faculty are the lifeblood of institutions and are responsible for facilitating student learning. The majority of faculty are passionate about their practice, and work hard to create eLearning environments that support student community and engagement. Yet, faculty are facing increasing time restrictions as large enrollment numbers and demands to conduct more research are pressured on to them by colleagues and chairs. Jane explained that "faculty are exhausted" while Leah struggled with faculty time constraints, finding that when presented with SRL support opportunities:

> There was a lot of "I don't have time for this"—there are time restraints. There was faculty pushback... and I really think some of them saw the value in it, but I think that they felt too overwhelmed at that moment with other duties to implement it.

Increased workload leaves less time for faculty to familiarize themselves with online learning best practices or to explore new learning experiences or technologies, leaving

them at a disadvantage when it comes to supporting online student learning and SRL skill development.

Instructional designers conceded that providing training opportunities for faculty about supporting student SRL development would be a strong reinforcer for future SRL implementation success. However, designers also emphasized that faculty should have options around how and when they attended training. While adding SRL curriculum to the mandatory "Teaching Online with Blackboard" Cohort Training seemed the easiest addition, designers expressed concerns about whether additional formal training would create stress and frustration for faculty members, which may lower the likelihood of them collaborating with IDs in the future. Jane discouraged the use of the cohort training, and instead made her case for micro-sessions and one-on-ones:

> The cohort might be a good route, but it might stress some of them [the faculty] out…micro-session for the faculty themselves or one-on-one would be better, I think. Some type of training where IDs can show faculty that it is OK to trust them and that they can do this [scaffolding SRL].

Seasoned designers, like Joy, agreed with Jane's perspective. She stressed the importance of continued faculty support through the fostering of faculty-ID relationships. Sharing knowledge, supporting faculty ideas and goals, and building trust were listed as important aspects of effective faculty development. Joy reflected, "They [the faculty] have to know that they can actually trust you and that you actually know what the hell you're doing, and that you're going to make things better, not worse for them."

Designers cautioned that faculty who felt disrespected or nervous would shut down and would be more likely to reject SRL scaffolds and implementations. Participants

insisted that to increase faculty willingness, designers needed to find a middle ground in which faculty training was occurring but in which faculty still felt safe and able to voice questions and concerns. Faculty experience with online teaching was also recommended as a consideration of training, with participants stressing the importance of teaching tools and practices that are approachable based on faculty teaching styles and levels of technological competency.

Theme 3: Encouraging Student Empowerment in Support of SRL Skill Development

Online modality shifts the learning responsibility from faculty to student. Students who have poor SRL skills struggle with student-centered approaches as they have not yet developed the self-efficacy or motivational skills to keep them engaged in the learning process (You & Kang, 2014). This is especially true of courses with limited student interaction (Jung & Lee, 2018).

Instructional designers strongly supported the adoption of student-centered approaches in online learning and suggested that students be given the necessary autonomy to explore, self-monitor, and self-reflect on their learning. Stella expressed that, “We need to give students the opportunity and the structure to be able to do these things, to practice SRL.” Two subcategories emerged while exploring this theme. They included (a) student knowledge development through scaffolding and training, and (b) the adoption of PBL in higher online education.

Student Knowledge Through Training

In addition to faculty training, student SRL skill training was recommended by participants. Participants contended that by being more aware of their current level of

SRL development, students would be more likely to make behavioral changes to encourage SRL development. Empowering students to take ownership of their own learning by offering training opportunities was suggested to increase student motivation and self-reflection. Designers felt it important that students be trained not just on SRL, but also on LMS tools and how to use them in their online courses.

To accomplish this, participants suggested that student training should target incoming freshman. The First Year Experience program, or FYE, was identified to provide students with opportunities to build SRL knowledge and competencies, with Stella stating, "I don't know exactly what the curriculum is in FYE, but this should be a centerpiece of it… how do you build better learners? By teaching them how to be better learners" to which Leah added, "I would love to see SRL skills development incorporated into the First Year Experience curriculum. I think that setting the foundation that these are skills that we're trying to develop and home in on is going to be great for our incoming students."

Empowering students to use LMS tools was also a topic of discussion in the third group interview. As a best practice, instructions for use should be provided to students for any eLearning tool in the course. These instructions can be added through navigational supports, such as a link on the sidebar or as videos or PDFs linked into course folders or modules. Stella pointed out that several of her faculty had historically launched an eLearning tool for students to use but provided limited instruction on how to use it. This created tension as students became frustrated with the tool. Stella explained that these frustrations often led "students to give up and just not complete the task." However, if students were familiar with the tool, they were less likely to give up due to technological

frustrations. Leah also considered this, and suggested that whatever tool is to be adopted, that faculty should provide clear expectations on how the tool is used from the student's perspective. This could be using student learning objectives (SLO), adding assignment instructions, and supplying how-to video supports to students.

The Adoption of PBL in Higher Education Online

Adopting a student-centered approach in online courses allows students some autonomy and decision power by allowing them to decide what material to learn and how to learn it. Student centered approaches support SRL because it engages the students in self-assessment and decision-making practices. Designers recognized the connection between student-centered approaches such as PBL and SRL skills. Leah explained the connection between PBL and SRL, suggesting that, “A lot of self-regulated learning happens in PBL because of the way that it's structured.” Jane reinforced Leah’s comment by adding, “You take PBL and add in the checkpoints, you add self-reflective elements, ways to assess SRL and PBL throughout its progress on the student side... Supporting SRL with PBL? It works.”

Research supports the connection between SRL and PBL. English and Kitsantas (2013) presented a theoretical model illustrating the relationship existing between SRL and PBL. The model presents three phases of PBL: Project/ Problem Launch, Guided Inquiry and Product/ Solution Creation, and Project/ Problem Conclusion. Each of the PBL phases supports a phase of the Cyclical Phase Model. This model could be adopted by instructional designers in future course implementations to increase student SRL development.

Work by Polman (2004) highlights the importance of strong activity structures in developing PBL environments. Instructional designers can use instructional tools and navigation, such as project templates, instructional examples, and instructional protocols, to support both PBL and SRL in online course environments. Joy and Stella suggested that modifications could be made to the Online Course Rubric that encouraged faculty to promote PBL in efforts to increase student SRL development opportunities. Changes to course formative and summative assessment strategies was particularly highlighted as a rubric element that would benefit from PBL adoption and that could be used to encourage student metacognitive processing.

Quantitative Findings

Quantitative data was collected during cycle one of this study. This included pre and posttest scores collected at the conclusion of the SRL training course. The quantitative data findings are analyzed in the following sections.

Data Collection

As reported in Chapter Three, data collection was conducted over a two-semester period lasting a total of 30 weeks (about 7 months). Quantitative data collection occurred during Cycle one, and data was collected from the SRL training course provided to designers prior to their implementations. Descriptive statistics and a Wilcoxon Rank Test were implemented to analyze the data.

Intervention Fidelity

During the SRL Online Training, participants were asked to complete pre- and posttest assessments. The pretest assessment was the first activity participants engaged with in the course and was meant to provide a baseline understanding of their current

competencies and knowledges related to the support of student SRL skills in online learning. The posttest was completed at the conclusion of the course and was the last activity the participants completed. The nominal data from these assessments was collected from Blackboard an imported into SPSS for analysis.

Results

The hypothesis was that instructional designers would have a low baseline of professional readiness to support SRL prior to their participation in my developed training which would then increase once they had completed the training course. I believed that pretest data would show lower baseline scores then those of posttest data collected at the conclusion of the training. My hypotheses were as follows:

H_0: There will be no difference in the point between pre- and posttest.

H_1: There will be a difference in the point between pre- and posttest.

A Wilcoxon matched-pairs signed-rank test was conducted to determine whether there was a difference in the point between pre- and posttest. The Wilcoxon Rank Test is a nonparametric statistical test that is used to observe differences between paired scores. This test was chosen over ANOVA or t-test due to the small data set.

The results showed that there was no significant difference in points between pre- and posttest scores, with $z = -1.84$, $p = .066$. Therefore, the null hypothesis was not able to be rejected. However, the Wilcoxon did show that participant total points on pre- and posttest attempts did increase from pre- (Mdn=30.00, M = 30.00, SD = 8.16) to posttest (Mdn=45.00, M = 47.50, SD = 9.57), suggesting that participant knowledge of SRL did increase from the training, though not by a statistically significant amount. The results of the Wilcoxon Signed-Rank Test are illustrated in Table 7 and Figure 5 below.

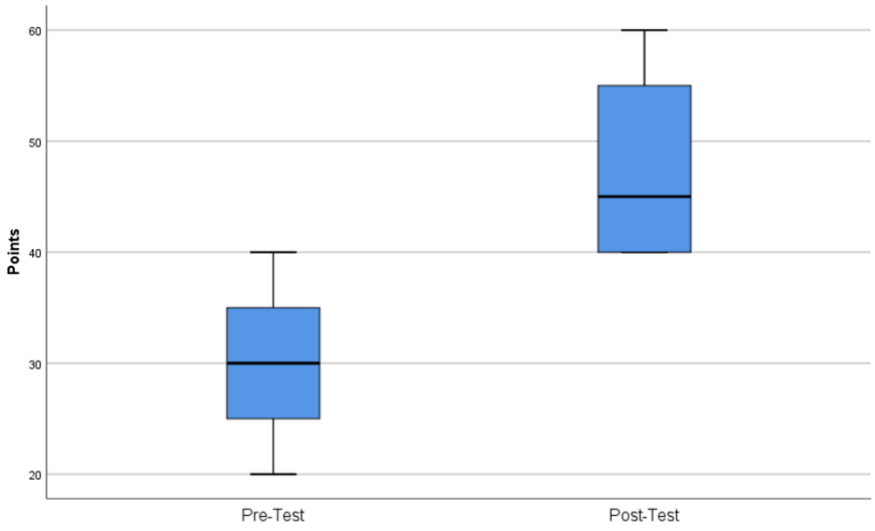
Table 7

Results of the Wilcoxon Rank Test Pre- and Posttest Data

	Test					
	Pre			Post		
	M	*SD*	*Mdn*	*M*	*SD*	*Mdn*
Points	30.00	8.16	30.00	47.50	9.57	45.00

Figure 5

Box Plot of Students Pre- and Posttest Scores



Note: There is not a significant difference in the points between pre and posttest (p=.066).

Synthesis and Summary

Data analysis was provided for both the quantitative and qualitative elements of the study. Pre- and posttest scores were analyzed using descriptive statistics and the Wilcoxon Rank Test. While the training course did increase participant performance

related to SRL, it was not found to have a statistically significant impact on the instructional designers' development of knowledge or competencies related to SRL.

Qualitative data was analyzed through thematic analysis and three themes emerged from the data: (a) professional readiness to support SRL in online courses, (b) building faculty relationships in support of SRL and design best practices, and (c) encouraging student empowerment in support of SRL skill development. These themes were then analyzed through the theoretical framework, the literature, and through analysis of participant data to answer the four research questions posed by this study.

Under Professional Readiness to Support SRL in Online Courses, a) developing professional readiness through designer training and experience, b) showing professional readiness through the adoption of SRL supporting learning management system tools, c) professional readiness in adopting and implementing feedback tools, and d) professional readiness to use course navigation to support student SRL were identified as subthemes of theme one.

Participants expressed that they felt more professionally ready to support SRL skills development in students after training and implementation had occurred. Participants identified that implementation had more impact on their professional readiness than the online training did, but that both were helpful in learning about SRL and how to support the development of these skills in online courses. However, pre and posttest scores did not find a significant increase between participant baseline scores and participant posttest scores.

Designers identified that their proficiencies related to supporting SRL through LMS tools and navigation was an important competency in determining designer

professional readiness to support SRL. In alignment with both the Cyclical Phase Model and ID best practices, designers focused mostly on supporting SRL through feedback tools and reflection tools. ePortfolios, journals, discussion boards, and peer-to-peer review tools were all identified as tools which could be combined with design best practices to support student SRL development.

Navigational tools, such as folders and module structures to support course chunking, strong student learning objectives (SLO) and logical organization, were identified as essential elements in supporting student task analysis and self-reflection. Course tools, such as the syllabus and schedule, were listed as navigational tools that supported goal setting, student planning, attention focusing, and self-monitoring student behaviors.

Building faculty trust and supporting faculty through training were identified as subthemes of theme two, which discussed building faculty relationships in support of SRL and design best practices. This section approached support from the perspective of the instructional designers. The importance of developing faculty collaborative relationships in supporting student SRL development was highlighted as a major factor contributing to implementation success.

Faculty trust was identified as one of the most important elements in supporting SRL successfully. Designers also discussed that additional training should be provided to faculty to increase their knowledge of the importance of SRL skills to online students but that considerations should be given to faculty time limitations and increased responsibilities.

In lieu of cohort training, three of four participants agreed that leveraging faculty-ID relationships to conduct one-to-one training may be a more practical approach to increasing faculty SRL knowledge. Changes to the Online Course Rubric were also recommended, with formative and summative assessment and PBL inclusion being identified as two areas to include in rubric modifications.

Student empowerment in support of SRL skill development included two categories: increasing student knowledge of their SRL skills and adopting PBL in online higher education courses in an effort to provide students with learning autonomy and metacognitive growth opportunities. Participants expressed the importance of student responsibility in their learning in completing course tasks or goals.

To support student motivation, designers stressed the importance of providing students with clear instructions and expectations throughout the course. PDF or video tutorials of adopted course tools were recommended to decrease the potential effect of student frustration on learning motivation. Designers also highlighted the importance of clearly defined learning expectations on student success.

In terms of external training, designers suggested that an SRL curriculum should be added to the First Year Experience program (FYE) targeting incoming freshman. The curriculum for these courses helps incoming students develop skills and competencies necessary for their college success. Designers strongly suggested that a module or curriculum components pertaining to SRL skills development should be added to the current FYE curriculum.

Chapter Four provided an analysis of the qualitative and quantitative data related to designer professional readiness to support student SRL development in online courses.

The concluding chapter, Chapter Five, discusses SRL implementations and supports in online courses and explores future implications of this study.

CHAPTER V

Discussion and Conclusion

Overview of Study

The purpose of this study was to determine the professional readiness of instructional designers to support self-regulated learning in online higher education at a medium sized university in the southern United States. The subject of this action research was in response to faculty concerns over low student motivation and high attrition in their eLearning courses. As a response, SRL was recommended as a potential area of focus in addressing faculty concerns.

The study, which was conducted over two fifteen-week semesters, was divided into two cycles based on the Kemmis and McTaggart (1988) Action Research Model. The first cycle designers completed was an online training course. This course defined SRL, discussed its benefits, and outlined suggested practices that could support student SRL development in higher online education. Pre and posttest data was collected on the participants' knowledge acquisition during the training. Designers later reflected on the course and their SRL knowledge and competencies during group and individual interview sessions.

Participants were then asked to apply their new knowledge to current instructional design practices. During this cycle, instructional design participants collaborated with faculty to develop and implement online courses with eLearning tools and navigational features that supported student SRL development. Instructional designers then reflected on these efforts and determined (a) if SRL should be more intentionally supported in our online design development and implementation processes and (b) how can instructional

designers support SRL skill development in future implementations? The discussion of the findings and their implications are discussed below.

Research Questions

The following research questions were considered in this study:

RQ1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in online learning?

RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?

RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?

RQ4: What actions can be taken in regards to current practice to support SRL implementations in future semesters?

Methodology and Theoretical Framework

This study a mixed method action research to examine the professional readiness of instructional designers in supporting student SRL skill development in online higher education courses. Mixed methods approach allowed me to gather rich subjective insights from the participants while obtaining quantifiable data. The combination of methods provides a more thorough understanding of the data by allowing the data to be considered from a multitude of perspectives (Regnault et al., 2018).

Thematic analysis was applied to analyze the qualitative data in the study. This included individual and group interview session. This also included some notes that I took during the participant interview sessions. Thematic analysis is a method for "identifying, analyzing, and reporting patterns within data" (Braun & Clarke, 2006, p.79).

The Braun and Clarke (2006) six-phase guide was adopted as the thematic analysis structure for this study. A representation of the Six-Phase Guide to Thematic Analysis is shown in Figure 6.

Figure 6

Braun and Clarke's (2006) Six-Phase Guide to Thematic Analysis

Note. This figure is adapted from the Braun and Clarke (2006) Six- Step Guide for Thematic Analysis.

Quantitative data was also collected and analyzed for the purposes of this study. When paired with qualitative analysis, quantitative analysis provides "an overall or negotiated account of the findings that brings together both components of the conversational debate" (Bryman, 2007, p. 21). Pre and posttest data analysis was conducted using data derived from the SRL training provided to participants at the beginning of the study. This data was triangulated with qualitative data from interviews to ascertain the professional readiness of instructional designers to support SRL skill development in online learning.

Central to data analysis was the application of Zimmerman and Moylan's (2009) Cyclical Phase Model. This model comprehensively details key processes that influence student learning and metacognition. This theoretical framework was adopted for the development and delivery of the Online SRL Training Course. It was also the model used to present the elements of SRL to the ID participants.

