

Examination of the applied instructional design process in transforming tacit knowledge into explicit knowledge through communities of practice

by

Pinar Melek Celik

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Major: Education (Curriculum and Instructional Technology)

Program of Study Committee:
Connie Hargrave, Major Professor
Abdi Kusow
Ann Thompson
Evrin Baran
Mack Shelley

The student author, whose presentation of the scholarship herein was approved by the program of study committee, is solely responsible for the content of this dissertation. The Graduate College will ensure this dissertation is globally accessible and will not permit alterations after a degree is conferred.

Iowa State University

Ames, Iowa

2021

Copyright © Pinar Melek Celik, 2021. All rights reserved.

DEDICATION

I dedicate my dissertation to my smart, caring, beautiful friend for life, my spouse, Koray, who has supported me throughout this entire journey. Without your unconditional love, support, and encouragement, I would not have gotten this far. This is as much my dissertation as it is yours. Thank you for just being you and sharing this lifetime with me.

TABLE OF CONTENTS

	Page
LIST OF FIGURES.....	vi
LIST OF TABLES.....	vii
NOMENCLATURE.....	viii
ACKNOWLEDGMENTS	ix
ABSTRACT	x
CHAPTER 1. INTRODUCTION.....	1
Review of Literature	5
Origins of Instructional Design and Learning Theory.....	5
Social Constructivism in the Field of Instructional Design	6
Community of Practice and Instructional Designers.....	8
Statement of the Problem.....	13
Purpose of the Study	13
Research Questions.....	13
Definitions of Terms	14
Conclusion	15
CHAPTER 2. REVIEW OF LITERATURE.....	17
Theoretical Framework: Constructivism	18
Individual Learning –Cognitive Theorists	19
Group Learning –Sociocultural Theorists.....	21
Coordination Between Cognitive and Sociocultural Theories of Constructivism	24
Coupling Cognitive and Sociocultural Theories of Learning	28
Communities of Practice	30
The Domain, The Community, and The Practice	30
Participation and Reification	32
Joint Enterprise, Mutual Engagement, and Shared Repertoire	33
Identity	35
Knowledge.....	36
Value Creation	36
Changing Field of Instructional Design in Higher Education.....	38
Roles of Instructional Designers in Higher Education	38
Instructional Design and Change Management.....	39
Organizational Change and Knowledge Management	40
Summary.....	42
CHAPTER 3. METHODOLOGY.....	45
Research Context	46
Research Questions	46

Description of the University	47
Description of Online Learning Unit	48
Overview of the Services Provided and Instructional Design Tasks at Online Learning Unit	51
Case Study Approaches and Rationale	55
Case Study Approaches	55
Rationale.....	57
Research Methods	58
Data Sources.....	58
Data Collection.....	66
Data Analysis.....	72
Validation Criteria Procedures.....	73
Institutional Review Board Approval	75
CHAPTER 4. FINDINGS.....	76
Research Question 1: What are the attributes of the instructional design process at Online Learning Unit?	77
Applied Instructional Design Model.....	78
Instructional Design Framework	83
Instructional Design Process	88
Research Question 2: How do instructional designers at Online Learning Unit describe their roles within the instructional design process?	93
Roles of Instructional Designers.....	93
Research Question 3: How do roles of the faculty and instructional design process influence the roles of instructional designers?	99
Research Question 4: How do the instructional designers at Online Learning Unit build and utilize community of practice?	111
Communities of Practice Built Between Instructional Designers and Faculty	112
Communities of Practice Build Among Instructional Designers	116
CHAPTER 5. DISCUSSION ABOUT FINDINGS	120
Discussion of the Key Findings.....	120
Significance of the Study	122
Recommendations for Future Research	124
REFERENCES	126
APPENDIX A. INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL FOR THE RESEARCH	137
APPENDIX B. INFORMED CONSENT FORM FOR THE INTERVIEW WITH THE DIRECTOR OF DESIGN AND DELIVERY.....	139
APPENDIX C. INFORMED CONSENT FORM FOR THE INTERVIEW WITH INSTRUCTIONAL DESIGNERS.....	143
APPENDIX D. INFORMED CONSENT FORM FOR THE FOCUS GROUP WITH	

INSTRUCTIONAL DESIGNERS	147
APPENDIX E. RESEARCH INVITATION EMAIL FOR THE DIRECTOR.....	151
APPENDIX F. FIRST FOLLOW-UP EMAIL FOR THE DIRECTOR	152
APPENDIX G. SECOND FOLLOW-UP EMAIL FOR THE DIRECTOR.....	153
APPENDIX H. RESEARCH INVITATION EMAIL FOR INSTRUCTIONAL DESIGNERS	154
APPENDIX I. FIRST FOLLOW-UP EMAIL FOR INSTRUCTIONAL DESIGNERS	155
APPENDIX J. SECOND FOLLOW-UP EMAIL FOR INSTRUCTIONAL DESIGNERS	156
APPENDIX K. TRANSCRIPT REVIEW EMAIL FOR INDIVIDUAL INTERVIEW SESSIONS.....	157
APPENDIX L. RESEARCH INVITATION EMAIL FOR FOCUS GROUP	158
APPENDIX M. FOLLOW-UP EMAIL FOR FOCUS GROUP.....	159
APPENDIX N. SEMI-STRUCTURED INTERVIEW QUESTIONS FOR THE DIRECTOR	160
APPENDIX O. SEMI-STRUCTURED INTERVIEW QUESTIONS FOR INDIVIDUAL INSTRUCTIONAL DESIGNERS	161
APPENDIX P. FOCUS GROUP SESSION QUESTIONS FOR INSTRUCTIONAL DESIGNERS.....	163
APPENDIX Q. FOCUS GROUP SESSION PROTOCOL.....	164
APPENDIX R. EXAMPLE OF STATEMENT OF WORK DOCUMENT.....	167
APPENDIX S. EXAMPLE OF MODULE MAP DOCUMENT	170
APPENDIX T. EXAMPLES COURSE ASSESSMENT AND ACTIVITIES OUTLINE DOCUMENT	177
Example 1	177
Example 2	181
APPENDIX U. MEETING MINUTES SAMPLES FROM INSTRUCTIONAL DESIGNERS	185
Initial Meeting Minutes Sample.....	185
Follow-up Meeting Minutes Sample 1	187
Follow-up Meeting Minutes Sample 2	188
APPENDIX V. ALIGNMENT BETWEEN RESEARCH QUESTIONS AND STUDY METHODS....	199

LIST OF FIGURES

	Page
Figure 1. Organizational chart for Online Learning Unit in 2019	49
Figure 2. Online Learning Unit applied instructional design model.	79
Figure 3. Fundamental instructional design tasks for instructional designers at Online Learning Unit.....	84
Figure 4. Instructional design process for grant courses at Online Learning Unit	89
Figure 5. Factors influencing the roles of instructional designers during the instructional design process at Online Learning Unit.	101

LIST OF TABLES

	Page
Table 1. Summary of study participants.	64
Table 2. Alignment between categories of the research questions and research questions in the study.....	68
Table 3. Participants for respective data collection methods.....	71

NOMENCLATURE

ADA	American Disability Act
ADDIE	Analysis, Design, Development, Implementation, Evaluation
CoP	Community of Practice
ID	Instructional Design
IDP	Instructional Design Process
IDer	Instructional Designer
LMS	Learning Management System
OLU	Online Learning Unit
QM	Quality Matters
SoW	Statement of Work
SME	Subject Matter Experts
UDL	Universal Design for Learning
ZPD	Zone of Proximal Development

ACKNOWLEDGMENTS

I would like to thank my committee chair, Connie Hargrave, and my committee members, Abdi Kusow, Ann Thompson, Evrim Baran, and Mack Shelley, for their guidance and support throughout the course of this research.

In addition, I would like to thank my friends, colleagues, faculty and staff for making my time at Iowa State University a wonderful experience. I want to also offer my appreciation to those who were willing to participate in my study, without whom, this dissertation would not have been possible.

ABSTRACT

This dissertation examines how instructional designers navigate the daily challenges of their work as a group; how do they successfully respond to the changing demands of designing instruction for online learning; and replicate their work and practices in higher education context. This is accomplished by investigating the role of instructional design process in transforming tacit knowledge into explicit knowledge through communities of practice.

This study was designed to address four research questions: (1) What are the attributes of the instructional design process at Online Learning Unit? (2) How do instructional designers at Online Learning Unit describe their roles within the instructional design process? (3) How do roles of the faculty and instructional design process influence the roles of instructional designers? And (4) how do the instructional designers at Online Learning Unit build and utilize their community of practice? To answer these research questions a collective case study was conducted in a higher education setting under IRB # 19-321-00. Participants of this study were instructional designers and their director who have been working with Colleges of Engineering and Liberal Arts and Sciences, to support online course design and delivery, at a state university in the mid-west United States.

Findings of this research for each research question are the following. (1) Instructional design process is an iterative, collaborative, continuously reflective partnership. (2) Roles of the instructional designer are collaborator, mentor, coach, motivator, partner, and technical support. (3) There are three aspects that influence the roles of instructional designers within the instructional design process: time and time-management; course needs; and faculty experiences. (4) There are two ways instructional

designers can build their communities of practice: (i) among themselves through their weekly meetings and impromptu conversations and (ii) with faculty that they work with through their weekly meetings during the design and development phases of an online course. In the light of these findings, higher education organizations can benefit from supporting and fostering instructional design communities of practices where instructional designers transform not only their tacit knowledge, but also that of the organization's.

CHAPTER 1. INTRODUCTION

Purpose of this chapter is to introduce the dissertation study that explores how instructional designers (IDers) navigate through the daily challenges of their work; how do they successfully respond to the changing demands of higher education; and replicate their work and practices in the higher education context. During the past three decades, four major events have been and are shaping and changing the instructional design (ID) landscape of the higher education: (1) increased influence of constructivism as a theory of learning; (2) advancements in technology; (3) increased demand for distance and online education; and (4) changes in the roles of IDers. Each of the major events is discussed below.

According to the constructivist theory of learning, the way in which knowledge is conceived and acquired; the types of knowledge, skills, and activities emphasized; the role of the learners and instructor; and how goals are established are articulated differently (Heylighen, 1993; von Glasersfeld, 1995; Mayer, 1996; Murphy E. , 1997; Fosnot & Perry, 2005). Constructivism, as a theoretical position, posits that a person actively constructs their own ways of thinking and knowing because of innate capacities interacting with their experiences (Sounders, 1992; Darling-Hammond & Falk, 1997). In this theoretical view, learning is a self-regulated process of resolving inner conflicts through concrete experience, discussion, and reflection (Brooks & Brooks, 1993; von Glasersfeld, Radical constructivism: A way of knowing and learning. Studies in mathematics education series: 6, 1995; Gilakjani, Leong, & Ismail, 2013). Knowledge is constructed by the learner, it cannot be supplied by the instructor (Holzer & Andruet, 2000). Knowledge construction is a dynamic process that demands the active engagement of learners who are responsible for

their learning while the role of the instructor is to create an effective learning environment (Darling-Hammond & Falk, 1997; Papert, 1999; Ewing, Dowling, & Coutts, 1999; Drayton, Falk, Stroud, Hobbs, & Hammerman, 2010; Gilakjani, Leong, & Ismail, 2013).

The second key factor impacting the ID landscape of higher education is the development of advanced communication and technological services. Information and communication technology (ICT) has become one of the building blocks of modern society (Anderson & van Weert, 2002). ICT in higher education is the mode of education that uses information and communications technology to support, enhance, and optimize the delivery of information (Anderson & van Weert, 2002). It is a broad field that encompasses computer, telephone, cellular networks, satellite, communication broadcasting media and other forms of communication. Today, it is difficult to function without ICT in higher education and the world at large (Ubogu & Orighofori, 2020). During 2020-2021, higher education ecosystem has been impacted significantly by the rapid spread of COVID-19 outbreak. It represented an immediate crisis for higher education, creating significant challenges for enrolled students and traditional institutions. Worldwide, there were 1.2 billion students in 186 countries (UNESCO, 2020) affected by school closures due to the COVID-19 global pandemic. Universities across the US have adjusted their programs in response to the spread of the COVID-19 virus. The most effective tool in keeping student retention and maintaining access to learning has been online courses. However, COVID-19 raised strategic questions that go far beyond planning for 2020-2021 academic year, related to the pre-existing conditions such as rapidly escalating costs, widening disconnect with future workforce needs, crushing student debts, unacceptable racial disparities in outcomes, and low completion rates overall (Pulsipher, 2020). "The higher education

sector is also in the throes of technology-driven disruption, a disruption irreversibly accelerated by [COVID-19]" (Pulsipher, 2020) with global educational technology investment reaching \$18.66 billion in 2019 (Market Insider, 2020) and the overall market for online education projected to reach \$350 billion by 2025 (GlobeNewswire, 2019). Whether it is language apps (Andress, Star, & Balshem, 2020), virtual tutoring (Morales, 2020), video conferencing tools (Kelly, 2020), or online learning software (Dignan, 2020), there has been significant increase in usage of ICT since March 2020. ICT can play a crucial role in the creation of effective learning environments as well as addressing the listed pre-existing conditions in higher education (Rakes, Fields, & Cox, 2006; Gilakjani, Leong, & Ismail, 2013). For this to happen it is critical that ICT is used co-dependently with the constructivist learning methodology as mindful and purposeful cognitive tool (Muniandy, Mohammad, & Fong, 2007). Only then it has the potential of lowering the costs for students, increasing the value of higher education degrees by improving workforce alignment, and addressing issues of equity and access.

The third key factor impacting the ID landscape of higher education is the increased demand for distance and online education. With the influence of advancement in ICTs, distance and online education enrollments have continued to grow as more and more students look for flexible formats to take courses and complete certificate and degree programs (Seaman, Allen & Seaman, 2018). The desire and need for virtual and online learning have been further exasperated during 2020-2021, in large part due to the COVID-19 global pandemic. For universities to function during the COVID-19 pandemic, instructors adapted new ICT tools for delivering their courses; students navigated new

terrain in their hybrid and virtual learning environments; information technology and instructional staff were called upon to provide new and additional services and supports.

The fourth key factor that has changed the ID landscape of higher education has been the role of IDers. Prior to, and likely long after, COVID-19, the demand for IDers in higher education has been growing (Barrett, 2016). An increasing number of institutions employ teams of IDers to support teaching and learning needs on their campuses (OLC, 2018). Findings of 2016 Intentional Futures report on the role, workflow, and experience of IDers revealed that ID professionals tend to hold advanced degrees and have wide range of work experience (Intentional Futures, 2016). This report also indicated that the path into the profession varies from person to person and there is no universal profile of an IDer. Moreover, in contrast to popular belief, reports suggests that IDers do more than just designing instruction (Intentional Futures, 2016; Linder and Dello Stritto, 2017). Most IDers reported five categories of responsibilities: (1) design instructional materials and courses, particularly for digital delivery; (2) manage the efforts of faculty, administration, IT, other IDers, and others to achieve better student learning; (3) train faculty to leverage technology and implement pedagogy effectively; (4) support faculty in addressing technical or instructional challenges (Intentional Futures, 2016); and (5) conduct research, (Linder and Dello Stritto, 2017). As COVID-19 has forced higher education to pivot to virtual learning, IDers have leveraged their network to support higher education online learning. They have (1) shared their expert ID knowledge widely and shared their design frameworks and experience with student engagement activities within and beyond their institutions; (2) focused on known challenges such as faculty training and preparation for online teaching; (3) helped to reimagine assessment for meaningful online learning

environments and experiences for online learners; (4) created how-to-learn online courses and supports for students to help them build online learners' skills and to strengthen their confidence in the use of technology; and (5) helped evaluate and deploy appropriate technology for creating effective instructional materials and online learning environments (TeachOnline.CA, 2021).

This section reviewed the four major events in the higher education context. These are: (1) increased influence of constructivism as a theory of learning; (2) advancements in technology; (3) increased demand for distance and online education; and (4) changes in the roles of instructional designers. All these four major events that have been shaping and changing the instructional design landscape in higher education. The following section will provide a review of the research literature on the origins of instructional design and learning theory; social constructivism in the field of instructional design; community of practice and instructional designers to better situate one's understanding for the purpose of this study.

Review of Literature

Origins of Instructional Design and Learning Theory

The history of ID can be traced back to World War II when psychologists and educators such as Robert Gagné, Leslie Briggs, John Flanagan, and many others were asked to conduct research and develop training materials for the military personnel (Reiser, 2001).

Intellectual lineage of ID field began to emerge as many of the psychologists continued their work on solving instructional problems and based their work on behaviorist learning theories such as Thorndike's and Skinner's (Saettler, 1968; 1990).

These behaviorist theories were established based on the assumptions that “behavior is predictable, and that educational design [that would influence and change this behavior], therefore, can occur in isolation from educational execution” (Koper, 2000).

Deriving from these claims, the language of traditional ID echoes a systematic approach that focuses on efficiency and effectiveness (Braden, 1996; Dick, 1996; Dick & Carey, 1996; Merrill, Drake, Lacy, Pratt, & the ID2 Research Group, 1996; Merrill, 2002). Consequently, such traditional ID models are linear and prescriptive (Andrews & Goodson, 1980; Wedman & Tessmer, 1993; Braden, 1996) as well as empirical in nature (Jonassen & Rohrer-Murphy, 1999). These models are regarded to be instrumental, and hence rational and objective. They operate under the assumption of educational technologies and environments being neutral and there is, in fact, a ‘known world’ that is waiting to be discovered (Campbell, Schwier, & Kenny, 2005). Garrison (1993) and Vrasidas (2000) critiqued the products and environments that the traditional ID models produce as often being formal, restrictive, and reductionist. Though, over time, many moved away from these linear approaches to ID, “systematic models continue to thrive in various portrayals” (Campbell, Schwier, & Kenny, 2005, pp. 245-246) and continue to be taught to thousands of graduate students.

Social Constructivism in the Field of Instructional Design

Since the 1990s, constructivist learning theory has had a major impact on the field of ID. Constructivism, as a theoretical position, posits that a person actively constructs their own ways of thinking and knowing because of innate capacities interacting with their experiences (Sounders, 1992; Darling-Hammond & Falk, 1997). In this view, learning is a self-regulated process of resolving inner conflicts through concrete experience, discussion,

and reflection (Brooks & Brooks, 1993; von Glasersfeld, 1995; Gilakjani, Leong, & Ismail, 2013). The emergence of constructivism has caused a cultural shift from teacher-centered to learner-centered education (Reigeluth C. M., 1996; 1999). With focus in learning shifting to the active construction of knowledge by the learners, based on their existing knowledge base, traditional ID approaches has come under attack by many (Merrill, Li, & Jones, 1990; Gayeski, 1998; Gordon & Zemke, 2000; Zemke & Rossett, 2002; Sims, 2006). This led to the emergence of ID models that are based on constructivist learning principles (e.g., Cennamo, Abell & Chung, 1996; Hannafin, Land & Oliver, 1999; Jonassen, 1999; Mayer, 1999; Shabaugh & Magliaro, 2001; Willis, 2000). Contemporary ID models are moving away from linear approaches to models that acknowledge and embrace the interrelatedness and concurrency of all activities of design (Smith & Rana, 2005). IDers now apply a range of ideas from cognitive and social-constructivist theories and draw a unique repertoire of instructional design strategies when working with content and subject matter experts (Keppell, 2004).

Social constructivism, strongly influenced by Vygotsky's (1978) work, is a "theory of knowledge in sociology and communication theory that examines the knowledge and understandings of the world that are developed jointly by individuals" (Amineh & Asl, 2015). Social constructivists argue that learning happens in rich contexts, where learning embeds itself into the environments where knowledge is constructed through social interactions. According to this view, knowledge is not something that is held objectively; instead, knowledge is unique, subjective, and created by establishing shared understandings among individuals through social interactions (Cobb, 2005).

Social constructivists are interested in experiences that are shared “through conversation[s], negotiation[s], and construction of new knowledge products” (Schwier, Campbell, & Kenny, 2004, p. 70). When examined, an IDer’s practice where self-reflection is crucial, will reflect their own “values and belief structures, understandings, prior experiences, and construction of knowledge through social interaction and negotiation within professional communities of practice” (Campbell, Schwier, & Kenny, 2005, p. 246).

This dissertation study sits on the theoretical foundations of communities of practice. Understanding communities of practice is critical to the notion of social constructivist view of the ID practice as IDers utilize communities of practice to learn, question, critically analyze, reflect on, and negotiate their understanding of this complex field of study.

Community of Practice and Instructional Designers

Communities of Practice (CoP) are “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (Wenger-Trayner & Wenger-Trayner, 2015). They are characterized by negotiation, intimacy, commitment, and engagement (Kowch & Schwier, 1997). They create dialog and achieve intimacy among their members that satisfy personal needs through active engagement (Heckscher, 1994). Intimacy and engagement instigate a level of commitment to the community and this commitment often manifests itself in alignment with the values and knowledge of the community (Wenger, 1998).

The term CoP emerged from Lave and Wenger’s (1991) study that explored the situated learning in the apprenticeship model. They viewed the acquisition of knowledge as a social process. People in CoP “engage in a process of collective learning in a shared

domain of human endeavor” (Wenger-Trayner & Wenger-Trayner, 2015). It is important to note that this definition allows for intentionality but does not necessarily assume its existence. In other words, not everything that is called community is in fact a CoP.

Depending on their context, CoP may take different forms but they all need to share a basic structure and come together with a unique combination of three fundamental elements to be considered a CoP: (1) domain of knowledge that creates a common ground and sense of common identity; (2) a community of people who care about the domain and create the social fabric of learning; and (3) a shared practice that the community develops to be effective in their domain (Wenger, 1998).

Knowledge management and organizational change

Knowledge management is to “understand, focus on, and manage systematic, explicit, and deliberate knowledge building, renewal, and application –that is, manage effective knowledge processes [...]” (Wiig, 1997). Knowledge management approaches refer to managing intellectual capital, social capital, and other resources in organizations (Sumner, 1999; Takeuchi, 2001) and have direct application to ID (Spector, 2002). The use of knowledge management in this dissertation study is to inform our understanding of CoP. It is based on the idea that CoP develop both intellectual (intellectual capital) and social (social capital) resources. CoP are dynamic environments where such knowledge is created and nourished by the community. Since “the production and use of knowledge is deeply entwined with social phenomena” (Erickson & Kellogg, 2002, p. 239), the knowledge that ID communities develop, and the processes they use to create the knowledge, are inseparable (Schwier, Campbell, & Kenny, 2004). ID practice is constituted by socially and culturally produced patterns of language, or discourse, with socially transformative power

through the positioning of the self in explicit action (Francis, 1999; Campbell, Schwier, & Kenny, 2005). In this view, ID is a socially constructed practice rather than a technology to be employed.

Furthermore, in addition to the social implications of ID practices, ID exists within a larger context of social change. It is argued that the process of change is particular to the context in which it occurs –in this case, ID in higher education context (Campbell, Schwier, & Kenny, 2005). Most change models fall into two broad categories: planned and unplanned. Planned change is deliberate, and it is normally the outcome of conscious reasoning based on some clear expectations. However, change has unplanned features that introduce desirable or undesirable consequences, and ID similarly embraces tacit, creative, and spontaneous elements that can influence the quality of outcomes. To maximize the benefits of change and avoid unintended consequences, change must be effectively managed, including social negotiation among individuals and groups, and larger transformational changes (Bolman & Deal, 1997). This brings us to the importance and implications of effective knowledge management.

To address the evolving demands of higher education, ID units and instructional support staff effectively and successfully rethink about their processes, their roles, and revise their services regularly. A knowledge management view of ID puts IDers in the role of knowledge managers in higher education institutions. Not only they routinely work within their CoP but also with teams of content experts and a variety of professionals to uncover tacit knowledge and make it explicit for designing instruction and training. In the ID process, participation in learning revolves around communication between all those involved in the design process, in terms of shared understanding or shared thinking

(Rogoff, 1990). As a result, learning takes its most effective form since it is embedded in social experience, is situated in an authentic problem-solving context entailing cognitive demands relevant for coping with real life situations, and occurs through social intercourse (Glaser, 1991; Ewing et al., 1998; Jonassen et al., 1997; Kanuka & Anderson, 1998). On a larger scale, it is believed that “[IDers] are actually engaging in a process of professional and personal transformation that has the potential to transform the institution” (Schwier, 2004, p. 74).

Intellectual capital

Intellectual capital refers to the storehouse of knowledge that resides in a community or organization, and it is made up of explicit and tacit knowledge. Explicit knowledge is formally articulated, public, and shared, knowledge that is relatively easy to identify. In ID, intellectual capital it includes knowledge of instructional models, cognitive design principles, instructional theory, and the like. Tacit knowledge, in contrast, is knowledge that is not formally articulated. It is privately held by members of the community and is often difficult to articulate, not necessarily shared, yet essential to the community. In ID, tacit knowledge includes approaches and strategies IDers have learned by experience or particular skills they have developed that are not part of the public professional discourse.

One goal of knowledge management projects to transform tacit knowledge into explicit knowledge so that the knowledge can be shared and used in the larger community (Zhu, 2004). In some cases, tacit knowledge is held subconsciously –community members may not recognize knowledge they hold is significant. It is possible that IDers possess craft knowledge that is tacit and not shared with the larger ID community. This knowledge may

remain tacit, in part because the methods of eliciting and extracting the knowledge have not been employed and because of the limited channels for sharing this kind of knowledge (Schwier, Campbell, & Kenny, 2004).

Social capital

Social capital is defined in various ways, but definitions share common themes. Fukuyama (1999) defines social capital as “an instantiated informal norm that promotes cooperation between two or more individuals”. “Not just any set of instantiated norms constitutes social capital; they must lead to cooperation in groups and therefore related to traditional virtues like honesty, the keeping the commitments, reliable performance of duties, reciprocity, and the like” (Fukuyama, 1999). Then, the resulting trust, mutual understanding, and shared values and behaviors would bind people as members of human networks and communities (Cohen & Prusak, 2001).

Lessor and Storck (2001) stated that communities of practice serve as engines for the development of social capital. They identified four performance outcomes that were associated with communities of practice and linked to social capital: connections among practitioners who may or may not be co-located; relationships that build trust and mutual obligation; shared language; and, shared context.

This research study takes a knowledge management approach in looking into how communities of practice can be used to examine what instructional designers do and how they do it. A knowledge management approach is instrumental in examining how instructional designers transform their tacit knowledge into explicit knowledge.

Statement of the Problem

Conventional ID models fail to effectively address challenges posed by the demands and realities of 21st century learning environments in higher education. The increased influence of constructivism as a theory of learning; advancements in technology; and increased demand for distance and online education; the roles and professional practices of instructional designers have adapted and changed to meet the demands of contemporary higher education. Yet, little is known about how IDers navigate the daily challenges of their work as a group; how they respond to the changing demands in higher education; and replicate their work and practices. There is a paucity of research about how IDers in higher education engage in and navigate the ID process in 21st century higher education.

Purpose of the Study

The purpose of this study is to investigate how IDers navigate the daily challenges of their work as a group; how do they successfully respond to the changing demands of designing instruction for online learning; and replicate their work and practices in higher education context. Through the multi-faceted lens of professional practice, CoP, and knowledge management, this study examines (1) the ways instructional designers interact with subject matter experts (faculty); (2) the roles of instructional designers in the instructional design process; and (3) how these roles are affected by the instructional design process itself.

Research Questions

This study was designed to address four research questions:

1. What are the attributes of the instructional design process at Online Learning Unit?

2. How do instructional designers at Online Learning Unit describe their roles within the instructional design process?
3. How do roles of the faculty and instructional design process influence the roles of instructional designers?
4. How do the instructional designers at Online Learning Unit build and utilize their community of practice?

Definitions of Terms

- The University: Refers to the large research university in the Midwestern United States where this study was conducted.
- Online Learning Unit: Refers to the unit that works with multiple colleges at the University where participants of this research study were selected from.
- Faculty: Refers to the faculty who teach asynchronous online courses at the University.
- Director: Refers to the director of the design and delivery sub-unit team of Online Learning Unit. Director and Mae Kelly (pseudo name) are used interchangeably throughout this text to protect research participant's identity.
- ID: It is an abbreviation that is used to refer to instructional design.
- IDer(s): It is an abbreviation that is used to refer to instructional designers.
- ISD: Instructional Systems Design
- SME: Subject Matter Expert, or SME, is the person who possesses a deep understanding of a particular subject.

Conclusion

This chapter provided an overview of the nature of collaborative relationship between instructional designers and faculty who teach online courses by employing constructivist theory as a lens. It also introduces two layers of literature review. The first layer inspects modern practices. Three main influences in higher education have been happening and shifting the culture: the increased influence of constructivism; advancements in technology; increased demand for distance and online education. The roles and professional practices of instructional designers had to adapt to address the changes caused by these influences. Roles and practices changed and adapted to address these influences. And they can only be understood within the instructional process itself by looking into instructional designer's practices; interactions with subject matter experts, and with each other; and the field itself. However, conventional ID models do not fully explain how instructional designers operate in their line of work on a daily basis. But we can understand how IDers operate by developing a deeper understanding of the ID process itself. Instructional design process is complex, and it goes beyond applying ID models; it includes change management and knowledge management. For this reason, the second layer investigates the origins of instructional design and learning theory; social constructivism in the field of instructional design; and community of practice and instructional designers. It provides a lens to look into the instructional design process to understand the process with all of its complexities. So far, the research into how IDers engage and navigate the ID process in 21st century higher education ecosystem has been sparse.

The rest of this dissertation is organized as follows. Chapter 2 provides the theoretical basis for this dissertation that focuses on the explicit and tacit knowledge instructional designers use to design online courses in higher education. The chapter reviews the theoretical framework of constructivism, communities of practice, and changing field of instructional design. Chapter 3 presents the research methodology and discusses the methods employed to collect and analyze the data. Chapter 4 provides the findings to the study. And Chapter 5 is a discussion of the significance of this work, the impact of the findings, and suggestions for further study.

CHAPTER 2. REVIEW OF LITERATURE

Cognitive theory provides the theoretical basis for this research which focuses on eliciting the explicit and tacit knowledge IDers use to design online courses in higher education. In much of this work in the online environment, IDers engage as professionals who facilitate interactions between and among subject matter experts (SMEs) and IDers. Thus, they individually learn and come to a new understanding of the content and course objectives for the online course. Working collectively with the SMEs and other members of the ID team, IDers also construct what it means to master subject matter content in the online learning context. They engage in learning and development at the individual level, so they have the ability to collectively construct teaching and learning for the online learning environment. Within cognitive theory, Piagetian constructivism (1977) provides a theoretical foundation to understand how individuals learn, in this case IDers and SMEs; and Vygotsky's social learning theory (1978) provides the theoretical framework for understanding how teams involved in the ID process led by IDers make meaning collectively to create online learning environment. Thus, in this work where we are seeking to understand how IDers use knowledge management processes within community of practice (CoP) to design online learning environments, the theoretical framework is a combination of both Piagetian constructivism and Vygotsky's social cultural learning.

This chapter consists of the review of literature. It is organized into three sections: (1) theoretical framework: constructivism; (2) communities of practice; and (3) changing field of instructional design in higher education. First section outlines the theoretical framework for this dissertation. It will discuss first Piagetian constructivism to illuminate how learning occurs in an individual. Then it will discuss Vygotsky's social learning theory.

The section concludes with a discussion on how these two works together in this dissertation research.

Theoretical Framework: Constructivism

Constructivism, as a theoretical position, posits that a person actively constructs their own ways of thinking and knowing because of innate capacities interacting with their experiences (Sounders, 1992; Darling-Hammond & Falk, 1997). In this view, learning is a self-regulated process of resolving inner conflicts through concrete experience, discussion, and reflection (Brooks & Brooks, 1993; von Glasersfeld, 1995; Gilakjani, Leong, & Ismail, 2013). Such inner conflicts are influenced by both internal factors of the learner's experiences and level of development; and external factors of the learner's immediate learning environment such as people, resources, opportunities, etc. (Cobb, 2005).

Two of the most influential scholars about constructivism are Jean Piaget (1977) and Lev Vygotsky (1978). Their work inspired two major trends in constructivist education research in the last two decades: the cognitive view and sociocultural view of constructivism. The theoretical arguments that support the cognitive position are epistemological, inspired by Piaget's (1977) work and advanced by von Glasersfeld (1984; 1987; 1989). The cognitive trend of constructivism can be contrasted with a second focus that emphasizes the socially and culturally situated nature of activity. The theoretical underpinning of socially and culturally situated nature of the second focus is inspired by the work of Vygotsky (1978) and advanced by activity theorists such as Davydov (1998), and Leont'ev (1981).

Individual Learning –Cognitive Theorists

Cognitive constructivists often trace their philosophical lineage back to Piaget's (1970, 1980) epistemology and give priority to the individual learner's sensory-motor and conceptual activity. Piaget argued that learning starts with and moves from assimilated structures that are challenged through repeated or enhanced experiences, including those involving others, to provide new perceptions involving accommodation (Piaget, 1977). According to Piaget, learning advances from concrete explorations where the learner interacts with their immediate environment, to an internalization that involves initially simple, and then increasingly complex, meaningful internal representations. Piaget emphasizes that this progression involves the learner using a process of symbolic interpretation that is built up from their earliest experience as well as their maturing cognitive functions. In the Piagetian view, these functions, namely organization and adaptation, are key elements in the growth of cognition. Learning moves towards conceptualization and understanding through the learner's developing success in reflection and abstraction.

In Piaget's view, there are clear links between what is presented outside the learner, the external events of a learning environment, and how the learner interprets this. Piaget's argument was that thinking and learning involves making connections between new knowledge (external to the learner) and past knowledge (internal to the learner) through actively engaging in a process of organizing, ordering, classifying, identifying relations, transforming, and explaining (Ewing, Dowling, & Coutts, 1999). These activities demand *acting on* rather than *taking in*.

Cognitive constructivist theorists analyze thought in terms of conceptual processes located in the individual (Minick, 1989). Later, von Glasersfeld defined the term knowledge in “Piaget’s adaptational senses to refer to those sensory-motor and conceptual operations that have proved viable in the knower’s experience” (von Gladersfeld, 1992, p. 380). Von Gladersfeld characterizes learning as a process of self-organization in which the learner recognizes their activity to eliminate perturbations (1989). Though he defines learning as self-organization, von Gladersfeld recognizes that this constructivist activity occurs as the individual interacts with other members of the community. Hence, knowledge refers to “conceptual structures that epistemic agents, given the range of present experience within their tradition of thought and language, consider viable” (1992, p. 381). Von Glasersfeld further argues that “the most frequent source of perturbation for the developing cognitive [individual] is interaction with others” (1989, p. 136).

Whereas von Glasersfeld tends to focus on individuals’ construction of their ways of knowing, Bauersfeld characterized learning as “the subjective reconstruction of societal means and models through negotiation of meaning [embedded] in social interaction” (1988, p. 39). Bauersfeld’s view then emphasizes that the perturbations are not limited to the occasions when individuals in an interaction believe that communication has broken down and explicitly negotiate meanings (Bauersfeld, 1980; Bauersfeld, Krummheuer, & Voigt, 1988). Instead, communication is a process of often implicit negotiations in which subtle shifts and slides of meaning occur outside the participants’ awareness (Cobb, 2005). Taking this perspective, negotiation then can be characterized as a process of mutual adaptation during which the instructor and the learner set expectations for others’ activity and obligations for their own activity (Cobb, 2005; Voigt, 1985).

Cognitive theorists are usually concerned with the quality of individual interpretive activity, with the development of ways of knowing more within a specific context, and with the participants' interactive constitution of social norms and practices within this context (Cobb, 2005). The burden of explanation in cognitive accounts of development falls on models of individual learners' self-organization and an analysis of the processes by which these actively engaged learners constitute the local social situation of their development (Cobb, Wood, & Yackel, 1993). Thus, a cognitive theorist would see classroom interactions as an evolving microculture that does not exist outside of the instructor's and learners' attempts to coordinate their individual activities. Furthermore, they would see a learner adapting to the actions of others in the course of ongoing negotiations. In making these interpretations, cognitive theorists utilize metaphors such as accommodation and mutual adaptation to describe the processes of learning and knowing. Cognitive theorists tend to stress heterogeneity and eschew analyses that single out pre-given social and cultural practices. Their focus is on the constitution of social and cultural processes by actively interpreting individuals.

Group Learning – Sociocultural Theorists

Much of Piaget's work has been interpreted as a reflecting cognitive and somewhat individualistic perspective on learning whereas a more sociocultural approach was adopted by Vygotsky (Ewing, Dowling, & Coutts, 1999; Cobb, 2005). A major aspect of Vygotsky's work that has led to a significant elaboration of constructivism is his proposition for the existence of a zone of proximal development (ZPD) (Vygotsky, 1978). Vygotsky's argument on children's learning and development is more than the result of modeling and reinforcement, where the behavior is directly shaped by or copied from the

adults in a child's world (Ewing, Dowling, & Coutts, 1999). Rather, children's progress is more likely to be the result of their active involvement in internal mental processes (thinking) while interacting with others (adults and peers) in appropriate activities (Berk & Winsler, 1995). Such interaction emphasizes the social and cultural aspects of the learning and development process. As learning and development advance, the external experiences and the associated thinking processes become internalized, and the child begins a process of constructing meaningful and self-regulated sets of behaviors. In this regard, links between learning and development identify not only the need to match learning experiences with a child's development level, but also the need to identify at least two development levels (Vygotsky, 1978). These two levels are the actual development level of child that they have achieved and the potential level of what could be achieved with assistance. This gap is the ZPD. Through the creation of an opportunity to move towards a level of potential performance via ZPD, learning enables development processes which otherwise might not occur. Therefore, learning leads and encourages development.

Vygotsky's elaboration of constructivism has been extended by many scholars (Cole, 1984; Tharp & Gallimore, 1988; Rogoff, 1990). Sociocultural constructivist theorists usually link activity to participation in culturally organized practices. They tend to assume that cognitive processes are subsumed by social and cultural processes (Cobb, 2005). They refer to Vygotsky's contention that "the social dimension of consciousness is primary in fact and time. The individual dimension of consciousness is derivative and secondary" (Vygotsky, 1989, p. 30). Davydov later argued that "thought (cognition) must not be reduced to a subjectively psychological process" (1988, p. 16). Consequently, sociocultural theorists make the individual-in-social-action as their unit of analysis (Minick, 1989).

In her detailed examination of learners' social engagement in learning activities, Rogoff (1990) emphasized the roles of all participants functioning within a ZPD and the nature of the internalizing process which individual learning demands. She argues that participation in learning is contingent on communication between the pupil and the instructor, or among pupils in a peer group, in terms of shared understanding and thinking. In this regard, knowledge is not held by the instructor in an objective way such that it becomes available to learners if they are motivated to access it. Instead, knowledge is constructed by the learner (Holzer & Andruet, 2000) and the process of knowledge construction is dynamic and demands the active engagement of learners who are responsible for their learning. Similar to cognitive theorists, explaining how participating in social interactions and culturally organized activities influences psychological development is also the primary issue for sociocultural theorists.

Sociocultural theorists formulated this in different ways. Vygotsky (1978) underlined the importance of social interactions with more knowledgeable adults and peers in the ZPD and emphasized on the role of culturally developed sign systems as tools for thinking. Later, Leont'ev (1981) argued that thought comes from practical, object-oriented activity. Several theorists later elaborated on constructs developed by Vygotsky and his students. Specifically, these theorists talked about cognitive apprenticeship (Brown et al., 1989; Rogoff, 1990), legitimate peripheral participation (Forman, 1992; Lave & Wenger, 1991), or the negotiation of meaning in construction zone (Newman, Griffin, & Cole, 1989). Each of these contemporary approaches situates learning in co-participation in cultural practices. Hence, educational implications usually focus on the kinds of social

engagements that enable learners to participate in the activities of the expert rather than on the cognitive processes and conceptual structures involved (Hanks, 1991).

Another comparison point between cognitive theorists and sociocultural theorists is the way negotiation is defined. Newman et al., (1989) defined negotiation from a sociocultural constructivist theory point of view as a process of mutual appropriation in which the instructor and the learner continually use each other's contributions. Here, the instructor's role is characterized as that of mediating between learner's personal meanings and culturally established meanings of the subject matter in the wider society. From this point of view, one of the instructor's primary responsibilities when negotiating meaning with the learners is to "appropriate their actions into this wider system of [...] practices" (Cobb, 2005). Moreover, sociocultural theorists give priority to social and cultural process.

Coordination Between Cognitive and Sociocultural Theories of Constructivism

Cognitive and sociocultural constructivist perspectives appear to be in direct conflict, each claiming hegemony for their view about learning and knowing (Steffe, 1995; Voigt, 1992). They are in a dispute over "whether the mind is located in the head or in the individual-in-social-action, and whether learning is primarily a process of active cognitive reorganization or a process of enculturation into a community of practice (Minick, 1989)". The two constructivist theories, cognitive and sociocultural, bring focus to different challenges and issues, yet are not entirely disparate. Cobb (2005) argues that there are aspects of one position that are implicit in the other.

A central concept in Vygotsky's work is that of internalization. He argued: any higher mental function was external and social before it was internal. It was once a social relationship between two people. We can formulate the general genetic

law of cultural development in the following way. Any function appears twice or on two planes. It appears first between people and an intermental category, and then within the child as an intramental category (1960, pp. 197-198).

Rogoff (1990) notes that children learn by observing or participating with others. “The underlying assumption is that the external lesson is brought across a barrier into the mind of the child. How this is done is not specified, and remains a deep problem for these approaches” (p. 195). She elaborates on the concept of internalization by arguing that children already engaged in a social activity when they actively observe and participate with others. If children are viewed as being in the social activity in this way “then what is practiced in social interaction is never on the outside of a barrier, and there is no need [to] [...] separate process of internalization” (p. 195).

Rogoff’s point that children are already active participants in the social practice means that they engage in and contribute to the development of practices.

[I]n the process of participation in social activity, the individual already functions with shared understanding. The individual’s use of this shared understanding is not the same as what was constructed jointly; it is an appropriation of the shared understanding by each individual that reflects the individual’s understanding of and involvement in the activity (Rogoff, 1990, p. 195).

Rogoff’s employment of the individual’s use of a shared understanding and the shared understanding that is constructed jointly are closely related to the distinction that a cognitive constructivist theorist may make between an individual’s understanding and the taken-as-shared meaning established by the community (Cobb, 2005). Cobb (2005) then concludes from Rogoff’s treatment of internalization that learning is a process of active

construction that occurs when children engage in practices, frequently while interacting with others. He further argues that a similar conclusion can be made when considering von Glasersfeld's (1995) elaboration of Piaget's development theory.

Von Glasersfeld develops his view of learning following the footsteps of Piaget's self-organization concept by making a clear distinction between two types of cognitive reorganization: empirical abstraction and reflective abstraction. According to von Glasersfeld, empirical abstractions produce construction of a property of a physical object, whereas the process of constructing concepts involves reflective abstraction (1995). Von Glasersfeld describes a situation to illustrate the notion of empirical abstraction: Someone wants to put a nail into a wall but does not locate a hammer in the room. They find a wooden mallet instead and utilize this mallet to complete the tasks. But, they quickly realize nail goes into the mallet instead of going into the wall. Von Glasersfeld makes the point that in this situation, the person assimilated the mallet to their hammering task, but then they made an accommodation when things did not go as they expected, and a perturbation occurred. This accommodation involved an empirical abstraction and resulted in the construction of a novel function for the mallet, which is the mallet as a tool is not the sort of thing that can be used to put a nail on a wall.

The act of putting a nail into the wall is a cultural practice in that it involves acting with specific artifacts, nail and hammer. With engagement in the practice of hammering, they make an empirical abstraction. Thus, Cobb (2005) then extends the definition of empirical abstraction

by emphasizing both that it results in the emergence of novel physical properties and that it occurs as the individual participates in a cultural practice, often while

interacting with others. This formulation involves the coordination of perspectives in that the first part, referring as it does to an experienced novelty, is said from the 'inside,' whereas the second part is said from the 'outside' and locates the individual in a cultural practice (page number).

Cobb (2005) further argues that the assumption of individual activity as culturally situated is also implicit in von Glasersfeld's discussion of the construction of concepts. von Glasersfeld's work uses the notion of reflective abstraction to account for the process by which actions are reified and become mental objects that can themselves be employed. He argues that it is by means of reflective abstraction that learners can reorganize their initially informal activity, and learners can only interpret the instructor's actions within the context of their ongoing activity. The conceptual reorganizations happen as the learners engage in cultural practices. It can also be noted that the activities about which the learners engage in abstraction include their interpretation of others' activity and of joint activities (Viogt, 1992). Cobb suggests that these considerations bring us to the point where in defining reflective abstraction, we emphasize both that it involves the reification of sensory-motor and conceptual activity and that it occurs while engaging in cultural practices, frequently while interacting with others. As was the case with the characterization of empirical abstraction, this formulation involves the coordination of perspectives. (2005).

To summarize, Rogoff's view of learning as acculturation through guided participation implicitly assumes an actively engaged and constructing learner. Conversely, von Glasersfeld's view of learning as cognitive self-organization implicitly assumes that the learner is participating in cultural practices. In conclusion, Cobb (2005) states that "active

individual construction constitutes the background against which guided participation in cultural practices comes to the fore for Rogoff, and this participation is the background against which self-organization comes to the fore for von Glasersfeld”.

The focus of the following section will be to explore ways of coordinating cognitive constructivist and sociocultural constructivist perspectives in the CoP framework. The perspective that emerges at certain points in an empirical case as it concerns IDers’ interactions within CoP can then be seen as relative to the challenges and issues that members of CoP’s face.

Coupling Cognitive and Sociocultural Theories of Learning

Transitioning into more of the operationalization, this research study relies on both cognitive and sociocultural constructivist theories to examine what is happening with the IDer and to illuminate what is occurring in the CoP, answering the research questions guiding this study.

Piaget’s approach as advanced by von Glaserfeld views learning primarily as a process of cognitive organization which is an internal and individual activity that functions in a context of guided participation (the learning environment). On the other hand, Rogoff’s extension of Vygotsky’s approach underlines guided participation as leading learning through active internal construction.

Cobb (2005) argued that both the sociocultural and the cognitive perspectives tell half of a good story, and each can complement the other. He concluded that “sociocultural analyses involve implicit cognitive commitments, and vice versa. It is as if one perspective constitutes the background against which the other comes to the fore” (Cobb, 2005).

Therefore, meaningful interaction between the knower (e.g., instructor, peer) and the

learner requires some negotiation of meaning, probing one another's understanding, to generalize meaning across different experiences (Fosnot & Perry, 2005). This generalization is achieved by decentering, moving beyond personally held views, and by constructing new and expanded inner conflicts and representations. Sharing ideas, as a form of cultural learning or collaborative learning, occurs where new ideas are available and accepted for individual consideration. The learner will construct new representations of the learning environment as learning proceeds. Thus "learning is both a process of self-organization and a process of enculturation that occurs while participating in cultural practices, frequently while interacting with others" (Cobb, 2005). In this view, learning is situated in rich contexts, and knowledge is constructed in CoP through social interactions (Schwier, Campbell, & Kenny, 2004).

To conclude, the constructivist view is interested in "prior experience[s] that [are] shared, through conversation, negotiation, and construction of new knowledge products" (Schwier, Campbell, & Kenny, 2004). Deriving from this theoretical point of view, an individual's (IDer) practice will reflect their own values and belief structures, understandings, prior experiences, construction of new knowledge through social interaction, and negotiation within their professional CoP.

This study employs the CoP as a framework to study complex, formal and informal knowledge management, and knowledge construction structures in ID in higher education context. Understanding CoP is central to the notion of a social constructivist view of the practice of ID.

Communities of Practice

The term Communities of Practice emerged from Lave and Wenger (1991). In their initial work, they used an anthropological perspective to argue that learning is not just receiving and absorbing information. They defined learning as situational and socially constructed through participation in a novice-expert relationship and viewed the acquisition of knowledge as a social process (Lave & Wenger, 1991). Members of a community negotiate and re-negotiate meaning to develop a shared understanding (Lave & Wenger, 1991; Wenger, 1998) and this shared understanding leads to learning. Learning is seen as “an inseparable act of social practice” (Lave & Wenger, 1991, p. 31). Most recently, CoP is defined as a “learning partnership among people who find it useful to learn from and with each other about a particular domain. They use each other’s experience of practice as a learning resource” (Wenger, Trayner, & de Laat, 2011, p. 9). Based on this definition, the following section explores important concepts that underpin CoP principles.

The Domain, The Community, and The Practice

Wenger, McDermott, and Snyder (2002) identified the following three characteristics of CoP: (1) domain of knowledge that creates a common ground and sense of common identity; (2) a community of people who care about the domain and create the social fabric of learning; and (3) a shared practice that the community develops to be effective in their domain.

The domain

A CoP has an identity defined by a shared domain of interest. For Wenger et al. (2004), the domain of a CoP constitutes “the area of knowledge that brings the community together, gives it its identity, and defines the key issues that members need to address”

(2004). The domain is what gives a group its identity and distinguishes it from a group of friends or network of connections among people. Membership to a CoP then implies a commitment to the domain, and therefore a shared competence that distinguishes members from other groups or networks of people.

The community

In pursuing their interests in the domain, members of CoP engage in joint activities and discussions, help each other, and share information. For Wenger (2004), the community includes “the group of people for whom the domain is relevant, the quality of the relationships among members, and the definition of the boundary between the inside and the outside” (2004). For a group of people to create a CoP, members must come together around the ideas or topics of interest (the domain); interact with each other to learn together; and care about their standing with each other.

The practice

A CoP is not merely a community of interest; instead, members of a CoP are practitioners. They develop a shared repertoire of resources: experiences, stories, tools, ways of addressing recurring problems – in short, a shared practice. This takes time and sustained interaction. Wenger (2004) define practice as “the body of knowledge, methods, tools, stories, cases, documents, which members share and develop together” to address recurring problems in their specific context (2004). Most recently Consalvo et al. (2015) defined practice, from a Wengerian perspective, as a “way of acting in the world” and as “a field of endeavor and expertise” (p. 3). These definitions suggest that “practice implies knowledge of and engagement with a domain” (Uzuner Smith, Hayes, & Shea, 2017, p. 211).

Participation and Reification

In a CoP, thinking and knowing are socially constructed through situated negotiation and re-negotiation of meaning (Wenger, 1998). Wenger (1998) argued that the process of negotiation of meaning takes place in the convergence of processes of participation and reification.

Participation involves acting and interacting. Wenger's conceptualization of participation includes the following: (1) how we locate ourselves in a social landscape; (2) what we care about and what we neglect; (3) what we attempt to know and understand and what we choose to ignore; (4) with whom we seek connections and whom we avoid; (5) how we engage and direct our energies; and (6) how we attempt to steer our trajectories (Wenger, 1998). Participation and nonparticipation can occur within, around and across CoP (Wenger, 1998).

Reification is the "process of giving form to our experience by producing objects that congeal the experience into thingness" (Wenger, 1998, p. 58). Reification involves producing artifacts like tools, words, symbols, rules, documents, concepts, theories, etc.

Participation and reification are two complementary dimensions within a CoP that ultimately influence joint work or enterprise where participants systematically negotiate meaning through interactive talk and learn through this process (Wenger, 1998). Their complementary nature allows each to make up for the limitations of the other. For example, when reading about an idea or observing a practice does not make sense to an individual, other members who have a better understanding of it may become a source for the individual's understanding through conversation. This is a form of participation. Similarly, giving shape to an idea through application (a form of reification) may improve one's

meaning making in ways that conversing about it with others could not. A CoP “requires both participation and reification to be present and in interplay” (Wenger, White, Smith, & Rowe, 2005). At the end, knowledge is created and identities are formed through these processes of participation and reification (Tanis, 2020).

Joint Enterprise, Mutual Engagement, and Shared Repertoire

Wenger (2010) underlines that over time, through participation and reification, members of CoP develop and negotiate “a set of criteria and expectations by which they recognize membership” (2010, p. 180). These criteria include (1) joint enterprise that is a collective understanding of what the community is about; (2) mutual engagement that includes interacting and establishing norms, expectations, and relationship; and (3) shared repertoire that involves using communal resources, such as language, artifacts, tools, concepts, methods, and standards.

Joint enterprise

Having mutual relations, participants within a CoP usually experience “complex mixtures of power and dependence [...] success and failure [...] resistance and compliance” (Wenger, 1998, p. 77). Regardless of whether the experiences of mutual engagement are positive or negative, this dimension of a CoP is ultimately responsible for fostering or inhibiting complex and diverse relationships engaged in the negotiation of a joint enterprise. It is also joint enterprise, or the result of negotiation, that binds the CoP (Wenger, 1998). As an example, the community’s negotiated response to a situation could be deciding to improve faculty’s media creation and production skills for their online courses that would positively impact online students’ learning experiences. This joint enterprise creates “relations of mutual accountability that become an integral part of the

practice” (Wenger, 1998, p. 78). Joint enterprise does not mean agreement; instead, the members’ daily social practice of negotiation and renegotiation allows the group to reach consensus even though some members live with dissension. In the previous example, many IDers may favor a particular path in coaching faculty to improve their media creation and production skills; however, if the CoP decides to implement a new, systematic strategy, all members may be persuaded to put aside their different views during this joint enterprise. This persuasion may be the result of understanding the joint enterprise as an indigenous enterprise, or one that is “shaped by conditions outside the control of its members” (Wenger, 1998, p. 79). In the case of the example, IDers and faculty face many resource constraints (e.g., time, money, equipment, etc.) that may lead them to follow a particular strategy to create and produce media for online courses efficiently and effectively. Being a member of a CoP may enable IDers and faculty to develop “inventive resourcefulness” to respond to such conditions and may prevent deviant thinking among the members (Wenger, 1998, p. 79).

Mutual engagement

Mutual engagement defines the social practice of the community (Wenger, 1998) within a CoP. It is imperative for members of a CoP to work together, to “engage in discussion and exchange information and opinions to directly influence each other’s understanding as a matter of routine” (Wenger, 1998, p. 75). Such routines depend not only on individual competence but also on the collective competence of the group. Participants’ complementary, yet temporal, contributions ultimately make or break the CoP, allowing it to be either a positive or negative participatory experience. Within a CoP, engagement is maintained around a domain, even if it is inconsistent at times. Members negotiate and re-

negotiate meaning around the domain. Such group dynamics are seemingly favorable for professional development to be successful (Vangrieken, Meredith, Packer, & Kyndt, 2017).

A condition for learning and improving teaching effectiveness is when the members of the CoP are involved in joint work or enterprise (Tanis, 2020). This occurs when participants systematically negotiate meaning through interactive talk and learn through participation (Feiman-Nemser, 1998; Wenger, 1998; McLaughlin & Talbert, 2010) In the CoP, knowledge is owned and situated in practice (Lave & Wenger, 1991; Wenger, 1998).

Shared repertoire

The third element of this unity of CoP is the development of a shared repertoire of resources including “routines, words, tools, ways of doing things, stories, gestures, symbols, actions or concepts the community has produced or adopted in the course of its existence” (Wenger, 1998, p. 83). Wenger (1998) considers these resources a “repertoire” because they are rehearsed and reflect “a history of mutual engagement” among members of the CoP (p. 83). The history becomes a resource for the negotiation of meaning and allows for coordination among members to reach a decision. It may also provide solutions to institutional generated conflicts, help novices join a community, and create a collegial atmosphere (Wenger, 1998).

Identity

As people participate in a CoP, they acquire new knowledge, and simultaneously their sense of who they are, their identities, change (Wenger, 1998). “Because learning transforms who we are and what we can do, it is an experience of identity. It is not just an accumulation of skills and information, but a process of becoming –to become a certain person or, conversely, to avoid becoming a certain person” (Wenger, 1998, p. 215).

Knowledge

Participants in CoP produce knowledge as they interact with each other, share information, experience, insight and advice; and help each other solve problems. Over time, this combination of action and discourse eventually represents communal approaches to understanding and solving problems, and the process of reification transforms this shared knowledge into the tools and artifacts that embody a CoP's regime of competence. The community's knowledge is dynamic, not static. It is also explicit and tacit, as well as social and individual (Wenger, McDermott, & Snyder, 2002).

Value Creation

The concept of value creation describes and assesses the nature of social learning in a CoP and what, if any, value is created as a result of CoP members' activities and in their interactions with others in informal networks (Wenger, Trayner, & de Laat, 2011). Though the primary beneficiaries of this value are members of a CoP, value may transcend to other stakeholders, such as the organization in which the CoP operates and their sponsors who invest resources (Uzuner Smith, Hayes, & Shea, 2017).

Five different cycles of value creation can be produced within a CoP: (1) immediate value – learning that is used immediately to solve a problem; (2) potential value –benefits related to the shared skills and knowledge that can be realized at some time in the future; (3) applied value – application of shared skills and knowledge to new contexts; (4) realized value –reflections of CoP members and stakeholders on how the skills and knowledge gained as a result of their participation in a CoP made a difference in their ability to achieve important goals; and (5) reframed value – identification and definition of new criteria for success (Wenger, Trayner, & de Laat, 2011).

In industry, for instance, communities of practice emerged to facilitate the growth and implementation of new knowledge. The term *knowledge management* then emerged in mid-1990s to manage the explosion of information and a milieu of continuous change (Ponzi & Koenig, 2002). Yet, many of the knowledge management strategies implemented proved to be ineffective and inefficient, such as complex databases becoming dead virtual fields of unused information. More recently, however, there has been increasing recognition of the importance of subtler, tacit types of knowledge that need to be shared, and communities of practice have been identified as a group where such types of knowledge is nurtured, continuously shared, and sustained (Heldreth & Kmible, 2002).

A knowledge management view of instructional design puts IDers in the role of knowledge managers in higher education institutions. They routinely work with teams of subject matter experts and a variety of professionals to uncover tacit knowledge and make it explicit for designing instruction and training. Under these circumstances, the instructional design process acts as a catalyst in which designers and subject matter experts develop new ideas and understandings through conversation, and may also be a form of cultural and/or collaborative learning. In such a context, participation in learning revolves around communication between people in a group, in terms of shared understanding or shared thinking (Rogoff, 1990). As a result, learning takes its most effective form since it is embedded in social experience, is situated in an authentic problem-solving context entailing cognitive demands relevant for coping with real life situations, and occurs through social intercourse (Glaser, 1991; Ewing et al., 1998; Jonassen et al., 1997; Kanuka & Anderson, 1998). On a larger scale, it is believed that “instructional

designers are actually engaging in a process of professional and personal transformation that has the potential to transform the institution” (Schwier, 2004, p. 74).

Communities of practice are characterized by negotiation, intimacy, commitment, and engagement (Kowch & Schwier, 1997). They create dialog and achieve intimacy among their members that satisfy personal needs through active engagement (Heckscher, 1994). Intimacy and engagement instigate a level of commitment to the community and this commitment often manifests itself in alignment with values and knowledge (Wenger, 1998).

Changing Field of Instructional Design in Higher Education

Roles of Instructional Designers in Higher Education

Constructivist approaches to learning coupled with advancements in information technology have changed the higher education landscape. These changes have affected the ways instructors teach and engage their students. In a constructivist context, the instructor creates a learning environment that is invigorating, interactive, immersive, and informative (Papert, 1999). The instructor takes on the role of a facilitator who directs learners to an achievable goal. Instructors work with learners in a way that there is an increase in critical thinking skills, and they use instructional technologies as a learning tool. They make practical choices of tools and media that will shape the way learners learn, express themselves, and perform (Drayton, Falk, Stroud, Hobbs, & Hammerman, 2010). In this eclectic environment, the role of the instructor is a significant influencer of learner’s performance (Darling-Hammond & Falk, 1997).

Though an increasing number of institutions employ teams of IDers to support teaching and learning needs on their campuses (OLC, 2018), questions of who the IDers are

and what kinds of roles they assume in higher education institutions raise some uncertainties. Findings of 2016 Intentional Futures report on the role, workflow, and experience of IDers revealed that these professionals tend to hold advanced degrees and have a wide range of work experience (Intentional Futures, 2016). The path into the profession varies and there is no universal profile of an IDer. Moreover, various reports suggest that IDers do more than just designing instruction. A recent report unveiled that most IDers reported four categories of responsibilities: (1) design instructional materials and courses, particularly for digital delivery; (2) manage the efforts of faculty, administration, IT, other IDers, and others to achieve better student learning; (3) train faculty to leverage technology and implement pedagogy effectively; and (4) support faculty when they run into technical or instructional challenges (Intentional Futures, 2016). Finally, Oregon State University's Ecampus Research Unit shed light on a fifth category, which is research, as a significant part of IDers' responsibilities, although often research is not in their official job description (Linder and Dello Stritto, 2017).