During cycle two of this study, participants paired their knowledge of Cyclical Phase Model with instructional design best practices and eLearning tools to create implementations that supported student SRL development throughout the semester. Careful consideration was given to the model as designers paired the framework with eLearning tools and navigational elements to support student SRL development during their online course. Data collected from designer interviews was considered through the lens of this model to determine how the designers supported SRL based on the Zimmerman and Moylan (2009) SRL framework.

Participants

Four instructional designers participated in this research study. Each participant worked for the same a medium sized southern university in the United States within the Department of Instructional Design. The participants represented a diverse group of individuals from a variety of backgrounds and fields of expertise. Additional information about the participants is provided below:

1. The four participants in this study identified as female.
2. All participants were employed at the university as an instructional designer for the duration of this study.
3. All participants held a bachelor's degree or higher.
4. Two participants had been instructional designers for three to four years.
5. Two participants had been instructional designers for nine or more years.
6. All participants were involved in the development of academic course development and support.

The four participants were each assigned a pseudonym to use throughout the study. These included Joy, Leah, Jane, and Stella. Each participant provided general background information about their years of service, expertise, previous fields of work, and design experiences. A detailed overview of each participant is in Chapter 4 of this research study.

The participants provided rich, descriptive data regarding their experiences implementing and supporting SRL in higher education online courses at the university. The participants assumed the role of equal stakeholder in this research study. One-on-one interviews gave designers an opportunity to share their experiences and challenges in

supporting SRL in their implementation courses. Group interviews opened the floor to discussion related to professional readiness, current practice, and actions that should be taken to support student SRL development in future online courses at the university. The following section is a discussion of the findings of this study presented by research question.

Discussion

To fully explore the research findings from this mixed methods action research, it is important that the results focus on both the research purpose and research questions upon which the study was based. The findings of this research also consider current and previous research in the field related to SRL and instructional design. The findings of this study are presented below.

RQ 1: How can Instructional Designers Improve their Professional Readiness to Implement Self-regulated Learning Practices (SRL) in Online Learning? To ascertain instructional designer professional readiness to support SRL, participants were asked to complete two tasks. The first was a training course which included a pre and posttest that participants were required to complete. The pre and posttest data collected showed that while instructional designer's scores increased between pre and post assessment, it was not enough to be considered statistically significant. At the completion of the training course, instructional designer discussed their understanding of SRL based off the training course. Designers assigned a number one through ten in an impromptu rating opportunity during the first group interview session. Designers reported an average professional readiness score of 6 ($\bar{x}$=6) as it related to the implementation of activities and scaffolds to support student SRL skill development.

The second task was to execute an SRL supporting implementation or scaffolding opportunity in a live online course. Over the course of one fifteen-week semester, instructional designers collaborated with faculty to develop, implement, and support SRL skill development procedures, activities, and tools within their chosen online courses through the adoption of eLearning tools and navigational course elements. Post implementation, the designers were again asked to rate their professional readiness to support SRL in online courses. Designers rated their professional readiness at an average readiness of 8.875 ($\bar{x}$ =8.875). Designers also reported that the hands-on experience of engaging in implementation during live courses increased their knowledge and competencies to support SRL online. Jane commented that. "I definitely feel more ready now that I've done it...and now that I know that other people have done it, and it's just not me having some crazy kooky idea that no one's gonna back. The fact that there's been success now tells me I am ready to do it."

An explanation for the difference in reported professional readiness may be explained by field studies about competency and knowledge development in instructional designers. Several studies exploring instructional designer training have posed that a disconnect exists between formal instructional design training and the designer's work experiences (Campbell et al., 2009; Williams et al., 2011). This causes many instructional designers to ignore their formal education and instead focused on either their own personal experiences or the experiences of other designers in their communities of practice (Williamson et al., 2011).

Some designers also sought external help from instructional design communities of practices on the World Wide Web while printed formal literature was identified by

instructional designers to be less helpful or trustworthy (Schwier et al., 2004). All four designers inferred the importance of community in their development; Joy reflected that:

> I came in with next to no knowledge about what SRL was, and now I feel like not only do I have the knowledge and skills to support it, [but] that I can help others [instructional designers] learn too. I brainstormed in the beginning with a support system of people that I can bounce ideas off of. And that makes it a lot easier to do.

It was interesting to note that while participants identified the implementation as more effective in increasing their feelings of professional readiness, they did not dismiss the importance of the formal training. During group interview sessions, designers discussed what they learned from their experiences and shared successes and challenges they encountered while implementing and supporting SRL development in online courses. Designers identified the training as providing the foundation needed for successful implementation.

Vocabulary and exemplars were listed as the most helpful training elements. Joy said about SRL vocabulary building that, "Now that I know the words to use to describe these things, because of the steps are all training because of this implementation, it absolutely needs to be a fixture in what we do" while Leah noted that "the examples of what SRL supports might look like in an online course" really helped her solidify her understanding of SRL. Stella also commented on the importance of the training as she related the concepts and exemplars to her design best practices. She noted that, "I think this training was beneficial to me as an Instructional Designer, I was surprised by the number of existing connections between the course development rubric that we use here and components."

As an actionable item, designers recommended that future SRL training be offered to not only designers, but also to faculty and students to increase SRL awareness amongst campus stakeholders. Designers also encouraged efforts that would support the development of communities of practices for designers to better support the diffusion of information concerning SRL and how to best support it in online learning.

RQ 2: How can Instructional Designers use Learning Management System Tools and Navigation to Support Self-regulated Learning more Effectively in Online Learning? Instructional designers often utilize eLearning tools to support student learning in online courses. In this study, instructional designers were asked to consider how LMS tools and navigational course elements could be employed to support student SRL. Designers identified a plethora of tools which could be adopted to support SRL in the eLearning environment. Two of the four instructional designers suggested outside tools, such as AI, to support SRL efforts. Several studies support the use of AI technologies in student SRL development (Carter et al., 2020; Cho & Heron, 2015; Narciss et al., 2007). However, these tools were considered outside of the scope for this study.

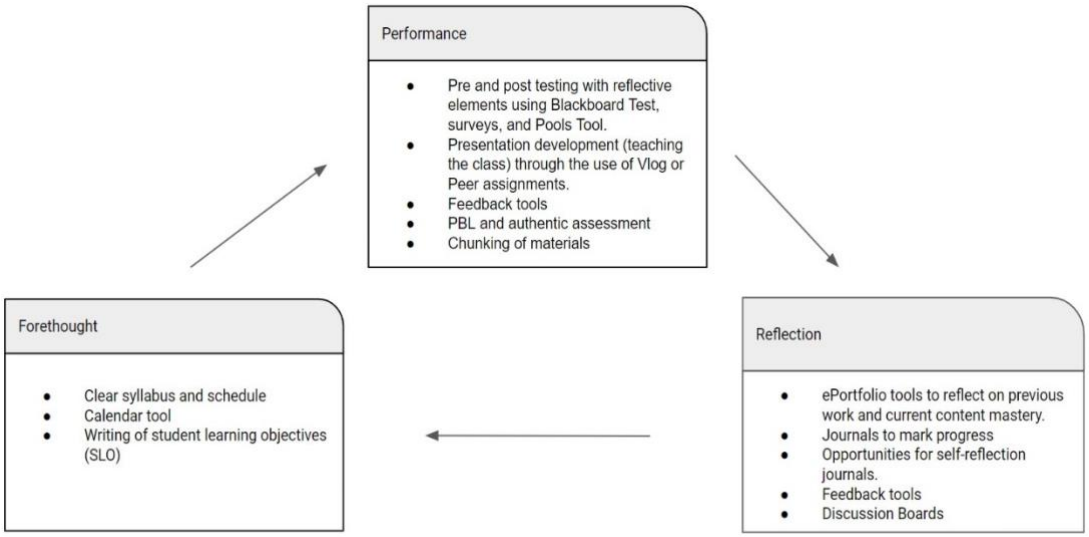
The most identified tools for SRL skill development were those which supported student feedback and self-reflection. Some examples of eLearning tools included Blackboard Journals, Blackboard Discussion Board, Peer Review, and ePortfolio tools. Designers discussed that their choices of tools and supports was heavily influenced by faculty feedback concerning the student needs as well as faculty level of comfort in relation to using technology. Since faculty expressed concerns related to student

motivation, reflection, and critical thinking at the beginning of course development, tools which supported these behaviors were most focused on by designers.

The participants chose tools in support of student motivations and behaviors identified in Zimmerman and Moylan's (2009) Cyclical Phase Model. A full list of identified tools is in Chapter Four of this study. The most identified and implemented tools have been categorized by the cycle which they support below in Figure 7.

Figure 7

Tools Chosen by IDs to Support Cyclical Phases of SRL



Instructional designers suggested a multitude of tools to support SRL in Blackboard online courses, but ultimately implemented tools that (a) addressed faculty concerns related to student performance and (b) that faculty were comfortable or familiar with. Instructional designers emphasized that tools should be chosen to support instructional design best practices and online pedagogy and not just because they are new or interesting. Pedagogy, rather than eLearning tools, should drive course delivery

(Schwier et al., 2004). Tools chosen without consideration to best practices may hinder rather than help student learning.

eLearning tools chosen to pair with design best practices primarily focused on supporting students during the performance and reflection phases of the Cyclical Phase Cycle. Designers supplied that faculty information about student behavior and learning influenced their decisions related to course development, design, and implementation. The most frequently adopted tools included those that supported feedback and self-reflection. These two elements have been found to be essential for deep learning in students (Davies, 2015; Ramsden, 1992). Examples of tools implemented most frequently included discussion boards, Grade Center and Turnitin feedback, journals, and ePortfolio tools.

Navigational elements were also added to courses in to support of student SRL efforts. Most adopted navigational elements related to the support of either student forethought or reflection. To support forethought, instructional designers implemented navigational elements such as updated course syllabi and schedules, clear student learning objectives (SLO) or lesson plans at the beginning of each module, and pre-planning activities such as course surveys related to student study habits. To support Performance phase, instructional designers applied navigational elements such as folders or modules to support chunking of course materials. Authentic assessment and the use of PBL were also suggested implementations, although neither was adopted due to a lack of buy in from faculty. Opportunities for feedback, both peer and individual, were also supported through checkpoints built into the course schedule. This aspect also worked to support self-reflection in students.

Instructional designers rely heavily on their communities of practice to increase ID competencies and knowledges necessary to the successful development and support of eLearning courses (Schwier et al., 2004). Participants posited that additional formal and informal trainings should be conducted within our community of practice to diffuse knowledge and competencies to support SRL on a campus-wide level.

RQ 3: What can Instructional Designers do to Integrate Self-regulated Learning into the Online Course Environment Seamlessly? Instructional designers shared their experiences during and after their SRL supporting implementations. During both group and individual interview sessions, these participant designers proposed several actions instructional designers can take to ensure that integration of SRL supporting practices is both effective and undisruptive to course design and practices.

The number one action suggested to ensure seamless integrations was effective collaboration and communication with faculty. In each implementation, participants reported considering both the needs of the learner and the needs of the faculty when choosing activities and tools to support SRL. Since faculty frequently reported that students suffered from low motivation, engagement, and self-reflection, instructional designers focused on what would support those motivations and behaviors in relation to the Cyclical Phase Model. As a result, designers focused on tools that could be paired with best practices to support those elements of learning. Blackboard tools that supported student internal and external feedback as well as student self-reflection were the most frequently adopted by designers. These were also reported to be the most readily accepted by faculty. Building trust and rapport and actively listening to faculty needs and concerns were reported by designers as essential elements of successful integration. By taking the

time to kindle these relationships, faculty can "relax, become more open, and have stronger buy-in" (Richardson et al., 2019, para. 23). Joy reflected on leveraging faculty trust to encourage buy-in, stating, "I think most faculty are afraid, but if you can get them to dip their toes in by adding things here and there that work, once they see small changes go well they are more willing to trust you and take a big leap." Active listening, engagement, compassion, empathy, willingness to learn, and strong communication were all listed as key elements in developing faculty relationships that would allow for SRL supports to be built into future implementations seamlessly.

Designers suggested that collaborative relationship building could also be supported by setting clear course expectations during the early development phases. Our university utilizes an Online Course Design Rubric to guide faculty through the course development and implementation process. This rubric provides a roadmap of design best practices which support the development of engaging and pedagogically sound online courses. Participants discussed in length the Online Course Design Rubric and suggested how the rubric could be modified to better support SRL student development. Designers posited that presenting the rubric during the development stage encouraged open communication between faculty and instructional designer. The rubric also provides necessary framework for new faculty to follow during the development of their early online courses. Designers suggested changes to the organizational and collaboration blocks specifically in relation to the rubric and suggested additional research be conducted to determine how SRL could be better supported by the Online Course Design Rubric.

Sharing and help seeking from designer communities of practice was suggested to support designer implementation success. A study conducted by Schwier et al. (2004) addresses the importance of designer communities of practices within institutions, stating that, "Part of an instructional designer's identity is embedded in the context of the institutional culture in which ID is practiced. The culture of an institution carries with it very strong embedded values and a unique identity (p. 79)."

The college's department of instructional design has spent years cultivating an environment that encourages a strong community of practice. Brainstorming, faculty relationship building, and research and training are all approached as collaborative efforts of self-exploration and growth as it relates to our design practices. Designers suggested that the training as well as opportunities of collaboration should be expanded to the entire community of practice to encourage systematic change agency in support of SRL implementations and scaffolds. Mirroring responses in RQ1, designers explained that communities of practice encourage the growth of knowledges and competencies instructional designers need to increase professional readiness. The more professionally ready a designer is to support SRL in online courses, the more seamless the integration. Hands-on opportunities to engage in SRL implementations were listed as critical to future successful SRL implementations. It was also suggested that novice designers engage in shadowing activities of veteran designers before attempting SRL supporting implementations in an effort to expose new designer to potential challenges that might impact seamless integration.

RQ4: What Actions can be taken in regard to Current Practice to Support SRL Implementations in Future Semesters? Designers reported seeing the value of SRL in

the courses, saying that faculty were reporting that students seemed to be more engaged in course activities than they were before implementations. In response to this, study participants suggested the drafting of a plan of action to address the need for change agency within our department. These actions are described in the following sections and are organized into three categories of action: Designer focused, faculty focused, and student focused.

Designer Focused Actions to Support SRL. Four designer focused actions were presented by participants to support future SRL implementations. These included additional research, edits to the SHSU Online Rubric, additional SRL training for instructional designers, and finally, working with university stakeholder to encourage change agency in support of SRL in online courses.

The first action participants recommended was to conduct additional research related to instructional design best practices and how they can help support SRL development in eLearning courses. Once completed, designers believed that addendums should be made to the Online Course Design Rubric that directly supported SRL during the development and implementation of eLearning courses. Components of the rubric, such as the communication and organization sections, were particularly highlighted by participants as areas which could be revised to include SRL supports for current and future implementations. A notated copy of the rubric with participant suggestions are in Appendix D.

Additional resource allocation to training designers on SRL was noted by participants as an immediate actionable item. Group discussions suggested ways in which the SRL Online Training completed by participants could be improved by turning the

training course into smaller microlearning sessions as they would take less time to complete. These microlearning sessions would be paired with implementation and shadowing opportunities for designers to develop knowledge and develop competencies related to designer professional readiness as it relates to supporting SRL in online university course offerings. Joy noted how additional designer training could promote implementation acceptance by increasing professional readiness of designers. This way, designers could competently work with stakeholders to encourage the adoption of SRL practices and tools and navigation to support it. She stated, "We need to train our IDs on SRL, because our IDs are going to be the champions. They are going to be the ones that either make people want to support it [SRL] or reject it."

Participants posited that arguably the most important action they could take to support future SRL integrations was to continue to develop trusting relationships with university stakeholders. This, they suggested, would lead to an increased understanding of SRL, and encourage seamless SRL implementations in future online courses. Designers are uniquely qualified to complete this task as their university roles and duties provide them with access to all three major university stakeholders: the faculty, the administration, and the students (Schwier et al., 2007). By supporting the generation of dialogue around SRL, instructional designers can encourage change agency within their institutions (Schwier et al., 2007).

Designers do not need to hold high rankings of power within the university system to advocate for changes supporting SRL. Rather, instructional designers are tasked to deliver communication around a clear vision of what works and what does not. By developing strong relationships built on trust, designers can both support SRL through

faculty collaboration while providing necessary feedback to administrative stakeholders about the importance of supporting student SRL in online college courses.

In terms of supporting students, designers closely monitor eLearning course trends and apply reflexive practice to address student learning needs. This understanding of the students allows designers to advocate for practices and tools which support student development and success.

George Couros, author of the Innovation Mindset, acknowledges the unique role instructional designers play as agents of change in terms of working towards a common goal. Designers must encourage buy in by providing context and meaning around SRL skill development in learners. This can come through sharing best practices, providing feedback, or articulating student risks. Success comes when designers “have sustainable change that is meaningful to people, it is something that they will have to embrace and see important…the persistence comes in that you will take opportunities to help people get a step closer often when they are ready, not just giving up on them after the first try" (Couros, 2013, para.8). Designers suggested encouraging collaboration through stakeholder connection building to develop trust among stakeholder parties. Once trust is established, stakeholders can then work together in developing a clear vision, addressing risks and problems, advocate for student needs, and generate strong reasons to support SRL implementations in online classrooms.