Instructional Design and Change Management

Francis (1999) and Campbell et al. (2005), proposed that ID practice is constituted by socially and culturally produced patterns of language, or discourse, with socially transformative power through the positioning of the self in explicit action. In this view, ID is a socially constructed practice rather than a technology to be employed.

Furthermore, in addition to the social implications of ID practices, ID exists within a larger context of social change. It is argued that the process of change is particular to the context in which it occurs – in this case, ID in higher education (Campbell, Schwier, & Kenny, 2005). Change can be episodic or continuous (Weick & Quinn, 1999). Episodic

changes are infrequent and discrete. They typically occur once and are usually contained. On the other hand, continuous changes are ongoing. They oftentimes occur over time and may resonate beyond the system within which the change initially occurred. Though many changes in ID are considered episodic (e.g., changes in an online course), the process and influence of ID are continuous (Campbell, Schwier, & Kenny, 2005).

Independent from being episodic or continuous, most change models fall into two broad categories: planned and unplanned. Planned change is deliberate, and it is normally the outcome of conscious reasoning based on some clear expectations. However, change has unplanned features that introduce desirable or undesirable consequences, and ID similarly embraces tacit, creative, and spontaneous elements that can influence the quality of outcomes. To maximize the benefits of change and avoid unintended consequences, change must be effectively managed, including social negotiation among individuals and groups, and larger transformational changes (Bolman & Deal, 1997). This brings us to the importance and implications of effective knowledge management.

Organizational Change and Knowledge Management

Knowledge management approaches refer to managing intellectual capital, social capital, and other resources in organizations (Sumner, 1999; Takeuchi, 2001) and have direct application to ID (Spector, 2002). The use of knowledge management in this dissertation is to inform our understanding of CoP. It is based on the idea that CoP develop both intellectual (intellectual capital) and social (social capital) resources. CoP are dynamic environments where such knowledge is created and nourished. Since “the production and use of knowledge is deeply entwined with social phenomena” (Erickson & Kellogg, 2002, p.

239), the knowledge of communities develop, and the processes they use to create the knowledge are inseparable (Schwier, Campbell, & Kenny, 2004).

Intellectual capital

Intellectual capital refers to the storehouse of knowledge that resides in a community or organization, and it is made up of explicit and tacit knowledge (Schwier, Campbell, & Kenny, 2004, p. 72). Explicit knowledge is formally articulated, public, shared, and is relatively easy to identify. In ID it includes IDers' knowledge of instructional models, ID principles, instructional theory, and the like. Tacit knowledge, by comparison, is not formally articulated. It is privately held by members of the community and is difficult to articulate yet essential to the community (Schwier, Campbell, & Kenny, 2004, p. 73). In ID, tacit knowledge includes approaches designers have learned by experience or skills they have developed that are not part of the public professional discourse. In some cases, tacit knowledge is held subconsciously – community members may not recognize knowledge they hold as significant. It is possible that IDers have learned a great deal of craft knowledge that is never shared with the larger ID community because it is so deeply held and dynamic, and because there are few organized channels for sharing this kind of knowledge (McInerney, 2002).

Intellectual capital plays the role of an enabler for knowledge management to connect the accessible capital with value creation (Abeysekera, 2021). Hence, one goal of knowledge management is to transform tacit knowledge into explicit knowledge so that it can be shared and used in the larger community (Kulki & Kosenen, 2001; McInerney, 2002; Scwen, Kalman, 1998; Zhu, 2004). Recent studies in the field of knowledge management found out that organizations with high levels of intellectual capital and high use of

knowledge management practices are likely to outperform the organizations with low overall levels of intellectual capital and knowledge management practices (Hussinki, Ritala, Vanhala, & Kianto, 2017).

Social capital

Social capital is defined in various ways, but definitions share common themes. Fukuyama (1999) defines social capital as “an instantiated informal norm that promotes cooperation between two or more individuals”. Cohen and Prusak (2001) define social capital as “a stock of active connections among people”. Fukuyama argues that trust, networks, civil society, and the like that are associated with social capital are the results of social capital but not constituting the social capital itself. “Not just any set of instantiated norms constitutes social capital; they must lead to cooperation in groups and therefore related to traditional virtues like honesty, the keeping the commitments, reliable performance of duties, reciprocity, and the like” (Fukuyama, 1999). Then, the resulting trust, mutual understanding, and shared values and behaviors would bind people as members of human networks and communities (Cohen & Prusak, 2001). Lesser and Storck (2001) stated that CoP serve as engines for the development of social capital and identified four performance outcomes associated with CoP and linked to social capital: connections among practitioners who may or may not be co-located, relationships that build trust and mutual obligation, shared language, and shared context.

Summary

A cultural shift triggered largely by the influence of constructivist learning theory and advancement in communication and information technologies has been happening in higher education for the last three decades. Both factors affected the ways we interact with

and consume information; learn; and the ways we teach. Instructional designers have become crucial players in higher education through the ways they effectively operate within this constantly evolving mechanism. Developing a deeper understanding on (1) how IDers navigate the daily challenges of their work as a group; (2) how do they successfully respond to the changing demands of designing instruction for online learning; and (3) replicate their work and practices in higher education context is not only intriguing but also crucial to effectively and successfully manage the ever-changing demands in higher education.

Chapter 2 provided theoretical basis of this dissertation which can be found in cognitive theory as it aims to excavate the explicit and tacit knowledge of instructional designers employed to design and develop online courses in higher education. After reviewing Piagetian constructivism and Vygotsky's social learning theory, it operationalized a definition for constructivism by coupling both cognitive and sociocultural constructivist theories. According to this definition, "learning is both a process of self-organization and a process of enculturation that occurs while participating in cultural practices, frequently while interacting with others" (Cobb, 2005). In this view, learning is situated in rich contexts, and knowledge is constructed in CoP through social interactions (Schwier, Campbell, & Kenny, 2004). Prior experiences of IDers are "shared, through conversation, negotiation, and construction of new knowledge products" (Schwier, Campbell, & Kenny, 2004). Accordingly, an IDer's practice will reflect their own values and belief structures, understandings, prior experiences, construction of new knowledge through social interaction, and negotiation within their professional CoP. Thus, this study

employs the CoP as a framework to study complex, formal and informal knowledge management, and knowledge construction structures in ID in higher education context.

CHAPTER 3. METHODOLOGY

The purpose of this chapter is to present the research methods employed to examine professional practices employed by instructional designers (IDers) in a higher education context to answer the research questions guiding this study. The aim of this study is to conduct an in-depth exploration on how IDers in an online learning unit within a large research university in the Midwest United States navigate the daily challenges of their work as a group, respond to the changing demands, and replicate their work and practices in a higher education context. Through the lens of professional practice, community of practice, and knowledge management, this study seeks to illuminate (1) the ways IDers interact with subject matter experts (faculty); (2) the roles of IDers in the ID process; and (3) how these roles are affected by the ID process itself.

This chapter is divided into three sections: (1) research context, (2) overview of case study approaches and rationale, and (3) research methods. The first section will start by presenting the research questions and will then describe the research context for this study and provide an overview that will situate this research within that context. Providing rich context is crucial because this is a collective case study. Description of the research context will include the description of the university, the Online Learning Unit (OLU) in which the study was conducted, and an overview of the instructional design tasks that IDers complete within the OLU.

The second section will overview case study approaches and state the rationale for the collective case study methods utilized in this dissertation research. This section will begin with an overview of collective case study approaches and then provide rationale for employing a collective case study to examine the role and professional practices of the

IDers. The study's purpose and research questions guided the exploration and examination of phenomena for this study (Merriam, 1998), rendering methods aimed at generating inductive reasoning and interpretation appropriate rather than testing hypotheses. A case study is the "detailed inquiry of a unit of analysis as a bound system [the case], over time, within its context" (Harrison, Birks, Franklin, & Mills, 2017). Case study methodology was most appropriate for this research because case study design can answer a wide range of questions asking the why, what, and how of an issue and "assist researchers to explore, explain, describe, evaluate, and theorize about complex issues in context. Outcomes can lead to an in-depth understanding of behaviors, processes, practices, and relationships in context" (Harrison, Birks, Franklin, & Mills, 2017). A case study examines a single unit of analysis, and a collective case study examines multiple units of analysis (but still very few) in the same ways. With this in mind, collective case study methods were used to examine how IDers engage in the ID process, how they navigate through their daily practices, and how they work with faculty to create effective online learning environments.

Finally, the third section of this chapter will discuss the collective case study research method and the specific methods employed in this research. The section will start with presenting the data sources for the research and will then discuss the data collection and data analysis procedures.

Research Context

Research Questions

The following research questions guide this dissertation research:

1. What are the attributes of the instructional design process at Online Learning Unit?

2. How do instructional designers at Online Learning Unit describe their roles within the instructional design process?
3. How do roles of the subject matter experts and instructional design process influence the roles of instructional designers?
4. How do the instructional designers at Online Learning Unit build and utilize their community of practice?

Description of the University

This collective case study was conducted within a large research university in the Midwestern United States. The university is located in a suburban town and has a student population of roughly 35,000, about 28,000 of whom are undergraduate students.

The university houses seven colleges: College of Agriculture and Life Sciences, College of Design, College of Engineering, College of Human Sciences, College of Liberal Arts and Sciences, College of Veterinary Medicine, and College of Business. Colleges of Engineering and Liberal Arts and Sciences are the two largest colleges at the university. The university has several university-wide centers and units to support online education, such as offices that provide online education and educational technology assistance, and department and college centers that offer online degrees. This study was conducted in one of these university units offering online degrees called an Online Learning Unit (OLU). The Online Learning Unit was developed and funded by two of the largest colleges, Colleges of Engineering (CoE) and Liberal Arts and Sciences (CLAS), to help faculty from these two colleges design, develop, and teach online courses.

Description of Online Learning Unit

The Online Learning Unit at the university is responsible for online education for CoE and CLAS. Online Learning Unit offers a number of online graduate and undergraduate degree programs and certificates as well as professional development opportunities for learners all around the nation and globe, serving online student enrollments averaging around 10,000 per year. The Online Learning Unit offers 11 engineering Master's degrees, 10 engineering graduate certificate programs, and a Bachelor of Liberal Studies online degree. For these degree and certificate programs, Online Learning Unit offers around 325 online courses from approximately 60 different academic departments each Fall and Spring semester. Online Learning Unit also offers 10 professional development courses catering to working professionals in science, technology, engineering, and math (STEM) fields.

The Online Learning Unit employs 20 fulltime professional staff members and around a dozen parttime undergraduates and graduate students for various subunits. Figure 1 illustrates Online Learning Unit's structure at the time of conducting this dissertation research. As Figure 1 illustrates, Online Learning Unit is headed by Associate Deans in both CoE and CLAS. The Program Director/Operations Manager oversees the four departments, each of which has its own department head and individual service offerings.

As a unit that primarily supports online teaching and learning at the university, OLU provides a variety of services and resources to students and faculty. Student services and resources are grouped under two categories: (1) online learning support, and (2) general support. Online learning support includes assistance in accessing online courses; add/drop/withdrawal; resources and assistance for tuition, fees, and scholarships;

ONLINE LEARNING UNIT

Organizational Chart

2019

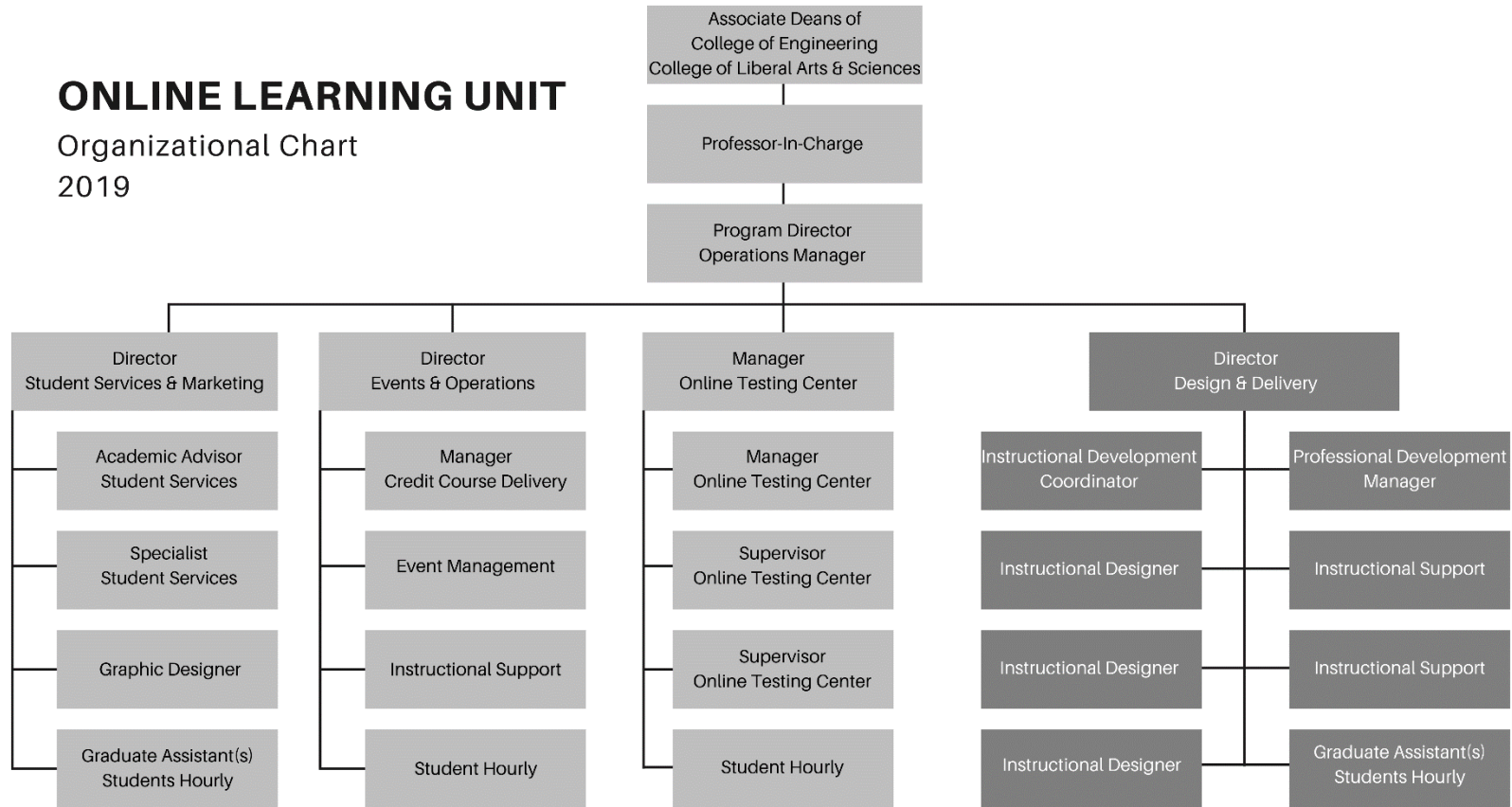


Figure 1. Organizational chart for Online Learning Unit in 2019

proctoring and online testing; and technical support. General support involves student accessibility services, advising, military resources, access to academic success center, and technical assistance.

Faculty services and resources that OLU provides aim to create online courses, develop Master's certificate or degree programs, or improve existing online courses. To serve this purpose, one department of Online Learning Unit offers design and delivery services for the CoE and CLAS, as Figure 1 illustrates. These services include course design consultation and support, course design and development, and course delivery for online and blended courses offered for credit and/or professional development. Such services are grouped under three subunits: (1) design and development; (2) live classroom delivery; and (3) professional development. The design and development subunit focuses on asynchronous and blended credit courses and university projects. The live classroom subunit works on lecture-capture technology courses. And, finally, professional development works on online courses for working professionals.

The Design and Delivery subunit at OLU is constituted by a director, instructional development coordinator, professional development manager, two instructional support staff, three instructional designers, and up to five graduate students. The Design and Delivery director oversees and manages operations for all three subunits. The instructional development coordinator regularly communicates with the instructional designers at OLU and assists the director with day-to-day operations pertaining to the asynchronous and blended courses. The professional development team designs and develops professional development courses, maintains and manages these courses, and builds ongoing partnerships with professional organizations. The professional development manager

usually employs a graduate assistant as an instructional designer, and one of the three fulltime instructional designers consults and collaborates with both the graduate assistant and professional development manager as they design professional development courses. Two instructional support staff oversee live classroom delivery. They typically employ one or two graduate assistants and multiple hourly undergraduate students to capture on-campus class meetings and deliver recordings to online students through a learning management system (LMS). Three instructional designers and, typically, three graduate students who are also employed as instructional designers work on design, development, and maintenance of asynchronous online and blended courses.

Instructional designers at the Online Learning Unit operate in the Design and Development subunit within Design and Delivery services; therefore, informed by the research questions, this research study will focus in that subunit. The remainder of this section will describe the instructional design process that IDers employ at OLU.

Overview of the Services Provided and Instructional Design Tasks at Online Learning Unit

The instructional design process at OLU is informed and shaped by services provided by Design and Delivery subunit; and tasks to be completed. Combined, these factors influence and shape the ID process. Detailed descriptions for these services and tasks will help in understanding the context in which the research study was situated.

Basic services provided by Design and Delivery

The Online Learning Unit's Design and Delivery subunit provides the basic services listed below for credit and professional development courses. Design and Delivery explicitly communicate that these services involve individual faculty (the subject matter expert) collaborating with an OLU instructional designer. Otherwise, faculty support is

limited to technical support. This may occur if the faculty believes they do not need ID assistance, or the faculty is not communicative which inhibits both faculty and IDers from timely faculty assistance. Basic services are:

- Guidance and support for the design and development of online and/or blended courses. This includes working with faculty to:
 - Clarify course objectives and learning outcomes;
 - Align learning outcomes with activities and assessments;
 - Provide feedback on assessing student learning;
 - Identify technologies that enhance student learning;
 - Provide guidance on exam creation and distance student proctoring options.
- Provide information or options for recording and/or hosting videos;
- Provide information on making the course accessible to diverse learners;
- Set up course pages on Learning Management Service (LMS);
- Troubleshoot technical issues in the course;
- Train faculty and/or teaching assistants to manage the day-to-day operations of the course, such as,
 - Update course pages in LMS;
 - Post, manage, and facilitate discussions on the discussion forum;
 - Create and publish quizzes, manage the gradebook and student feedback.

Advanced design services

In addition to basic ID services, Design and Development accepts applications for course development grants for Fall, Spring, and Summer semesters. The Online Learning Unit offers seed funding to create and/or enhance online courses. The funding supports

courses that are approved and/or listed in the university catalog and comes with full instructional design support from OLU. Course development grants come with set of guidelines, as follows:

- Open to faculty and staff only;
- Granted for
 - Development of a new online course (\$3,000 per credit hour)
 - Improvement of an existing online/blended course (\$1,000 per credit hour)
 - Creation of a new blended course (\$2,000 per credit hour)
- Follows university expenditure guidelines;
- Includes assistance from the OLU instructional development and graphic design staff;
- Does not support lecture capture technology;
- The faculty and department commit to offering the course at least twice within a two-year period after development;
- The course must be completely developed and address Quality Matters (QM) guidelines for online course design before it is offered;
- The department, faculty, and OLU sign a Memorandum of Understanding (MoU).

Instructional design tasks for grant courses

Approximately 20 weeks prior to the semester that the course will be offered, OLU's grant committee approves the eligible applications and assigns an IDer to each course development project. The Director of Design and Delivery contacts the faculty and sends them the MoU as well as the contact information of the IDer assigned to the course. Once

the faculty signs the MoU, OLU releases the grant funds and the IDer starts working with the faculty SME to develop the online course.

OLU's IDers provide their ID expertise as per the guidelines established by the QM program on best practices for online course design. Tasks include:

- Meet with the faculty and/or teaching assistant regularly to understand and address the course development needs.
- Develop, in collaboration with the faculty, a timetable for course development.
- Create and design the course page(s) as per the Web Content Accessibility Guidelines 2.0.
- Provide visual design support.
- Ensure course content is uploaded and design is finalized two weeks prior to the start of the course.
- Assist with the creation of accessible online course materials (e.g., training the faculty and/or teaching assistant to record guest lectures and create learning modules, etc.). OLU does not provide complete video creation services (recording and post-production) but can assist in training.
- Assist faculty to create online assessments and research alternative ways of assessing student learning.
- Troubleshoot technical difficulties with faculty, teaching assistant(s) or students enrolled in the course. Questions related to course policies, structure, and content are to be handled by the faculty and/or teaching assistant(s).
- Train the faculty and/or teaching assistant(s) to manage the day-to-day operations of the course such as:

- Update the course pages;
- Post, manage, and facilitate discussions on the discussion forum; and
- Create and publish quizzes, manage the gradebook and student feedback.
- Test course usability, learning outcome-objective alignment, and carry out joint debriefs with faculty after the first offering of the developed course.
- Conduct joint educational research projects with faculty to improve their online/blended course and contribute to the scholarship of teaching and learning.

Such are the responsibilities of the online instructional designer at OLU.

Case Study Approaches and Rationale

Case Study Approaches

Case studies all examine specific phenomena within an individual case, but can take different specific methodological approaches. Choosing the optimal case study methodological approach requires careful consideration of different case study approaches to identify the design that best addresses the aim of the study and aligns with the researcher's worldview (Harrison, Birks, Franklin, & Mills, 2017). The goal of this alignment is to establish coherence between the researcher's philosophical position, their research question, design, and methods to be used in the study (Luck, Jackson, & Usher, 2006; Farquhar, 2012; Stewart, 2014; Yin, 2014).

Case study research methods employed in this study are informed by and aligned with Merriam's (1998; 2009) and Stake's (1995; 2006) work involving constructivism. Merriam (1998) takes a constructivist approach to case study research, where reality is perceived as constructed intersubjectively through meaning and understandings developed socially and experientially. Due to the intent on phenomenon discovery, she

argues that when working on a qualitative case study, methods aimed at generating inductive reasoning and interpretation take priority over testing hypotheses. Cases are selected based on the research purpose and question(s), and what they could reveal about the phenomenon or topic of interest. The aim is to provide rich, holistic descriptions that bring light to one's understanding of the phenomenon examined (1998). Merriam advocates for procedures involving descriptive, thematic and content analysis, and triangulation (1998).

Similarly, Stake's (1995; 2006) approach to case study research is qualitative and aligned with a constructivist and interpretivist orientation. His approach is established by a strong motivation to discover meaning and understanding of experiences in context. In this view, the role of the researcher in producing knowledge is critical and the researcher's interpretive role is essential in the process. An interpretive approach embraces reality as multiple and subjective based on meaning and understanding. Knowledge generated through the research process is relative to the time and the context of the study. In this, the researcher is interactive and participates in the study. From the epistemological point of view, Stake argues that the unique situation shapes activity, experience, and one's interpretation of the case. Understanding the case demands "experiencing the activity of the case as it occurs in its context and in its particular situation" (Stake, 2006, p. 2). A case or collection of cases are selected because they are interesting or they can help in understanding something else – that is, they are instrumental in providing insights on an issue (Stake, 2006).

Stake (1995) underlined the distinction between the intrinsic and the instrumental case study. In the intrinsic case study, "we are interested in [the case], not because by

studying it we learn about other cases or some other general problem, but because we need to learn about that particular case” (1995, p. 3). In instrumental case, we seek to “understand something else” (1995, p. 3) and feel that we may “[gain] insights into the question by studying a particular case” (1995, p. 3). Stake further defined the type of instrumental case study in which the researcher chooses to study several cases, rather than just one, labeling this a collective case study. This dissertation follows a collective instrumental case study design.

Following case selection comes data collection. This research relies on IDers’ narratives as data for analysis. Campbell, Schwier, and Kenny (2006) found that “narrative is not just a powerful tool for learning about the multidimensional relationships that exist in every project, but that the stories of [IDers] and their clients are inseparable from the directions and outcomes of projects” (p. 16). Extracting the narratives IDers use with their clients lends tremendous insight to the role of IDers and how they conduct their work.

Rationale

Aligning with Stake’s (1995; 2006) constructivist and interpretivist orientation, this dissertation work argues that narrative inquiry and the storying of experience are socially and contextually situated in practices. This makes sense within the context of this dissertation based on the research others have done (Murphy & Taylor, 1993; Schwier, Campbell, & Kenny, 2004; Campbell, Schwier, & Kenny, 2005; Campbell, Schwier, & Kenny, 2006) on instructional designers’ experiences. In other words, the study and deep understanding of ID practice is most accessible to us in the forms in which IDers actually *do* design: “through a series of socially-references, scaffolded conversations that reveal how and why design is done and how we can use that understanding to prepare and support

designers to practice in the most agentic, authentic, and profound ways” (Campbell, Schwier, & Kenny, 2006).

This dissertation study uses an instrumental collective case study design to situate an in-depth exploration of university IDers’ navigation through the daily challenges of their work as a group, responding to changing demands successfully, and replicating their work and practices in an online learning unit within a large research university in the Midwestern United States. Through the multi-faceted lens of professional practice, CoP, and knowledge management, this study seeks to identify (1) the ways instructional designers interact with subject matter experts (faculty); (2) the roles of instructional designers in the instructional design process; and (3) how these roles are affected by the instructional design process itself.

Research Methods

Data Sources

This research relied on narrative as an analytical approach. Narrative data was collected through a variety of sources: semi-structured interview with the Director of Design and Delivery, semi-structured interviews with five IDers, focus group session with four IDers, researcher’s field notes from the interviews, and artifacts from the IDers’ work process. The data collection methods were triangulated in this way because field notes, transcripts, and working directly from the audio recordings all have disadvantages and it appears that not a single method stands out as being perfect or better (Tessier, 2012), so amalgamating them seemed optimal for accessing all data. Rather than seeing these methods as substitute, they were treated as complementary methods with each offering a different way of accessing the data (Duranti, 2006). Combining field notes and transcripts

provides a stronger analysis than if only one of the two methods is used because the combination provides both specific details (transcripts) and contextual elements (field notes), resulting in a more complete understanding of the event (interview) (Hamo et al., 2004).

The following section provides rationale for each of these data sources.

Semi-structured interviews

Semi-structured, one-on-one interviews were conducted and recorded with the director of Design and Delivery and five IDers. The purpose of these interviews was to gain insight to the design context, purpose and intent of the work, pressures, and approaches to instructional design within the context of this study. Recordings were transcribed and transcripts analyzed.

Researcher's field notes

Field notes were created to remember and record the behaviors, activities, events, and other features of the interviews, helping construct a fuller picture of the interview milieu.

Focus group

The purpose of the focus group was to prompt the team of IDers to reflect on their own tacit and then explicit knowledge within their local community of practice. The researcher was interested in observing and recording their CoP discussions on their own knowledge transition. See [Appendix P](#) for the focus group questions.

Artifacts

Instructional designers were asked to share any documents, tools, and/or strategies that they employ while working with faculty to design and develop online courses. The

purpose of these artifacts was to aid in providing a more holistic narrative regarding the ID process used by the team of IDers.

Research participants (Sampling)

The Director of Design and Delivery and all 12 IDers at OLU were invited to participate in this collective case study. Seven IDers accepted the invitation. The faculty members that IDers work with were not invited to participate to this research due to the aim and scope of the study. Participants and treatments were approved by the university's Institutional Review Board (IRB) prior to conducting this research ([Appendix A](#)).

Design and Delivery Director, Mae Kelley

Mae Kelley is the Director for Design and Delivery at OLU. She holds a PhD in education, a Master's in German, and a Bachelor's in psychology. Dr. Kelley started working at OLU in 2014. At the time this dissertation study was conducted, she had been working at OLU for five years and was leading all three sub-units under Design and Delivery: (1) design and development; (2) live classroom delivery; and (3) professional development. She leads the instructional design team, support staff, and group of talented graduate assistants (hereinafter *student designers*). She oversees the design, development, and support of over 200 online courses each academic year. Mae and her team also support faculty development of new awareness and skills to teach online effectively. In addition, Mae's duties include leading a small team of instructional support staff to support working professionals with their training needs. She also works with university management to plan programmatic enhancements, introduce efficiencies, and develop new models of online course delivery.

There were two reasons to interview the Director of the Design and Delivery department: first, to gain a deeper understanding of the intended ID process for IDers and faculty to follow in the design and development of online courses. The second reason was to gain insight about how this ID process guides IDers' interactions with faculty and influences their roles through the tasks that each party needs to perform while they design and develop online courses. See [Appendix N](#) for the interview questions.

Instructional designers

Characteristics

Instructional designers at Online Learning Unit are full-time professional staff (hereinafter *full-time professional IDers*) and student designers who are Master's and doctoral graduate assistants (GAs). At the time this research was conducted, there were three full-time professional IDers and three student designers working in the design and development group.

Full-time ID staff members typically work a minimum of 40 hours per week, hold at least one advanced degree in Education, and have practical experience in the field of ID in the higher education context. Some also have teaching experience in K-12 and/or higher education. At the time this study was conducted, all full-time professional IDers at Online Learning Unit held Master's degrees in Education specializing in curriculum and instructional design, one had a graduate certificate in instructional design, and one had teaching experience in K-12 setting.

Graduate assistants typically work up to 20 hours per week as half-time staff members per the university's Graduate College guidelines. Student designers are oftentimes either master's or doctoral students who major in education and specialize in

curriculum and instructional technology. They generally possess a knowledge of adult learning theories and ID models but have limited applied knowledge in the field of distance and online education in the higher education context. At the time this study was conducted, all student designers working in the design and development group had completed at least their first year in their program. Hence, they had taken at least one ID course. One was pursuing her PhD in education and taught at the post-secondary level.

The purpose of interviews with IDers was to gain insights of their ID process during the design and development of online courses. See [Appendix O](#) for the interview questions. Instructional designers were prompted to provide rich descriptions about the details of the ID process outlined by the director, how the ID process influenced IDer's roles, how IDer's role influenced the ID process, and how the ID process shaped IDers' interactions with the faculty. These interviews with IDers also provided a chance for the IDers to describe their role within the ID process.

Instructional designers who participated in this study

A purposeful sampling method was employed to narrow the potential participant list. Instructional designers who worked in the design and development team under direct supervision of the director of Design and Delivery for at least one year between February 2014 and May 2019 were invited to participate in this study. February 2014 was the year that the current director of Design and Delivery was hired to shape and implement the ID process to design and develop online courses and lead the IDers in this process.

Recruitment process

Potential participants for this research study were identified through personal contacts and knowledge. The researcher contacted the Instructional Development

Coordinator to retrieve the full list of the IDers who worked in Online Learning Unit at least one year between February 2014 and May 2019, and under the direct supervision of the Director of Design and Delivery. Once the names were received, the researcher located each current employee's contact information (i.e., emails) through the university's directory which was publicly available information. The researcher already had some eligible past employees' (no longer associated with the university) email addresses through her personal connections, and she used these emails to reach out to them.

Based on the inclusion criteria, the director and 12 IDers were identified as eligible participants for this research study. Instructional designers who worked in Design and Delivery at least one year between February 2014 and May 2019 were invited to participate in an individual interview session. Seven of 12 IDers agreed to participate with this research.

Invitation for research participation

Individual interviews

The researcher contacted all eligible participants and the director via email (see [Appendix E](#) and [Appendix H](#)) to arrange an in-person interview. An informed consent form (see [Appendix B](#) and [Appendix C](#)) was attached to this invitation email to inform participants about the purpose of the study, what was expected of them, and risks and benefits of the study. Five IDers and the director accepted to be interviewed.

Research invitations to 12 IDers were sent; seven responded. Table 1 below provides details regarding each study participant including their professional experiences and educational background. To protect participant privacy, all names mentioned in this document have been changed to pseudonyms.

Table 1. Summary of study participants.

Participant	Description
Amy Henderson	Senior Instructional Designer. Amy is a full-time professional instructional designer. She is the most experienced instructional designer at Online Learning Unit (OLU). Amy has been working at OLU since 2012. She first started as a student designer and then was hired as a full-time professional instructional designer in April 2015. Amy possesses a Master of Science degree in Environmental Science, a Graduate Certificate in Instructional Design, and a Master of Science in Education specializing in curriculum and instructional technology. Prior to joining Online Learning Unit, Amy worked as a research and teaching assistant at the university.
Martha Smith	Instructional Designer. Martha is a full-time professional instructional designer. Martha has been working at OLU since 2017. She first started as a student designer and then was hired into her full-time position in June 2018. Martha possesses a Master of Education degree in higher education, and a Master of Science degree in Education specializing in curriculum an instructional technology. Prior to joining Online Learning Unit, Martha worked as an instructional designer at different units in the university for about four years.
Janice Bailey	Former Student Designer. Janice was a graduate assistance who worked as a student designer at OLU. She started working at OLU as a student designer in July 2017 and held her position until September 2019. Janice possesses a master’s degree in human computer education, and she has been working towards her PhD in Human Computer Education with a minor in Statistics. Prior to joining Online Learning Unit as a student designer, Janice held various teaching positions including in government; at high and middle school levels; and at college level. While working at OLU, Janice was also involved in multiple research projects as a research assistant pertaining to math and science education.
Harry Collins	Former Instructional Designer. Harry was a full-time professional instructional designer at OLU. He was hired in November 2015 and held his position until April 2019. Harry possesses a Master of Arts degree in Teaching Learning and Teacher Education. Prior to joining Online Learning Unit, Harry worked as an English teacher abroad; learning management specialist at a university; and e-learning specialist in a community college.
Lois Brown	Former Student Designer. Lois was a graduate assistant who worked as a student designer at OLU. She started working at OLU in May 2015 and held her position until December 2018. Lois possesses a Master of Education degree in Curriculum Studies and Teacher Development; and has been working towards her PhD in Education with curriculum and instructional technology focus. After leaving her position at OLU, Lois started working as a full-time professional instructional designer in another state.

Table 1. Continued

Participant	Description
Jean Peterson	Instructional Designer. Jean started working at OLU in August 2018. Jean holds a Master of Education degree in Education. Prior to joining Online Learning Unit Jean worked as a math, science, and social studies teacher; and curriculum and technology trainer in K-12 context.
David Johnson	Student Designer. David started working at OLU in June 2018. David possesses a master's degree in Education and has been working towards his PhD in Education specializing in Educational and Instructional Technology.

Data Collection

Time and venue for the interviews and focus group

After receiving confirmation from participants, the researcher asked for a convenient time allocation on participants' calendar to conduct the individual interviews. This communication occurred via email.

Once the date of the interview was determined, researcher booked a quiet and private study room in the university's library on campus for the face-to-face interviews. For those participants who were no longer working at the university, the researcher scheduled a Zoom meeting.

Prior to interview sessions

The researcher sent the semi-structured interview questions as well as a copy of the informed consent form to the participants a couple of days prior to the interview day and time. Researcher's purpose for sending these attachments ahead of time was to provide the participants time to orient themselves to the research, its purpose, and the methods employed. This also provided the participants with an opportunity to formulate and ask any questions they may have about the study prior to and/or at the beginning of the interview session.

During interview sessions

For the face-to-face interviews, the researcher provided printed copies of the informed consent form as well as the semi-structured interview questions to the participant at the beginning of the interview sessions. For virtual interviews, the researcher provided electronic copies of the informed consent for as well as the semi-structured interview questions during the interview sessions.

Prior to the start of the interview sessions, the researcher went through the informed consent form with the participants and made sure that the participants understood the form, and had an opportunity to ask any questions and/or indicate any concerns that they might have had. For the face-to-face sessions this task was performed by going over the printed document together with the participants. For the virtual interviews, this task was performed through the screen-sharing function in Zoom software and going over the document together with the participants. After going over the informed consent form, the researcher asked participants to sign the informed consent form.

The interview sessions lasted between 60 to 90 minutes. The researcher utilized a digital audio recorder for face-to-face interviews and Zoom's screen-recording function (with audio and video) for the virtual interviews, after which the researcher separated the video and audio files and kept only the audio files for the transcription purposes. The video files were then deleted and not stored in any shape or form.

After interview sessions

After the interview sessions, the researcher immediately transferred the audio files to a password-protected desktop computer to securely store collected data. After this transfer, interview recordings were deleted from the digital audio recorder. No data were stored on the audio recorder.

After an individual interview session, the researcher immediately transcribed the audio files, verbatim. Once the transcription of the interview audio was complete, it was sent to the participant for review via email (See [Appendix K](#)). The researcher's aim of sending the transcriptions of the interview audio to the participant was to provide them an opportunity to make any modifications and/or additions to the transcripts to clarify

participant's meaning, further develop the participant's ideas, and hold back any information that participant did not feel comfortable sharing.

Table 2. Alignment between categories of the research questions and research questions in the study.

Categories of Interview Questions	Research Question			
	1	2	3	4
Instructional Design (ID) Process	✓	✗	✓	✓
Roles of Instructional Designers (IDers)	✗	✓	✓	✗
Community of Practice (CoP)	✗	✗	✗	✓

Focus group

After the individual interviews were completed, IDers working at Online Learning Unit at the time this research was conducted were invited to participate in a focus group. Based on this criterion, six IDers were eligible to participate in the focus group. The researcher contacted all six eligible participants via email (see [Appendix L](#)). An informed consent form (see [Appendix D](#)) was attached to this invitation email to inform participants about the purpose of the study, what is expected of them, and risks and benefits of the study. Four of the six agreed to participate in the focus group.

Prior to the session

The focus group session was conducted after the individual interviews with the participants were finalized. When asked during individual interviews, IDers had difficulty in identifying/pointing out their own tacit knowledge. To be able to answer the research question four, posing such questions in a focus group setting could be conducive for a

richer conversation by prompting the team of IDers to reflect on their tacit and then explicit knowledge within their community of practice as a team.

The researcher sent individual emails to the eligible participants with appointment options to find a convenient time for most of the participants. Once a convenient date was determined, the researcher booked a quiet and private group study room in the university's library. An email was sent to them to inform them about the day, time, and venue for the focus group session. A copy of the informed consent form was also attached to this email to provide time for the participants to orient themselves to the research, its purpose, and the methods to be employed. This also provided participants an opportunity to ask any questions that they may have about the study prior and/or at the beginning of the focus group session.

During the session

At the beginning of the session, the researcher went through the focus group protocol with the participants, then provided time and opportunity for participants to ask questions. After answering these questions, the researcher asked participants to sign the informed consent forms prior to the session.

The researcher then informed participants that she will start recording the audio of the session with an audio recorder.

After the session

After the focus group discussion, the researcher transferred the audio files as soon as possible to a password-protected desktop computer to securely store collected data. After this transfer, the focus group recording was deleted from the digital audio recorder. No data were stored on the audio recorder.

The researcher immediately transcribed the audio file, verbatim. Once the transcription of the focus group audio was complete, it was sent to the participants, individually, for review via email. The researcher's aim of sending the transcription of the focus group audio to the participants was to provide them with an opportunity to make any modifications and/or additions to the transcripts to clarify the participant's meaning, further develop the participant's ideas, and hold back any information the participant did not feel comfortable sharing.

Artifacts

During the interview sessions and focus group, participants were asked whether they wanted to share any artifacts (tools, documents, strategies, repositories, etc.) that they employed during the instructional design process. The researcher noted these items in her field notes along with the details that the participants shared regarding these artifacts. The researcher then reminded the participants of these artifacts near the end of the interview session and focus group and asked for a copy of the artifact. If the participants were not able to provide a copy at that point in time, the researcher informed the participants that she will be following-up with an email to receive these artifacts.

If the participants indicated during their interview that they wanted to share artifacts but did not have the opportunity to do so at the moment, the researcher reminded them to share the artifacts that they mentioned during their interview.

Table 3. Participants for respective data collection methods.

Participants	Data Source		
	Interview	Focus Group	Artifacts
Mae Kelley	✓	✗	✓
Amy Henderson	✓	✓	✓
Martha Smith	✓	✓	✓
Janice Bailey	✓	✗	✗
Harry Collins	✓	✗	✗
Lois Brown	✓	✗	✗
Jean Peterson	✗	✓	✗
David Johnson	✗	✓	✗

Researcher's field notes

During the interview sessions and throughout the data collection period, the researcher kept field notes detailing the events that occurred over the course of data collection and analysis portions of the research study. All field notes included date, time, location, and details of the participants. Field note details were not identifiable to others because the research participants were assigned pseudonyms in the notebook. The researcher did not conduct any observations of the participants. The purposes of the field notes were to help the researcher

- make notes of the key points that the participants were talking about so that the researcher could make any necessary adjustments to the upcoming semi-structured interview questions without interrupting the flow of the conversation; and

- remember aspects the participants underlined during the interview sessions during the data analysis process.

First, during the interview, the researcher took notes to record impressions (rather than to record the content of interview). Second, immediately after the interview, the researcher's thoughts were written down to expand on initial field notes taken during the interview. Third, the recording was listened to, and amendments/revisions were made to the field notes accordingly, making sure that these new entries were distinguishable from the initial notes (e.g., by using a different pen).

Data Analysis

Participant-approved interview and focus group transcripts were loaded into NVivo 12 software. The analysis of the data was recursive, dynamic, and flexible and included both within-case and cross case analysis. The data were analyzed in three cycles. The first cycle coding was in vivo coding. This ensured to "honor the participant's voice [...] and capture the meanings inherent in the participant's experience" (Saldaña, 2016, p. 106). The second cycle coding included cross-case coding and was done after all the individual interviews were completed. These codes were then developed into thematic codes with peer checking. The third cycle coding involved re-examining the transcripts through the lenses of these thematic codes and refining the codes.

During this analytical process, the researcher created a list of emergent thematic codes and visualizations of codes in the forms of diagrams and mind maps. The researcher then shared these visualizations and interpretations with two critical friends. A critical friend is one who will "challenge assumptions and the meaning making of researchers" (Herr & Anderson, 2015, p. 140). After external confirmation of accuracy and logic, the

researcher then analyzed the emergent thematic codes to answer the research questions of this study.

The field notes were used in the analysis and provided additional meaning; however, they were not coded. The analysis of notes occurred as the notes were being prepared and while the researcher was still in the interview room. This was important for at least two reasons: (1) This preliminary analysis fostered self-reflection, and self-reflection is crucial for understanding and meaning making; and (2) preliminary analysis revealed emergent themes. Identifying emergent themes while still in the field allowed the researcher to shift her questions and prompts in ways that fostered a more developed investigation of emerging themes.

Validation Criteria Procedures

Credibility

Credibility criterion in qualitative research is identified as reciprocal to the internal validity criterion in quantitative research (Guba & Lincoln, 1989). It establishes “the match between the constructed realities of respondents (or stakeholders) and those realities as represented by the evaluator and attributed to various stakeholders” (Guba & Lincoln, 1989, p. 237).

Peer debriefing

The purpose of peer debriefing is to engage in an extended and extensive discussion with a research peer about a researcher’s findings, conclusions, tentative analyses, and, occasionally, field stresses to *test them out* with someone who has no contractual interest in the situation and also helping to make propositional that tacit and implicit information the researcher may possess (Guba & Lincoln, 1989). For this research study, the

researcher conducted peer debriefing with two critical colleagues who work in the field of instructional design.

Member checks

Member checks are opportunities for respondents to check the accuracy of their contributions. A member check occurred with the Director and individual IDers right after the semi-structured interviews were conducted. After the interview session was over, audio file was transcribed verbatim. Once the transcription of the interview audio was complete, the transcription was sent to the participant for review via email. Participants were provided an opportunity to review the interview transcript and make any modifications and/or additions to the transcript to clarify their meaning, further develop their ideas, and hold back any information that they do not feel comfortable sharing. Follow-up conversations were held via email to clarify and elaborate meaning.

Transferability

Transferability can be thought of as “parallel to external validity or generalizability” (Guba and Lincoln 1989, p. 241) and is “always relative and depends entirely on the degree to which salient conditions overlap or match” (p. 241). In the constructivist point of view, the “burden of proof for claimed transferability is on the *receiver*” (p. 241).

Providing thick descriptions is the “major technique for establishing the degree of transferability” in qualitative research (Guba & Lincoln, 1989, p. 241). “To thickly describe social action is actually to begin to interpret it by recording the circumstances, meanings, intentions, strategies, motivations, and so on that characterize a particular episode. It is this interpretive characteristic of description rather than detail per se that makes it thick” (Schwandt, 2001, p. 255).

The semi-structured interview questions both for the individual interviews as well as focus group provided ample opportunities to pose probing/follow-up questions seeking to elicit the types of information and perception needed for thick description.

Institutional Review Board Approval

In all research, especially with human participants, a researcher must comply with the highest ethical standards. Principles of “informed consent, avoidance of deception, avoidance of harm or risk, treating others always as ends and never as means, and no breaches of promise or confidence” (Schwandt, 2001, p. 74) must be firmly obtained and sustained. In this dissertation, such ethical standards were achieved through institutional review, informed consent forms, and confidentiality. Once the dissertation committee approved research proposal, it was submitted to Institutional Review Board (IRB) for approval (see [Appendix A](#)). Further, the researcher of this study as part of their studies, completed online course in ethical research, ensuring awareness and understanding of the expectations regarding appropriate research with human participants.

CHAPTER 4. FINDINGS

The purpose of this chapter is to present the findings from the research study conducted to investigate how IDers navigate the daily challenges of their work as a group; how do they successfully respond to the changing demands of designing instruction for online learning; and replicate their work and practices in higher education context. Through the lenses of professional practice, community of practice (CoP), and knowledge management, this study examined (1) the ways instructional designers (IDers) interact with faculty; (2) the roles of IDers in the instructional design (ID) process; and (3) how these roles are affected by the ID process itself. Rest of this chapter is organized in four sections, each section answering one research question.

First section answers research question one – what are the attributes of the instructional design process at Online Learning Unit? Instructional design process is characterized by the participants of this study as iterative, collaborative, and continuously reflective partnership. To answer this question, section one first outlines the applied ID model at OLU, then explains the ID framework used, and examines the ID process.

Second section answers research question two – how do instructional designers at Online Learning Unit describe their roles within the instructional design process? Instructional designers describe their roles as dynamic, influenced by various factors during the ID process. Common roles that IDers assume are collaborator, mentor, partner, technical support. Section two provides detail explanations of these IDer roles.

Third section answers research question three – how do roles of the faculty and instructional design process influence the roles of instructional designers? Findings showed that there are three main factors influencing IDers' roles at OLU. These are time

and time management; prior experiences of faculty; and needs of courses. Section three describes each of these factors in detail.

Finally, fourth section answers research question four – How do the instructional designers at Online Learning Unit build and utilize community of practice? Instructional designers at OLU build their CoPs in two ways. First, together with faculty, IDers and faculty build a CoP through the ID process. Second, IDers build a CoP among each other at OLU with the help of their ongoing, weekly IDers' meetings; impromptu conversations pertaining ID topics; and space that bring them together. Findings for question four also illuminated that IDers at OLU participate in ID related conversations at local, national, and international level in varying capacities.

Research Question 1: What are the attributes of the instructional design process at Online Learning Unit?

The data from the interviews as well as the artifacts indicated that ID process followed at OLU is characterized as iterative, collaborative, continuously reflective partnership. These characteristics manifest themselves when IDers employ the ID model within OLU's ID framework as they work with faculty to design and develop online courses. Instructional design model applied in OLU is the revised Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model (Allen, 2006). Instructional design framework, on the other hand, provides a form around the ID model via certain fundamental tasks that each IDer is expected to accomplish throughout the phases in ADDIE model. Combined and put into a timeline that expands over multiple academic semesters, both ID model and ID framework construct the ID process for the IDers at OLU.

Rest of this section is organized in three parts: (1) applied instructional design model, (2) instructional design framework, and (3) instructional design process. First part

will outline different phases of the applied ID model at OLU. Second part will provide details about the fundamental tasks that IDers complete during the ID process. And finally, third part will bring both ID model and ID framework together on a timeline to explain the ID process. Each part will also provide detailed explanations on the iterative, collaborative, continuously reflective partnership characteristics of the ID process.

Applied Instructional Design Model

Instructional designers at OLU employ a revised ADDIE model (Allen, 2006). Figure 2 shows OLU's ID model. Process for OLU's ADDIE model starts with *Analysis Phase*; continues to *Design and Development*; and followed by *Evaluation and Feedback Phases*. Note that this Figure 2 was taken from one of the artifacts that research participants provided to the researcher. Instructional designers at Online Learning Unit included this figure in many conference presentations and conference proceedings. However, the researcher of this study intentionally chose to not to cite those resources to protect the privacy of the research participants in this study.

Quality assurance for the instruction and developed online learning environment is the centerpiece of this ADDIE model. This is obtained in two ways: First, through following best practices for ID; and nationally and internationally recognized *Quality Guidelines* such as Quality Matters (QM) Standards (Standards from the Quality Matters Higher Education Rubric, Sixth Edition). Second, implementing *Continuous Evaluation* tools (e.g., student surveys, faculty debrief) and strategies (e.g., ongoing conversations with faculty) throughout the ID process. Figure 2 shows that implementation phase is intentionally left out of the OLU's applied ADDIE model because IDers do not take part in the implementation of the instruction and facilitation of the online learning environment.



Figure 2. Online Learning Unit applied instructional design model.

The OLU applied ADDIE model consists of five elements. To address the research question, a description of how OLU's ADDIE model is utilized is presented. Specifically, a description of what IDers do in each phase of the OLU ID model is provided.

Analysis phase

Analysis Phase carries the iterative and collaborative attributes of ID process. In the *Analysis Phase* IDer aims to gain a holistic understanding about the course and the context in which it will operate. IDer conducts a front-end analysis through the examination of all available documents (e.g., as faculty's grant application; a draft of the course syllabus; and faculty's plan for how they intend to spend available grant funding) and their conversations with faculty. Instructional designer engages in various iterative dialogue with faculty to learn more about learning objectives of the course; expected audience; pre-requisites;

faculty's plan for teaching the course in an online learning environment; their teaching experiences; and their comfort level in working with instructional technologies while teaching their courses.

Examination of these preliminary documents as well as their initial conversations with faculty help IDer and faculty make critical decisions collaboratively on how to develop the online course that can help fulfill different learning needs of students and achieve the intended learning objectives for the course.

Design phase

Design Phase illustrates the iterative, collaborative, and continuously reflective partnership attributes of the ID process in two ways: (1) alignment exercise; and (2) creation of the visual identity for the course.

In *Design Phase* IDer begins working with faculty to create a plan for the course development, utilizing varying tools and processes. One of these is Statement of Work (SoW) that helps them facilitate the conversation regarding to the alignment of different components in the course ([Appendix R](#)). With the help of this tool, IDers collaborate with faculty to clearly and in a measurable way, state the learning objectives. Second, once the learning objectives are stated, they then work with faculty to identify the best methodologies to assess students' competencies based on the identified learning objectives. Third, depending on the identified assessments strategies, IDer and faculty then plan for the resources of the course content. At the end, these three components of the course are aligned with each other to help students to develop necessary competencies and achieve course learning objectives.

In addition to working with faculty with the help of SoW, IDer also creates a visual identity for the online course during the design phase. They work with an OLU graphic designer to create a course banner, thumbnails that will accompany the major topics, etc, to create a clear visual guidance. Once IDer has these visuals and a clear idea for the course structure, they create a prototype module on university's LMS. Collaboratively, faculty and IDer decide whether any modifications are needed. Instructional designer finalizes these. This prototype module then becomes the template for all other learning modules' structure.

Development phase

Iterative, collaborative, and continuously reflective attributes of the ID process can be observed in the *Development Phase* in two ways: IDers and faculty (1) work on creating instructional and assessment strategies; and (2) they work with the OLU graphic designer to develop a visual identity for the course.

In the *Development Phase*, IDer assists faculty to create the identified assessments and learning activities. If the faculty and IDer agreed on creating faculty's own multimedia resources for instructional materials, IDer guides faculty in creating effective multimedia resources based on online teaching and learning best practices; Quality Matters (QM) Standards for Online Teaching; Universal Design for Learning (UDL); and compliant with American Disability Act (ADA).

The OLU graphic designer also plays important role in the *Development Phase* to improve the look and feel of course pages in the LMS. A visual identity for the course greatly helps orient students in the course. Graphic designer also works to improve navigation and usability through unique visuals. The visuals on the course pages help IDers

to create a hierarchy for different learning modules and/or topics and this helps in navigation by breaking up the user interface.

Evaluation phase

At the *Evaluation Phase*, iterative, collaborative, and continuously reflective attributes manifest themselves through continuously formative and summative evaluations of the *Development* and *Implementation* Phases that feed into the next course offering.

Instructional designers at OLU conduct evaluation throughout the ID process. For each item that goes into the course page in the LMS the IDer conducts an internal evaluation to examine whether it adheres to the QM Standards for Online Teaching; whether the principles of UDL were followed; and whether it is compliant with ADA. If not, IDer and the faculty revise and modify the item accordingly. This formative evaluation is applied iteratively and continuously throughout the ID process.

Instructional designer also helps faculty to conduct summative evaluations for the course. Over the years, IDers and the director created two surveys for the online courses that are offered through OLU. These surveys are linked in the course. One of them is sent to the students at the beginning of the semester and the other one is sent to them towards the end. The goal of these surveys is to learn about students' perceptions regarding to the course; their experiences during the semester; and aspects that the faculty may improve. Instructional designers collect these data points, analyze, and share them with the faculty along with their suggestions and guidance for improvements.

Third aspect of the evaluation phase is the faculty debrief session that happens after the semester is over. Instructional designer meets with the faculty. Over the years, IDers came up with set of questions that would guide their conversations during these debrief

sessions. Through these guided questions, IDer and faculty identify points of improvement for the next course offering and note them down. Their notes from the debrief and student surveys constitute the basis for *Analysis Phase* for the next course offering.

Instructional Design Framework

Instructional design framework at the OLU consists of applied ADDIE model, and the six fundamental ID tasks that each IDer is asked to accomplish as they work on a grant course. Previous section outlined the applied ADDIE model at OLU. This section will describe in detail the six fundamental ID tasks to paint the complete picture for the ID framework.

1. Initial meeting setup

When IDers know which faculty they will be working with they set up an initial meeting. This initial meeting has three goals: (1) review the signed MoU; (2) set up regular meetings; and (3) learn more about the course and faculty. Review of the signed MoU helps both IDer and the faculty to be on the same page.

Second, IDers also take advantage of their initial meeting with faculty by setting up a time to meet periodically. They also talk about means of communication outside regular meetings, and determine the technologies that will enable them to collaborate (e.g., email, shared folder, phone calls, Zoom or Skype meetings, etc.).

Many faculty who come to OLU for assistance have little to no experience creating and operating an online learning environment, or working with an IDer. IDers utilize their initial meeting to ask as many questions as possible and let the faculty talk about their teaching experiences, what they are envisioning for their online course, how comfortable they feel utilizing some of the commonly used instructional technologies at the university.

FUNDAMENTAL INSTRUCTIONAL DESIGN TASKS

for Instructional Designers at Online Learning Unit

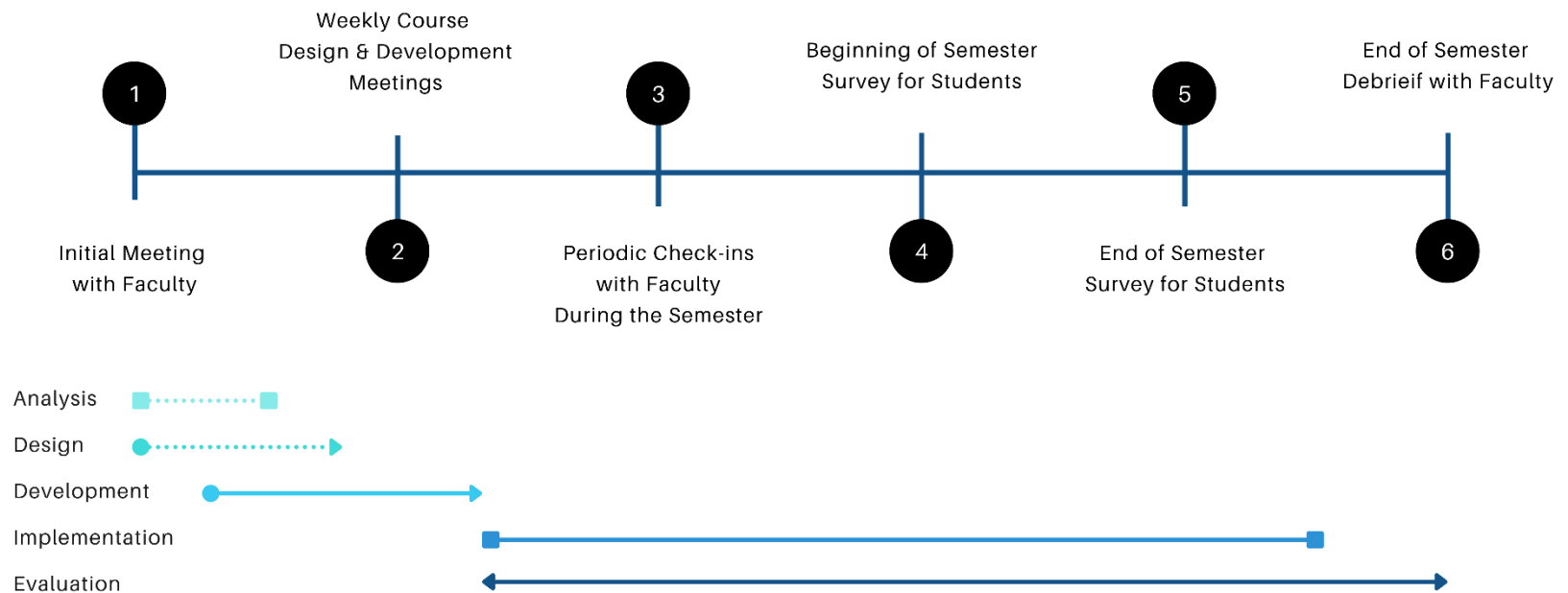


Figure 3. Fundamental instructional design tasks for instructional designers at Online Learning Unit.

2. Weekly course design and development meetings

Communication through design and development meetings are the backbone of iterative, collaborative, continuously reflective ID process. During the next 16 to 20 weeks following initial meeting many IDers and faculty meet weekly. These meetings continue through the *Design* and *Development* phases, until the Implementation phase; beginning of the semester. They discuss different strategies on how to assess student-learning. Between weekly meetings, IDers create multiple prototypes via different tools – both university-supported (e.g., LMS) and third-party software (e.g., VoiceThread, mind mapping tools, case study builders, etc.). Instructional designers then take these prototypes to their meetings to demonstrate and explore them together. Once both parties reach to an agreement, course development begins. During the final meeting, IDer provides suggestions, recommendations, and reminders about teaching strategies; building and maintaining engagement with as well as among learners; making learning modules available in a timely manner; communicating about proctored exam preparations (if/when applicable); dates the surveys that will go out, etc.

3. Periodic check-ins with faculty during the semester

Instructional designers keep in touch with faculty throughout the semester, remind faculty about best practices in teaching an online course such as strategies to utilize announcements in the course to guide students learning; discussion boards to help students communicate with each other as well as with the faculty and ways this could reduce faculty's time allocation in responding emails with the same questions, etc. Instructional designers also send emails to the faculty to remind them about upcoming survey dates.

4 & 5. Beginning and end of semester student surveys

Online Learning Unit collects data about students' perceptions and experiences in the online courses that their IDers help designing and developing. Instructional designers analyze these data points and share with faculty. Once they share the data with faculty, they also share such improvement strategies with them.

6. End of semester debrief with faculty

Depending on the semester and whether the faculty will be teaching second time in the upcoming semester, at the end of the semester or shortly after, IDer gets in touch with faculty for a debrief about their experiences teaching the online course for the first time.

Tasks included in instructional design process but not part of instructional design tasks

These tasks are (a) grant application submission; (b) grant application review and selection of courses; and (c) ongoing weekly group meetings for instructional designers. These points are identified and shown in the timeline in Figure 4.