Faculty Focused Actions to Support SRL Participants identified two faculty-focused actions to support future implementations of SRL. The first action to support successful implementation was for faculty to provide students with opportunities to participate in both internal and external feedback opportunities. Feedback is an important

component of the Cyclical Phase Cycle which helps support students during all three phases of SRL. Specifically, external feedback can encourage student metacognitive activities (Chou & Zou, 2020) and then those metacognitive activities can activate student self-monitoring, leading to self-reflection and evaluation.

Several studies have explored the importance of effective faculty feedback and how to increase feedback effectiveness in both face-to-face and online courses (Nicol, 2010; Yang & Carless, 2013). Gan et.al (2021) explored the presentation of feedback and its role on optimizing student learning. The two researchers highlighted six faculty driven actions to promote student learning. These included:

> (1) stimulating student engagement with disciplinary problems through dialogic feedback; (2) developing student self-regulation through inducting students to the multiple purposes of feedback and their active role in generating, processing and using feedback; (3) nurturing collaborative and mutually trusting teacher-student and peer relationships; (4) showing sensitivity to students' emotional responses and psychological needs; (5) being flexible in the provision, timing, forms and sequencing of feedback, to facilitate student uptake; (6) mobilizing disciplinary and non-disciplinary resources for feedback provision, especially new technologies (Gan et al., 2021, p. 2).

A mix of feedback methods should be adopted throughout the duration of the course which supports student internal and external feedback efforts. Designers also recommended the adoption of tools, such as rubrics and grade center feedback, to encourage student self-monitoring skill development and metacognition.

SRL course implementations can also be supported through faculty engagement in trainings opportunities about how to support student SRL skill development in online education courses. Since faculty at our university are frequently engaged in other campus activities, participants suggested that additional training run consecutively with the faculty online teaching certification. This certification is required of all faculty teaching online at the university. In lieu of this option, one on one collaboration sessions between the designer and the faculty were suggested to increase faculty competencies and knowledge related to SRL skill development.

Student Focused Actions to Support SRL. Most well-designed online learning courses are student-centered, meaning that they are designed to empower students to take responsibility for their own learning. Student focused learning approaches support SRL by encouraging students to take control of their own learning (Wang et al., 2020). Courses designed as student-centered provide students with opportunities to actively engage and participate in learning activities. They promote student monitoring, encourage student engagement, and increase student critical thinking and communication skills (Sun & Liu, 2021) and can be individualized to the learner.

Faculty can encourage student centered learning by adopting navigational elements, tools, and best practices that support student autonomy, choice, and voice in online courses. For this to be successful, students must be able to self-regulate their learning as they navigate the course content throughout a semester. Research has shown that students with higher SRL exhibit more academic self-efficacy and are more flexible in their learning process; elements which are key to online learner success (Cho & Shen, 2013).

Students can support the development of their own self-regulated learning skills by actively engaging with course materials and seeking help when they find that they are struggling with material comprehension. Active engagement in student feedback opportunities can also help students generate internal dialogue to self-assess their own understanding of the materials (Chou & Zou, 2020) and provides them with help-seeking opportunities. These actions by students encourage the development of behaviors and motivations outlined in the Zimmerman and Moylan (2009) Cyclical Phase Model.

Summary of Results

Four questions were presented in this research study to determine the professional readiness of instructional designer to support and implement SRL supporting activities, navigation, and practices within higher education online courses. Findings were generated from the analysis of qualitative and quantitative data collection. Quantitative data included the collection of pre and posttest scores of participants after their SRL Online Training Course was completed. These were analyzed using a Wilcoxon Rank Test.

Qualitative data collected from group and individual interview sessions were analyzed through the completion of a thematic analysis. This data when applied to the current literature, provided answers to the proposed research questions of this study. Data analysis revealed several interesting findings. The first finding was that instructional designers reported increases in their professional readiness to support SRL both after the SRL Training Course and again after Cycle two's implementations. A Wilcoxon Rank test showed improvement in participant pre and posttest scores, but the increases were not enough to be considered statistically significant. Designers were also asked to rate

themselves after the completion of the SRL Training Course in Cycle one. The designer's provided a mean score of six on a ten-point scale.

During cycle two, instructional designers were once again asked to rate their professional readiness to support SRL in online courses on a ten-point scale. Designers reported increased professional readiness, with the mean score being 8.875. Designers reported that while the training course was helpful to building knowledge about SRL, the implementation phase was more effective at increasing their competency to support implementations and scaffolds that encouraged student SRL development. Participants recommended that instructional designer be trained within their community of practice to increase knowledge and competencies around SRL implementations and scaffolding in online courses. A combination of both micro-learning modules and opportunities for shadowing and hands on practices were presented as the most effective means of increasing professional readiness of the instructional designers within our community of practice.

Participants identified that professional readiness could be observed by examining designer choices when developing and supporting online courses. Professional readiness was defined in part by observing how instructional designers paired best practices with eLearning tools to develop student SRL development opportunities. Designers completed this through the adoption of assignments, course structure, and learner approaches. During Cycle one, Instructional designers identified a multitude of eLearning tools that could be paired with best practices to support SRL. These include AI scaffolds, simulation tools, journals, portfolios, vlogs, library services, and other third-party simulation tools. Participants were later redirected to focus on LMS tools and

navigational elements. During the proceeding interview sessions, participants identified the adoption of LMS tools and navigational elements that in general fell into two categories: a) tools and navigation that supported feedback b) tools and navigation that supported student reflection. Tools and navigational elements chosen to support SRL were chosen by participants that (a)addressed faculty concerns related to student performance and (b) would be readily adopted by faculty.

To support internal and external feedback, instructional designers most frequently implemented Discussion Boards, Rubrics, Turnitin feedback (both automatic and faculty created), peer review through the Groups tool, and the use of Grade Center Feedback tools. To support internal feedback, designers most frequently adopted Blackboard Journal tools and Blackboard ePortfolio tools. Participants believed that these tools encouraged student task management, self-monitoring, and self-reflection; all of which are critical behaviors associated with strong student SRL.

In terms of course navigation elements, designers identified a structurally sound course structure as an essential element to student SRL growth. Designers frequently commented on the necessity of a well communicated syllabus and schedule, which supported student task management and goal setting, both important components of forethought phase. Participants explained that student learning objectives (SLOs) should be clearly defined and represent measurable student outcomes that support task analysis and student planning.

Organization of content was promoted to encourage student task analysis, planning, and self-monitoring behaviors. All four participants adopted navigational elements that supported content chunking. The most frequently adopted navigation

elements were modules and folders. These navigational elements were combined with SLO's and lesson outlines to activate student task analysis, strategic planning, outcome expectation, and task strategies.

Participants identified faculty buy-in as the number one factor required for seamless SRL integration in online course development and implementation. The unique relationship between IDs and faculty is well documented in field literature (Cestone et al., 2021; Richardson et al., 2019). Designers must collaborate with faculty to determine how a course will be structured, how students will engage in it, and what eLearning tools will be implemented to support student learning. Challenges arise when faculty are unfamiliar with design best practices or when trust has not been established (Cestone et al., 2021). To support SRL seamlessly in online course development, designers must develop strong interpersonal communication skills such as building trust, active listening, and developing a common language with faculty to develop strong collaborative relationships (Cestone et al., 2021; Chen & Carliner, 2020; Richardson et al., 2019). Additional opportunities for both cohort and one-on-one faculty trainings to increase knowledge and competencies around supporting SRL from the faculty perspective were also discussed by participants, although concern was raised over faculty limitations related to scheduling.

To help lead faculty/ID discussions concerning course development and implementation, participants also focused on the university's Online Course Design Rubric. This rubric is presented to faculty during the development of all new online courses. Participants suggested that the rubric undergo modifications. Elements and activities that directly supported student SRL development were suggested as additions to

the rubric. Participants recommended adding verbiage to all areas of the rubric under the Exemplary category area that defined actions that would support student SRL.

Finally, empowering the student through the adoption of student-center approaches was recognized by designers as an action moving forward in support of student SRL development in online courses. Developing SRL is not an overnight process. It requires the student to continually engage in the learning process not just in one semester's courses, but throughout their college experience. Participants recommended that students be educated about SRL practices by participating in training modules delivered through First Year Experience (FYE) or through Freshman Orientation (FO). Training materials would be designed to introduced students to SRL, help them establish their SRL baseline, and develop a personalized plan of action to support the development of their SRL skills throughout their college experience. Designers also prompted that as an online student, there is an expectation that students will be more autonomous in their own learning. To be successful at SRL, or in any online course, students must take accountability for their own learning and develop strategies that help them successfully master materials through more independent methods.

Limitations

This action research study was designed to determine the professional readiness of instructional designers to support SRL in online higher education courses. This study explored how instructional designers supported student SRL development through the integration of LMS tools and the application of navigational course elements. The study also explored the role of faculty in the seamless integration of SRL support in eLearning college courses. While this study's methodology was chosen to generate the most

accurate and pertinent data in relation to the research questions. However, there are some limitations posed by this study. One such limitation of this study relates to the nature of action research. Small sample size and data collection limitations should also be notated. The findings of this action research were never intended to be generalizable to settings or situations outside the one that the research took place in. Rather, the goal of action research is to provide opportunities to reflect on one's own practices to improve their effectiveness (Koshy et al., 2011; Mills, 2017). The use of the findings beyond the study's context is dependent on the reader.

Data collection was impacted by the sample size of the study. While four participants represented one-quarter of the homogeneous population of the Online Design Department, it was still a very small sample based on traditional research standards. This impacted the generalizability of the research study (Harry and Lipsky, 2014). A mixed methods approach was adopted to counteract some of the issues with generalizability as qualitative data sample sizes are subjective and based on cultural factors (Marshall et al., 2013). Additionally, the qualitative data produced from this study was rich and accurately detailed the designers' experiences during the training and implementation phases of this study (cycle one and cycle two).

Data collection in this study included both group and individual interview sessions. While both types of interviews generated rich descriptive data essential to generating answers to the research questions, this method of collection can also present limitations. Throughout this study, I assumed the role of both researcher and stakeholder. I conducted and monitored all interview sessions to protect the confidentiality of participants. This was especially important to me as the population from which the

sample was drawn was small. However, this may have limited the honesty of participants since they were familiar to me. This might have discouraged participants from providing me with critical feedback related to the training course or their implementations. Participant responses may also have been influenced by other stakeholder responses.

Study Implications

The findings of this action research present several implications that can be useful to my fellow designers and I who wish to support student SRL development in online higher education courses at our university. The interpretations of this study present themselves as the following: a) personal implications, b) recommendations of what actions can be taken to support SRL in future semesters based on current practices, and c) Implications for supporting the professional readiness of designers to support SRL in online higher education. These implications provide actionable feedback from instructional designers that can potentially encourage the development of knowledge and competencies needed to support SRL.

Personal Implications

At the beginning of this study, I had little knowledge of what action research was or what processes needed to be completed to conduct a successful action research study. Through conducting this research with my fellow stakeholders, I have gained experience that has positively impacted both my personal growth and my professional readiness as an instructional designer supporting higher education. This has also increased my competency as an educational researcher.

As a direct result of this study, I have developed an elevated understanding of a) the impact of SRL research in online higher education, b) the application of qualitative

and quantitative data on research analysis, and c) the importance of communicating my findings to encourage change agency that supports student SRL development in online higher education.

The Impact of Generated Research Literature in SRL. This action research was conducted within my community of practice. It provided each of us with an opportunity to explore the impact of SRL on student motivation and achievement in current and future online courses. It also provided rare opportunities for us as designers to reflect on our current practices and determine whether actions should be taken to target the development of student SRL in our development, implementation, and support processes. On a personal level, this study influenced my practices as an instructional designer, and has encouraged me to consider additional research on how SRL can be fully supported and scaffolded in online higher education.

What I thought would be generated from this study was information about increasing professional readiness within our communities of practice to support SRL in current university online courses, and while this study did yield answers to that question, it also unearthed a deeper understanding of the importance of faculty relationship building within our practice. The collaborative relationships that we share with faculty are unique, and to best support SRL development, we must openly communicate with faculty to develop pedagogically founded student centered learning environments that provide opportunity for SRL growth.

Additionally, this research provided insights into what eLearning tools might be chosen by designers to support SRL. It was interesting to observe that while designers often focused on the same learner goals (IE: supporting student motivation and

engagement, increasing self-reflection), they all either chose or applied eLearning tools in different and sometimes unconventional ways. I think this reinforces studies such as Schwier et al. (2004) which emphasize the importance of instructional designers supporting each other in communities of practice. Data from this study also suggested that the designers were more likely to ask each other for help or to try something out than to apply formal teaching or research to the problem they were trying to solve.

In terms of the field, this study adds knowledge about the experiences and perspectives of instructional designers working with faculty to develop courses that support student SRL development. It provides a voice to instructional designers in higher education and highlights their experiences, touches on their challenges, and presents several topics of interest for future research. It also provides an opportunity for external designers to reflect on their own practices and to determine whether they are professionally ready to support SRL at their own universities.

The Application of Qualitative and Quantitative Data on Research Analysis. The purpose of this action research was to explore the professional readiness of instructional designers to support SRL skill development in online higher education courses. To accomplish this task, a mixed methods action research was adopted as the study's methodological approach. Throughout the process of the study, I was provided with opportunities to collect and analyze both quantitative and qualitative data elements. While I am normally predisposed to focusing on only qualitative data for studies, I came to appreciate the fact that the quantitative data produced more objective information concerning designer pre and posttest performance in the SRL Online Training Course. This, paired with the qualitative data produced in group interview #1 and individual

interview #1, provided me a more complete picture of the designer's professional readiness during and after completion of the training course.

Qualitative data collected from participants was predominately rich and descriptive. Designer participants discussed their experiences in detail and mused over their successes and failures throughout the SRL Training Course and during their development and support of their SRL supporting implementations and scaffolds. This data provided me with deep insights related to the designer's attitudes and beliefs about developing and supporting SRL skill developing implementations and scaffolds in current and future online course offerings. Their experiences also provided me an opportunity to reflect on my community of practice's current design efforts and to collaborative determine how to best support SRL in future courses.

Group and individual interview sessions were conducted during this study. I chose individual interview sessions to provide instructional designers an opportunity to dive deeper and independently reflect on their own experiences and beliefs (Adhabi & Anozie, 2017)

Focus group interviews are used “to explore attitudes and perceptions, feelings and ideas about a topic” (Denscombe, 2007, p. 115). In this study, the focus group was comprised of four instructional designers not including myself. I assumed the role of moderator in these discussions. The group interview sessions provided an informal environment for designers to reflect as a group on their experiences, offer suggestion to other designers, and develop plans of action for supporting SRL in future course semesters. This simulated normal behaviors within this community of practice, so designers felt very comfortable sharing in group interview sessions. In comparison, group

interviews provided more data overall than individual interviews; however individual interviews were still essential to providing context around designer experiences in supporting SRL throughout their semester implementations.

The Importance of Communicating my Findings to Encourage Change Agency that Supports Student SRL Development in Online Higher Education. Engaging in this action research with my fellow stakeholders was an experience that both increased our professional readiness as instructional designers and strengthened the effectiveness of our community of practice. The methodological approaches adopted by this study allowed me as the researcher to assume a flexible role where I was able to collaborate along with my four fellow designers to consider our professional readiness in supporting student SRL development.

The findings of this study directly impacted not only my own professional practices as an instructional designer, but also those of the four other designers who participated in this study. The ability to share my findings with other instructional designers and with faculty empowered both entities to consider how courses could be developed to support student SRL development while increasing student achievement. At the conclusion of the study, the participants and I discussed types of eLearning tools that could support SRL and how they could be implemented. While this study focused specifically on LMS tools, there was also discussion concerning AI supports as well as third party tools to scaffold SRL skills. Navigational elements were also addressed, and participants suggested that edits be made to the Online Course Rubric so that SRL was a more primary focus of the development process.

Ultimately, this action research will have long-term positive effects as grow in our design practice and has allowed us to reconsider the student. By integrating SRL supports within assignments, experiences, and navigation within the course, designers can more effectively support student motivation and achievement in future academic semesters.

Recommendations

Prior and current research on online learning has shown that student SRL is essential to student success in online academic environments (Azevedo et al., 2012; Cho & Shen, 2013; Vrieling et al., 2012). Instructional designers who have high professional readiness can work with faculty to develop and support eLearning environments that combine best practices, navigational elements, and eLearning tools to provide students with opportunities to engage in SRL development. The following are recommendations related to supporting student SRL in online courses. Three sections are presented.

Course Recommendations

The nature of online learning requires students to be more autonomous in their own learning. It requires students to take responsibility for their own learning and to critically evaluate their progress as they work to develop necessary knowledges and competencies. Student self-monitoring, critical thinking, and metacognitive practices are more critical to student success in this modality than in a face-to-face course (Kramarski & Michalsky, 2009).

Participants in this study provided several course recommendations for supporting student SRL development. Designers discussed the importance of student-centered learning approaches in online college education, stressing that students must be responsible for their own learning and regulate the autonomy related to the online

modality. These learning environments require students to engage in key SRL processes such as self-reflection, metacognitive monitoring, planning, and task analysis. However, many students do not engage in these behaviors which limits their potential success in student- centered online courses (Azevedo et al., 2012).