A. Grant application submission

Faculty of Colleges of Engineering and Liberals Arts and Sciences are eligible to apply for grants to improve their existing online courses or to develop new ones. Online Learning Unit accepts new grant applications every Fall, Spring, and, occasionally, Summer.

When applying for a new course development or a course improvement grant, faculty are asked to (1) submit answers to a questionnaire; (2) fill out a budget spreadsheet; (3) attach a syllabus; and (4) attach a letter of support signed by the department or program chair.

B. Grant application review and selection of courses

Online Learning Unit reviews grant applications within two weeks. If approved, Instructional Development Coordinator and the Director draft a memorandum of understanding (MoU) to be signed by the OLU, faculty who applied for the grant, and the department that the faculty is associated with. This MoU lists (1) the services that OLU will provide to the faculty and the department; (2) the expectations from the faculty; (3) expectations from the department; (4) conditions for the use of grant funds; and (5) the way to acknowledge the contributions of Online Learning Unit and IDer to design and develop the course for the possible publications.

Applications accepted in Fall are for the upcoming Spring or Summer semesters, whereas Spring applications are for the upcoming Fall semester. Once the MoU is signed, OLU typically releases the funds to the department, to be used by the faculty within one year. Online Learning Unit also assigns an IDer to each course.

C. Ongoing weekly group meetings for instructional designers

Ongoing weekly group meetings are the primary activity that helps IDers build the CoP and benefit from it. Instructional Design and Delivery group meets every week for 60-90 minutes. This meeting includes IDers, Instructional Development Coordinator, Coordinator for Professional Development, Instructional Support Staff, and Online Testing Center Staff, on a need basis. Director along with Instructional Development Coordinator set the agenda to facilitate the conversation. The group typically talks about ongoing and upcoming course design and development projects; innovative teaching strategies; examples from current courses that utilize a new tool or a new teaching strategy; data from

the student surveys; upcoming conferences in the field; ongoing research projects; upcoming conference presentations, etc.

Instructional Design Process

Instructional design process for OLU includes the applied ADDIE model at OLU, fundamental ID tasks that IDers are asked to complete; and the timeline for all of these events. Previous sections in this chapter provided details regarding to the applied ADDIE model as well as the fundamental ID tasks. This section will focus on the timeline of events to give a holistic picture for the ID process.

Timeline

Instructional designers at OLU follow a common ID model and set of fundamental tasks to complete at each phase while designing and developing online courses. Instructional design model provides IDers a path to follow and frame their ID work. Each course development project brings unique needs and challenges, and hence each faculty follows a slightly different path and timeline to get to the finish line. Thus, IDers may find themselves completing certain steps that are common across course development projects such as establishing alignment between course objectives and other components of the course; conceptualizing effective assessment strategies that measure students' competencies for the identified course objectives; exploring different instructional technologies with faculty etc. However, the ways conversations to be held, tasks to be completed, and timeline can differ from one course development project to the other; and IDers build, observe, and maintain specific, steady workflow unique to each project that will guide faculty throughout the ID process.

INSTRUCTIONAL DESIGN PROCESS

for Grant Courses at Online Learning Unit

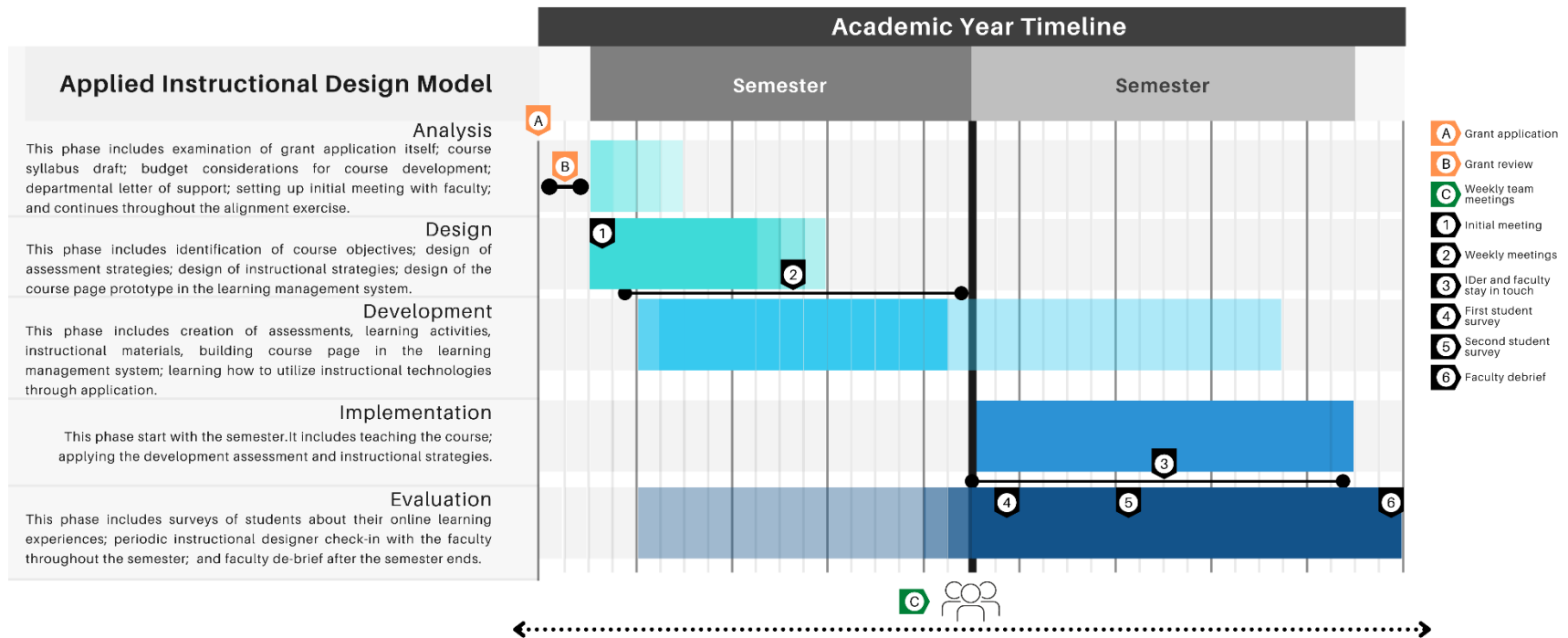


Figure 4. Instructional design process for grant courses at Online Learning Unit

Conversations with faculty

Conversations with the faculty speaks to the attributes of iterative, collaborative and continuously reflective partnership nature of the ID process. Instructional designers find themselves anchoring their conversations with faculty to the preliminary goals and characteristics identified during their first three meetings throughout the ID process. They craft their conversations and course design and development elements towards helping faculty achieving identified goals for the course.

Online Learning Unit also invests in faculty's professional learning and development and would like all grant faculty who go through the ID process to be knowledgeable and experienced to be able to operate independent from OLU when it comes to online teaching and learning. To serve this purpose, IDers not only help faculty to design and develop online courses but also converse about the reasoning behind the application and reflect on it on a regular basis. For instance, during the design phase, when they work on the alignment for the course, IDers explain the Backward Design principles and Bloom's Taxonomy to guide the process of writing measurable objectives for the course. Similarly, in the development phase, IDers not only provide examples on how to create assessments, learning activities, and content; and help faculty to create these; but also converse about the important considerations when it comes to building a balanced approach between teaching, social, and cognitive presence to create an effective teaching and learning experience in the course.

Majority of these conversations occur during faculty and IDer's weekly meetings in the design and development phases. Although IDers provide strategies for the implementation phase, conversations are usually focused on the design and development

tasks. Early semester conversations with faculty as they relate to teaching their online courses, also help them build connections between what IDers and faculty did to develop the online course, and how those elements translate into teaching the online course.

Project management

Instructional designers at OLU follow ADDIE (Apply, Design, Develop, Implement, and Evaluate) model and practice an iterative process while designing and developing online courses. After designing the course, instructor and the IDer may decide to try different assessment techniques, instructional strategies, and/or instructional technologies to examine which one(s) would best help students achieve the course objectives. If and when something does not serve well to this goal, it is likely that they will go back to the drawing board and then try to find a better solution.

In between these weekly meetings, IDers effectively organize information; keep track of their conversations with faculty and decisions made; conduct research; gather resources; design prototypes for the assessment and instructional strategies; and develop a course structure using the university's learning management system based on ID and universal design for learning (UDL) best practices.

Conversations with instructional designers

Instructional designers at OLU meet as a team on a weekly basis. The goal of these meetings is to provide updates on ongoing course development projects; share any challenges, and ask for feedback or advice; and share innovative or new practices with one another.

Relationship between an instructional designer and faculty

The relationship between faculty and IDer starts with a signed MoU. It is a contractual relationship that turns into collaboration through dialogue. In some cases, depending on faculty's level of commitment, it can also be characterized as partnership. At the Online Learning Unit, IDers are expected to develop soft skills that will help them gauge where the faculty is, meet them there, and adjust their guidance accordingly to assist faculty in designing and developing their online courses. Depending on these parameters, each faculty that an IDer works with can be at different stages in the ID process; and an IDer can operate at different levels for each online course that they design. For instance, a faculty who is not familiar with the instructional technologies that will help them record videos to deliver their course content may spend more time learning and getting comfortable with using the technology. On the other hand, a faculty who is putting curriculum together for a -new course may spend a great deal of time conceptualizing. These variables influence (1) the roles of IDers; (2) breadth and depth of the guidance they will provide to faculty depending on their needs; (3) the amount of time they need to allocate to complete course design and development tasks.

This iterative instructional design process is first shaped by the instructional design model that the IDers at OLU follow. Instructional designers then customize the ID process based on their assessments of multiple factors such as identified competencies of the course; needs of the online students; and skills and experiences of faculty. Identification of each of these factors happen through continuous dialogue between an IDer and faculty which is facilitated by the ID model and ID process itself. Collaboration happens as the goal

of the Design and Delivery sub-unit is to help faculty to become self-sufficient online instructors.

Research Question 2: How do instructional designers at Online Learning Unit describe their roles within the instructional design process?

Analysis of the semi-structured interviews conducted with instructional designers was not only helpful in identifying the different roles that IDers assume within the ID process, but analysis also shed light on the challenges that they face on a regular basis associated with their roles. Below, Nvivo 12 mind map output shows these varying roles and associated challenges.

Roles of Instructional Designers

Participants of this study indicated that their roles change depending on the course and faculty that they work with. Though IDers see their roles changing depending on the course, common themes emerged across individual interviews with IDers.

Collaborator

Instructional designers at OLU characterized their relationship with faculty as a collaboration. This collaborative relationship is established based on trust and mutual understanding of both parties' varying levels of expertise in subject matter and ID. Lois talked about the importance of building trust as it enables them to build a strong relationship with faculty.

I think [...] to make a collaboration effective, [...] the sense of trust is really important. [...] [O]nce we have this kind of [...] a strong relationship and have a sense of trust, it just makes things easier as we move forward. Because the faculty will feel comfortable talking to me or complain about anything and even sometimes

share their personal stories, so that will just, make our relationship connection much stronger. And I know what is the best way to contact or talk to this faculty [...] so that I could just adjust my communication way, based on their preference.

(individual interview, August 16, 2019)

All participants in this study reflected on the importance of the first couple of meetings with faculty in building the necessary sense of trust between themselves and faculty through their dialogue.

Instructional designers pointed out that it is very likely for them to work with a faculty for many years. Their work may focus on maintaining an already developed online course; improving an existing online course; or designing and developing a new online course. Whatever the case may be, as their long-lasting collaboration continues, IDers' collaborator role fuels the process of guiding faculty to improve their technical skills, knowledge, and experiences in online teaching and learning over the years.

Through this strong and long-lasting collaborator role that they assume, IDers can also build effective scaffolding on varying topics for faculty throughout the course of *Design and Development Phases* to help faculty become more 'self-sustainable'. With the help of attentive listening and caring, IDers and faculty, collaboratively, can identify the strengths of faculty and walk them through to utilize and transfer these strengths to an online teaching and learning environment.

Director's vision of faculty becoming independent from OLU's assistance after going through the intended ID process, found its echoing voice in IDers' reflections on their collaborator role. Instructional designers also acknowledged that this collaborative relationships between themselves and faculty is delicately crafted one that takes time and

patience. However, the time pressure imposed by the short course design and development time may negatively affect it and cause unintended consequences.

I think [...] [giving] faculty more hands on experience, [...] make[s] them more self-sustainable in the future. So once the faculty build the confidence and feel comfortable with building [...] for the future semester, usually they will not require a lot of assistance from us [instructional designers] and they will be more likely they can just take care of their courses on their own. [...] But if for in some cases the faculty don't have time or not willing to kind of build courses on their own, that was put more pressure on me not only for this semester but also in the future as well. [...] [A]s we're moving forward to the next semester or next year and they still don't know and they just panic about this and they want you to help them out again. I think in that way it's also kind of alter their perception about the instructional designer and they feels like 'you are supposed to be helping me to build everything'. And that was part of your [instructional designer] job. I think that was become a negative cycle, once we did that once and then that means we have to do that forever. (L. Brown, individual interview, August 16, 2019)

Instructional designers characterized sustaining a strong collaborator role in their relationships with faculty as an enabler for creativity during the *Design and Development Phases* as well. They specifically talked about how their collaborator role afforded them to be more assertive with their thought provoking questions when it comes to be a sounding board for faculty while re-thinking about their course content delivery, assessments, engagement with their students in an online learning and teaching environment.

Mentor (or Coach or Motivator)

Acting as a mentor (or a coach) is another role for the IDers at OLU. This is especially true when it comes to working with instructional technologies. As they work with faculty to prepare them to teach online courses, IDers create opportunities for faculty where they can gain hands-on experiences with the instructional technologies that faculty will be using during the semester and beyond. Instructional designers indicated that creating such opportunities would usually involve them creating a prototype of a learning unit/module for the faculty based on their conversations and decisions until that point in the ID process. Then, faculty and IDer come together to look at the prototype unit/module together and discuss about the individual elements involved. Once prototype unit/module is finalized, IDer walks faculty through how to replicate this prototype design for the rest of the course unit/modules in the course. Having such hands-on experience prepare faculty for the semester and beyond where they can sustain their own online courses. It also frees up IDers' time for the new course design and development projects to come.

Instructional designers talked about their experiences on how they organically build scaffolding as they work with faculty during the development process to guide and support them in learning necessary instructional technologies for their online courses. Instructional designers particularly identified positive effects of the relationship that faculty and IDers build based on mutual understanding and trust. Such relationship enables IDers to customize the learning process for faculty based on their technical skills and knowledge.

Instructional designers further articulated how asking right questions and listening and learning about faculty's prior teaching experiences as they build their relationship up,

helps IDers to help faculty creating more effective learning environments through sustainable teaching practices.

Partner

Instructional designers who participated in this study talked about partnering with faculty during the ID process. However, they did not make a distinction between being a partner and collaborator. Though IDers didn't utilize the word 'partnership' to define their role with faculty, Mae provided an explanation on the meaning of partnership as OLU defines it.

You can cooperate with somebody, but you necessarily don't have to be partner with that [person]. [...] [Y]ou have those same goals and the goal, you share that goal of building a successful course. Cooperation is an act, and partnership is a state of being. So it's more a promise that you will work with this person to achieve a certain end, or a certain goal. It's more of a contract because cooperation is an action where you work with somebody. I could cooperate with you to do something. But we are not necessarily partners. So there is nothing further than that. It's not an agreement. So this is a partnership. [...] And that requires cooperation. Without cooperation, you cannot do it. (M. Kelley, individual interview, August 9, 2019)

Technical support

All the participants for this study identified technical support as being one of the roles that they assume. They acknowledged that the lines blur between utilizing instructional technologies to develop online courses; helping faculty learn such technologies; and supporting faculty while they are actively employing such technologies in

teaching online courses. However, participants underlined the fact that being a technical support is not one of their job responsibilities nor one of the roles that they are asked to play within this ID process. Instructional designers talked about how they find themselves at some point during the process to firmly identify and describe their role to faculty that would separate them from teaching assistants and/or technical support personnel at the university. They utilize varying strategies to achieve this. Some of the IDers try to help faculty to distinguish their services from information technology services provided by the university.

I [...] try to clarify with the faculty via email or during the in person meeting [...] [to] help them understand that my role is supposed to [...] provide [...] consultation on your pedagogy, material and course design. [...] [I let faculty know] we [OLU] do have some technical support, [...] [if you have technical] issue you can just talk to the IT or submit a ticket to the IT office. (L. Brown, individual interview, August 16, 2019)

Others prefer to share their existing workload with faculty and provide alternative solutions that will help them. Harry tells faculty that

I have eight other grant courses, and other [projects] going on. I don't have time to take care of these minor details for you every week. So, you or a TA need to learn to do it on your own.' I'd say that. I still wouldn't say, 'I'm not your TA,' but I just point out that I have a workload as well, I know they might be teaching so many classes in the semester, but we're [instructional designers/OLU] not here just for [one faculty]. (H. Collins, individual interview, August 15, 2019)

According to the IDers, there are two sources why they become technical support point. The first one of these reasons is that faculty often times do not have a clear understanding of IDers' roles and responsibilities. When this happens, faculty may see IDers as technical support.

[...] I feel my collaboration with SME [...] really depends on the dynamic or [inaudible] side of the faculty. [...] for those faculty [who] have a clear understanding what is my role[,] [...] then we have a lot of more deep conversation about their material and the online pedagogy, how we can structure the course. Well, for other faculty, they regarded ... they kind of treated me more like a technical support [...] mostly talking about how we can build courses in Blackboard or Canvas or how we can troubleshoot those technical issues. So I feel my collaboration with SME's really depends on the dynamic between us [faculty and instructional designer] and also most of the time I think related to the [inaudible] side of the faculty. (L. Brown, individual interview, August 16, 2019)

Second, IDers identified OLU's lack of drawing solid lines between services provided by the university and their own services as the second contributing reason to their presumed technical support role. Faculty assuming that being a technical support is IDers' role, they may start forwarding student questions to IDers, or expect IDers to that would push IDers to become point of contact for customer service.

Research Question 3: How do roles of the faculty and instructional design process influence the roles of instructional designers?

Roles of IDers within OLU's ID process is fluid and they can show differences depending on various factors. Amy characterized their role as dynamic and

chang[ing] with the kind of course I'm dealing, with the kind of person I'm [working] with. [...] So [...] we [instructional designers] have to adapt and be flexible at all points. From a very by the book definition of instructional designer, where we are just [consultants] (A. Henderson, individual interview, August 29, 2019)

Faculty are expected to work with IDers as partners and in cooperation during this ID process. As partners, IDers and faculty share the same “goal of building a successful [online] course” (Mae Kelley). Previous section of this chapter outlined the different roles IDers assume during the ID process. These are collaborator, mentor, partner, and technical support. Approaching from the partnership point of view, complementary to the assumed IDer roles, faculty’s roles as subject matter experts are content creator, partner, and collaborator.

Certain aspects of both ID process and the roles of the faculty influence the role of IDers. These aspects are time and time management; needs of the course; and faculty’s experiences (teaching, technology, building course content).

Time and Time Management

Faculty’s time commitment

For the partnership between IDers and faculty to work, faculty are expected to make time to collaborate with IDers on the design and delivery tasks for their online courses. Typically, after the grant approval and until the first day of the semester, IDers and faculty have about 16 weeks to design and develop the course for its first offering. Thus, the expectation is that “[faculty] make time for this because without them making time, the designer really cannot do much” (M. Kelley, individual interview, August 9, 2019). Amy, a

INFLUENCING FACTORS

for the Roles of Instructional Designers at Online Learning Unit

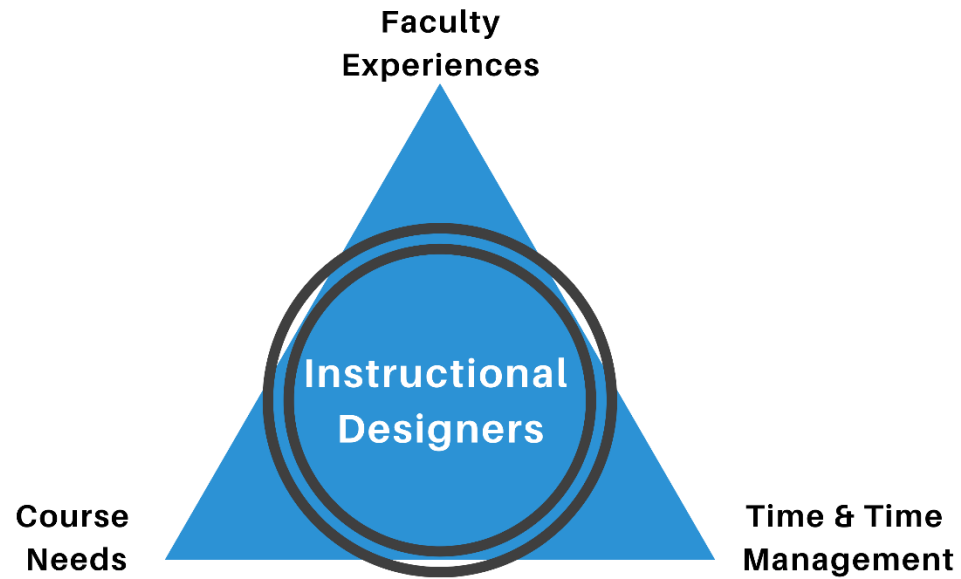


Figure 5. Factors influencing the roles of instructional designers during the instructional design process at Online Learning Unit.

senior IDer, highlights those discussions with faculty during the design phase are collaborative,

but when it comes to actual content creation [and] assessments [...] [faculty] are designing their content, they are [...] [preparing] their own presentations. [...] They are learning the technology, they are writing their assessment questions. (individual interview, August 29, 2019)

Hence, without the time commitment from faculty, ID process may slow down or completely stop. That is why OLU signs an MoU with faculty and their academic department. "It's an agreement between the three parties [OLU, the faculty, and the department] that we're going to work together to make this course, put it online, and make it a successful, quality course" (M. Kelley, individual interview, August 9, 2019).

There may be many reasons why in certain cases, some faculty cannot make necessary time commitment to design and development of their online courses. They may be used to working alone and collaborating with an IDer can be a new construct that they need to familiarize themselves with. Moreover, they may perform better under pressure and instead of working weeks ahead of the semester, they may prefer to wait until the start of the semester. Finally, they may have some unexpected or unplanned commitments – academic and family, alike – imposed on their schedules. In any of these cases, content development can be affected severely and may result in reduced quality in instruction.

the first time I meet them [faculty], I get the feel for what the upcoming 16 weeks are going to be like. So, I can ask them if their going on any trips, or if their doing anything, or have any special things going on, because I've had some faculty just [...]

[being absent] first, [I] try to get their schedules from them, and then based off that, I try to set benchmarks. [...] Ideally, once 16 weeks are up and going, it's just a matter of turning on the course, and it's ready to go. That's the ideal, but [...] I've never really had any courses work that way. Most of my courses I would say are mostly done. [...] It's frustrating as a designer, because at some point, you have some faculty just ignore you, and you have to keep e-mailing them, and keep calling them, and be like, 'Hey, this course is coming up, and I'm not going to build it for you without your help.' [...] (H. Collins, individual interview, August 15, 2019)

Respect for instructional designer's time

In this partnership, faculty are expected to be respectful of IDers time. Instructional designers put their time and effort into building an online course as much as faculty do. Respecting IDers time is as important as other expectations from faculty in this process. As described previously in this chapter while answering research question one, it is typical for an IDer to work on multiple grant courses and oversee handful or two non-grant and/or maintenance courses during each semester. Under these circumstances IDers have to be excellent in managing their time and tasks to be completed for the courses that they work on and support. In those cases where they hold their end of the bargain in their partnership with faculty, but faculty do not in a timely manner or not at all, IDers either feel the pressure of time creeping into the other projects that they work on; stressed about the timely completion of the course in question (especially in those cases where faculty decides to pick up their work closer to the semester); or that they wasted their time on a project that resulted with a dead-end. "I as an instructional designer have to deal with [lack of time

commitment from faculty] because I wasted my meeting times all through [the semester]” (A. Henderson, individual interview, August 29, 2019).

Instructional designer's time management

Though the aspects of a course associated with the content development cannot be completed by an IDer, there are certain strategies that IDers employ to manage their time effectively between projects. First strategy that they employ is to utilize a course page template in LMS. Secondly, they build a prototype learning module in collaboration with faculty towards the end of their design phase and show them how to populate the rest of the course page similarly. And third, they ask faculty to do complete some of the tasks that otherwise they prefer to do.

Course page template in LMS

Every course is unique and comes with unique needs and different set of audience. However, there are certain aspects that go into all course pages in LMS. These aspects are (1) a warm, welcoming home page that includes faculty's course welcome video; course syllabus; and important information regarding to course's technology needs, resources for student accommodations, resources to be successful in the course, and how to navigate the course page; (2) a learning module that orients students to the course that would include specific information about the schedule for the semester, course policies, information for technological assistance, and, in most cases, students' introduction to class activity in a discussion board; (3) a or couple of sample structure(s) for the course learning modules to create organization and scaffolding for students through design elements. Creating these elements for a course and crafting the accompanying take time. Since having these elements in every course is also in line with the ID best practices and QM Standards

(Standards from the Quality Matters Higher Education Rubric, Sixth Edition), IDers at OLU developed a course page template that can be copied to an empty course page in LMS. This course page template was developed and has been continuously maintained by all the IDers. They craft, revise, and finalize all the text that go into this course template; they update the appropriate university policies as the university updates them; and they change other aspects as their practices and processes changes through their ongoing conversations within their CoP. This course page template acts as their baseline at the start of their prototype design process and gives them the opportunity to utilize their limited time efficiently and effectively.

Use of prototype module in the course page

All IDers at OLU develop a prototype learning module in collaboration with faculty that they work with. This learning modules usually includes a structure and flow uniquely developed for faculty's online course, based on faculty and IDer's discussions. It also includes sample texts for the content pages, assessments, and learning activities that faculty can utilize directly or modify as they wish. Once faculty and IDer finalize their decisions on the learning module prototype, some of the IDers prefer to ask faculty to create rest of the learning modules by following this example. They walk faculty through how to create items within the prototype module, how to change the text on the pages, how to create duplicates of the items, and how to create links between items. Instructional designers consider this walk through as part of faculty's training on LMS. They also believe faculty will feel more comfortable utilizing LMS if they start putting course elements together in LMS starting early in the development phase. Instructional designers answer any technical questions that faculty may have related to LMS as faculty gain experience

through their practice. This strategy also allows IDers to utilize their limited time efficiently and effectively.

Task sharing

In the previous section it is mentioned that some IDers prefer for faculty to start working with the LMS early in the development phase. Others choose a different path – they carefully assess the experiences and skill levels of faculty with the LMS and decide whether to follow the same path as other IDers and train faculty and ask them to create rest of the course learning modules. In those cases when IDers believe shifting faculty's focus to utilizing LMS can hinder the course development project, IDers choose to take over course page development in LMS. These IDers believe that it is more important for faculty to focus on developing quality instructions and course content as oppose to focusing on both content development and learning the technology at the same time. When IDers decide to take over course page development off of faculty's plate, they communicate this clearly with faculty and let them know explicitly what they will be doing and how. When IDer and faculty approaches towards the end of their development phase and towards the beginning of the semester, IDer provides one or couple of training sessions customized for the faculty on how to utilize the course page. They talk extensively about how to utilize aspects of the course page that faculty need to update periodically during the semester. Instructional designers make this decision considering the workload and cognitive load of faculty during the development phase; thus, this decision cannot be necessarily associated with the time management.

In the cases where IDer's planned timeline for the course development was affected by the factors previously mentioned in this section, IDers may find themselves asking

faculty to share some of these course page development tasks with them towards the end of the course development phase. At that point in time IDers feel confident and comfortable that faculty are ready for such tasks once they are provided training and instructions.

[I]n terms of [course page in LMS], [...] most parts I would do, but if there is a situation where I have 10 other courses to take care of and say I have to add dates to assessments, I always tell the [faculty] that, "Can you go ahead and add dates to it because I'm tied up with something else." [...] They go in and do that. I provide them with instructions and they're pretty good with that. (A. Henderson, individual interview, August 29, 2019).

This strategy allows IDers to manage their time efficiently.

Course Needs

Needs of the course can be another important influencing factor of the roles of an IDer during the ID process. Instructional designers and faculty identify the audience; their prior knowledge and experiences pertaining to the subject matter; and learning outcomes for students. These variables create an important impact on decisions for the instructional and assessments strategies in the course.

Learning outcomes of certain courses may require students to utilize a specific piece of software to gain practical experience. Couple of examples for such courses can be a communication course where students need to practice public speaking; an engineering course where students need to utilize a virtual lab to conduct experiments; and a veterinary course where students need to make critical decisions at different stages on a case and learn from different outcomes based on these critical decisions. In these instances,

IDer need to develop a deeper understanding related to the instructional technology to be used in the course to ensure its meaningful integration to the course to create an effective learning environment for the students. Depending on IDer's level of knowledge and experience utilizing the instructional technology to be integrated into the course, they can assume different roles in creating and supporting the learning environment.

First, if they are knowledgeable with the instructional technology, they can help faculty brainstorm how the planned assessment and/or instructional strategy can be meaningfully integrated to the course with the help of the technology. Through iterative and continuously reflective conversations, together, they come to a decision. Instructional designer can create a quick example of how things will look and feel. And finally, IDer can train faculty on the technology to help them utilize the instructional technology in this particular way, as the course needs demanded. Second, if IDer is not knowledgeable with the instructional technology, they can act as thought partners for faculty and help them build links between the learning outcomes and technology; and think differently and creatively about the integration of the technology in the course.

In addition to instructional technology needs of a course, course may demand application of a particular teaching strategy such as team-based learning, problem-based learning, or game-based learning. In these instances, IDer helps faculty to build connections between theory and practice; and help them craft the learning environment and intended learning experiences for students. Under these circumstances IDer may take more of a coach role for faculty and build an ID process to guide faculty through *Design* and *Development Phases* accordingly.

Faculty Experiences

Prior experience of faculty influences the roles of IDers in the ID process. These experiences can be grouped under three categories: (1) teaching, (2) technology, and (3) building course content.

Teaching

Faculty with prior teaching experiences affect IDers' way of approaching to the ID process and their conversations with the faculty. Faculty with extensive face-to-face teaching experience may bring with them set ideas about course assessments. Although said assessments may be effective in the face-to-face learning environment they may not be as effective in the online learning environment. "If an instructor has already been teaching the course, he has a set notion about how to assess students, which may have worked wonderfully, which may not have worked wonderfully for the instructor." (A. Henderson, individual interview, August 29, 2019). Or they may want to teach their courses online in the same manners that they have been teaching in the face-to-face classroom environment (e.g., recording a lecture video that lasts one hour). In those cases, during their weekly meetings throughout the *Design and Development Phases*, IDers bring best practices, literature, and examples from other courses to their conversations with the faculty. The aim is to guide the faculty thought processes towards best practices; creating effective online learning environment.

Faculty with some prior online teaching experiences, IDers have experienced, are more willing to try different assessment and instructional strategies. And they are more open to talking about how to improve their courses. However, they may perceive instructional designer as rather technical support.

Technology

Faculty's experience with instructional technologies can be an important factor that influence the roles of IDers during the ID process. If faculty are not familiar with instructional technologies, they may need to allocate more time to practice with it. This may create some time management challenges for the ID process to be completed due to the limited time that IDers and faculty have to make the course ready for the semester. Second, faculty may be too focused on learning how to utilize the technology to teach their online courses that they may overlook the fact that what makes a quality online course is the quality instructional and assessment strategies. Third, their unfamiliarity with the technology may prevent them to see technology as a tool to be utilized to create an effective online learning environment. They may be too focused on the tool and its capabilities.

Course content

In addition to faculty's prior experiences in teaching and technology, their prior experiences with the course content influenced the way of an IDer to conduct the ID process in their collaborative partnership with faculty. Instructional designers indicated that sometimes they find working with an existing content more challenging compared to working with a brand-new course with no existing content. They indicated that if content for a course exists, it is likely that the course is taught in face-to-face learning environment, and this impacts the way faculty think about how the course can be taught online.

Because firstly, neither of us have an idea how the course is going to plan out. The subject matter expert has the content knowledge but not necessarily knows how to present it [the content in an online environment] or how not to present it. It's easier to [guide] their views about things [related to online teaching and learning]. It's

easier to [guide] how they work. It's easier to create a workflow [when there is no existing course content]. (A. Henderson, individual interview, August 29, 2019)

In these cases, IDers utilize specific set of tools such as module map ([Appendix S](#)), or course assessment and activities outline documents ([Appendix T Example 2](#)).

Research Question 4: How do the instructional designers at Online Learning Unit build and utilize community of practice?

Communities of practice that instructional designers participate can vary. Such CoP can be operating at the local (e.g., unit, university, school system, state, etc.), national, or international level (e.g., professional organizations in the field). All participants of this study indicated that they join different kinds of CoPs at the local, national, and international levels through university resources, online resources, and through their engagements at the professional organizations. Yet, during the interview sessions IDers disclosed that their engagements and roles within such CoPs that exist outside of OLU are limited, on a need basis, sparks interest during the certain times of the year – typically around the time of the annual conferences. As this research question focuses on how IDers at OLU build and utilize CoP, researcher's analysis of data focused on unearthing CoP building and maintenance efforts of IDers within the ID process at OLU.

Instructional designers at OLU build CoPs in two ways: (1) CoPs built between IDers and faculty; and (2) CoP built among IDers at OLU. The factors that enable IDers to build, maintain, and benefit from these CoPs are (1) their continuous dialogue with faculty throughout the ID process; (2) their informal conversations with each other; and (3) their weekly ID team meetings. Instructional designers utilize these CoP to transform tacit knowledge into explicit knowledge that facilitates the growth and implementation of new

knowledge in the design and development of online courses. Instructional designers make their explicit knowledge part of their ID process. Instructional designers employ and apply the tools and practices produced by their explicit knowledge extensively as they collaborate with faculty. This allows them the opportunity to see the aspects to be improved in the tool or practice. They then bring such improvements to their conversations with each other to revisit. And the cycle continues. Instructional designers also frequently write about their practices and experiences to publish. They present their work in various venues such as local, national, and international conferences.

Rest of this section will provide details on how IDers build their CoPs with the faculty that they collaborate with, and among IDers at OLU. In doing so it will also talk about the enabling factors for each kind of CoP. Rest of this section is organized in two sub-sections: (1) CoPs built between IDers and faculty; and (2) CoP built among IDers. Each sub-section will first explain how these CoPs are built and then talk about the factors that enable IDers to build, maintain, and benefit from them.

Communities of Practice Built Between Instructional Designers and Faculty

Instructional designers at OLU and faculty who partner with them build communities of practice via their engagement with each other throughout the ID process. In this case, the domain of interest that bring IDer and faculty together is their knowledge and experiences in designing and developing an online course, and teaching in an online learning environment. Instructional designers are committed to helping faculty creating meaningful online learning experiences for their students through ID best practices and based on adult learning theories. Faculty, on the other hand, are committed to learning and improving their skills in developing an effective learning environment and teaching in an

online setting. Commitment to this domain of interest starts with the signed memorandum of understanding (MoU). Yet, it evolves into a collaboration through shared competence gained throughout the ID process. This shared competence finds its roots in the iterative, continuously reflective conversations; and applications and practices of ideas between IDer and faculty. In that sense, the applied ID model and the time allocated to the ID process become important influencers of the commitment to the domain of interest for this CoP.

In this CoP, IDer and faculty are practitioners. Instructional designers practice not only design and development tasks to be completed to create an online course, but also consult with faculty; engage in ongoing conversations; learn about the subject matter of the course; provide training to faculty and teaching assistance when needed. Faculty practice not only teaching in an online environment, but also learn how to design and develop their course for online.

In pursuing their interests in the domain, both IDer and faculty engage in joint activities and discussions about online course design, development, and teaching. This way they interact with each other to learn together, help each other, and share information. Such joint activities are their conversations, training, and IDer's artifacts.

Dialogue between instructional designer and faculty

Dialogue between IDer and faculty starts with their initial meeting in the ID process and grows well into the implementation phase where the faculty teaches their online course. In this collaborative relationship, each member of the community is subject matter expert (SME) in their own domain. Faculty is the SME in the domain that they teach whereas IDer is the SME in the domain of ID, teaching, and learning in online setting. Moreover, services that OLU offers; and identified and agreed on expectations in MoU help

forming different roles for both IDer and faculty for the ID process. Both the positionalities of IDer and faculty determined by their expertise, and their roles, help shaping and guiding their ongoing dialogue throughout the ID process as it speaks to design, development, and teaching of the online course.

Instructional designer's artifacts

Instructional designers at OLU produces variety of artifacts during the ID process. These artifacts enable them to transform tacit knowledge into explicit knowledge through conversation, reflection, and writing. These artifacts have multiple purposes: facilitating their conversations with faculty (e.g., statement of work; module map; course assessment and activities outline), improving faculty's online teaching practices, training faculty, and managing their time effectively.

Meeting minutes

Instructional designers' meeting minutes are a way for them to transform tacit knowledge into explicit knowledge; and share it with faculty. Instructional designers craft meeting minutes regularly after their weekly meetings with faculty. They note down what they talked and did; decisions made; what will they do in between their meetings; and finally, what will they talk during their next meeting. The act of writing these meeting notes is a reflective process where IDers need to revisit their conversations with faculty during the meeting to make note of the main points. As they craft their meeting minutes they also speak to faculty through their writing about the best practices in online teaching and learning; and state explicitly some of the strategies to be followed and the reasoning behind them ([Appendix U](#)).

Survey results

Instructional designers not only collect and analyze the data from students' surveys, but they also identify points of improvement in the course based on students' feedback, and share these points with faculty either via email and/or during one of their meetings. In this case survey results and IDers' recommendations for improvement and strategies to accomplish them become artifacts that IDers create during the ID process. Instructional designers' existing knowledge is distilled through students' feedback about the course and poured into the list of suggestions that they share with faculty. This approach turns IDers' tacit knowledge into explicit knowledge.

Tutorials, cheat sheets, resource repository

As indicated previously in this chapter, IDers provide various types of training to faculty during the *Development Phase* of the ID model. One of the examples of such training is on how to utilize instructional technology tools to record videos. The second example could be training on how to utilize the course page in the LMS. And, finally, the third example could be training on a particular instructional technology tool that the course will be utilizing during the implementation – while the faculty teaching the course.

As they engage in deep conversation with faculty about online teaching and learning; and provide training to faculty on various tools, IDers develop tutorials, cheat sheets, and resource repositories. Tutorials are typically customized to the needs of the faculty, for a specific way of utilizing an instructional technology. Instructional designer may prepare to provide the basics on how to utilize the instructional technology in general and for faculty's course. During the training session, through their conversation and faculty's questions, IDer then have a better understanding around the challenging aspects

of the tool for faculty. When creating the tutorial, IDer then takes these challenging aspects into consideration. Both the conversation and putting a tutorial together help IDer to transform tacit knowledge into explicit knowledge to be shared with the other member of this community – faculty.

Similar to tutorials, cheat sheets are artifacts produced during the ID process and largely derive from the needs of the faculty about a particular topic, practice, application. Creation of these cheat sheets is embedded into the conversation and can be a collaborative effort.

And, finally, IDers add these tutorials and cheat sheets to their resource repositories to be utilized in the future, during ongoing or upcoming projects. Some of these resource repositories are shared with other IDers at OLU and some others are not. Instructional designers typically decide on what they believe would be beneficial for other IDers at OLU based on their prior and ongoing conversations during their weekly meetings and impromptu conversations with each other. Once they share a new tutorial and/or an artifact that they produced, they then collectively decide whether to include this into their common resource repository.

Communities of Practice Build Among Instructional Designers

Instructional designers build a community of practice within Online Learning Unit through their practices, sharing their applied knowledge with each other, and working together on novel challenges that they face in their ID practices (e.g., responding to the increased demand for remote and online teaching caused by COVID-19 pandemic).

The domain of interest that bring the IDers together, gives its identity, and defines key issues that IDers need to address is the knowledge of instructional design and

application of it. All IDers at OLU are professionally committed to the field of ID and also committed to the success of OLU's commitment to helping faculty creating quality online learning environments for university students. The practice for IDers at OLU consists of practicing instructional design in online learning setting within the context of higher education. Through this engagement IDers produce common experiences; shared stories and tools; and ways of addressing common problems. All these constitute their shared practices within their CoP. This takes time and sustained interactions. They engage in joint activities and discussions, help each other, and share information in three ways: (1) through their weekly instructional designers' meetings, (2) through their impromptu conversations among themselves, and (2) by joining the conversations at local, national, and international levels. Rest of this section will elaborate on these engagements.

Weekly instructional designers' meetings

All instructional designers at OLU meet weekly. Their conversations include updates

Impromptu conversations among instructional designers

In addition to their weekly meetings, participants indicated that they engage in deep conversations and joint activities with each other in a less structured ways. Such conversations and activities occur impromptu. IDers talked about having an event, a question, or a problem related to a course that they work on triggering these conversations. Typically, they walk into a fellow IDer's cubicle and just start talking about the issue. In other cases, they talked about their kitchen area being the facilitator of their conversations and brainstorming.

Joining the conversations at local, national, and international levels

Instructional designers at OLU are also active participants in conversations pertaining to instructional design, and distance and online education at local, national, and international levels. They participate in these CoPs in four ways: (1) write and publish; (2) present; (3) ask, listen, and learn; and (4) actively contribute.

Instructional designers at OLU consider themselves as practitioners and researchers. They write about their practice and publish in journals in the field of education and instructional design. Their publications focus on the exploration of teaching and learning strategies they help faculty apply in their online courses; examination of their practices and processes as a group at OLU; and learning outcomes of students in online courses. They frequently partner with faculty to write together. Such joint activity is sometimes initiated by an IDer and sometimes by faculty.

Instructional designers frequently present their ID work in local, national, and international conferences. IDers are encouraged by Online Learning Unit to do so as OLU's IDers' presence in these conferences (1) help them learn about what other ID units in other institutions are doing; (2) share what OLU is doing; and (3) increase OLU's and hence university's visibility at local, national, and international level. Furthermore, OLU is also committed to its IDers' professional development. Both full time professional staff and student designers are provided professional development funds every year to present in conferences.

Finally, participants indicated that they engage in conversations in the topics related to ID, teaching, and learning at the university level. Some of these topics include use of LMS; teaching and learning in team-based learning (TBL) environment; and creating accessible

online content for students. Instructional designers indicated that they learn from these CoP; share their experiences and knowledge with the CoP; and apply what they learned in their daily practices.

CHAPTER 5. DISCUSSION ABOUT FINDINGS

Discussion of the Key Findings

Key finding of this study is, instructional designers at OLU build their communities of practice through collaborative, iterative, and continuously reflective partnership. This partnership is enabled by their ID process. Their communities of practice enable them to transform their tacit ID knowledge to explicit knowledge. Transforming tacit knowledge into explicit knowledge makes the instructional design process visible by showing concrete examples from the tasks that IDers complete. It makes the product of an IDer's work more visible, and consequently, sheds light on the ID process as well. Yet the tools, documents, resources, trainings that IDers develop that transform their knowledge into explicit knowledge do not alone tell the whole story.

It makes it visible, but stories of instructional designers would also help of what they do. [...] When you make it [instructional design process] explicit, it just brings in more clarity. [...] But then again, those get reinterpreted in the process, so we should never just stick with the product. We should always be aware of the process. It's a process that we can regulate and we can modify. The product remains as is, and we have to understand what meaning we are bringing to the product. [...] (M. Kelley, individual interview, August 9, 2019)

The product helps the IDers and faculty to transform tacit knowledge to explicit. This brings clarity to the process. However, the products also get reinterpreted within the process. Therefore, instead of focusing on the product, we should be aware of the process. Because product is static – remains as is, we bring meaning to the product through the

process. Thus, product does not tell the entire story; the process and the stories of instructional designers do. That is the rationale why a collective case study was employed in this study.

The research in this dissertation has excavated the attributes of the instructional design process. It can be characterized as an iterative, collaborative, and continuously reflective partnership. These attributes of ID process affect the CoPs that are built through discourse between IDers and faculty; and among IDers. Developing a deeper understanding of the ID process at OLU helps the researcher to make these elements explicit for the future research. Through iterative approach IDers and faculty develop a shared repertoire and shared understanding of each other. These shared understandings help IDers to customize their guidance, training based on the experiences and skills of the faculty as they learn new information, develop new skills, and expand their experiences in online teaching and learning. And CoP between IDers and faculty greatly help with that.

We can also see the aspects of changing role of IDers within this context. Instructional designers at OLU describe their roles within the instructional design process as a collaborator; a mentor; a coach; a motivator; a partner; and technical support. Instructional Designer is not only the person who collaborates with an subject matter expert (SME) to do instructional design, but a professional who guide SME throughout the instructional design experience and help them become independent, experienced faculty. Faculty may not know everything about online teaching and learning at the end of the experience of developing one course, but know where to find relevant information, where to start, how to build an effective learning environment, what it takes to do so, and how to teach it. The purpose of ID process is to ultimately make a faculty self-sufficient in their

future online teaching. One who can design, develop, and teach an online course with minimal to no instructional designer assistance. The ID-faculty relationship going forward then morphs into more of a thought partnership, and this happens through the ID process. ID process enables building a CoP together and engage in joint activities, learn together, share information over a long period of time. This is made possible in part because the personal and professional characteristics of an instructional designer are being confident, non-judgmental, trustworthy, reflective, and an educated risk taker (Mae Kelley, Interview).

Significance of the Study

This study investigated how IDers navigate the daily challenges of their work; how they successfully respond to changing demands of designing online instruction for online learning; and learn from and replicate their work and practices. The study does this by examining IDers discourse embedded in their communities of practices in the context that they operate. This examination allows to see and evaluate the complexities of IDers work looking beyond the application of instructional design models.

Instructional designers have been key players in responding challenges posed by contemporary demands from higher education. Multiple studies (Seaman, Allen & Seaman, 2018, Intentional Futures, 2016, Linder and Dello Stritto, 2017) showed that to tackle these challenges, higher education institutions employ IDers under varying titles and with varying roles. They are working under various roles in multiple institutions, but we know little about how to examine what they do and how they do it. The findings from this research provide a framework to examine what instructional designers do, and how they do it, through professional community of practice and knowledge management lenses.

Most recent example of a challenge where IDers rose to the occasion was the pivoting to remote teaching in response to the COVID-19 global pandemic. When teaching and learning suddenly had to transition to remote at the beginning of 2020, instructional designers utilized their existing networks, skills, resources, and processes to quickly react to the demanding situation and come up with suggestions for solutions to administrators, and act on it by helping the faculty and the students to transition to a completely online learning environment. They did this by tapping into their existing problem-solving skills. A better understanding about IDers' ways of operating would have been helpful to the administrators to enable IDers; how they can better support IDers and in what ways.

Educational, training, and certificate programs designed for IDers can better prepare future IDers and educators by examining how ID models are applied in different contexts. Design of said programs can greatly benefit from inclusion of professional IDers in developing and teaching curriculum.

This study provided an explicit way of thinking about how IDers transform their tacit knowledge into explicit knowledge. Instructional designers either individually or as a group can develop more intentional ways of approaching their processes to make this transformation happen. Being intentional about the positive outcomes that this transformation brings, IDers can approach their collaboration with faculty in certain ways that not only help faculty to develop and teach one online course but start their journey in becoming better faculty. Because such approach will invest in faculty's professional development in online teaching and learning.

Recommendations for Future Research

Data sources for this collective case study were interviews with instructional designers; the director; focus group with instructional designers; artifacts shared by the instructional designers; and researcher's field notes. Researcher's direct observations of instructional designers' work as they collaborate with each other, and faculty alike were not included as a data source. Although this presents itself as a limitation for this study, the researcher intentionally excluded the data source. In the past, during another research study the researcher has conducted, such direct observations of collaboration of instructional designers with faculty have affected the instructional design process. The researcher developed a protocol to follow what IDers do during and after faculty meetings. The researcher being present in the room has created a different dynamic; the faculty may be confused who is the instructional designer, and the instructional designer may be confused believing they are being evaluated rather than observed. This hindering of the ID process affects the relationship the ID and faculty have been trying to build together; the backbone of this iterative, collaborative, continuously reflective partnership.

Observational study of IDers while they are working within their CoP may be possible in certain institutional settings. For example, in the institution the researcher has collected the data, the established practice and the culture dictated one IDer is assigned to one faculty and they worked together. This ecosystem does not lend itself well for an observer to be present in the room alongside the IDer and faculty. But in other IDer groups in other institutions the norm may be to have multiple ID support staff working on a course development project together. For instance, if university resources allow to allocate a team; a media professional, a technical support staff, and an IDer, to collaborate with a faculty

through the ID process, in those cases, the relationship already involves multiple people in the room, and an additional observer would not be a hindering element. Thus, a confirmative study with additional observational data pertaining to instructional designers CoP could provide additional insights.

Longitudinal and observational study of faculty's perceptions of ID process may be conducted. This would provide a more holistic picture of the ID process that Online Learning Unit in this study has followed. This would also help IDs to improve their workflow with the faculty. Hearing the faculty's perceptions pertaining to ID process may help instructional designers to be aware of their assumptions.

A longitudinal study that will follow on how new hires are onboarded to an ID team may be beneficial. New hires learn the trade through the existing CoP that the team of instructional designers in the team have previously built. The process of developing a course is long winded and it may take up to nine months. In many cases onboarding of a new hire involves shadowing a senior instructional designer. A new hire's training is not truly complete until they have had a chance to participate with the process in its full length.

REFERENCES

- Abeyssekera, I. (2021). Intellectual capital and knowledge management research towards value creation. Form the past to the future. *Journal of Risk and Financial Management, 14*(6). doi:10.3390/jrfm14060238
- Allen, C. W. (2006, November). Overview and evolution of the ADDIE training system. *Advances in Developing Human Resources, 8*(4), 430-441.
- Amineh, R. J., & Asl, H. D. (2015). Review of constructivism and social constructivism. *Journal of Social Sciences, Literature and Languages, 1*(1), 9-16.
- Anderson, J., & van Weert, T. (2002). *Information and communication technology in education: a curriculum for schools and programme of teacher development*. Paris: UNESCO. Retrieved from http://unesco.org/fileadmin/user_upload/ict/e-books/ICT_Teacher_Development/ICT_in_Teacher_Development.pdf
- Andress, M., Star, M. G., & Balshem, D. (2020, April 15). *Forbes*. Retrieved June 9, 2021, from Language learning apps are seeing a surge in interest during the COVID-19 pandemic: <https://www.forbes.com/sites/mergermarket/2020/04/15/language-learning-apps-are-seeing-a-surge-in-interest-during-the-covid-19-pandemic/#1410beed48f4>
- Andrews, D. H., & Goodson, L. A. (1980). A comparative analysis of models of instructional design. *Journal of Instructional Development, 3*(4), 2-16. Retrieved July 9, 2020, from www.jstor.org/stable/30220623
- Bailey, C. J., & Card, K. A. (2009). Effective pedagogical practices for online teaching: Perception of experienced instructors. *The Internet and Higher Education, 12*(3-4), 152-155. doi:<https://doi.org/10.1016/j.iheduc.2009.08.002>
- Berk, L. E., & Winsler, A. (1995). *Scaffolding children's learning: Vygotsky and early childhood education*. Washington, DC: National Association for the Education of Young Children.
- Bolman, L. G., & Deal, T. E. (1997). *Reframing organizations artistry, choice, and leadership* (2nd ed.). San Francisco, California: Jossey-Bass Publishers.

- Braden, R. A. (1996). The case of linear instructional design and development: A commentary on models, challenges, and myths. *Educational Technology, 36*(2), 5-23. Retrieved July 9, 2020, from www.jstor.org/stable/44428323
- Brooks, J. G., & Brooks, M. G. (1993). *In search of understanding: The case for constructivist classrooms*. Alexandria, VA: Association for Supervision and Curriculum.
- Campbell, K., Schwier, R. A., & Kenny, R. F. (2005). Agency of the instructional designer: Moral coherence and transformative social practice. *Australasian Journal of Educational Technology, 21*(2), 242-262. doi:10.14742/ajet.1337
- Campbell, K., Schwier, R. A., & Kenny, R. F. (2006). Conversation as inquiry: A conversation with instructional designers. *Journal of Learning Design, 1*(3), 1-18.
- Cobb, P. (2005). Where is the mind? A coordination of sociocultural and cognitive constructivist perspectives. In C. T. Fosnot (Ed.). New York and London: Teachers College Columbia University. Retrieved July 9, 2020
- Cohen, D., & Prusak, L. (2001). *In good company: How social capital makes organizations work*. Massachusetts: Harvard Business School Press.
- Cole, M. (1984). The zone of proximal development: Where culture and cognition create each other. *Journal for the Study of Education and Development, 7*(25). doi:10.1080/02103702.1984.10822018
- Consalvo, A. L., Schallert, D. L., & Elias, E. M. (2015). An examination of the construct of legitimate peripheral participation as a theoretical framework in literacy research. *Educational Research Review, 16*, 1-18. doi:10.1016/j.edurev.2015.07.001
- Darling-Hammond, L., & Falk, B. (1997, November). Using standards and assessments to support student learning. *Phi Delta Kappan, 79*(3), 190-199.
- Dick, W. (1996). Dick and Carey Model: Will it survive the decade? *Educational Technology and Development, 44*(3), 55-63. Retrieved July 9, 2020, from www.jstor.org/stable/30221035
- Dick, W., & Carey, L. (1996). *The systematic design of instruction* (4th ed.). New York, NY: HarperCollins College Publishers.

- Dignan, L. (2020, March 22). *ZDNet*. Retrieved June 9, 2021, from Online learning gets its moment due to COVID-19 pandemic: Here's how education will change: <https://www.zdnet.com/article/online-learning-gets-its-moment-due-to-covid-19-pandemic-heres-how-education-will-change/>
- Drayton, B., Falk, J. K., Stroud, R., Hobbs, K., & Hammerman, J. (2010). After installation: Ubiquitous computing and high school science in three experienced, high-technology schools. *The Journal of Technology, Learning, and Assessment*, 9(3).
- Ewing, J. M., Dowling, J. D., & Coutts, N. (1999). Learning using the world wide web: A collaborative learning event. *Journal of Educational Multimedia and Hypermedia*, 8(1), 3-22. Retrieved July 9, 2020, from <http://web.b.ebscohost.com/ehost/detail/detail?vid=0&sid=0f74d431-688c-4b94-bd4f-6ad7553183f7%40pdc-v-sessmgr01&bdata=jkF1dGhUeXBIPXNoaWlsaXAmc2l0ZT1laG9zdC1saXZl#AN=507602061&db=eft>
- Farquhar, J. D. (2012). What is case study research? In J. D. Farquhar, *Case Study Research for Business* (pp. 3-14). London: Sage.
- Feiman-Nemser, S. (1998). Teachers as teacher educators. *European Journal of Teacher Education*, 21(1). doi:10.1080/0261976980210107
- Fosnot, C. T. (1992). Constructing constructivism. In T. M. Duffy, & D. H. Jonassen (Eds.), *Constructivism and the technology of instruction: A conversation* (1st ed.). Hillsdale, NJ: Lawrence Erlbaum.
- Fosnot, C. T., & Perry, R. S. (2005). Constructivism: A psychological theory of learning. In C. T. Fosnot (Ed.). New York, NY: Teachers College Press.
- Francis, B. (1999). Modernist reductionism or post-structuralist relativism: Can we move on? An evaluation of the arguments in relation to feminist educational research. *Gender and Education*, 11(4), 381-393. doi:10.1080/09540259920465
- Fukuyama, F. (1999, October 1). *Social capital and civil society*. Retrieved May 31, 2021, from International Monetary Fund: <https://www.imf.org/external/pubs/ft/seminar/1999/reforms/fukuyama.htm>

- Gardner, L. (2020, March 20). *Covid-19 has forced higher ed to pivot to online learning. Here are 7 takeaways so far*. Retrieved April 7, 2021, from The Chronicle of Higher Education: <https://www.chronicle.com/article/covid-19-has-forced-higher-ed-to-pivot-to-online-learning-here-are-7-takeaways-so-far/>
- Garrison, D. R. (1993). A cognitive constructivist view of distance education: An analysis of teaching-learning assumptions. *Distance Education, 14*(2), 199-211.
doi:10.1080/0158791930140204
- Gilakjani, A. P., Leong, L.-M., & Ismail, H. N. (2013, May). Teachers' use of technology and constructivism. *I. J. Modern Education and Computer Science*(4), 49-63.
doi:10.5815/ijmeecs.2013.04.07
- GlobeNewswire*. (2019, December 17). Retrieved from Online education market study 2019: World market projected to reach \$350 billion by 2025, dominated by the United States and China: <https://www.globenewswire.com/news-release/2019/12/17/1961785/0/en/Online-Education-Market-Study-2019-World-Market-Projected-to-Rreach-350-Billion-by-2025-Dominated-by-the-United-States-and-China.html>
- Harrison, H., Birks, M., Franklin, R., & Mills, J. (2017). Case study research: Foundations and methodological orientations. *Forum: Qualitative Social Research, 18*(1).
doi:10.17169/fqs-18.1.2655
- Herr, K. G., & Anderson, G. L. (2015). *The action research dissertation: A guide for students and faculty* (2nd ed.). Thousand Oaks, CA: Sage.
- Heylighen, F. (1993, September). *Epistemology, introduction*. Retrieved May 24, 2021, from Principia Cybernetica Web: <http://pespmc1.vub.ac.be/EPISTEMI.html>
- Hill, J. R., Bichelmeyer, B. A., Boling, E., Gibbons, A. S., Grabowski, B. L., Osguthrope, R. T., . . . Wager, W. (2004). Perspectives on significant issues facing instructional design and technology. In M. Orey, M. A. Fitzgerald, & R. M. Branch, *Educational Media and Technology Yearbook* (Vol. 29, pp. 23-43). Connecticut: Libraries Unlimited.
- Holzer, S., & Andruet, R. H. (2000). Active learning in the classroom. *Proceedings, ASEE Southern Section Annual Meeting*. Roanoke.