To support students in these environments, designers recommend pairing course materials with LMS eLearning tools that encourage student SRL. Participants emphasized tools that supported self-reflection and feedback processes. Commonly noted tools to support students included journals, peer feedback tools (Turnitin, Group Discussion Board, Small Group Discussion Board), and ePortfolio tools. Navigations elements, such as syllabi, schedules, SLO's, and course folder or modules to encourage content chunking were also identified in supporting student self-monitoring, task analysis, and feedback. Designers also discussed the importance of meaningful feedback from faculty and suggested training and exemplars increase the effectiveness of student feedback.

Recommendations for Designer Professional Readiness and Best Practice

All four participants in the study agreed that SRL should play a greater role in our current design best practices. Participants suggested that our Online Course Design Rubric should be updated to include language about student SRL development and that the 'Exemplary' section of each rubric category be updated to include additional guidelines around best practices, such as the inclusion of self-reflective activities or feedback opportunities, within online courses. This updated rubric acts as a set of guidelines for all new course development and all current development which currently has no SRL supporting eLearning tools, activities, or navigational elements.

Micro-module training about SRL was recommended for all instructional designers within our university community of practice to increase professional readiness to support SRL in online courses. Shadowing seasoned instructional designers was recommended to allow designers to ask questions about how SRL can be best supported by designer best practices. Providing opportunities for discussion and brainstorming about supporting SRL through the application of tools and navigational elements was recommended to encourage further departmental adoption of SRL supporting practices.

Recommendation for Administrative Change Agency

Designers recommended partnering with university stakeholders to determine current student SRL development, possibly by providing the MSLQ in certain university courses. Data from this inventory could be used to identify and target student SRL motivations and behaviors that may hinder student performance. Partnering with campus services such as First Year Experience (FYE) and Freshman Orientation (FO) may provide the ID department and opportunity to provide students with information about the importance of SRL in online course success. Additional student services, such as Graduate Studies and Library Services, could direct students to on and off campus services to support student SRL growth. A repository of these services could also be created and linked within Blackboard online courses to increase student accessibility.

Suggestions for Future Research

At the conclusion of this study, a final review of the literature was conducted to reconsider the research findings and to identify gaps and needs for further research exploration. There were three areas identified for future exploration: a) the impact of AI adoptions and hybrid AI tool adoptions on student motivation and achievement; b)

determining the impact of SRL implementations at our university, and c) exploring the roles of faculty and instructional designers in supporting SRL in online course development.

AI and Hybrid AI Tool Adoption Impacts on Student Motivation and Achievement

For the purposes of this study, instructional designers were asked to support SRL development by actuating the use of LMS tools and navigation. Designers were limited to applying tools that existed within the Blackboard LMS system. The decision was made to limit them so that I could more objectively observe the instructional designer's professional readiness to support SRL during development and implementation. Some departments allocate larger budget percentages to third party tools, which may have made it more difficult to compare the designers' implementations within similar contextual constraints.

Designers did engage in an impromptu brainstorming session during group interview #1 where some tool recommendations were provided to support SRL. This session was not limited to LMS tools or LMS navigation elements. An interesting recurring thread in the qualitative findings was that during this group interview as well as in the interviews following, frequently identified AI scaffolds to support student SRL. Several studies have supported the effectiveness of AI tools and hybrid AI tools in supporting tailored SRL interventions and scaffolds (Molenaar, 2022; Saadati et al., 2021; Song & Kim, 2021). Since this study focused on LMS tool adoption and navigational elements that supported student SRL, it would seem logical that additional studies be conducted on third-party tools such as AI and hybrid AI options to further

support student SRL as they actively engage with course materials within a university's adopted LMS.

Determining the Impact of SRL Implementations at Our University

This research study focused on the professional readiness of instructional designers within our university and whether they were able to support SRL implementations and scaffolds within online education courses. While this study worked to provide insights into how designers increased their professional readiness through training and hands-on experiences, this research did not aim to determine whether students benefitted from the implementations and scaffolds added by designers in the courses. Any discussion of effectiveness was derived from faculty feedback rather than from quantifiable data.

A true analysis of an implementation's effectiveness should be conducted to determine whether SRL supports are benefitting the students. It is highly recommended that quantitative measures be employed to analyze and determine data finding to establish causation. This data would also help designers within our institution to further advance change agency efforts to increase designer professional readiness to implement and support SRL in future online courses.

Exploring The Roles of Faculty and Instructional Designers in Supporting SRL In Online Course Development

A major theme uncovered in this study was the importance of faculty/ ID relationship building. Faculty and instructional designers share responsibility in course development and delivery, requiring instructional designers and faculty to work

collaboratively to develop courses that provide the foundations for student success (Bawa & Watson, 2017; Richardson et al., 2019).

Participants articulated the importance of developing faculty relationships and that faculty buy-in played a major role in what tools and implementation methods were proposed to faculty for implementation. Designers expressed the importance of considering faculty concerns, listening to suggestions, and considering faculty technology comfort when suggesting eLearning tools and navigational elements to support implementations.

While some research exists on faculty/ ID relationship, less research explores the unique roles faculty and instructional designers adopt in the development, implementation, and support of online courses. The field would benefit from studies that address how these roles are established and how these roles influence the faculty/ ID relationship. Research should be conducted from both the lens of the faculty and the designer's perspectives.

Concluding Thoughts

This research investigated the instructional designer's professional readiness to support student SRL in higher education online learning. Data was collected from both quantitative and qualitative methods from four instructional designer participants. This research explored how instructional designers increased their professional readiness to support SRL, what eLearning tools and navigational elements they employed to support student SRL in online courses and investigated the actions that designers felt should be taken to support future online SRL implementations and scaffolds in our university's online courses.

The following conclusions can be drawn from this study. First, instructional designers reported that both traditional training opportunities and hands on training opportunities were effective in increasing their professional readiness to support SRL in online courses. Participants did feel that their hands on implementation experiences were more effective in increasing professional readiness than the traditional training alone. Professional readiness was measured by how well designers supported SRL through their implementations and scaffolds.

Designers adopted a multitude of LMS related tools and navigational elements to support student SRL development. Designers most frequently adopted tools that supported internal and external student feedback and self-reflection. Participants reported that in terms of Cyclical Phase Model, these behaviors were chosen because faculty had reported students were struggling with these behaviors in their online courses. Examples of commonly adopted tools included Blackboard Journals, feedback tools (such as Turnitin, Discussion Boards, and Group Discussion Boards), and ePortfolio tools. Faculty buy-in and technology comfort impacted designer tool suggestion and adoption.

To seamlessly support SRL implementations in online courses, designers emphasized the importance of developing strong faculty/ID relationships. Clear communication and trust were identified as essential for faculty buy in and successful implementations. Further research is recommended related to the roles of the instructional designer and the faculty in the collaborative course development process.

Finally, designers recommended several actions to support future SRL implementations as well as suggested changes to current practices and documentation (Online Course Design Rubric) to generate knowledge around SRL and encourage

faculty to engage in practices that support SRL in future online course offerings. While these findings provide insights into my community of practice, they cannot be generalized to other higher education instructional design communities of practice. This same study needs to be conducted at other universities to determine whether similarities exist related to instructional designer professional readiness to support SRL in online higher education courses.

REFERENCES

Adhabi, E. A. R., & Anozie, C. B. L. (2017). Literature review for the type of interview in qualitative research. *International Journal of Education*, *9*(3), 86. https://doi.org/10.5296/ije.v9i3.11483

Alexiou, A., & Paraskeva, F. (2010). Enhancing self-regulated learning skills through the implementation of an e-portfolio tool. *Procedia - Social and Behavioral Sciences*, *2*(2), 3048–3054. https://doi.org/10.1016/j.sbspro.2010.03.463

Allen, E., & Seaman, J. (2017). *Digital Compass Learning: Distance Education Enrollment Report 2017*. Babson Survey Research Group. https://eric.ed.gov/?id=ED580868

Allen, I. E., & Seaman, J. (2015). *Grade Level: Tracking Online Education in the United States*. Babson Survey Research Group. https://eric.ed.gov/?id=ED572778

Ambrose, S. A. (Ed.). (2010). *How learning works: Seven research-based principles for smart teaching* (1st ed). Jossey-Bass.

Azevedo, R., & Aleven, V. (2013). Metacognition and learning technologies: An overview of current interdisciplinary research. In R. Azevedo & V. Aleven (Eds.), *International Handbook of Metacognition and Learning Technologies* (Vol. 28, pp. 1–16). Springer New York. https://doi.org/10.1007/978-1-4419-5546-3_1

Azevedo, R., & Cromley, J. G. (2004). Does training on self-regulated learning facilitate students' learning with hypermedia? *Journal of Educational Psychology*, *96*(3), 523–535. https://doi.org/10.1037/0022-0663.96.3.523

Azevedo, R., & Hadwin, A. F. (2005). Scaffolding self-regulated learning and metacognition – implications for the design of computer-based scaffolds.

Instructional Science, *33*(5–6), 367–379. https://doi.org/10.1007/s11251-005-1272-9

Azevedo, R., Landis, R. S., Feyzi-Behnagh, R., Duffy, M., Trevors, G., Harley, J. M., Bouchet, F., Burlison, J., Taub, M., Pacampara, N., Yeasin, M., Rahman, A. K. M. M., Tanveer, M. I., & Hossain, G. (2012). The effectiveness of pedagogical agents' prompting and feedback in facilitating co-adapted learning with Meta Tutor. In S. A. Cerri, W. J. Clancey, G. Papadourakis, & K. Panourgia (Eds.), *Intelligent Tutoring Systems* (Vol. 7315, pp. 212–221). Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-30950-2_27

Balashov, E., Pasichnyk, I., & Kalamazh, R. (2018). Self-monitoring and self-regulation of university students in text comprehension. *PSYCHOLINGUISTICS*, *24*(1), 47–62. https://doi.org/10.31470/2309-1797-2018-24-1-47-62

Bannert, M., Hildebrand, M., & Mengelkamp, C. (2009). Effects of a metacognitive support device in learning environments. *Computers in Human Behavior*, *25*(4), 829–835. https://doi.org/10.1016/j.chb.2008.07.002

Baum, F. (2006). Participatory action research. *Journal of Epidemiology & Community Health*, *60*(10), 854–857. https://doi.org/10.1136/jech.2004.028662

Bawa, P. (2016). Retention in online courses: Exploring issues and solutions—a literature review. *SAGE Open*, *6*(1), 215824401562177. https://doi.org/10.1177/2158244015621777

Bawa, P., & Watson, S. (2017). The chameleon characteristics: A phenomenological study of instructional designer, faculty, and administrator perceptions of collaborative instructional design environments. *The Qualitative Report*.

https://doi.org/10.46743/2160-3715/2017.2915

Beirne, E., & Romanoski, M. P. (2018). Instructional design in higher education: Defining an evolving field. *OLC outlook: An environmental scan of the digital learning landscape*. https://olc-wordpress-assets.s3.amazonaws.com/uploads/2018/07/Instructional-Design-in-Higher-Education-Annotated-Bibliography.pdf

Boekaerts, M. (1996). Self-regulated learning at the junction of cognition and motivation. *European Psychologist*, *1*(2), 100–112. https://doi.org/10.1027/1016-9040.1.2.100

Boekaerts, M. (1999). Self-regulated learning: Where we are today. *International Journal of Educational Research*, *31*(6), 445–457. https://doi.org/10.1016/S0883-0355(99)00014-2

Boton, E. C., & Gregory, S. (2015). Minimizing attrition in online degree courses. *Journal of Educators Online*, *12*(1). https://eric.ed.gov/?id=EJ1051044

Boud, D., & Molloy, E. (Eds.). (2013). *Feedback in higher and professional education: Understanding it and doing it well*. Routledge.

Bowers, J., & Kumar, P. (2015). Students' Perceptions of Teaching and Social Presence: A Comparative Analysis of Face-to-Face and Online Learning Environments. *International Journal of Web-Based Learning and Teaching Technologies (IJWLTT)*, *10*(1), 27–44. https://doi.org/10.4018/ijwltt.2015010103

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Broadbent, J., & Lodge, J. (2021). Use of live chat in higher education to support self-

regulated help seeking behaviours: A comparison of online and blended learner perspectives. *International Journal of Educational Technology in Higher Education*, *18*(1), 17. https://doi.org/10.1186/s41239-021-00253-2

Broadbent, J., & Poon, W. L. (2015). Self-regulated learning strategies & academic achievement in online higher education learning environments: A systematic review. *The Internet and Higher Education*, *27*, 1–13. https://doi.org/10.1016/j.iheduc.2015.04.007

Bryman, A. (2007). Barriers to integrating quantitative and qualitative research. *Journal of Mixed Methods Research*, *1*(1), 8–22. https://doi.org/10.1177/2345678906290531

Campbell, K., & Schwier, R. (2014). Major movements in instructional design. In T. Anderson & O. Zawacki-Richter (Eds.), *Online distance education: Towards a research agenda* (pp. 345–380). AU Press.

Campbell, K., Schwier, R. A., & Kenny, R. F. (2006). *Conversation as Inquiry: A conversation with instructional designers*. https://files.eric.ed.gov/fulltext/EJ1066474.pdf

Campbell, K., Schwier, R. A., & Kenny, R. F. (2009). The critical, relational practice of instructional design in higher education: An emerging model of change agency. *Educational Technology Research and Development*, *57*(5), 645–663. https://doi.org/10.1007/s11423-007-9061-6

Canty, A. J., Chase, J., Hingston, M., Greenwood, M., Mainsbridge, C. P., & Skalicky, J. (2020). Addressing student attrition within higher education online programs through a collaborative community of practice. *Journal of Applied Learning and*

Teaching, *3*(Sp. Iss. 1), 140–152. https://doi.org/10.37074/jalt.2020.3.s1.3

Carter Jr, R. A., Rice, M., Yang, S., & Jackson, H. A. (2020). Self-regulated learning in online learning environments: Strategies for remote learning. *Information and Learning Sciences*, *121*(5/6), 321–329. https://doi.org/10.1108/ILS-04-2020-0114

Cathy, M. (2012). Understanding participatory action research: A qualitative research methodology option understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research*, *13*(2), 34–50. https://doi.org/https://doi.org/10.33524/cjar.v13i2.37

Cestone, C., Belt, E., & Kulo, V. (2021). Communicating Instructional Design with Faculty. In J. E. Stefaniak, S. Conklin, B. Oyarzun, & R. M. Reese, *A practitioner's guide to instructional design in higher education*. EdTech Books.

Chaney, E. G. (2001). Web-based instruction in a rural high school: A collaborative inquiry into its effectiveness and desirability. *NASSP Bulletin*, *85*(628), 20–35. https://doi.org/10.1177/019263650108562803

Chang, M.-M. (2007). Enhancing web-based language learning through self-monitoring: Enhancing web-based language learning. *Journal of Computer Assisted Learning*, *23*(3), 187–196. https://doi.org/10.1111/j.1365-2729.2006.00203.x

Chen, J. H., Björkman, A., Zou, J. H., & Engström, M. (2019). Self–regulated learning ability, metacognitive ability, and general self-efficacy in a sample of nursing students: A cross-sectional and correlational study. *Nurse Education in Practice*, *37*, 15–21. https://doi.org/10.1016/j.nepr.2019.04.014

Chen, Y., & Carliner, S. (2021). A special SME: An integrative literature review of the relationship between instructional designers and faculty in the design of online

courses for higher education. *Performance Improvement Quarterly*, *33*(4), 471–495. https://doi.org/10.1002/piq.21339

Cho, M. H., & Cho, Y. (2014). Instructor scaffolding for interaction and students' academic engagement in online learning: Mediating role of perceived online class goal structures. *The Internet and Higher Education*, *21*, 25–30. https://doi.org/10.1016/j.iheduc.2013.10.008

Cho, M.-H., & Heron, M. L. (2015). Self-regulated learning: The role of motivation, emotion, and use of learning strategies in students' learning experiences in a self-paced online mathematics course. *Distance Education*, *36*(1), 80–99. https://doi.org/10.1080/01587919.2015.1019963

Cho, M.-H., & Shen, D. (2013). Self-regulation in online learning. *Distance Education*, *34*(3), 290–301. https://doi.org/10.1080/01587919.2013.835770

Chou, C.Y., & Zou, N.B. (2020). An analysis of internal and external feedback in self-regulated learning activities mediated by self-regulated learning tools and open learner models. *International Journal of Educational Technology in Higher Education*, *17*(1), 55. https://doi.org/10.1186/s41239-020-00233-y

Cleary, T. J., & Zimmerman, B. J. (2012). A cyclical self-regulatory account of student engagement: Theoretical foundations and applications. In S. L. Christenson, A. L. Reschly, & C. Wylie (Eds.), *Handbook of Research on Student Engagement* (pp. 237–257). Springer US. https://doi.org/10.1007/978-1-4614-2018-7_11

Clinefelter, D. L., & Aslanian, C. B. (2016). *Online college students 2017: Comprehensive data on demands and preferences*. Louisville, KY: The Learning House.

https://www.marist.edu/documents/20182/21452/Online+College+Students+2016.pdf/e961e9e2-0780-4c5c-a91c-7f9c1550ffbb

Corno, L. (1994). *Implicit Teachings and Self-Regulated Learning* [Speech]. https://files.eric.ed.gov/fulltext/ED377140.pdf

Creswell, J., Shope, R., Plano, V., Green, C., & Green, Denise. (2006). How Interpretive Qualitative Research Extends Mixed Methods Research. *Research in the Schools*, *13*(1), 1–11. https://www.researchgate.net/publication/228435302_How_interpretive_qualitative_research_extends_mixed_methods_research

Creswell, J. W. (2009). Editorial: Mapping the field of mixed methods research. *Journal of Mixed Methods Research*, *3*(2), 95–108. https://doi.org/10.1177/1558689808330883

Creswell, J. W. (2012). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed). Pearson.