- Hussinki, H., Ritala, P., Vanhala, M., & Kianto, A. (2017). Intellectual capital, knowledge management practices and firm performance. *Journal of Intellectual Capital, 18*(4).
- Jonassen, D. H. (1991). Objectivism versus constructivism: Do we need a new philosophical paradigm? *Educational Technology Research and Development*(39), 5-14.
doi:<https://doi.org/10.1007/BF02296434>
- Jonassen, D. H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development, 47*(1), 61-79. doi:doi.org/10.1007/BF02299477
- Jones, A., & Mercer, N. (1993). Theories of learning and information technology. In P. Scrimshaw (Ed.), *Language, classroom and computers*. Hillsdale, NJ: Routledge.
- Kelly, S. M. (2020, March 27). *CNN Business*. Retrieved June 9, 2021, from Zoom's massive 'overnight success' actually took nine years:
<https://edition.cnn.com/2020/03/27/tech/zoom-app-coronavirus/index.html>
- 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, 31*(1). doi:[10.21432/T2JW2P](https://doi.org/10.21432/T2JW2P)
- Koper, R. (2000). From change to renewal: Educational technology foundations to electronic learning environments. *Inaugural address of the Educational Technology Expertise Center, Open University of Netherlands*.
- Lajoie, S. P., & Derry, S. J. (Eds.). (1993). *Computers as cognitive tools*. Hillsdale, NJ: Lawrence Erlbaum Associates, Inc., Publishers.
- Lave, J., & Wenger, E. (1991). *Learning in doing: Social, cognitive, and computational perspectives. Situated learning: Legitimate peripheral participation*. London: Cambridge University Press. doi:[10.2307/2804509](https://doi.org/10.2307/2804509)
- Lesser, E. L., & Storck, J. (2001). Communities of practice and organizational performance. *IBM Systems Journal, 40*(4), 831-841.
- Luck, L., Jackson, D., & Usher, K. (2006). Case study: a bridge across the paradigms. *Nursing Inquiry, 13*(2), 103-109. doi:[10.1111/j.1440-1800.2006.00309.x](https://doi.org/10.1111/j.1440-1800.2006.00309.x)

- Mahalakshmi, K., & Radha, R. (2020). COVID-19: A massive exposure towards web based learning. *Journal of Xidian University*, 14(4), 2405-2411. doi:<https://doi.org/10.37896/jxu14.4/266>
- Marek, M. W., & Wu, P.-H. N. (2020). Digital learning curriculum design: Outcomes and affordances. In L. Daniela (Ed.), *Pedagogies of digital learning in higher education*. Taylor & Francis eBooks (Routledge).
- Market Insider*. (2020, January 7). Retrieved June 9, 2021, from 2019 global edtech investments reach a staggering \$18.66 billion: <https://markets.businessinsider.com/news/stocks/2019-global-edtech-investments-reach-a-staggering-18-66-billion-1028800669>
- Mayer, R. E. (1996). Learners as information processors: legacies and limitations of educational psychology's second metaphor. *Educational Psychologist*, 31(3/4), 151-161.
- McClintock, R. (1992). *Transforming education through information technology*. New York: Teachers College Press.
- McLaughlin, M. W., & Talbert, J. E. (2010). Professional learning communities: Building blocks for school culture and student learning. *American Institute of School Reform*, 35-45.
- Merriam, S. B. (1998). *Qualitative research and case study applications in education* (2nd ed.). San Francisco, CA: Jossey-Bass Publishers.
- Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Merriam, S. B., & Tisdell, E. J. (2016). *Qualitative research: A guide to design and implementation* (4th ed.). San Francisco, CA: Jossey-Bass.
- Merrill, D. M. (2002). First principles of instruction. *Educational Technology Research and Development*, 50(3), 43-59. doi:[doi:doi.org/10.1007/BF02505024](https://doi.org/10.1007/BF02505024)
- Merrill, D. M., Drake, L., Lacy, M. J., Pratt, J., & the ID2 Research Group. (1996). Reclaiming instructional design. *Educational Technology*, 36(5), 5-7. Retrieved July 9, 2020, from www.jstor.org/stable/44428356

- Morales, N. J. (2020, March 23). *TheStar*. Retrieved June 9, 2021, from Covid-19: Online tutors boosting incomes as demand surges due to coronavirus lockdowns: <https://www.thestar.com.my/tech/tech-news/2020/03/23/covid-19-online-tutors-boosting-incomes-as-demand-surges-due-to-coronavirus-lockdowns>
- Muniandy, B., Mohammad, R., & Fong, S. F. (2007). Synergizing pedagogy, learning theory and technology in instruction: How can it be done? *US-China Education Review*, 4(9), 46-53.
- Murphy, D., & Taylor, G. (1993). A tale from the mud. In P. Michael (Ed.), *Developing open courses* (pp. 55-76). Churchill, Australia: Centre for Distance Learning, Monash University Gippsland Campus.
- Murphy, E. (1997). *Constructivism: From philosophy to practice*. Retrieved April 7, 2021, from <https://eric.ed.gov/?id=ED444966>
- Papert, S. (1999). Ghost in the machine: Seymour Papert on how computers fundamentally change the way kids learn. (D. Schwartz, Interviewer) Retrieved from <http://www.papert.org/articles/GhostInTheMachine.html>
- Petzold, A. (2020). Resources and recommendations for a quick transition to online instruction in physiology. *Advances in Physiology Education*, 44, 217-219. doi:10.1152/advan.00049.2020
- Piaget, J. (1977). *The development of thought: Equilibrium of cognitive structures*. New York: Viking Press.
- Pulsipher, S. (2020, July 8). *Forbes*. Retrieved June 9, 2021, from Covid-19 accelerates 3 disruptive trends facing higher education: <https://www.forbes.com/sites/scottpulsipher/2020/07/08/covid-19-accelerates-3-disruptive-trends-facing-higher-education/>
- Rakes, G. C., Fields, V. S., & Cox, K. E. (2006). The influence of teachers' technology use on instructional practices. *Journal of Research on Technology in Education*, 38(4), 409-424. doi:10.1080/15391523.2006.10782467
- Reeves, T. (1998, April 18). Evaluating what really matters in computer-based education. Retrieved April 7, 2021, from <https://eduworks.com/Documents/Workshops/EdMedia1998/docs/reeves.html>

- Reigeluth, C. M. (1996). A new paradigm of ISD? *Educational Technology, 36*(3), 13-20. Retrieved July 9, 2020, from <http://www.jstor.com/stable/44428335>
- Reigeluth, C. M. (1999). What is instructional-design theory and how is it changing? In C. M. Reigeluth (Ed.), *Instructional-design theories and models: A new paradigm of instructional theory* (Vol. II, pp. 5-29). Mahwah, New Jersey: Lawrence Erlbaum Associates, Publishers.
- Reiser, R. (2001). A history of instructional design and technology: Part II: A history of instructional design. *Educational Technology Research and Development, 49*(2), 57-67.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Saettler, P. (1968). *A history of instructional technology*. New York: McGraw-Hill.
- Saettler, P. (1990). *The evolution of American educational technology* (Revised ed.). Englewood, Colorado: Libraries Unlimited.
- Saldaña, J. (2016). *The coding manual for qualitative researchers* (3rd ed.). Los Angeles, CA: Sage.
- Schwandt, T. A. (2001). *The SAGE dictionary of qualitative inquiry* (2nd ed.). Thousand Oaks, CA: Sage.
- 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), 69-100. doi:doi.org/10.7939/R3804Z11C
- Sounders, W. L. (1992, March). The constructivist perspective: Implications and teaching strategies for science. *School Science and Mathematics, 92*(3), 136-141. doi: <https://doi.org/10.1111/j.1949-8594.1992.tb12159.x>
- Stake, R. E. (1995). *The art of case study research*. Thousand Oaks, CA: Sage.
- Stake, R. E. (2006). *Multiple case study analysis*. New York, NY: Guilford.

- Standards from the Quality Matters Higher Education Rubric, Sixth Edition.* (n.d.). Retrieved July 4, 2021, from Quality Matters:
<https://www.qualitymatters.org/sites/default/files/PDFs/StandardsfromtheQMHigherEducationRubric.pdf>
- Stewart, A. (2014). Case study. In J. Mills, & M. Birks (Eds.), *Qualitative methodology: A practical guide* (pp. 145-159). Thousand Oaks, CA: Sage.
- Supiano, B. (2020, March 19). *Teaching - How to help students keep learning through a disruption.* Retrieved April 7, 2021, from The Chronicle of Higher Education:
<https://www.chronicle.com/newsletter/teaching/2020-03-19>
- Tanis, J. L. (2020, May). A community of practice approach to teacher learning a dissertation. *A community of practice approach to teacher learning.* Upper Montclair, NJ: Montclair State University.
- TeachOnline.CA.* (2021, March 17). Retrieved April 20, 2021, from Five things instructional designers and course creators did right in their response to the COVID-19 pandemic:
<https://teachonline.ca/tools-trends/five-things-instructional-designers-and-course-creators-did-right-their-response-covid-19-pandemic>
- Tharp, R. G., & Gallimore, R. (1988). *Rousing minds to life: Teaching, learning, and schooling in social context.* New York: Cambridge University Press.
- Ubogu, R., & Orighofori, M. V. (2020). Information and communication technology: a strategic tool in the internalization of higher education. *International Journal of Education and Practice*, 8(3), 586-598. doi:10.18488/journal.61.2020.83.586.598
- UNESCO. (2020, April 29). *Education: From disruption to recovery.* Retrieved April 30, 2020, from UNESCO: <https://en.unesco.org/covid19/educationresponse>
- Uzuner Smith, S., Hayes, S., & Shea, P. (2017, March). A critical review of the use of Wegner's Community of Practice (CoP) theoretical framework in online and blended learning research, 2000-2014. *Online Learning*, 21(1), 209-237. doi:10.24059/olj.v21i1.963
- Vangrieken, K., Meredith, C., Packer, T., & Kyndt, E. (2017, January). Teacher communities as a context for professional development: A systematic review. *Teaching and Teacher Education*, 61, 47-59. doi:10.1016/j.tate.2016.10.001

- von Glasersfeld, E. (1984). An introduction to radical constructivism. In P. Watzlawick (Ed.), *The Invented Reality* (pp. 17-44). New York: Norton.
- von Glasersfeld, E. (1987). Learning as a constructive activity. In C. Janvier (Ed.), *Problems of representation in the teaching and learning of mathematics* (pp. 3-18). Hillsdale, NJ: Erlbaum.
- von Glasersfeld, E. (1989). Constructivism. In T. Husen, & T. N. Postlethwaite (Eds.), *The international encyclopedia of education* (1st ed., Vol. 1, pp. 162-163). Oxford, England: Pergamon.
- von Glasersfeld, E. (1995). A constructivist approach to teaching. In L. P. Steffe, & J. Gale (Eds.), *Constructivism in education* (pp. 3-15). Hillsdale, NJ: Lawrence Erlbaum Associates.
- von Glasersfeld, E. (1995). *Radical constructivism: A way of knowing and learning. Studies in mathematics education series: 6*. London and Washington: The Falmer Press.
- Vrasidas, C. (2000). Constructivism versus objectivism: Implications for interaction, course design, and evaluation in distance education. *International Journal of Educational Telecommunications*, 6(4). Retrieved July 9, 2020, from https://link.gale.com/apps/doc/A72890602/AONE?u=iastu_main&sid=AONE&xid=adf88a5f
- Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. (M. Cole, V. John-Steiner, S. Scribner, & E. Souberman, Eds.) Cambridge, Massachusetts: Harvard University Press.
- Wedman, J., & Tessmer, M. (1993). Instructional designers decisions and priorities: A survey of design practice. *Performance Improvement Quarterly*, 6, 43-57. doi:10.1111/j.1937-8327.1993.tb00583.x
- Weick, K. E., & Quinn, R. E. (1999). Organization change and development. *Annual Review of Psychology*, 361. Retrieved July 9, 2020, from http://bi.gale.com/essentials/article/GALE|A54442304/c03c83e4f337a0a0fb26f9a462e1c937?u=iastu_main
- Wenger, E. (1998). *Communities of practice: Learning, meaning and identity*. New York, NY: Cambridge University Press.

- Wenger, E. (2004). Knowledge management as a doughnut. *Ivey Business Journal*. Retrieved June 14, 2021, from <https://iveybusinessjournal.com/publication/knowledge-management-as-a-doughnut/>
- Wenger, E. (2010). Communities of practice and social learning systems: The career of a concept. In C. Blackmore (Ed.), *Social learning systems and communities of practice* (pp. 179-198). London: Springer. doi:10.1007/978-1-84996-133-2
- Wenger, E., McDermott, R., & Snyder, W. M. (2002). *Cultivating communities of practice*. Boston, MA: Harvard Business School Press.
- Wenger, E., Trayner, B., & de Laat, M. (2011). *Promoting and assessing value creation in communities and networks: A conceptual framework*. Open University of the Netherlands. Heerlen: Ruud de Moor Centrum. Retrieved June 14, 2021, from https://wenger-trayner.com/documents/Wenger_Trayner_DeLaat_Value_creation.pdf
- Wenger, E., White, N., Smith, J. D., & Rowe, K. (2005). Technology for communities. In L. Langelier (Ed.), *Working, learning and collaborating in a network: Guide to the implementation and leadership of intentional communities of practice* (pp. 71-94). Quebec City: CEFIRO. doi:10.1109/ICSMC.2004.1399962
- Wenger-Trayner, E., & Wenger-Trayner, B. (2015). *Wenger-Trayner.com*. Retrieved June 9, 2021, from Introduction to communities of practice: A brief overview of the concept and its uses: <https://wenger-trayner.com/introduction-to-communities-of-practice/>
- Wiig, K. M. (1997). Knowledge management: An introduction and perspective. *The Journal of Knowledge Management*, 1(1), 1-14.
- Wilson, B. G. (1997). Reflections on constructivism and instructional design. In C. R. Dills, & A. J. Romiszowski (Eds.), *Instructional development paradigms* (pp. 63-80). Englewood Cliffs, NJ: Educational Technology Publications.
- Yin, R. K. (2014). *Case study research: Design and methods*. Los Angeles, CA: Sage.
- Zhu, Z. (2004). Knowledge management: Towards a universal concept or cross-cultural context? *Knowledge Management Research & Practice*, 2(2), 67-69. doi:10.1057/palgrave.kmrp.8500032

APPENDIX A. INSTITUTIONAL REVIEW BOARD LETTER OF APPROVAL FOR THE RESEARCH

IOWA STATE UNIVERSITY
OF SCIENCE AND TECHNOLOGY

Institutional Review Board
Office for Responsible Research
Vice President for Research
2420 Lincoln Way, Suite 202
Ames, Iowa 50014
515 294-4566

Date: 07/31/2019

To: Pinar M Celik Connie Hargrave

From: Office for Responsible Research

Title: Beyond Instructional Design

IRB ID: 19-321

Submission Type: Initial Submission **Review Type:** Full Committee

Approval Date: 07/31/2019 **Approval Expiration Date:** N/A

The project referenced above has received approval from the Institutional Review Board (IRB) at Iowa State University according to the dates shown above. Please refer to the IRB ID number shown above in all correspondence regarding this study.

To ensure compliance with federal regulations (45 CFR 46 & 21 CFR 56), please be sure to:

- Use only the approved study materials in your research, including the recruitment materials and informed consent documents that have the IRB approval stamp.
- [Retain signed informed consent documents](#) for 3 years after the close of the study, when documented consent is required.
- Obtain IRB approval prior to implementing any changes to the study or study materials.
- Promptly inform the IRB of any addition of or change in federal funding for this study. Approval of the protocol referenced above applies only to funding sources that are specifically identified in the corresponding IRB application.
- Inform the IRB if the Principal Investigator and/or Supervising Investigator end their role or involvement with the project with sufficient time to allow an alternate PI/Supervising Investigator to assume oversight responsibility. Projects must have an [eligible PI](#) to remain open.
- Immediately inform the IRB of (1) all serious and/or unexpected [adverse experiences](#) involving risks to subjects or others; and (2) any other [unanticipated problems](#) involving risks to subjects or others.
- IRB approval means that you have met the requirements of federal regulations and ISU policies governing human subjects research. **Approval from other entities may also be needed.** For example, access to data from private records (e.g., student, medical, or employment records, etc.) that are protected by FERPA, HIPAA, or other confidentiality policies requires permission from the holders of

those records. Similarly, for research conducted in institutions other than ISU (e.g., schools, other colleges or universities, medical facilities, companies, etc.), investigators must obtain permission from the institution(s) as required by their policies. **IRB approval in no way implies or guarantees that permission from these other entities will be granted.**

- Your research study may be subject to [post-approval monitoring](#) by Iowa State University's Office for **Responsible Research**. In some cases, it may also be subject to formal audit or inspection by federal agencies and study sponsors.
- Upon completion of the project, transfer of IRB oversight to another IRB, or departure of the PI and/or Supervising Investigator, please initiate a Project Closure to officially close the project. For information on instances when a study may be closed, please refer to the [IRB Study Closure Policy](#).

If your study requires continuing review, indicated by a specific Approval Expiration Date above, you should:

- **Stop all human subjects research activity if IRB approval lapses**, unless continuation is necessary to prevent harm to research participants. Human subjects research activity can resume once IRB approval is re-established.
- **Submit an application for Continuing Review** at least three to four weeks prior to the **Approval Expiration Date** as noted above to provide sufficient time for the IRB to review and approve continuation of the study. We will send a courtesy reminder as this date approaches.

Please don't hesitate to contact us if you have questions or concerns at 515-294-4566 or IRB@iastate.edu.

APPENDIX B. INFORMED CONSENT FORM FOR THE INTERVIEW WITH THE DIRECTOR OF DESIGN AND DELIVERY

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

CONSENT FORM FOR: BEYOND INSTRUCTIONAL DESIGN

Invitation to be Part of a Research Study

You are invited to participate in a research study. This form has information to help you decide whether you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary, and you can stop at any time.

Please ask the researcher any questions you have about the study or about this form before deciding to participate.

Who is conducting this study?

This study is being conducted by Pinar M. Celik.

Why am I invited to participate in this study?

You are eligible to participate in this study since you have been holding the Director of Design and Development position at [REDACTED] between February 2014 and present.

What is the purpose of this study?

The purpose of this study is to contribute to the body of the literature of instructional design by exploring the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. This study investigates the ways instructional designers interact with subject matter experts (faculty); roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

What will I be asked to do?

If you agree to participate,

- You will be asked to participate to an interview session where you will be prompted to
 - describe the instructional design process that team of instructional designers apply while working with a subject matter expert (i.e., faculty/instructor/teaching team) to design and develop online course in a higher education setting;
 - identify and explain some of the expected factors that are either introduced by instructional designer or subject matter expert into the process that influenced the instructional design process that they follow;
 - describe the role of an instructional designer;
 - describe how instructional designer and the subject matter expert work together to design and develop online course and the tasks that both of them expected to perform during the instructional design process;
 - describe how instructional designer and subject matter expert communicate with each other throughout the instructional design process;

- Explain if/how instructional designers collaborate with other instructional designers within the unit that you work/worked; and
- Your participation will last for 60-90 minutes, single interview session with the researcher of this study.
- Your interview session may occur face-to-face or via ZOOM.
- The audio from the interview session will be recorded through an audio recorder to be transcribed for data analysis purposes.
- The researcher of this study will be taking notes during the session to note down important conversation points.
- After the interview session, you will be sent the verbatim transcription of the session's audio recording via email. This will provide an opportunity for you to check the transcript to modify, add, correct, expand your responses. You will be given two to three weeks to make these modifications, additions, corrections.

What are the possible risks or discomforts I may experience during the study?

There are no foreseeable physical, emotional, or psychological risks/discomforts associated with the participation to this study. In case you feel uncomfortable having any data included in this study, you may notify the researcher and this data will be excluded from the analysis and write up.

There may be risks or discomforts that are currently unforeseeable at this time. The researcher will tell you about any significant new information learned that may relate to your willingness to continue participating in this study.

What are the benefits of participation in the study?

It is hoped that the information gained in this study will benefit society and advance the practice of instructional design by providing insights regarding to a collaborative relationship among instructional designers within the same team; and collaborative relationship between the instructional designers and subject matter experts (online faculty) in designing and developing online courses in a higher education institution. It is also hoped that these insights will be influential in shaping the future of teaching instructional design; and curriculum and instructional technology.

You may expect to benefit from participating to this study. If you are currently working/continue working/planning to work as instructional designer, through participating in this study, you may have opportunities to

- practice and improve your critical and reflective thinking skills related to your practice;
- gain more insights regarding to your professional learning that occurs during your practice;
- shift your own thinking and practices moving forward.

What measures will be taken to ensure the confidentiality of the data or to protect my privacy?

Research records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available without your permission. However, it is possible that other people and offices responsible for making sure research is done safely and responsibly will see your information. This includes federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies), which may inspect and/or copy study records for quality assurance and data analysis. These records may contain private information.

To protect confidentiality of the study records and data, the following measures will be taken:

- Each participant to the study will be assigned a pseudonym at the beginning of the study;
- Participants will be referred to as their assigned pseudonym throughout the study;
- When the results of the study published and/or presented, the research will not disclose any key identifiers about you, as the participant of the study;
- All the data (audio recordings of the interviews; transcripts of the interviews; artifacts that are shared by the participants) will be stored on researcher's password protected desktop computer at researcher's home office;
- Signed consent documents will be securely stored and separate of any study data.
- The key linking pseudonyms to participant identifiers will be stored separately of the study data and will be deleted following data collection and analysis.

To protect your confidentiality when results of the study are reported, the following measures will be taken:

- All the identifiers associated with research participants will be destroyed after pseudonyms are assigned to participants

Despite measures taken to protect your confidentiality, given the small sample size and nature of this research, it remains possible that you could be indirectly identified in reports of findings.

Will the information I provide be used for anything other than the current study?

Information about you, will *only* be used by the researcher for the project described in this document.

What are my rights as a research participant?

- Participating in this study is completely voluntary;
- You may choose not to take part in the study or to stop participating at any time, for any reason, without penalty or negative consequences;
- You can skip any questions that you do not wish to answer;
- After the interview, researcher will send you a copy of the transcription of your interview where you will be provided the opportunity to make additions and/or modifications to the existing text *before* the researcher starts the analysis of the data. You will be given two to three weeks to make these additions and/or modifications, if any;
- Collected data from this interview will be analyzed in conjunction with data collected via focus group sessions with instructional designers that will be held after the individual interviews with instructional designers are completed;

- Upon completion of the study, you will be notified and shared the results as well as the write-up of the study.

If you have any questions *about the rights of research subjects or research-related injury*, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Whom can I call if I have questions about the study?

You are encouraged to ask questions at any time during this study. For further information *about the study*, contact Pinar M. Celik, pinar@iastate.edu; or the supervising investigator, Connie Hargrave, PhD, cph@iastate.edu.

Your Consent

By signing this document, you are agreeing to participate in this study. Make sure you understand what the study involves before you sign. If you have any questions about the study after you agree to participate, you can contact the research team using the information provided above.

I am 18 years of age or older and agree to take part in this study.

Participant's Name (printed) _____

Participant's Signature _____ Date _____

APPENDIX C. INFORMED CONSENT FORM FOR THE INTERVIEW WITH INSTRUCTIONAL DESIGNERS

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

CONSENT FORM FOR: BEYOND INSTRUCTIONAL DESIGN

Invitation to be Part of a Research Study

You are invited to participate in a research study. This form has information to help you decide whether you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary, and you can stop at any time.

Please ask the researcher any questions you have about the study or about this form before deciding to participate.

Who is conducting this study?

This study is being conducted by Pinar M. Celik.

Why am I invited to participate in this study?

You are eligible to participate in this study if you

- worked at [REDACTED] at least one year between February 2014 and present;
and
- were/have been under the direct supervision of the current Director of Design and Development.

You should not participate if you

- worked at [REDACTED] less than a year between February 2014 and present;
and/or
- worked at [REDACTED] prior to February 2014;
and/or
- were not/have not been under the direct supervision of the current Director of Design and Development.

What is the purpose of this study?

The purpose of this study is to contribute to the body of the literature of instructional design by exploring the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. This study investigates the ways instructional designers interact with subject matter experts (faculty); roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

What will I be asked to do?

If you agree to participate,

- You will be asked to participate to an interview session where you will be prompted to

- describe the instructional design process that you apply/applied while working with a subject matter expert (i.e., faculty/instructor/teaching team) to design and develop online course in a higher education setting;
 - identify and explain some of the expected and/or unexpected factors that are either introduced by you or subject matter expert into the process that influenced the instructional design process that you follow/followed;
 - describe your role as an instructional designer;
 - describe how you and the subject matter expert work together to design and develop online course and the tasks that both of you perform during the instructional design process;
 - describe how you and subject matter expert communicate with each other throughout the instructional design process;
 - explain if/how you collaborate with other instructional designers within the unit that you work/worked; and
- You will be asked to share any documents/tools/strategies that you employ while working with subject matter experts (online faculty) to design and develop online courses.
 - Your participation will last for 60-90 minutes, single interview session with the researcher of this study.
 - Your interview session may occur face-to-face or via ZOOM.
 - The audio from the interview session will be recorded through an audio recorder to be transcribed for data analysis purposes.
 - The researcher of this study will be taking notes during the session to note down important conversation points.
 - After the interview session, you will be sent the verbatim transcription of the session's audio recording via email. This will provide an opportunity for you to check the transcript to modify, add, correct, expand your responses. You will be given two to three weeks to make these modifications, additions, corrections.
 - If you are currently employed by [REDACTED] under the direct supervision of the current Director of Design and Development, you will also be invited to participate to a focus group session after this individual interview session.

What are the possible risks or discomforts I may experience during the study?

There are no foreseeable physical, emotional, or psychological risks/discomforts associated with the participation to this study. In case you feel uncomfortable having any data included in this study, you may notify the researcher and this data will be excluded from the analysis and write up.

There may be risks or discomforts that are currently unforeseeable at this time. The researcher will tell you about any significant new information learned that may relate to your willingness to continue participating in this study.

What are the benefits of participation in the study?

It is hoped that the information gained in this study will benefit society and advance the practice of instructional design by providing insights regarding to a collaborative relationship among instructional designers within the same team; and collaborative relationship between the instructional designers and subject matter experts (online faculty) in designing and developing online courses in a higher education institution. It is also hoped that these insights will be influential in shaping the future of teaching instructional design; and curriculum and instructional technology.

You may expect to benefit from participating to this study. If you are currently working/continue working/planning to work as instructional designer, through participating in this study, you may have opportunities to

- practice and improve your critical and reflective thinking skills related to your practice;
- gain more insights regarding to your professional learning that occurs during your practice;
- shift your own thinking and practices moving forward.

What measures will be taken to ensure the confidentiality of the data or to protect my privacy?

Research records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available without your permission. However, it is possible that other people and offices responsible for making sure research is done safely and responsibly will see your information. This includes federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies), which may inspect and/or copy study records for quality assurance and data analysis. These records may contain private information.

To protect confidentiality of the study records and data, the following measures will be taken:

- Each participant to the study will be assigned a pseudonym at the beginning of the study;
- Participants will be referred to as their assigned pseudonym throughout the study;
- When the results of the study published and/or presented, the research will not disclose any key identifiers about you, as the participant of the study;
- All the data (audio recordings of the interviews; transcripts of the interviews; artifacts that are shared by the participants) will be stored on researcher's password protected desktop computer at researcher's home office;
- Signed consent documents will be securely stored and separate of any study data.
- The key linking pseudonyms to participant identifiers will be stored separately of the study data and will be deleted following data collection and analysis.

To protect your confidentiality when results of the study are reported, the following measures will be taken:

- All the identifiers associated with research participants will be destroyed after pseudonyms are assigned to participants.

Despite measures taken to protect your confidentiality, given the small sample size and nature of this research, it remains possible that you could be indirectly identified in reports of findings.

Will the information I provide be used for anything other than the current study?

Information about you, will *only* be used by the researcher for the project described in this document.

What are my rights as a research participant?

- Participating in this study is completely voluntary;
- You may choose not to take part in the study or to stop participating at any time, for any reason, without penalty or negative consequences;
- You can skip any questions that you do not wish to answer;
- After the interview, researcher will send you a copy of the transcription of your interview where you will be provided the opportunity to make additions and/or modifications to the existing text *before* the researcher starts the analysis of the data. You will be given two to three weeks to make these additions and/or modifications, if any;
- Collected data from this interview will be analyzed in conjunction with data collected via focus group sessions that will be held after the individual interviews are completed;
- Upon completion of the study, you will be notified and shared the results as well as the write-up of the study.

If you have any questions *about the rights of research subjects or research-related injury*, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Whom can I call if I have questions about the study?

You are encouraged to ask questions at any time during this study. For further information *about the study*, contact Pinar M. Celik, pinar@iastate.edu; or the supervising investigator, Connie Hargrave, PhD, cph@iastate.edu.

Your Consent

By signing this document, you are agreeing to participate in this study. Make sure you understand what the study involves before you sign. If you have any questions about the study after you agree to participate, you can contact the research team using the information provided above.

I am 18 years of age or older and agree to take part in this study.

Participant's Name (printed) _____

Participant's Signature _____ Date _____

APPENDIX D. INFORMED CONSENT FORM FOR THE FOCUS GROUP WITH INSTRUCTIONAL DESIGNERS

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

CONSENT FORM FOR: BEYOND INSTRUCTIONAL DESIGN

Invitation to be Part of a Research Study

You are invited to participate in a research study. This form has information to help you decide whether you wish to participate. Research studies include only people who choose to take part—your participation is completely voluntary, and you can stop at any time.

Please ask the researcher any questions you have about the study or about this form before deciding to participate.

Who is conducting this study?

This study is being conducted by Pinar M. Celik.

Why am I invited to participate in this study?

You are eligible to participate in this study if you are

- currently working at [REDACTED];
- and
- currently under direct supervision of the Director of Design and Development.

You should not participate if you are

- not under the direct supervision of the Director of Design and Development.

What is the purpose of this study?

The purpose of this study is to contribute to the body of the literature of instructional design by exploring the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. This study investigates the ways instructional designers interact with subject matter experts (faculty); roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

What will I be asked to do?

If you agree to participate,

- You will be asked to participate to a focus group session where you will be prompted to
 - describe the instructional design process that you apply/applied while working with a subject matter expert (i.e., faculty/instructor/teaching team) to design and develop online course in a higher education setting;
 - identify and explain some of the expected and/or unexpected factors that are either introduced by you or subject matter expert into the process that influenced the instructional design process that you follow/followed;

- describe your role as an instructional designer;
 - describe how you and the subject matter expert work together to design and develop online course and the tasks that both of you perform during the instructional design process;
 - describe how you and subject matter expert communicate with each other throughout the instructional design process;
 - explain if/how you collaborate with other instructional designers within the unit that you work/worked.
- You will be asked to keep information shared during this focus group session private and confidential.
 - You will be asked to share any documents/tools/strategies that you employ while working with subject matter experts (online faculty) to design and develop online courses
 - Your participation will last for 60-90 minutes, focus group session with the other instructional designers in at [REDACTED] and researcher of this study.
 - The audio from the focus group session will be recorded through an audio recorder to be transcribed for data analysis purposes.
 - The researcher of this study will be taking notes during the session to note down important conversation points.
 - After the focus group session, you will be sent the verbatim transcription of the focus group session's audio recording via email. This will provide an opportunity for you to check the transcript to modify, add, correct, expand your responses. You will be given two to three weeks to make these modifications, additions, corrections.

What are the possible risks or discomforts I may experience during the study?

There are no foreseeable physical, emotional, or psychological risks/discomforts associated with the participation to this study. In case you feel uncomfortable having any data included in this study, you may notify the researcher and this data will be excluded from the analysis and write up.

There may be risks or discomforts that are currently unforeseeable at this time. The researcher will tell you about any significant new information learned that may relate to your willingness to continue participating in this study.

What are the benefits of participation in the study?

It is hoped that the information gained in this study will benefit society and advance the practice of instructional design by providing insights regarding to a collaborative relationship among instructional designers within the same team; and collaborative relationship between the instructional designers and subject matter experts (online faculty) in designing and developing online courses in a higher education institution. It is also hoped that these insights will be influential in shaping the future of teaching instructional design; and curriculum and instructional technology.