Cruz, M., & Golom, F. D. (2020). An open-systems approach to course redesign: Moving beyond the pulpit. *Industrial and Organizational Psychology*, *13*(4), 519–523. https://doi.org/10.1017/iop.2020.89

Davies, S. (2012). Embracing reflective practice. *Education for Primary Care*, *23*(1), 9–12. https://doi.org/10.1080/14739879.2012.11494064

Denscombe, M. (2007). *The good research guide: For small-scale social research projects*. Open University Press.

DiBenedetto, M., & Zimmerman, B. (2010). Differences in self-regulatory processes among students studying science: A microanalytic investigation. *International*

Journal of Educational & Psychological Assessment, *5*(1), 2–24. https://www.researchgate.net/profile/Barry-Zimmerman-2/publication/284604049_Differences_in_self-regulatory_processes_among_students_studying_science_A_microanalytic_investigation/links/56bf9bb908aeedba0562e894/Differences-in-self-regulatory-processes-among-students-studying-science-A-microanalytic-investigation.pdf

Dignath, C., Buettner, G., & Langfeldt, H. P. (2008). How can primary school students learn self-regulated learning strategies most effectively? *Educational Research Review*, *3*(2), 101–129. https://doi.org/10.1016/j.edurev.2008.02.003

Dignath, C., & Büttner, G. (2008). Components of fostering self-regulated learning among students. A meta-analysis on intervention studies at primary and secondary school level. *Metacognition and Learning*, *3*(3), 231–264. https://doi.org/10.1007/s11409-008-9029-x

Dinsmore, D. L., Alexander, P. A., & Loughlin, S. M. (2008). Focusing the conceptual lens on metacognition, self-regulation, and self-regulated learning. *Educational Psychology Review*, *20*(4), 391–409. https://doi.org/10.1007/s10648-008-9083-6

Dumulescu, D., Pop-Păcurar, I., & Necula, C. V. (2021). Learning design for future higher education – insights from the time of covid-19. *Frontiers in Psychology*, *12*, 647948. https://doi.org/10.3389/fpsyg.2021.647948

Edisherashvili, N., Saks, K., Pedaste, M., & Leijen, Ä. (2022). Supporting self-regulated learning in distance learning contexts at higher education level: Systematic literature review. *Frontiers in Psychology*, *12*, 792422. https://doi.org/10.3389/fpsyg.2021.792422

English, M. C., & Kitsantas, A. (2013). Supporting student self-regulated learning in problem- and project-based learning. *Interdisciplinary Journal of Problem-Based Learning*, *7*(2). https://doi.org/10.7771/1541-5015.1339

Etikan, I. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, *5*(1), 1. https://doi.org/10.11648/j.ajtas.20160501.11

Fedynich, L. V. (2013). Teaching beyond the Classroom Walls: The Pros and Cons of Cyber Learning. *Journal of Instructional Pedagogies*, *13*. https://eric.ed.gov/?id=EJ1060090

Five characteristics of a change agent. (2013, January 26). *George Couros*. https://georgecouros.ca/blog/archives/3615

Flavell, J. H. (1979). Metacognition and cognitive monitoring: A new area of cognitive-developmental inquiry. *American Psychologist*, *34*(10), 906–911. https://doi.org/10.1037/0003-066X.34.10.906

Fox, E., & Riconscente, M. (2008). Metacognition and self-regulation in James, Piaget, and Vygotsky. *Educational Psychology Review*, *20*(4), 373–389. https://doi.org/10.1007/s10648-008-9079-2

Gan, Z., An, Z., & Liu, F. (2021). Teacher feedback practices, student feedback motivation, and feedback behavior: How are they associated with learning outcomes? *Frontiers in Psychology*, *12*, 1–14. https://doi.org/10.3389/fpsyg.2021.697045

Gilbert, Brittany, "Online Learning Revealing the Benefits and Challenges" (2015). *Education Masters.* Paper 303.

https://fisherpub.sjfc.edu/education_ETD_masters/303

Gilbert, N. (2017). Predicting success: An application of data mining techniques to student outcomes. *International Journal of Data Mining & Knowledge Management Process*, *7*(2), 01–20. https://doi.org/10.5121/ijdkp.2017.7201

Gonzalez, G., & Leticia, M. (2013). Learning goals and strategies in the self-regulation of learning. *US-China Education Review, (3)1*. https://eric.ed.gov/?id=ED539959

Hacker, D. J., Dunlosky, J., & Graesser, A. C. (Eds.). (2009). *Handbook of metacognition in education*. Routledge.

Hadwin, A., & Oshige, M. (2011). Self-regulation, coregulation, and socially shared regulation: Exploring perspectives of social in self-regulated learning theory. *Teachers College Record*, *113*(2), 240–264. https://eric.ed.gov/?id=EJ927077

Harris, K. R., & Graham, S. (1999). Programmatic intervention research: Illustrations from the evolution of self-regulated strategy development. *Learning Disability Quarterly*, *22*(4), 251–262. https://doi.org/10.2307/1511259

Hart, J. (2020). Importance of Instructional Designers in Online Higher Education. *The Journal of Applied Instructional Design*, *9*(2). https://dx.doi.org/10.51869/92jeh

Herbert, M. (2006). Staying the course: A study in online student satisfaction and retention. *Online Journal of Distance Learning Administration*, *9*(4), 300–317. https://eric.ed.gov/?id=EJ1108805

Heri Suryaman & Husni Mubarok. (2020). Profile of online learning in building engineering education study program during the covid-19 pandemic. *IJORER : International Journal of Recent Educational Research*, *1*(2), 63–77. https://doi.org/10.46245/ijorer.v1i2.42

Hu, H., & Driscoll, M. (2013). Self-Regulation in e-Learning E=environments: A remedy for community college? *Educational Technology & Society*, *16*(4), 171–184.

Intentional Futures (2016, April). Instructional design in higher education: A report on the role, workflow, and experience of instructional designers. Intentional Futures. https://www.intentionalfutures.com/work/instructional_design/

Ivankova, N. V. (2015). *Mixed methods applications in action research: From methods to community action*. SAGE Publications.

Janesick, V. J. (1999). A journal about journal writing as a qualitative research technique: History, issues, and reflections. *Qualitative Inquiry*, *5*(4), 505–524. https://doi.org/10.1177/107780049900500404

Jansen, R. S., van Leeuwen, A., Janssen, J., Conijn, R., & Kester, L. (2020). Supporting learners' self-regulated learning in Massive Open Online Courses. *Computers & Education*, *146*, 103771. https://doi.org/10.1016/j.compedu.2019.103771

Jansen, R. S., van Leeuwen, A., Janssen, J., Jak, S., & Kester, L. (2019). Self-regulated learning partially mediates the effect of self-regulated learning interventions on achievement in higher education: A meta-analysis. *Educational Research Review*, *28*, 100292. https://doi.org/10.1016/j.edurev.2019.100292

Johnson, G., & Davies, S. (2014). Self-regulated learning in digital environments: Theory, research, praxis. *British Journal of Research*, *1*(2), 1–14. https://www.primescholars.com/articles/selfregulated-learning-in-digital-environments-theory-research-praxis.pdf

Johnson, R. B., Onwuegbuzie, A. J., & Turner, L. A. (2007). Toward a definition of mixed methods research. *Journal of Mixed Methods Research*, *1*(2), 112–133.

https://doi.org/10.1177/1558689806298224

Jung, Y., & Lee, J. (2018). Learning engagement and persistence in massive open online courses (Moocs). *Computers & Education*, *122*, 9–22. https://doi.org/10.1016/j.compedu.2018.02.013

Kagima, L., & Hausafus, C. (2001). Faculty: The central element in instructional technology integration. *Journal of Family and Consumer Sciences*, *93*(4), 33–36. https://eric.ed.gov/?id=EJ634099

Kang, Y., & Ritzhaupt, A. D. (2015). A job announcement analysis of educational technology professional positions: Knowledge, skills, and abilities. *Journal of Educational Technology Systems*, *43*(3), 231–256. https://doi.org/10.1177/0047239515570572

Kauffman, D. F., Zhao, R., & Yang, Y.-S. (2011). Effects of online note taking formats and self-monitoring prompts on learning from online text: Using technology to enhance self-regulated learning. *Contemporary Educational Psychology*, *36*(4), 313–322. https://doi.org/10.1016/j.cedpsych.2011.04.001

Ke, F., & Kwak, D. (2013). Constructs of student-centered online learning on learning satisfaction of a diverse online student body: A structural equation modeling approach. *Journal of Educational Computing Research*, *48*(1), 97–122. https://doi.org/10.2190/EC.48.1.e

Kemmis, S., & McTaggart, R. (Eds.). (1988). *The action research planner* (3. ed.). Deakin University.

Kenny, R., Zhang, Z., Schwier, R., & Campbell, K. (2005). A review of what instructional designers do: Questions answered and questions not asked.

Canadian Journal of Learning and Technology / La Revue Canadienne de l'apprentissage et de La Technologie, *31*(1). https://doi.org/10.21432/T2JW2P

Koshy, E., Koshy, V., & Waterman, H. (2011). *Action research in healthcare*. SAGE.

Kramarski, B., & Michalsky, T. (2009). Investigating preservice teachers' professional growth in self-regulated learning environments. *Journal of Educational Psychology*, *101*(1), 161–175. https://doi.org/10.1037/a0013101

Kreiner, G. E., Hollensbe, E. C., & Sheep, M. L. (2009). Balancing borders and bridges: Negotiating the work-home interface via boundary work tactics. *Academy of Management Journal*, *52*(4), 704–730. https://doi.org/10.5465/amj.2009.43669916

Kumar, S., & Ritzhaupt, A. (2017). What do instructional designers in higher education really do? *International Journal on E-Learning*, *16*(4), 371–393. https://www.learntechlib.org/primary/p/150980/

Ahmed Lachheb & Boling, E. (2021). The role of design judgment and reflection in instructional design. In J. K. McDonald & R. E. West (Eds.), *Design for Learning: Principles, Processes, and Praxis*. BYU Open Textbook Network. https://open.byu.edu/id/design_judgment

Leggett, H., Sandars, J., & Roberts, T. (2019). Twelve tips on how to provide self-regulated learning (Srl) enhanced feedback on clinical performance. *Medical Teacher*, *41*(2), 147–151. https://doi.org/10.1080/0142159X.2017.1407868

Levy, Y. (2007). Comparing dropouts and persistence in e-learning courses. *Computers & Education*, *48*(2), 185–204. https://doi.org/10.1016/j.compedu.2004.12.004

Lim, C. (2005). Development and effects of a learning management system for

supporting self-regulated learning. *Journal of Educational Technology*, *21*(4), 77–100. https://doi.org/10.17232/KSET.21.4.77

Lin, C., Zhang, Y., & Zheng, B. (2017). The roles of learning strategies and motivation in online language learning: A structural equation modeling analysis. *Computers & Education*, *113*, 75–85. https://doi.org/10.1016/j.compedu.2017.05.014

Lyndon, G., & Cynthia, F. (2012). Instructional design as a change agent in a school of nursing. *Distance Learning*, *9*(3), 1–10. https://files.eric.ed.gov/fulltext/EJ1085297.pdf

MacDonald, C. (2012). Understanding participatory action research: A qualitative research methodology option. *The Canadian Journal of Action Research*, *13*(2), 34–50. https://doi.org/10.33524/cjar.v13i2.37

Maguire, M., & Delahunt, B. (2017). Doing a thematic analysis: A practical, step-by-step guide for learning and teaching scholars. *All Ireland Journal of Higher Education*, *9*(3). https://ojs.aishe.org/index.php/aishe-j/article/view/335

Manfra, M. M., & Bullock, D. K. (2014). Action research for educational communications and technology. In J. M. Spector, M. D. Merrill, J. Elen, & M. J. Bishop (Eds.), *Handbook of Research on Educational Communications and Technology* (pp. 161–172). Springer. https://doi.org/10.1007/978-1-4614-3185-5_14

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research? A review of qualitative interviews in is research. *Journal of Computer Information Systems*, *54*(1), 11–22. https://doi.org/10.1080/08874417.2013.11645667

Mayer, R. E. (2019). Instructional design as a form of information design. *Information Design Journal*, *25*(3), 258–263. https://doi.org/10.1075/idj.25.3.03may

Mertler, C. A. (2016). Leading and facilitating educational change through action research learning communities. *Journal of Ethical Educational Leadership*, *3*(3), 1–11.

Mills, G. E. (2017). *Action research: A guide for the teacher researcher*. Pearson Education.

Molenaar, I. (2022). The concept of hybrid human-AI regulation: Exemplifying how to support young learners' self-regulated learning. *Computers and Education: Artificial Intelligence*, *3*, 100070. https://doi.org/10.1016/j.caeai.2022.100070

Moskal, T. M. (2012). Instructional designers in higher education [Doctoral dissertation, University of Nebraska]. Proquest. https://www.proquest.com/openview/88cdfec5be987b7e1fa99d8cefb4dee3/1?pq-origsite=gscholar&cbl=18750

Mukadam, A. (2020). *Student empowerment in higher education. Reflecting on teaching practice and learner engagement* (Vol. 1). Logos Verlag Berlin.

Narciss, S., Proske, A., & Koerndle, H. (2007). Promoting self-regulated learning in web-based learning environments. *Computers in Human Behavior*, *23*(3), 1126–1144. https://doi.org/10.1016/j.chb.2006.10.006

National Council for State Authorization Reciprocity Agreements. (2021). *NC-SARA Institution Survey: Perspectives on the Pandemic*. https://nc-sara.org/sites/default/files/files/2021-10/Perspectives_PUBLISH_18Oct2021.pdf

Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, *59*(3), 1065–1078. https://doi.org/10.1016/j.compedu.2012.04.016

Nicol, D. (2010). From monologue to dialogue: Improving written feedback processes in mass higher education. *Assessment & Evaluation in Higher Education*, *35*(5), 501–517. https://doi.org/10.1080/02602931003786559

Nodoushan, M. (2012). Self-regulated learning (SRL): Emergence of the RSRLM model. *International Journal of Language Studies*, *6*(3), 1–16. https://files.eric.ed.gov/fulltext/ED533138.pdf

O'Malley, S. (2017). What do instructional designer do? *Inside Higher Ed*. https://www.insidehighered.com/.

Panadero, E. (2017). A review of self-regulated learning: Six models and four directions for research. *Frontiers in Psychology*, *8*. https://doi.org/10.3389/fpsyg.2017.00422

Panadero, E., & Alonso-Tapia, J. (2014). How do students self-regulate? A review of Zimmerman's cyclical model of self-regulated learning. *Anales de Psicología*, *30*(2), 450–462. https://psycnet.apa.org/record/2014-14001-008

Panadero, E., Broadbent, J., Boud, D., & Lodge, J. M. (2019). Using formative assessment to influence self- and co-regulated learning: The role of evaluative judgement. *European Journal of Psychology of Education*, *34*(3), 535–557. https://doi.org/10.1007/s10212-018-0407-8

Paul, J., & Jefferson, F. (2019). A comparative analysis of student performance in an online vs. Face-to-face environmental science course from 2009 to 2016. *Frontiers in Computer Science*, *12*. https://doi.org/10.3389/fcomp.2019.00007

Pazzaglia, A., Clements, M., Lavigne, H., & Stafford, E. (2016). *An analysis of student engagement patterns and online course outcomes in Wisconsin. Stated briefly.*

REL 2016-157. Regional Educational Laboratory Midwest. https://files.eric.ed.gov/fulltext/ED566960.pdf

Pérez-Álvarez, R., Maldonado-Mahauad, J., & Pérez-Sanagustín, M. (2018). Tools to support self-regulated learning in online environments: Literature review. In V. Pammer-Schindler, M. Pérez-Sanagustín, H. Drachsler, R. Elferink, & M. Scheffel (Eds.), *Lifelong Technology-Enhanced Learning* (Vol. 11082, pp. 16–30). Springer International Publishing. https://doi.org/10.1007/978-3-319-98572-5_2

Pintrich, P. R. (1999). The role of motivation in promoting and sustaining self-regulated learning. *International Journal of Educational Research*, *31*(6), 459–470. https://doi.org/10.1016/S0883-0355(99)00015-4

Pintrich, P. R. (2003). A motivational science perspective on the role of student motivation in learning and teaching contexts. *Journal of Educational Psychology*, *95*(4), 667–686. https://doi.org/10.1037/0022-0663.95.4.667

Pintrich, P. R., & Zusho, A. (2002). Student motivation and self-regulated learning in the college classroom. In J. C. Smart & W. G. Tierney (Eds.), *Higher Education: Handbook of Theory and Research* (Vol. 17, pp. 55–128). Springer Netherlands. https://doi.org/10.1007/978-94-010-0245-5_2

Polman, J. L. (2004). Dialogic activity structures for project-based learning environments. *Cognition and Instruction*, *22*(4), 431–466. https://doi.org/10.1207/s1532690Xci2204_3

Prensky, M. (2001). Digital natives, digital immigrants part 2: Do they really think differently? *On the Horizon*, *9*(6), 1–6.

https://doi.org/10.1108/10748120110424843

Puzziferro, M. (2008). Online technologies self-efficacy and self-regulated learning as predictors of final grade and satisfaction in college-level online courses. *American Journal of Distance Education*, *22*(2), 72–89. https://doi.org/10.1080/08923640802039024

Rakap, S. (2010). Impacts of learning styles and computer skills on adult students' learning online. *Turkish Online Journal of Educational Technology - TOJET*, *9*(2), 108–115.

Ramsden, J. (1992). If it's enjoyable, is it science? *School Science Review*, *73*(265), 65–71.

Regnault, A., Willgoss, T., Barbic, S., & On behalf of the International Society for Quality of Life Research (ISOQOL) Mixed Methods Special Interest Group (SIG). (2018). Towards the use of mixed methods inquiry as best practice in health outcomes research. *Journal of Patient-Reported Outcomes*, *2*(1), 19. https://doi.org/10.1186/s41687-018-0043-8

Reiser, R. A. (2001a). A history of instructional design and technology: Part I: A history of instructional media. *Educational Technology Research and Development*, *49*(1), 53–64. https://doi.org/10.1007/BF02504506

Reiser, R. A. (2001b). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology Research and Development*, *49*(2), 57–67. https://doi.org/10.1007/BF02504928

Richardson, J. C., Ashby, I., Alshammari, A. N., Cheng, Z., Johnson, B. S., Krause, T. S., Lee, D., Randolph, A. E., & Wang, H. (2019). Faculty and instructional designers

on building successful collaborative relationships. *Educational Technology Research and Development*, *67*(4), 855–880. https://doi.org/10.1007/s11423-018-9636-4

Ritzhaupt, A. D., & Kumar, S. (2015). Knowledge and skills needed by instructional designers in higher education. *Performance Improvement Quarterly*, *28*(3), 51–69. https://doi.org/10.1002/piq.21196

Rogers, P., Graham, C., Rus, R., J, C., & Donna, U. (2003). Case 2: Blending face-to-face and distance learners in a synchronous class: Instructor and learner experiences. *Quarterly Review of Distance Education*, *4*(3). https://eric.ed.gov/?id=EJ678080

Rowe, F. A., & Rafferty, J. A. (2013). Instructional design interventions for supporting self-regulated learning: Enhancing academic outcomes in postsecondary e-learning environments. *Journal of Online Learning and Teaching*, *9*(4), 590–601. https://jolt.merlot.org/vol9no4/rowe_1213.pdf

Saadati, Z., Zeki, C. P., & Vatankhah Barenji, R. (2021a). On the development of blockchain-based learning management system as a metacognitive tool to support self-regulation learning in online higher education. *Interactive Learning Environments*, 1–24. https://doi.org/10.1080/10494820.2021.1920429

Samruayruen, B., Enriquez, J., Natakuatoong, O., & Samruayruen, K. (2013). Self-regulated learning: A key of a successful learner in online learning environments in thailand. *Journal of Educational Computing Research*, *48*(1), 45–69. https://doi.org/10.2190/EC.48.1.c

Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science

education: Metacognition as part of a broader perspective on learning. *Research in Science Education*, *36*(1), 111–139. https://doi.org/10.1007/s11165-005-3917-8

Schunk, D. H. (2008). Metacognition, self-regulation, and self-regulated learning: Research recommendations. *Educational Psychology Review*, *20*(4), 463–467. https://doi.org/10.1007/s10648-008-9086-3

Schunk, D. H., & Greene, J. A. (Eds.). (2018). *Handbook of self-regulation of learning and performance* (Second edition). Routledge, Taylor & Francis Group.

Schwier, R. A., Campbell, K., & Kenny, R. (2004). Instructional designers' observations about identity, communities of practice and change agency. *Australasian Journal of Educational Technology*, *20*(1). https://doi.org/10.14742/ajet.1368

Schwier, R., & Wilson, J. (2010). Unconventional roles and activities identified by instructional designers. *Contemporary Instructional Technology*, *1*(2), 134–147. https:// doi.org/ 10.30935/cedtech/5970

Sener, J. (2015). A better completion agenda: Expanding the range of acceptable outcomes in higher education. *E-Mentor*, *59*(2), 86–94. https://doi.org/10.15219/em59.1175

Sharif, A., & Cho, S. (2015). 21st-century instructional designers: Bridging the perceptual gaps between identity, practice, impact, and professional development. *International Journal of Educational Technology in Higher Education*, *12*(3), 72–85. https://doi.org/10.7238/rusc.v12i3.2176

Shaw, K. (2012). Leadership through instructional design in higher education. *Online Journal of Distance Learning Administration*, *15*(3). https://eric.ed.gov/?id=EJ990672

Sindelar, P. T., McCray, E., Brownell, M., & Lignugaris, B. (Eds.). (2014). *Handbook of research on special education teacher preparation*. Edited by Paul T. Sindelar, Erica D. Mccray, Mary T. Brownell, and Benjamin Lignugaris-Kraft. Routledge.

Šliogerienė, J. (2016). Using portfolios to enhance self–regulated learning. *Darnioji Daugiakalbystė*, *9*, 186–204. http://dx.doi.org/10.7220/2335-2027.9.9

Song, D., & Kim, D. (2021). Effects of self-regulation scaffolding on online participation and learning outcomes. *Journal of Research on Technology in Education*, *53*(3), 249–263. https://doi.org/10.1080/15391523.2020.1767525

Song, L., Singleton, E. S., Hill, J. R., & Koh, M. H. (2004). Improving online learning: Student perceptions of useful and challenging characteristics. *The Internet and Higher Education*, *7*(1), 59–70. https://doi.org/10.1016/j.iheduc.2003.11.003

Stern, B. S. (2004). A comparison of online and face-to-face instruction in an undergraduate foundations of American education course. *Contemporary Issues in Technology and Teacher Education*, *4*(2), 196–213. https://www.learntechlib.org/primary/p/19939/

Sulisworo, D., Fatimah, N., Sunaryati, S. S., & Sanidi, S. (2020). A quick study on SRL profiles of online learning participants during the anticipation of the spread of COVID-19. *International Journal of Evaluation and Research in Education (IJERE)*, *9*(3), 723. https://doi.org/10.11591/ijere.v9i3.20642

Sun, H., & Liu, T. (2021). Student-centered online teaching practices in theoretical mechanics. *Higher Education Studies*, *11*(2), 233–239. https://eric.ed.gov/?id=EJ1297256

Trondsen, M., & Sandaunet, A.-G. (2009). The dual role of the action researcher.

Evaluation and Program Planning, *32*(1), 13–20. https://doi.org/10.1016/j.evalprogplan.2008.09.005

Vrieling, E., Bastiaens, T., & Stijnen, S. (2012). Effects of increased self-regulated learning opportunities on student teachers' motivation and use of metacognitive skills. *Australian Journal of Teacher Education*, *37*(8). https://doi.org/10.14221/ajte.2012v37n8.6

Wagner, D., & Hulen, K. (2015). Collaborating with an instructional designer to develop a quality learner-engaged online course. *Journal of Nursing Education and Practice*, *6*(4), 40–47. https://doi.org/10.5430/jnep.v6n4p40

Wandler, J. B., & Imbriale, W. J. (2017). Promoting undergraduate student self-regulation in online learning environments. *Online Learning*, *21*(2). https://eric.ed.gov/?id=EJ1149360

Wang, C.-H., Shannon, D. M., & Ross, M. E. (2013). Students' characteristics, self-regulated learning, technology self-efficacy, and course outcomes in online learning. *Distance Education*, *34*(3), 302–323. https://doi.org/10.1080/01587919.2013.835779

Wang, Z., Hwang, G. J., Yun, Z., & Ma, Y. (2020). A contribution-oriented self-directed mobile learning ecology approach to improving EFL students' vocabulary retention and second language motivation. *Journal of Educational Technology & Society*, *23*(1), 1–14. https://eric.ed.gov/?id=EJ1255779

What is instructional design? | ATD. (n.d.). https://www.td.org/talent-development-glossary-terms/what-is-instructional-design

Whitley, E., & Ball, J. (2002). Statistics review 4: Sample size calculations. *Critical*

Care, *6*(4), 335. https://doi.org/10.1186/cc1521

Williams, D. D., South, J. B., Yanchar, S. C., Wilson, B. G., & Allen, S. (2011). How do instructional designers evaluate? A qualitative study of evaluation in practice. *Educational Technology Research and Development*, *59*(6), 885–907. https://doi.org/10.1007/s11423-011-9211-8

Wong, J., Baars, M., Davis, D., Van Der Zee, T., Houben, G.-J., & Paas, F. (2019). Supporting self-regulated learning in online learning environments and moocs: A systematic review. *International Journal of Human–Computer Interaction*, *35*(4–5), 356–373. https://doi.org/10.1080/10447318.2018.1543084

Wuensch, K. L., Aziz, S., Ozan, E., Kishore, M., & Tabrizi, M. (2006). *Pedagogical characteristics of online and face-to-face classes*. 2422–2429.

Yang, M., & Carless, D. (2013). The feedback triangle and the enhancement of dialogic feedback processes. *Teaching in Higher Education*, *18*(3), 285–297. https://doi.org/10.1080/13562517.2012.719154

You, J. W., & Kang, M. (2014). The role of academic emotions in the relationship between perceived academic control and self-regulated learning in online learning. *Computers & Education*, *77*, 125–133. https://doi.org/10.1016/j.compedu.2014.04.018

Zhang, D., & Zhang, L. J. (2019). Metacognition and self-regulated learning (SRL) in second/foreign language teaching. In X. Gao (Ed.), *Second Handbook of English Language Teaching* (pp. 1–15). Springer International Publishing. https://doi.org/10.1007/978-3-319-58542-0_47-1

Zimmerman, B. J. (1989a). A social cognitive view of self-regulated academic learning.

Journal of Educational Psychology, *81*(3), 329–339. https://doi.org/10.1037/0022-0663.81.3.329

Zimmerman, B. J. (1989b). Models of self-regulated learning and academic achievement. In B. J. Zimmerman & D. H. Schunk (Eds.), *Self-Regulated Learning and Academic Achievement* (pp. 1–25). Springer New York. https://doi.org/10.1007/978-1-4612-3618-4_1

Zimmerman, B. J. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, *25*(1), 3–17. https://doi.org/10.1207/s15326985ep2501_2

Zimmerman, B. J. (1995). Self-regulation involves more than metacognition: A social cognitive perspective. *Educational Psychologist*, *30*(4), 217–221. https://doi.org/10.1207/s15326985ep3004_8

Zimmerman, B. J. (2000). Attaining self-regulation. In *Handbook of Self-Regulation* (pp. 13–39). Elsevier. https://doi.org/10.1016/B978-012109890-2/50031-7

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice*, *41*(2), 64–70. https://doi.org/10.1207/s15430421tip4102_2

Zimmerman, B. J. (2018). *Handbook of self-regulation of learning and performance* (D. H. Schunk, Ed.; Second edition). Routledge, Taylor & Francis Group.

Zimmerman, B. J., & Moylan, A. R. (2009). Self-regulation: Where motivation and metacognition intersect. In D. J. Hacker, J. Dunlosky, & A. C. Graesser (Eds.), *Handbook of metacognition in education* (pp. 299–315). Routledge.

Zimmerman, B. J., & Schunk, D. H. (Eds.). (2001). *(2nd ed.). Lawrence Erlbaum Associates Publishers.*

Zohrabi, M. (2013). Mixed method research: Instruments, validity, reliability, and reporting findings. *Theory and Practice in Language Studies*, *3*(2), 254–262. https://doi.org/10.4304/tpls.3.2.254-262

APPENDIX A

Interview Questions

The following are the interview questions used for this study. This study was composed of two individual interview sessions and three group interview sessions. These sessions were scheduled to be approximately 30-45 minutes. Both interview types were conducted in a semi-structured nature. The questions below are presented in sequence in which the interviews were conducted.

Cycle 1 Interview Questions

Group Interview #1

1. How would you rate your current readiness to support SRL implementations in online courses post-intervention training?
2. What questions do you still have concerning SRL implementation and support?
3. Given the training, what are some ideas of how SRL practices can be supported in the online environment?
4. What tools could be leveraged to support SRL in the online environment?
5. What barriers or challenges do you foresee in integrating SRL into online courses?

Individual Interview #1

1. How long have you been an instructional designer?
2. Have you ever used SRL in online learning, either as a student or as an instructor?
3. Before training, how would you rate your knowledge level concerning SRL practices, implementations, and support in online courses?
4. Are your faculty using any SRL practices currently?
5. Based on your observations, which SRL practices do you think will be of interest to faculty?
6. What courses have you identified as being most synergistic with SRL integrations?
7. What challenges or barriers do you think you will face during the implementation and support of SRL in the online environment?

Cycle 2 Interview Questions

Group Interview #2

1. How have you collaborated with the faculty to explain SRL and to work with them to implement these practices into their current course structure?

2. What tools are you using (if any) to support and implement SRL into the online courses?
3. What has surprised you during this implementation process?
4. What challenges have you faced in the implementation phases?

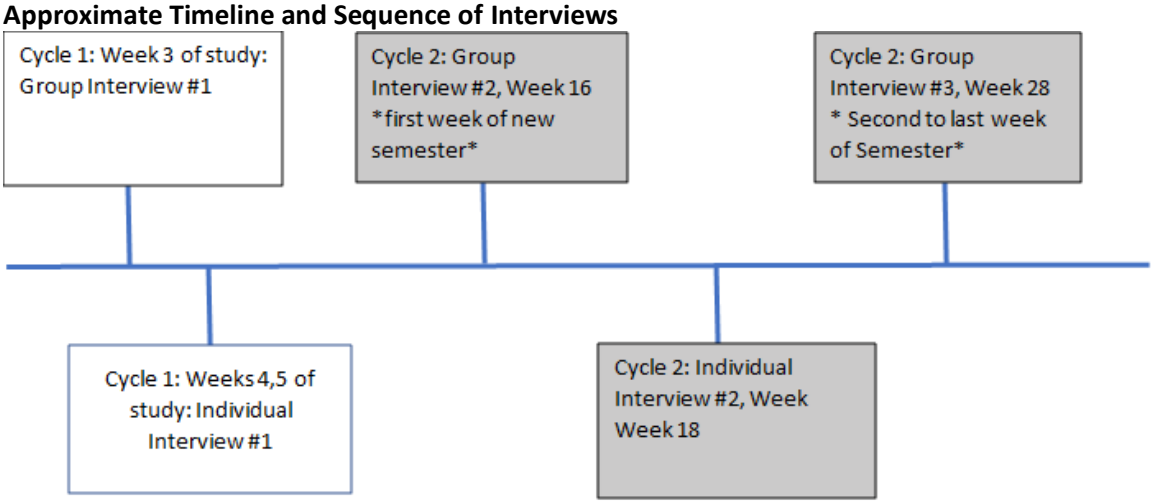
Individual Interview #2

1. Explain your opinions on your professional readiness to support SRL implementations in future courses.
2. How were your suggested integrations perceived by the faculty?
3. What challenges and successes did you have while supporting and collaborating with faculty on the implementation of SRL in the online course?
4. What could IDs do in the future that would help with the integration processes?
5. What advice would you give other ID's that wish to work with faculty in implementing SRL into online courses?

Group Interview #3

1. What experiences can you share about your efforts in supporting your SRL interventions?
2. What barriers or challenges have you experienced with implementing and supporting your SRL interventions?
3. How can SRL be seamlessly integrated into online courses?
4. Has there been any feedback concerning the implementation and support efforts from faculty?
5. Do you believe that SRL practices should be implemented more often in online courses? Please elaborate on your response.
6. What changes could be implemented to support IDs in supporting and implementing SRL in online courses?

Approximate Timeline and Sequence of Interviews



APPENDIX B

Instructional Design Recruitment Letter

THE INSTRUCTIONAL DESIGNER AND SELF-REGULATED LEARNING: AN ACTION RESEARCH APPROACH TO INCREASING INSTRUCTIONAL DESIGNER PROFESSIONAL READINESS TO SUPPORT SELF REGULATED LEARNING IN ONLINE HIGHER

You are invited to be in a research study concerning self-regulated learning in higher education. You were selected as a possible participant because you have a bachelor's degree and at least five years' experience in the field. You are also currently employed at a university as an instructional designer. We ask that you read this form and ask any questions you may have before agreeing to be in the study.

Principal Investigator:

This study is being conducted by: [redacted], Doctoral Candidate, [redacted]

Procedures:

If you agree to be in this study, we would ask you to do the following things:

- Four group interviews (1 hour each)
- Three individual interviews (1 hour each)
- One four-hour training on SRL and using it in higher education
- One pre-and-post assessment
- Development of an action plan with a group of your peers.

Confidentiality:

The records of this study will be kept private. In any sort of report we might publish, we will not include any information that will make it possible to identify a subject. Research records will be stored securely and only researchers will have access to

the records. Audio/ Video will be recorded during these interview sessions. They will be password protected in Blackboard. Once they are transcribed, these will be deleted and all identifying data will be removed in order to keep your privacy.

Voluntary Nature of the Study:

Participation in this study is voluntary. Your decision whether or not to participate will not effect your current or future relations with Sam Houston State University. If you decide to participate, you are free to not answer any question or withdraw at any time without affecting those relationships. You may choose not to continue at any time.

Contacts and Questions:

The researcher(s) conducting this study is: [redacted]. You may ask any questions you have now. If you have questions later, you are encouraged to contact me at [redacted] or [redacted] . You may also contact my advisor, [redacted] at [redacted] or [redacted]

If you feel you have not been treated according to the descriptions in this form, or you have any questions about your rights as a research participant, you may call the Office of Research and Sponsored Programs – [redacted] or e-mail ORSP at [redacted]

Should you still be interested in participating in this research, please fill out the Qualtrics link below.

<QUALTRICS LINK HERE>

You will be given a copy of this information to keep for your records.

APPENDIX C

Study Consent Form
Sam Houston State University
Consent for Participation in Research

KEY INFORMATION FOR: The instructional designer and self-regulated learning: An action research approach to increasing instructional designer professional readiness to support self -regulated learning in online higher education

You are being asked to be a participant in a research study about the instructional designer's professional readiness to support SRL practices in higher education online courses. You have been asked to participate in the research because you currently work for the target university as an instructional designer, have at least five years' experience as an ID, and hold at least a bachelor's degree and may be eligible to participate.

WHAT IS THE PURPOSE, PROCEDURES, AND DURATION OF THE STUDY?

By doing this study, I hope to provide instructional designers with an opportunity to assess our current online best practices and determine whether those practices are effectively meeting student needs. A new best practice (SRL) will be presented to you to try in an implementation setting in one of your upcoming classes. This is a four stage-study. The first stage includes a 4-hour training on SRL. This will include a pre-and-post assessment. Stages 2-4 will include an implementation of SRL in one of your online offerings for the upcoming semester. During these stages, audio and video-recorded individual and group interview sessions will occur. During these 60 minutes, audio and video-recorded individual and group interviews, the researcher will ask you questions about your profession and current design practices. They will also discuss your experiences with implementation and supporting SRL in the online environment. Finally, the researcher will work with your group to determine whether current ID practices

should be modified to include SRL more purposefully in future courses. Your participation in this research will last about 20 hours over a 15 to 17- week period.

WHAT ARE REASONS YOU MIGHT CHOOSE TO VOLUNTEER FOR THIS STUDY?

Participation may benefit the field of instructional design in better understanding the professional readiness of the instructional designer in supporting integrations of practices such as SRL in online higher education. This may also have direct benefit to designers as this will give them an opportunity to reflect on their own current practices within a community of peers and determine whether changes need to be made to better our current approaches and practices in developing future online courses.

For a complete description of benefits, refer to the Detailed Consent.

WHAT ARE REASONS YOU MIGHT CHOOSE NOT TO VOLUNTEER FOR THIS STUDY?

The study has minimal risk, meaning no more risk than adults would encounter in their typical, daily activities. However, you may experience some discomfort recalling your professional experiences in developing and implementing these SRL practices into the online environment. All discussion will be kept confidential.

During the group session, other group participants will know your identity, and the researcher cannot guarantee that others in these groups will respect the confidentiality of the group. We will ask that you keep all comments made during the group interviews confidential and not discuss what happened during the group outside the meeting environment. Those who fail to do so may be asked to leave the study.

Additionally, this study is a time commitment. Those participating should volunteer because they genuinely wish to participate. The time commitment is about 20 hours over the course of the fall semester.

For a complete description of risks, refer to the Detailed Consent.

DO YOU HAVE TO TAKE PART IN THE STUDY?

If you decide to take part in the study, it should be because you really want to volunteer. You will not lose any services, benefits, or rights you would normally have if you choose not to volunteer.

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS OR CONCERNS?

The person in charge of this study is Heather Vermilio, PI of the [redacted] who is working under the supervision of Dr. Donggil Song. If you have questions, suggestions, or concerns regarding this study or you want to withdraw from the study his/her contact information is:

Lead PI:

Heather Vermilio

[redacted]

[redacted]

Faculty Sponsor:

Dr. Donggil Song

[redacted]

[redacted]

If you have any questions, suggestions, or concerns about your rights as a volunteer in this research, contact the Office of Research and Sponsored Programs – [redacted] or e-mail ORSP at [redacted]

Sam Houston State University

Consent for Participation in Research

DETAILED CONSENT FOR: THE INSTRUCTIONAL DESIGNER AND SELF-REGULATED LEARNING: AN ACTION RESEARCH APPROACH TO INCREASING INSTRUCTIONAL DESIGNER PROFESSIONAL READINESS TO SUPPORT SELF REGULATED LEARNING IN ONLINE HIGHER

Why am I being asked?

You are being asked to be a participant in a research study about *the instructional designer's professional readiness to support SRL in online higher education courses* conducted by [redacted] *under the supervision of* [redacted] *for the* [redacted]. You have been asked to participate in the research because you currently work for the target university as an instructional designer, have at least five years' experience as an ID, and hold at least a bachelor's degree and may be eligible to participate. We ask that you read this form and ask any questions you may have before agreeing to be in the research.

Your participation in this research is voluntary. Your decision whether or not to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled.

Why is this research being done?

This study is being done in an effort to provide designers with an opportunity to assess our current online best practices and determine whether those practices are

effectively meeting student needs. A new best practice (SRL) will be presented to you to try in an implementation setting in one of your upcoming classes. Your group and individual interview sessions will provide valuable data concerning the instructional designer's experiences in implementing and supporting SRL in higher education online and will work to determine whether additional integrations should become a more intentional component of our current practices.

What is the purpose of this research?

In this study, I will explore two current research problems related to both SRL and instructional design in higher education. From a theoretical research perspective, the impact of SRL integrations in eLearning has not been closely studied from the lens of the instructional designer. The increased dependency of institutions on the instructional designer's expertise makes me believe that this gap in the current literature is worth studying. As the interest and adoption of SRL processes continue to increase in higher education, it is crucial that research related to the field also explores the professional readiness of instructional designers to support such integrations through development, implementation, and support phases of online course development.

From a practical use perspective, this research also addresses an immediate issue at Sam Houston State University. Over the last several semesters, students who prefer to engage in traditional face-to-face courses have to choose from a growing catalog of hybrid or fully online courses.

While these additional offerings allow non-traditional students additional flexibility, online learning also brings its own set of challenges to students who are unaccustomed to eLearning. To encourage student success, faculty are reaching out to

instructional designers about methods that can increase student motivation and lower course attrition. SRL has been shown by current literature to increase motivation, lower attrition, and help students develop a plan for learning. Training specifically related to the integration and support of SRL in eLearning at SHSU is not readily available or is prohibitively expensive, making it less accessible to designers whose colleges are under budget restrictions, in part due to COVID-19.

In this action research study, I look to address these problem by providing instructional designers an opportunity to collaborate as a community of practice to reflect on current practices and take action if deemed necessary to modify current SHSU Online course building procedures.

The following research questions will be explored in this study:

RQ1: How can instructional designers improve their professional readiness to implement self-regulated learning practices (SRL) in the online learning?

RQ2: How can instructional designers use learning management system tools and navigation to support self-regulated learning more effectively in online learning?

RQ3: What can instructional designers do to integrate self-regulated learning into the online course environment seamlessly?

RQ4: What actions can be taken in regards to current practice to support SRL implementations in future semesters?

What Procedures are involved?

If you agree to be in this research, we would ask you to do the following things:

- This is a four stage-study. The first stage includes a 4-hour training on SRL. This will include a pre-and-post assessment.

- Stages 2-4 will include an implementation of SRL in one of your online offerings for the upcoming semester.
    - During these stages, audio and video-recorded individual and group interview sessions will occur.
    - During this time, audio and video-recorded individual and group interviews, the researcher will ask you questions about your profession and current design practices.
    - They will also discuss your experiences with implementation and supporting SRL in the online environment.
    - Finally, the researcher will work with your group to determine whether current ID practices should be modified to include SRL more purposefully in future courses.

A chart of the tasks can be located below with an approximated timeline: **Approximately 20 hours over the course of the semester.** Approximately *six subjects* may be involved in this research at Sam Houston State University.

What are the potential risks and discomforts?

The study has minimal risk, meaning no more risk than adults would encounter in their typical, daily activities. However, you may experience some discomfort recalling your professional experiences in developing and implementing these SRL practices into the online environment. All discussion will be kept confidential.

During the group session, other group participants will know your identity, and the researcher cannot guarantee that others in these groups will respect the confidentiality

of the group. We will ask that you keep all comments made during the group interviews confidential and not discuss what happened during the group outside the meeting environment. Those who fail to do so may be asked to leave the study.

Additionally, this study is a time commitment. Those participating should volunteer because they genuinely wish to participate. The time commitment is about 20 hours over the course of the fall semester.

Are there benefits to taking part in the research?

Participation may benefit the field of instructional design in better understanding the professional readiness of the instructional designer in supporting integrations of practices such as SRL in online higher education. This may also have direct benefit to designers as this will give them an opportunity to reflect on their own current practices within a community of peers and determine whether changes need to be made to better our current approaches and practices in developing future online courses.

What about privacy and confidentiality?

The only people who will know that you are a research participant are members of the research team. No information about you, or provided by you during the research will be disclosed to others without your written permission, except:

- if necessary, to protect your rights or welfare (for example, if you are injured and need emergency care or when the SHSU Protection of Human Subjects monitors the research or consent process); or
- if required by law.

When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity. If photographs, videos, or

audiotape recordings of you will be used for educational purposes, your identity will be protected or disguised.

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

This research does include both group and individual interview sessions. In order to keep the authenticity of the data, these sessions will be recorded and loaded into Blackboard and password protected so that only the PI has access to them. These video/ audio files will then be immediately transcribed within one week of the initial interview sessions.

Once transcriptions are completed, they will be provided to the participants via a password protected file to verify for accuracy. Once the transcripts have been verified by the participants that they are in fact accurate, the video/audio files will be destroyed, and the transcripts will be kept in an encrypted Blackboard password protected file in a locked content collection. The PI will be the only one with access to the original recordings before they are destroyed. Transcriptions will be password protected in a locked Blackboard content collection for three years that only the PI will have access to. From there, the PI will destroy all data 3 years from the study's completion.

In addition to the destruction of these audio/video files, ID participants will be assigned a number. This number will be how the ID's will be identified in the data. All other identifiers will be removed from the data in an effort to protect participant confidentiality.

What are the costs for participating in this research?

There is no cost to participate in this study.

Will I be reimbursed for any of my expenses or paid for my participation in this research?

You will not be compensated in any way for participating in this study.

Can I withdraw or be removed from the study?

You can choose whether to be in this study or not. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind. You may also refuse to answer any questions you don't want to answer and still remain in the study. The investigator may withdraw you from this research if circumstances arise which warrant doing so.

Who should I contact if I have questions?

The researchers conducting this study is [redacted]. You may ask any questions you have now. If you have questions later, you may contact the researchers at: Phone: [redacted] *You may also contact the PI's advisor* [redacted]

APPENDIX D

Online Course Design Rubric with SRL Adjustments

The shsu online course design rubric synthesizes best practices for online course design and basic online instructional practices. The rubric is a guide that informs the course development process, as well as evaluation of the design of any course leveraging digital elements for teaching and learning. The rubric is applicable to fully or partially online, flipped, blended, or web-assisted face-to-face courses.

Developed on nationally recognized, research-based quality assurance standards related to the essential components of online course design, the rubric highlights best practices and practical recommendations in the following areas:

1 Course organization

2 Student Learning Objectives

3 Multimedia

4 Collaboration & Communication

5 Assignments & Assessments

It also provides a baseline for accessibility, ADA compliance, and learner support within an online course.

The SHSU online rubric for course design has been vetted by SHSU faculty and endorsed by members of the SHSU Online rubric committee, instructional designers and digital learning practitioners.

Contents

1. Course Organization: Creating a Framework for Development 1

Syllabus & Course Schedule 2
Course Description 4
Navigation 6
Navigation-Cont.—Unit-to-Unit 8
Navigation-Cont.—Within the Units 10
Elements of Design 12

2. Student Learning Objectives: Design with the End in Mind 15

Student Learning Objectives (SLO's) 16

3. Multimedia 19

Multimedia Elements 20

4. Collaboration & Communication 23

Student to Instructor 24
Student to Student 26

5. Assignments & Assessments

Assessment Measures 30
Academic Integrity 32

6. References 34

Syllabus & Course Schedule

When preparing to teach a course of any kind, the syllabus is typically a good place to start as it provides a workable outline for the instructional aims of the course. For online courses, the syllabus can be used as a guide that informs the organization and structure of the units, the items added to or removed from the navigation menu, as well as the design of the course schedule.

The Goal

To organize the structure of your course in a way that mimics or mirrors the structure and schedule flow indicated in your syllabus.

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A. The course design may confuse students. How can design more closely follow the syllabus or course schedule? B. Some links appear to be missing from some course items.	A. Course design clearly deriving and flowing from the course syllabus and schedule B. Terms and names used throughout the course are mostly consistent.	A. Excellent flow of course design from the course syllabus and schedule. B. Terms and names are consistent throughout the course and its documents.

Course scheduling tools help students plan their semester as well as the individual activities required throughout that semester.

For maximum success, faculty should utilize a clearly defined schedule with due dates or check points for the students.

An exceptional course would perhaps use tools such as the BB calendar or a free linked tool (such as mystudylife.com) may be particularly helpful to students.

Course Description

The Course Description is not only an opportunity to orient your students towards the course objectives. It is also an area where you can share your enthusiasm, perspective, and expertise about the subject of the course.

An expanded course description can address the following considerations:

1. Why should students want to complete this course?
2. How does it fit into the overall program curriculum?
3. What are the main learning objectives of the course?
4. How can students apply the content, intellectually and practically?

The Goal

To write a more expansive course description that provides essential details of the course. A welcoming tone is an ideal way to humanize your course!

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A. No description of the course is present.	A. Course catalogue description appears in the course and syllabus.	A. From the basis of the course catalogue description, the instructor has developed a more expansive description of the course (clarified terms, supplied emphasis, etc.), and has utilized it throughout the course as well as in the syllabus.

Your course description should clearly outline your expectations for the students.

- What is this course about?
- What is he/she/they supposed to get from this course?
- What are the levels of mastery? (Consider Bloom's taxonomy- is it enough for them to know it or are you making them really apply it?)

Navigation-Cont.
Unit-to-Unit

Best Practices

Unit to Unit

In Progress	*Established Practice*	*Exemplary Practice*
A. Students will benefit by increased course content chunking[1].	**A**. Instructor has aided students by chunking course content into manageable segments (i.e., presented in distinct learning units or modules).	**A**. Course content is chunked into manageable segments (i.e., presented in distinct learning units or modules).
B. Students may not discern the logical flow of the content.	**B**. Students will easily follow the content flow.	**B**. Course organization deploys and designs symmetrical units throughout.
C. Expected navigation may not be clear to student users.	**C**. Students will easily discern navigation from unit to unit.	**C**. Content flows in a logical progression; concepts are appropriately scaffolded.[2].
		D. Students will easily discern navigation from unit to unit.

The Goal

To chunk content, organize units in a logical progression, and scaffold concepts for the learner.

1."Chunking refers to the strategy of breaking down information into bite-sized pieces so the brain can more easily digest new information." Chunking allows for the grouping of material into modules or units of study that contain within themselves everything the learner needs to complete them. (The eLearning Coach Chunking Guide, retrieved from http://theelearningcoach.com/elearning_design/chunking-information/)

2."Scaffolding refers to a variety of instructional techniques used to move students progressively toward stronger understanding and, ultimately, greater independence in the learning process. The term itself offers the relevant descriptive metaphor: teachers provide successive levels of temporary support that help students reach higher levels of comprehension and skill acquisition" (The Glossary of Education Reform, retrieved from https://www.edglossary.org/scaffolding/).

Navigation

Navigation within an online course has a lot to do with the logical flow and organization of information, as well as the implementation of practices designed to create an intuitive and navigable environment. Navigation throughout the course, between course units, and within units is considered.

The Goal

To organize the flow of content in a logical manner, facilitating intuitive navigation for the learner.

Best Practices

Throughout the course

In Progress

A. Course navigation techniques may vary from unit to unit or from one section of the course to another.

B. Excessive clicking and/or scrolling is required to access content.

C. Presence of empty folders may confuse students.

Established Practice

A. Course navigation is efficient and consistent. Use of menu headers, dividers is recommended

B. Instructor has minimized the amount of clicks and scrolling necessary to access content.

C. The instructor has provided a course outline dividing the content into topic-based or weekly folders.

Exemplary Practice

A. Course navigation is efficient and consistent.

B. Instructor has minimized the amount of clicks and scrolling necessary to access content.

C. Instructor has employed a flat navigation when there are fewer than 8 items on a page.

D. Instructor has employed a tiered navigation when there are more than 8 items on a page.

E. Commonly used tools have their own links from the course navigation menu as appropriate.

F. The instructor has provided a course outline dividing the content into topic-based or weekly folders.

Navigation-Cont.
Within the Units

Best Practices
Within the Units

In Progress	*Established Practice*	*Exemplary Practice*
A. Students may not easily recognize unit's introductory materials.	**A**. Instructor has designed most units to include a lesson plan / outline / introduction.	**A**. Instructor has designed units to include a lesson plan / outline / introduction.
B. Students may not easily follow the organization of the content and/ or lesson plans.	**B**. Instructor has organized most content sequentially and follows the lesson plan.	**B**. Instructor has organized the content sequentially (by start date) and follows the lesson plan.

The Goal

To organize content within the units sequentially, and guide students with unit introductions.

SRL can be encouraged through thoughtful course design and navigation. Providing examples of organization, course organization flow, and lesson plans.

Students are much more likely to be able to engage in course materials without getting lost. This is our exemplary category.

Elements of Design

Visual elements play a key role within an online course. They are instrumental in highlighting important information, providing emphasis, and visually orienting the learner to the course layout. However, these elements must be utilized with accessibility and ADA compliance in mind.

The Goal

To create a more accessible online learning environment for students of all kinds.

Best Practices

In Progress

A. Propose ADA compliance - images should contain alternate text, documents also posted as scanned images.

B. Font usage – change fonts only for clear thematic reasons, consolidate font types in display areas.

C. Color usage - color best used as one of multiple methods of emphasis. Colorblind users will rely on specific shade variations. Students will likely cite clashing colors used within a visual area.

D. Recommend use of typesetting conventions.

Established Practice

A. Elements of ADA compliance –
1. all images have an alternate text display (including all images within uploaded files).
2. documents are posted in text format,
3. clear consideration of other barriers to access (link text must contain relevant context, for example "USA Today Article Title" and not www.usatoday/articletitle).
4. Ordered list formatting is done with text editors and not manually.

B. Instructor mostly employs modern typesetting conventions.

Exemplary Practice

A. Adherence to ADA rules and Universal Design principles goes above and beyond Established Practice
1. Documents have formatted headings
2. Video content is chosen from already captioned source material.
3. Student submitted papers are guided towards ADA compliance.

B. Instructor employs modern typesetting conventions.

Student Learning Objectives (SLO's)

A few sample SLO's: By the end of this course...

Students will be able to identify the social, political, economic and cultural influences and differences that affect the development process of the individual.

Students will be able to summarize the principles of design in computerized art.

Students will be able to evaluate economic events that apply to the preparation of financial statements.

Students will be able to conduct basic laboratory experiments involving classical mechanics.

The Goal

To help students see the link between their learning and the intended aims of the course.

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A. Students may struggle to relate course content to SLO's.	A. Students will likely identify learning objectives appropriately.	A. Students will easily relate course content to SLO's.

Providing SLO's allows students an opportunity to analyze task requirements.

It also allows them an opportunity to self-monitor:

- Where am I right now?
- What do I need to know to accomplish SLO?
- What strategies do I need to reach SLO goal?

SLO's NEED to be measurable to activate self-monitoring skills.

SRL Sprinkle Multimedia:

Not all students learn the same. Consider providing information in a variety of ways or explaining information in a few ways to students.

An idea might be a lecture followed by a different lecturer teaching the same concepts slightly differently.

3. *Multimedia*

The use of multimedia in an online course not only enhances the visual feel by breaking up large amounts of text on a page, it may actually reinforce learning. Research from the Dual Code Theory indicates that learners utilize two discrete information-processing functions: the verbal and the pictorial. Text on a page, such as in your course, provides a mechanism by which learners can glean and process information using the verbal function. The same can be said for podcasts. and other forms of narration. On the other hand, the use of visual multimedia, such as videos, graphics, pictures, and animations provide a chance to engage the pictorial information-processing function. Presenting a concept or topic using verbal and pictorial elements, facilitates learning (Mayer, 2009).

4. Collaboration & Communication

The online environment is particularly appropriate for collaborative learning approaches that emphasize group interaction (Harasim, 1990). Interaction among students and between students and instructor is key to learning (Palloff & Pratt, 1999). Social interaction among learners can have a significant impact on learning outcomes. According to Grabinger and Dunlap (2000), ''learning occurs in a social context through collaboration, negotiation, debate, peer review, and mentoring.''

Student to Instructor

Best Practices

In Progress

A . Students will likely not anticipate communication or grading response times, because the information is not yet posted or is not readily visible.

Established Practice

A . Instructor will utilize the announcement function surrounding major grades and significant course events.

B . Instructor provides expectations for response times for grading and student inquiries, and allows use of Virtual Office, email and/or equivalent for student queries.

Exemplary Practice

A . Instructor will communicate with students via announcements, grade center feedback, streaming media, discussion board responses, and/or email multiple times a week.

B . Students will likely have clear expectations for grading and communication response times for both regular email and the Virtual Office. The Instructor has also provided scheduled times of availability for office hours and live communication such as phone conferences.

Good Instructors provide the tools that SRL requires. Many of these can be in this category:

Access to grades that are up to date FEEDBACK that is useful and PROMPT (exemplary might even be meeting with students 1-on-1 who need most help)

Use of Rubrics

Information on performance- and letting students ask questions- is one of the best ways to encourage buy in and SRL.

The Goal

To articulate clear expectations regarding the frequency of the communication and provide mechanisms for students to connect with you.

Student to Student

Student-to-student collaboration and cooperation can provide learners with the opportunity to discuss, argue, negotiate, and reflect upon existing beliefs and knowledge (Agostinho, Lefoe, & Hedberg, 1997). Grabinger and Dunlap (2000) note that collaboration helps learners validate their learning experiences, and requires a level of articulation that promotes collective knowledge building and a deeper understanding of what is being studied.

The Goal

To provide opportunities for students to communicate and interact with peers.

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A. Students have no opportunities to communicate with peers.	A. Students have opportunities to interact with each other within the course.	A. Students have meaningful opportunities to communicate and interact with peers; the instructor encourages them to do so using tools such as discussion threads, blogs, wikis, or similar technologies.

Faculty may not want to hear it, but many students learn from each other.

The key is **AUTHENTIC** opportunities to activate metacognition.

- Current events
- Constructive debate
- Real world problem solving
- Project based learning

*Creation, not regurgitation

SRL Sprinkle Assignments:

- Reflection Journals
- Note-taking activities
- Student research opportunities
- Small group problem solving
- Response Papers
- Applied Discussions
- Practice quizzes
- Before and after Journals
  - What did I know before the test
  - How did I do on the test and how can I Improve?
- Test review opportunities/ corrections
- PBL

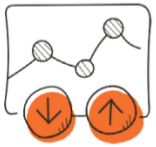
5. Assignments & Assessments

This section focuses on instructional activities designed to measure progress towards learning outcomes, and to provide feedback to both, student and instructor. It addresses the quality and type of student assessments within the course.

Assessment Measures

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A . Only high* stakes assessments employed. *An assessment worth 30% of the grade would count as a high stakes assessment, because the student would have to score 100% on all other assignments to achieve a low C in a course.	A . Course contains a quiz or assignment for each lesson and periodic exams or major projects with minimal additional assessment methods. B . Some assessments employed match SLO's.	A . Instructor employs a combination of assessment methods, including pre-tests, written assignments, student-created multimedia, graded collaborative projects, and/or exams. B . Instructor has matched assessments to stated SLO's.



The Goal

To create an assessment strategy using frequent and varied forms of assessments.

Assess your students in a variety of ways.

- Pre-and-Post tests are very helpful for SRL. It doesn't have to be a grade, but it does really help the student create a roadmap of their learning.
- **DO NOT** just use high stakes assessments.
- Make assignments require students to choose something unique, think about how content is applied, or generate opinions.

Academic Integrity

Best Practices

In Progress	*Established Practice*	*Exemplary Practice*
A. Plagiarism detection methods are not used for major writing assignments. **B**. Exams and quizzes present identical question sets for every student and/ or across multiple terms with no security methods employed.	**A**. Instructor employs plagiarism detection and prevention methods for most major writing assignments. **B**. Exams and quizzes use some protection methods, such as question randomization, multiple test forms per assignment, reserved question sets for subsequent terms, etc.	**A**. Plagiarism detection methods are used, when relevant, for major writing assignments. **B**. Instructor uses combined security measures including usage-restricted browsers, exams and quizzes drawn from large question/data pools that are refreshed on a rotating basis. Exams and quizzes are secured with video proctoring as appropriate.

- Encourage academic integrity through requiring students to sign academic integrity notices.
- Use anti plagiarism tools and test security measures when possible OR create authentic assessments/ projects that students are less likely to cheat on.
  - Got a huge class? Group PBL can be great. The key is communication and checking in with the teams. This allows faculty to guide students and address issues with participation/ course content.

The Goal

To leverage proctoring and plagiarism-detection tools and academic honesty strategies where appropriate to curb academic dishonesty.

6. *References*

Agostinho, S., Lefoe, G,. & Hedberg, J. (1997) Online Collaboration and Problem Solving for Effective Learning: A Case Study of a Post Graduate University Course, Proceedings of AUSWEB97 The Third Australian World Wide Web Conference, Southern Cross University, Lismore. Retrieved from http://ausweb.scu.edu.au/proceedings/index.html

Alexander, S. (1995) Teaching and learning on the World Wide Web, Proceedings of AUSWEB95 The First Australian World Wide Web Conference, Southern Cross University, Lismore. Retrieved from http://www.scu.edu.au/ausweb95/papers/education2/alexander/

Anderson, T. (2008). Towards a theory of online learning. In: Anderson, T. Elloumi, F. Theory and Practice of Online Learning. Athabasca University.

Arvan, L. (2004). Dialogic learning objects: Inviting the student into the instructional process. Retrieved from https://campustechnology.com/articles/2004/02/dialogic-learning-objects-inviting-the-student-into-the-instructional-process.aspx

Blackboard, Inc. (2015). Blackboard exemplary course program rubric. Retrieved from http://www.blackboard.com/resources/catalyst-awards/bbexemplarycourserubric_rebrand_july2015.pdf

Bransford, J. D., Brown, A. L., & Cocking, R. R. (Eds.). (1999). How people learn: Brain, mind, experience, and school. Washington, DC: National Academy Press.

California State University, Chico (2009). Rubric for online instruction. Retrieved from http://www.csuchico.edu/eoi/documents/rubricpdf

Christe, B. (2003) Designing online courses to discourage dishonesty. EDUCAUSE Quarterly, 26 (4), 54-58. Retrieved from http://www.educause.edu/ir/library/pdf/eqm0348.pdf

Clark, R. & Mayer, R. E. (2008). E-learning and the science of instruction (2nded). San Francisco: Jossey-Bass.

Dell, C. A., Dell, T. F., & Blackwell, T. L. (2015). Applying universal design for learning in online courses: Pedagogical and practical considerations. Journal of Educators Online, 12(2), 166-192.

Fink, L. D. (2003). Creating significant learning environments. San Francisco: Jossey-Bass Publishers.

Grabinger, R. S., Dunlap, J. C. (2000). Rich environments for active learning: A definition. In Squires, D., Conole, G., Jacobs, G. (Eds.), The changing face of learning technology (pp. 8–38). Cardiff, UK: University of Wales Press.

Harasim, L. (2012). Learning theory and online technologies. Routledge.

Harasim, L. M. (1995). Learning networks: A field guide to teaching and learning online. MIT press.

Harasim, L. (1996). Online education. Computer networking and scholarly communication in the twenty-first-century university, 203-214.

Harasim, L. M. (1990). Online education: Perspectives on a new environment. Greenwood Publishing Group Inc.

Institutional Eligibility under the Higher Education Act of 1965, 34 C.F.R. § 600.2 (2014). Retrieved from http://www.ecfr.gov/cgi-bin/text-idx?rgn=div8&node=34:3.1.3.1.1.1.23.2

Kearns, L. R., Frey, B. A., & McMorland, G. (2013). Designing online courses for screen reader users. Journal of Asynchronous Learning Networks, 17(3), 73-85.

Marion, S.F., DePascale, C., Domaleski, C., Gong, B., & Diaz-Bilello, E. (2012). Considerations for analyzing educators' contributions to student learning in non-tested subjects and grades with a focus on Student Learning Objectives. National Center for the Improvement of Educational Assessment. Retrieved from www.nciea.org.

MarylandOnline, Inc. (2011). Quality Matters rubric standards 2011 – 2013 edition with assigned point values.

Mayer, R. (2001). Multimedia learning. Cambridge, England: Cambridge University Press.

Palloff, R. M., & Pratt, K. (1999). Building Learning Communities in Cyberspace: Effective Strategies for the Online ' Classroom. San Francisco, CA: Jossey-Bass.

Pittman, C. N., & Heiselt, A. K. (2014). Increasing accessibility: Using universal design principles to address disability impairments in the online learning environment. Online Journal of Distance Learning Administration, 17(3).

Rao, K., Edelen-Smith, P., & Wailehua, C. (2015). Universal design for online courses: applying principles to pedagogy. Open Learning, 30(1), 35-52. doi:10.1080/02680513.2014.991300

Rose, R., & International Association for K-12 Online, L. (2014). Access and equity for all learners in blended and online education. International Association for K-12 Online Learning.

Shank, P (2010). The importance of intuitive navigation in online course design. In Robert Kelly, (Ed.) Online course design: Thirteen strategies for teaching in a web-based distance learning environment (Online Classroom Newsletter) pp. 20-21. Madison, Wisconsin: Magna Publications Inc.

Stavredes, T. (2011). Effective online teaching: foundations and strategies for student success. San Francisco, CA : Jossey-Bass, c2011.

Sweller, J. (1988). Cognitive load during problem solving: Effects on learning,Cognitive Science, 12, 257-285.

Terry Anderson, C. E. (2003). Getting the mix right again: An updated and theoretical rationale for interaction. International Review of Research in Open and Distance Learning, Vol 4, Iss 2 (2003), (2).

Wiley, D.A. (2000). Learning object design and sequencing theory. Retrieved from http://opencontent.org/docs/dissertation.pdf

Notes

APPENDIX E

IRB Approval Forms

Date: 6-5-2022

IRB #: IRB-2021-91
Title: The Instructional Designer and Self-Regulated Learning: An Action Research Approach to Increasing Instructional Designer Professional Readiness to Support Self-Regulated Learning in Online Higher Education
Creation Date: 3-31-2021
End Date:
Status: Closed
Principal Investigator: Heather Vermilio
Review Board: SHSU IRB
Sponsor:

Study History

Submission Type Initial	Review Type Expedited	Decision Approved
Submission Type Modification	Review Type Expedited	Decision Approved
Submission Type Renewal	Review Type Expedited	Decision
Submission Type Closure	Review Type Unassigned	Decision

Key Study Contacts

Member Donggil Song	Role Co-Principal Investigator	Contact song@shsu.edu
Member Heather Vermilio	Role Principal Investigator	Contact heatherv@shsu.edu
Member Heather Vermilio	Role Primary Contact	Contact heatherv@shsu.edu

VITA

Heather Vermilio

RESEARCH INTERESTS
Self-regulated learning (SRL), Adult Education, Cognitive Load Theory, Diffusion of Innovation

EDUCATION
Ph.D. in Education (Instructional Design and Systems Technology), 2022 – Sam Houston State University. Dissertation: *Instructional Designer Professional Readiness to Support SRL in Online Higher Education Courses.* Donggil Song, Chair
M.A. in Curriculum and Instruction, May 2011 – Sam Houston State University
B.A. in Psychology, December 2009– Sam Houston State University

CONFERENCE PRESENTATIONS
Vermilio, Heather (2011). Hidden Voices: A look at the educational opportunities within homeless communities. CSOTTE Conference, Corpus Christi, Texas, October 1-3,2011
Marilyn Rice, Sara Dempster, Heather Vermilio, Cynthia Vavasseaur, Kimberly LaPrairie. Designing Online Education: It is more than simply putting face to face courses online (2017). SITE Conferences
Stephen A. Turner, Heather L. Vermilio. Understanding the evolving learner- a shift towards online education (2017) SITE Conference
Stephen A. Turner, Heather L. Vermilio, Kimberly LaPrairie, Marilyn Rice. Utilizing PBL in the Online Environment (2017). ISTE Conference
Sosebee, T. & Vermilio, H. (2019) Teaching Online During COVID-19. CHSS Annual Meeting **Sosebee, T. & Vermilio, H. (2021)** Teaching Online with Blackboard for Graduate Instructors. GUIA Training Conference
Sosebee, T., Vermilio, H., Zientek, C. (2021) Collaboration and Engagement Tools in Blackboard. SHSU Online Conference
Sosebee, T. & Vermilio, H. (2021) Collaboration in Blackboard Learning. GUIA Training.

DESIGN EXPERIENCE
Educational Project Manager*- iDesign (2022-Present)*
Instructional Architect*- Penny AI (2022-Present)*
Instructional Designer and Project Manager*- Texas Department of Public Safety (2020-2021)*
Instructional Design Specialist*- Environmental Protection Agency (2014-2018)*
Instructional Designer *-Sam Houston State University (2014-2022)*

HONORS / AWARDS
President's List- 2007-2011