You may expect to benefit from participating to this study. If you are currently working/continue working/planning to work as instructional designer, through participating in this study, you may have opportunities to

- practice and improve your critical and reflective thinking skills related to your practice;
- gain more insights regarding to your professional learning that occurs during your practice;
- shift your own thinking and practices moving forward.

What measures will be taken to ensure the confidentiality of the data or to protect my privacy?

Research records identifying participants will be kept confidential to the extent permitted by applicable laws and regulations and will not be made publicly available without your permission. However, it is possible that other people and offices responsible for making sure research is done safely and responsibly will see your information. This includes federal government regulatory agencies, auditing departments of Iowa State University, and the Institutional Review Board (a committee that reviews and approves human subject research studies), which may inspect and/or copy study records for quality assurance and data analysis. These records may contain private information.

To protect confidentiality of the study records and data, the following measures will be taken:

- Each participant to the study will be assigned a pseudonym at the beginning of the study;
- Participants will be referred to as their assigned pseudonym throughout the study;
- Participants will keep information shared during this focus group session private and confidential;
- When the results of the study published and/or presented, the research will not disclose any key identifiers about you, as the participant of the study;
- All the data (audio recordings of the focus group session; transcripts of the focus group session; artifacts that are shared by the participants) will be stored on researcher's password protected desktop computer at researcher's home office;
- Signed consent documents will be securely stored and separate of any study data.
- The key linking pseudonyms to participant identifiers will be stored separately of the study data and will be deleted following data collection and analysis.

To protect your confidentiality when results of the study are reported, the following measures will be taken:

- All the identifiers associated with research participants will be destroyed after pseudonyms are assigned to participants.

Despite measures taken to protect your confidentiality, given the small sample size and nature of this research, it remains possible that you could be indirectly identified in reports of findings.

Will the information I provide be used for anything other than the current study?

Information about you, will *only* be used by the researcher for the project described in this document.

What are my rights as a research participant?

- Participating in this study is completely voluntary;

- You may choose not to take part in the study or to stop participating at any time, for any reason, without penalty or negative consequences;
- You can skip any questions that you do not wish to answer;
- After the focus group session, researcher will send you a copy of the transcription of the focus group session where you will be provided the opportunity to make additions and/or modifications to the existing text *before* the researcher starts the analysis of the data. You will be given two to three weeks to make these additions and/or modifications, if any;
- Collected data from this focus group session will be analyzed in conjunction with data collected via individual interview sessions that were held prior to this focus group session;
- Upon completion of the study, you will be notified and shared the results as well as the write-up of the study.

If you have any questions *about the rights of research subjects or research-related injury*, please contact the IRB Administrator, (515) 294-4566, IRB@iastate.edu, or Director, (515) 294-3115, Office for Responsible Research, Iowa State University, Ames, Iowa 50011.

Whom can I call if I have questions about the study?

You are encouraged to ask questions at any time during this study. For further information *about the study*, contact Pinar M. Celik, pinar@iastate.edu; or the supervising investigator, Connie Hargrave, PhD, cph@iastate.edu.

Your Consent

By signing this document, you are agreeing to participate in this study. Make sure you understand what the study involves before you sign. If you have any questions about the study after you agree to participate, you can contact the research team using the information provided above.

I am 18 years of age or older and agree to take part in this study.

Participant's Name (printed) _____

Participant's Signature _____ Date _____

APPENDIX E. RESEARCH INVITATION EMAIL FOR THE DIRECTOR

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Invitation to Research Study

Wednesday, July 10, 2019

Invitation to Research Email for Unit Director

Dear [name of the unit director],

I hope this email finds you well. I would like to invite you to participate in a research study, [name of the research study], that I am conducting for my PhD thesis. You are eligible to participate in this study because you have been leading the team of instructional designers at [REDACTED] between February 2014 and present.

The purpose of this study is to explore the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. The study investigates the ways instructional designers interact with subject matter experts (faculty); the roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

Your participation will last about 90 minutes. The interview will take place at a time and location convenient to you. Your participation is completely voluntary. You will not be penalized in any ways if you decide not to participate or withdraw at any time. The results of this study will be shared with you once the study is completed.

Please feel free to review the attached Informed Consent Form to learn more about the purpose; expectations from participants; as well as risks and benefits associated with this research. Please do not hesitate to let me know if you have any questions and/or concerns.

I hope you agree to participate in this study.

Looking forward to hearing back from you,

Kind regards,

Pinar M. Celik

APPENDIX F. FIRST FOLLOW-UP EMAIL FOR THE DIRECTOR

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Follow-up Email for the Invitation for Research

Wednesday, July 10, 2019

Follow-up Email to Unit Director

Thank you, [name of the unit director], for your response. As it is indicated in the consent form, the interview session will last up to 90 minutes. I am wondering when would be the best day and time for you for a 1.5-hour interview? Kindly, please let me know.

Kind regards,

Pinar Celik

APPENDIX G. SECOND FOLLOW-UP EMAIL FOR THE DIRECTOR

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Follow-up Email for the Invitation for Research

Wednesday, July 10, 2019

Follow-up Email to Unit Director

Thank you, [name of the participant], for your response. Based on the available dates and times that you indicated, it looks like [date], [time] would work best for our interview session. Kindly, locate the details regarding to the interview session below:

When: [date]**Time: [time]****How long: 90 minutes****Where: [meeting room location – will be scheduled after interviewee's confirmation]**

Kindly, find the interview questions as well as the informed consent form attached to this email. These attachments are in preparation for our interview session. I will bring printed copies to our session. Thus, no further action is necessary at this point. However, if you have any questions and/or concerns, please do not hesitate to let me know.

Kind regards,

Pinar Celik

Attachments:

- Informed consent form
- Interview questions for unit director

APPENDIX H. RESEARCH INVITATION EMAIL FOR INSTRUCTIONAL DESIGNERS

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Invitation to Research Study

Wednesday, July 10, 2019

Invitation to Research Email for Instructional Designers

Dear [name of the possible participant],

I hope this email finds you well. I would like to invite you to participate in a research study, [name of the research study], that I am conducting for my PhD thesis. You are eligible to participate in this study because (1) you worked at [REDACTED] at least one year between February 2014 and present; and (2) were/have been under direct supervision of the Director of Design and Development.

The purpose of this study is to explore the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. The study investigates the ways instructional designers interact with subject matter experts (faculty); the roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

Your participation will last about 90 minutes. The interview will take place at a time and location convenient to you. Your participation is completely voluntary. You will not be penalized in any ways if you decide not to participate or withdraw at any time. The results of this study will be shared with you once the study is completed.

Please feel free to review the attached Informed Consent Form to learn more about the purpose; expectations from participants; as well as risks and benefits associated with this research. Please do not hesitate to let me know if you have any questions and/or concerns.

I hope you agree to participate in this study.

Looking forward to hearing back from you,

Kind regards,

Pinar M. Celik

APPENDIX I. FIRST FOLLOW-UP EMAIL FOR INSTRUCTIONAL DESIGNERS

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Follow-up Email for the Invitation for Research

Friday, June 14, 2019

Follow-up Email to Instructional Designers

Thank you, [name of the participant], for your response. As it is indicated in the consent form, the interview session will last up to 90 minutes. I am wondering when would be the best day and time for you for a 1.5-hour interview? Kindly, please let me know.

Kind regards,

Pinar Celik

APPENDIX J. SECOND FOLLOW-UP EMAIL FOR INSTRUCTIONAL DESIGNERS

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Follow-up Email for the Invitation for Research

Wednesday, July 10, 2019

Follow-up Email to Instructional Designers

Thank you, [name of the participant], for your response. Based on the available dates and times that you indicated, it looks like [date], [time] would work best for our interview session. Kindly, locate the details regarding to the interview session below:

When: [date]**Time: [time]****How long: 90 minutes****Where: [meeting room location – will be scheduled after interviewee's confirmation]**

Kindly, find the interview questions as well as the informed consent form attached to this email. These attachments are in preparation for our interview session. I will bring printed copies to our session. Thus, no further action is necessary at this point. However, if you have any questions and/or concerns, please do not hesitate to let me know.

Kind regards,

Pinar Celik

Attachments:

- Informed consent form
- Interview questions for instructional designers

APPENDIX K. TRANSCRIPT REVIEW EMAIL FOR INDIVIDUAL INTERVIEW SESSIONS

Pinar Celik PhD Thesis

Methods – Transcript Review Email

Monday, July 22, 2019

Transcript Review Email for Individual Interview Sessions

Dear [name of the participant],

Thank you very much for your time and participation to my research study, [name of the research study]. I am attaching verbatim transcript of our interview session on [date of the interview] to this email for you to review. Please feel free to make any additions and/or modifications to this transcript if you believe the content does not capture your insights, thoughts, and point of view accurately and fully. Please, kindly, send me your comments by [two to three weeks from today].

Optional – if the participant indicated that s/he would like to share any artifacts regarding to the instructional design process that s/he follows:

During our interview session, you mentioned that you use/benefit from [the name of the artifact] for [the purpose of the artifact]. You indicated that you would like to share this artifact with me. Please also consider this email as a kind reminder to share [the name of the artifact] with me. Please feel free to attach it to this email.

If I do not hear back from you by [a week from today], I will assume that the attached verbatim transcription of our interview session captures your thoughts, insights, and point of view regarding to the interview questions accurately and fully; and I will proceed with the data analysis.

Once again, thank you for your time and participation.

Kind regards,

Pinar M. Celik

APPENDIX L. RESEARCH INVITATION EMAIL FOR FOCUS GROUP

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Invitation to Research Study

Wednesday, July 10, 2019

Invitation to Research Email for Focus Group Session

Dear [name of the possible participant],

I hope this email finds you well. I would like to invite you to participate in a research study, [name of the research study], that I am conducting for my PhD thesis. You are eligible to participate in this study because (1) you are currently working at [REDACTED]; and (2) you are currently working under direct supervision of the Director of Design and Development.

The purpose of this study is to explore the nature of collaborative relationship between instructional designers and online faculty at [REDACTED]. The study investigates the ways instructional designers interact with subject matter experts (faculty); the roles of instructional designers in this collaborative instructional design process; and how these roles are affected by the process itself in a higher education setting.

Your participation will last about 90 minutes. The focus group session will take place at a time and location convenient to all the participants. Your participation is completely voluntary. You will not be penalized in any ways if you decide not to participate or withdraw at any time. The results of this study will be shared with you once the study is completed.

Please feel free to review the attached Informed Consent Form to learn more about the purpose; expectations from participants; as well as risks and benefits associated with this research. Please do not hesitate to let me know if you have any questions and/or concerns.

If you agree to participate to this study, please respond to this email by indicating the couple of days and times that are most convenient for you between --/-- and --/-- [date interval within the next 3 weeks].

I hope you agree to participate in this study.

Looking forward to hearing back from you,

Kind regards,

Pinar M. Celik

APPENDIX M. FOLLOW-UP EMAIL FOR FOCUS GROUP

ISU IRB: 19-321-00 Approved Date: 07/31/2019 Expiration Date: N/A

Pinar Celik PhD Thesis

Methods – Follow-up Email for Focus Group Session

Friday, June 14, 2019

Follow-up Email for Focus Group Session

Thank you, [name of the participant], for your response and agreeing to participate to the focus group session.

After reviewing the dates and times that all the participants provided, looks like [date and time] will work [most/all] the participants. Thus, the focus group session is scheduled to be conducted on [date and time] in [building and room at ■ campus]. I hope this date and time still works for you.

I am attaching the informed consent form to this email once again for your convenience. This attached informed consent form outlines the purpose of this research; expectations from you as a participant in this research; and risks and benefits associated with the research. Please, kindly, feel free review the form and let me know if you have any questions and/or concerns regarding to anything related to this research study.

I am looking forward to seeing you on [date and time of the focus group session].

Kind regards,

Pinar Celik

APPENDIX N. SEMI-STRUCTURED INTERVIEW QUESTIONS FOR THE DIRECTOR

Instructional Design Process

1. Could you please describe the instructional design process that the team of instructional designers at Online Learning Unit follow to design and develop online courses?
 - a. How do instructional designers work with subject matter experts (faculty) to design and develop online courses?
 - b. What are the tasks that are expected to be performed by instructional designers during this process?
 - c. What are the tasks that are expected to be performed by subject matter expert (faculty) during this process?

Roles of Instructional Designers

2. Could you please describe how the roles of instructional designers are shaped within this instructional design process?
 - a. How (if) is this different than the roles of instructional designers in other units on campus?
3. Could you please describe the roles of the subject matter experts (faculty) within this instructional design process?
 - a. How (if) is this different than the roles of subject matter experts (faculty) in other units on campus?
 - b. How are the roles of subject matter experts (faculty) influence the roles of instructional designers when they go through this instructional design process?

Communities of Practice

4. How (if) do instructional designers transform tacit knowledge regarding to the ideas, procedures, strategies, or tactics that compose instructional design process into explicit knowledge?
 - a. Are there any kinds of tools, procedures, and strategies the team utilizes to transform tacit knowledge into explicit knowledge?
 - b. Why (if) transforming tacit knowledge into explicit knowledge is important for this team of instructional designers?
 - c. How does the team use explicit knowledge in the instructional design process?
5. Could you please describe how (if) this community of instructional designers and the knowledge base they create influence the instructional design process for OLU?
 - a. Are there any methods that the team of instructional designers follow to integrate now-explicit?

Demographics

6. Could you please tell me about your educational background?
7. How long you have been working at OLU as the director?
8. How would you describe your role as the director of OLU?

APPENDIX O. SEMI-STRUCTURED INTERVIEW QUESTIONS FOR INDIVIDUAL INSTRUCTIONAL DESIGNERS

Instructional Design Process

1. Could you please describe the instructional design process that you, as the instructional designer at Online Learning Unit, follow to design and develop online courses?
2. Could you please identify and explain some of the factors that are either brought by you or subject matter expert (faculty) into the picture/process that potentially influence (positive and negative) the instructional design process that you outlined?
 - a. Why do you characterize [...] as positive influencers?
 - b. Why do you characterize [...] as negative influencers?

Role of Instructional Designer

3. Could you please describe your role as an instructional designer at OLU?
4. Could you please describe how do you and subject matter expert (faculty) work together to design and develop an online course?
 - a. What are the tasks that you perform during this process?
 - b. What are the tasks that subject matter expert (faculty) perform during this process?
5. How do you and subject matter expert (faculty) communicate with each other throughout the instructional design process?

Communities of Practice

6. Do you collaborate with other instructional designers at OLU?
 - a. If yes, could you please describe how does this collaboration look like? What forms can it take?
 - b. How important do you believe collaborating with other instructional designers at OLU? Why?
7. Could you please define what community/communities of practice means to you
 - a. within OLU?
 - b. within the University?
 - c. in profession/larger context?
8. How do you describe your role in/contribution to/use of these communities of practices?
 - a. Could you please share some of the ideas, procedures, strategies, or tactics that you have invented or learned on the job?
 - b. Have you ever worked with a difficult subject matter expert (faculty)? If yes, how did you deal with him/her and/or the situation?
 - c. Could you please tell me more about a difficult instructional design project that you worked on?
 - i. What made the project difficult?
 - ii. How/if you were able to finish and deliver the project?

- iii. Did you seek for assistance and/or advice during the design and development process? If yes, from where and/or whom? Why did you opt in to choose this source?
- iv. Did you share your experience going through this difficult instructional design project with others? If yes, how?
- d. How do you feel about sharing your ideas, procedures, strategies, or tactics that you have invented or learned with others (e.g., instructional designers, faculty, administrative staff at the university)?

Demographics

- 9. Could you please tell me about your educational background?
- 10. How long you have been working at Online Learning Unit as an instructional designer?

APPENDIX P. FOCUS GROUP SESSION QUESTIONS FOR INSTRUCTIONAL DESIGNERS**Communities of Practice**

1. What are some of the ideas, procedures, strategies, or tactics that you invented or learned that facilitate the instructional design process while you are working with faculty to design and develop online courses?
 - a. What are some of the tools that you, as the instructional designer, utilize to share with each other?
 - b. What are some of the tools that you, as the instructional designer, utilize to communicate with faculty?
 - c. What are some of the tools and/or processes that you, as the instructional designer, utilize to prepare faculty to teach online?
2. How would you ask for help if/when you encounter a challenging instructional design problem?
 - a. What are some of the strategies that you utilize to deal with difficult faculty?
 - b. Is there a common place, shared space to share these strategies, ideas, procedures, tactics among other instructional designers?
 - i. How important do you find having access to such platform?
3. How (if) would you describe your influence on the instructional design process that your team at OLU follows?

APPENDIX Q. FOCUS GROUP SESSION PROTOCOL

Pinar Celik PhD Thesis

Methods – Focus Group Session Protocol

Monday, July 22, 2019

Focus Group Session Protocol with Instructional Designers

Welcome & Introductions

Good [morning, afternoon, evening] and welcome to our focus group session. Thank you for taking the time to join me to talk about the communities of practice that you, as the instructional designers of [REDACTED], create, maintain, and benefit from. My name is Pinar Celik. I am currently a PhD candidate in the School of Education at Iowa State University. I would like to find out who you are, so let's go around the table and have each person introduce ourselves to the rest of the group. Please tell us your first name, your position within the unit, how long you have been working in this and/or similar capacity in the field, and anything else you would like to add.

Action: Go around the table and have each person introduce themselves.

Housekeeping

Before we start, there are couple of things that we need to do, and I would like to tell you a little bit about why we are here and how we will conduct this focus group session.

I have some forms that I am going to pass out to you now. These forms will tell you a little bit about the purpose of this focus group session and this process. I will need your signature on the form, which states that you are consenting to participate in this focus group. But, before you sign them, I would like to review them with you and answer any questions that you may have.

Action: Pass out informed consent forms

Okay, now I am going to read through the informed consent form with you. If you have any questions, please stop me at any time.

Action: Read through form, sign, and collect

Guidelines

In a minute, I am going to ask you some open-ended questions and I would like you to share your responses to them.

Please share only information with this group you are comfortable sharing. Everything you say is strictly confidential – your real names will not be used at any time during this research project. Please keep information shared during this focus group session private and confidential. There are no wrong answers but rather differing points of view. Please feel free to share your point of view even if it differs from what others have said. Please remember that you can leave at any time.

You have probably noticed the [recording device]. I will be recording this focus group session because I do not want to miss any of your comments. Participants often make very helpful comments in these discussions and I, unfortunately, cannot write fast enough to get them all down.

We will be on a first name basis during this session, and I will not use any names in my write-ups. You may be assured of complete confidentiality. The insights you will be providing regarding to the communities of practice that you create, maintain, and benefit from during this session will be complementary to the data that I collected through individual interview sessions in which some of you may have participated.

At this time, I would like you to write down your first name only and/or preferred name on your name card.

Action: Have participants write down their first/preferred name on the name cards.

Before you make a comment, please tell us your first name and then make your comment. This helps me when I am transcribing the conversation from the recording to identify who is making a specific comment; sometimes it can get difficult to differentiate voices. For example, if I wanted to make a comment on one of the questions or what one of my peers had said, I would say, "I'm Pinar, and I agree with what Jim had to say about that, and I would like to add ..."

Note: If participants forget to state their first name, do not remind them because it will disrupt the flow of the conversation. Just make sure that you make not for who is talking.

Okay, are there any questions or concerns before we begin?

Action: Address any questions or concerns.

Begin Focus Group Session

We will now begin and I will turn on the recorder.

Action: Turn on the recorder.

Action: Start asking the questions. One at a time. Use your judgment in deciding when to move on to the next question. Watch your time.

Our first question is ...

1. What are some of the ideas, procedures, strategies, or tactics that you invented or learned that facilitate the instructional design process while you are working with online faculty to design and develop online courses?
 - a. What are some of the tools that you, as the instructional designer, utilize to share with each other?
 - b. What are some of the tools that you, as the instructional designer, utilize to communicate with online faculty?
 - c. What are some of the tools and/or processes that you, as the instructional designer, utilize to prepare online faculty to teach online?

2. How would you ask for help if/when you encounter a challenging instructional design problem?
 - a. What are some of the strategies that you utilize to deal with difficult online faculty?
 - b. Is there a common place, shared space to share these strategies, ideas, procedures, tactics among other instructional designers?
 - i. How important do you find having access to such platform?
3. How (if) would you describe your influence on the instructional design process that your team at [REDACTED] follows?

That was our final question. Is there anything else that anyone would like to add or any additional comments concerning what we have talked about here today?

Action: Allow time for comments.

This concludes our focus group session. Thank you for coming and participating. Once I complete the transcription of our focus group session recording, you will receive an email that will allow you to make modifications and/or additions to the script within the given period. Once I have conducted all the focus groups and analyzed the transcript, you will receive another email asking you to comment on the conclusions we have drawn based on our analysis of the comments made during the group discussion. If you have any questions at any time, please contact me.

Action: Once everyone has left, briefly review the notes before leaving the room.

APPENDIX R. EXAMPLE OF STATEMENT OF WORK DOCUMENT

Course Name & Number: ██████████ Instructor/TA: ██████████	Date, Place, Participants: Created on Sep 5, 2019 by ██████████ Updated on	
Learning Objectives & Rationale Describe what you will cover in this course. They are generally broader than learning outcomes.	Learning Outcomes - Expected & Unexpected A detailed description of what a learner must be able to do at the conclusion of a course/module.	Assessment How will you measure the learning outcomes (behavior/actions)? E.g., quiz, discussions, journals, blogs, portfolios, reports, essays, oral presentations, etc.
<ol style="list-style-type: none"> 1. Learners will become familiar with the various water pollution control processes used in industry and the literature 2. Learners will study the role and fundamentals of biochemical operations in water pollution control. 3. Learners will become knowledgeable of the traditional and lysis-regrowth models for simulating biochemical operations. 4. Learners will gain an understanding of and gain proficiency in using the computer simulation tool BioWin. 	<p>Upon completion of this course, students will be able to:</p> <ol style="list-style-type: none"> A. Apply the knowledge of biochemical operations used in water pollution control processes to develop a specific reactor system and treatment objectives <i>Learn this from textbook and lecture videos, tested by homework, quiz, exams, design project</i> B. Write the stoichiometric equations for the main biochemical operations with various electron donors and acceptors <i>Learn this from textbook and lecture videos, tested by homework, quiz, exams</i> C. Write the Monod and Andrews kinetic expressions and explain why they are important. [<i>Understand; Objective 2</i>] <i>Learn this from textbook and lecture videos, tested by homework, quiz exams</i> D. Critically critique scientific literature on water pollution control processes [<i>Evaluate; Objective 1</i>] <i>Learn from assignment rubric and instructor feedback; tested by group discussions, literature critique</i> E. Estimate the performance of a continuous stirred tank reactor (CSTR) for given influent characteristics and detention times, when provided the stoichiometric and kinetic values [<i>Apply; Objective 1&3</i>] <i>Learn from textbook and videos, tested by homework, exams</i> 	<p>Group discussions on current scientific literature will be done regularly. [LO C]</p> <p>Quizzes (multiple-choice) [A, B, C, E, F]</p> <p>Homework from the textbook end of chapter problems will be assigned regularly. [LO A, B, E]</p> <p>Students will review a current literature paper and write an abstract critiquing the literature routinely throughout the class. [LO D]</p> <p>There will be two mid-term and one final exam (multiple-choice closed book A, B, C and workout problems open booked). [LO A, E, F]</p> <p>There will be a design project using BioWin. [LO A, G]</p>

	<p>F. Articulate why various bioreactor configurations multiple bioreactors behave differently than a single CSTR. [Analyze; Objective 3]</p> <p>Learn from textbook and videos, tested by quiz, exams</p> <p>G. Simulate the performance of a bioreactor configuration using BioWin and design a system to meet certain effluent requirements. [Evaluate/Create; Objective 4]</p> <p>Learn from textbook and videos, BioWin tutorials; tested by design project</p>	
<p>Learning Activities List activities that students will engage in to achieve the intended learning outcomes. E.g., discussions, journaling, group work, homework</p>	<p>Course Structure & Communication Describe the structure of your course to facilitate the learning activities. For e.g.,</p> <ul style="list-style-type: none"> • Are the activities organized by week or by topic? • What facilities are there to support communication? (student-student, student-teacher, student-external mentors, etc.) • What facilities are there to support group work? • How frequently will the students be assessed? • What are the expectations regarding class management and plagiarism? • What other resources exist in the course to facilitate learning? 	<p>Course Materials What materials are needed to help students achieve the intended outcomes? Syllabus, schedule, readings, videos, audio, etc.</p>
<ul style="list-style-type: none"> • Read textbook • Watch video lectures (real-field examples) • Attend group discussions • Complete homework • Critique literature papers • Take exams • Complete a design project using BioWin 	<p>Organized by topics(chapter)</p> <p>Communication: Student-student: group discussions Student-instructor: group discussions; course messages (emails), feedback on homework</p> <p>Group work: group discussions</p>	<p>Syllabus, schedule, readings, lecture videos, BioWin tutorial videos,</p>

Task Distribution		Task Timeline	
Distribute course development tasks between OLU, instructor, and/or TA		Construct a timeline for completing the tasks.	
Tasks	Person Responsible	Tasks	By Dates
Course Content (syllabus, schedule, outcomes, lectures, readings, assessments, rubrics)	Tim ([redacted] will provide feedback and suggestions)	Finalize the course objectives, outcomes, assessments, activities, and alignment of these factors with each other	Oct 4 (4weeks)
Course Site Design (layout, navigation, visuals)	[redacted]	Modularize the course content and complete Module Map document (confirm each module's activities and assessments)	Oct 25 (3 weeks)
Create Assessments in LMS	[redacted] (may need help from Tim)	Create and build assessments	Dec 13 (at least 7 weeks, can start once assessments confirmed)
Instructor's self-intro video	and [redacted]	Create content (video recording, readings)	Dec 13 (at least 7 weeks)
Tutorials for Students (LMS tools, technical requirements, proctored exams, etc)	and [redacted] (BioWin related)	Create visual identity for the course page	End of Oct
Accessibility check	[redacted]	Record course orientation video	Dec 13
Instructional Technology Consultation	[redacted]	Wrap up course	Dec 27 (two weeks before semester starts)
		Publish course	At least the Friday before semester starts

APPENDIX S. EXAMPLE OF MODULE MAP DOCUMENT

Course Learning Outcomes			
<p>Upon completion of this course, students will be able to:</p> <ul style="list-style-type: none"> A. Apply the knowledge of biochemical operations used in water pollution control processes to develop a specific reactor system and treatment objectives B. Write the stoichiometric equations for the main biochemical operations with various electron donors and acceptors C. Write the Monod and Andrews kinetic expressions and explain why they are important. D. Critically critique scientific literature on water pollution control processes E. Estimate the performance of a continuous stirred tank reactor (CSTR) for given influent characteristics and detention times, when provided the stoichiometric and kinetic values F. Articulate why various bioreactor configurations multiple bioreactors behave differently than a single CSTR G. Simulate the performance of a bioreactor configuration using BioWin and design a system to meet certain effluent requirements. H. Explain the general principles of anaerobic operations, the significance of intermediate compounds, and the major benefits of incorporating AD in the overall treatment scheme. 			
Module	Topics	Learning Outcomes	Activities & Assessments
	List the topics you will cover in this module	Describe what a learner will be able to do at the conclusion of this module. Please also indicate which of the course-level outcomes align with this one.	List activities that learners will engage in to achieve the intended learning outcomes (e.g. read textbook, watch lecture video, etc.) & How will you measure the learning outcomes? (e.g. quiz, discussions, journals, presentations, etc.)
1 (week 1)	Classifications of Biochemical Operations	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) List and describe the three major biochemical transformations used in environmental biotechnology. 2) Describe each of the major bioreactor types found in environmental biotechnology applications. <p>Course-level A, G</p>	<ul style="list-style-type: none"> • Read Grady et al. Ch 1 • Watch lecture videos • Read journal articles (current literature related to topics) • Quiz (multiple-choice, matching, true-false, fill-in blank) • BioWin exercise (access to program, navigation)

<p>2 (week 2)</p>	<p>Fundamentals of Biochemical Operations</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Draw the nitrogen cycle, labeling all reactions. Then explain the following in terms of their importance in biochemical operations: ammonification, assimilation, nitrification, and denitrification. Describe the anammox variation to the nitrogen cycle. 2) Identify the causes of, and remedies for, filamentous bulking and foaming in activated sludge systems, factors that contribute to bulking and foaming, and control strategies. 3) Explain why it is convenient to express the concentrations of organic substrates and biomass in COD units. 4) Explain why the observed growth yield, Y_{obs}, in a bioreactor is less than the true growth yield, Y. 5) Define the terms EPS and SMP and describe the types normally encountered in biochemical systems. 6) Draw a sketch describing the multistep nature of methanogenic anaerobic cultures and the roles of major groups of microorganisms involved 7) Explain the functioning of phosphate accumulating organisms (PAO) in enhanced biological phosphorus removal systems (EBPR). <p>Course-level A, G,H</p>	<p>To complete this module, Students will need to:</p> <ul style="list-style-type: none"> • Read Grady et al. Ch 2 • Watch lecture videos • Read journal articles (current literature related to topics) • Quiz • BioWin exercise
------------------------------	---	--	--

<p>3 (week 3)</p>	<p>Stoichiometry and Kinetics</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Use McCarty's half reaction technique to write the molar, mass, and COD based stoichiometric equation for microbial growth, including associated nitrogen and phosphorus requirements. 2) Write the rate expression for bacterial growth and relate it to the rate of substrate removal and oxygen utilization. 3) State the Monod and Andrews expressions relating the specific growth rate to the soluble substrate concentration. Be able to show these relationships in a diagram. 4) Explain the difference between the traditional approach to modeling the loss of biomass in biochemical operations and the lysis: regrowth approach. 5) Write the equations for the loss of active biomass in the traditional and lysis: regrowth approaches. <p>B & C, G</p>	<p>To complete this module, Students will need to:</p> <ul style="list-style-type: none"> • Read Grady et al. Ch 3 • Watch lecture videos • Quiz • BioWin exercise
<p>4 (week 4)</p>	<p>Modeling Suspended Growth Systems</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Define the terms: mean residence time and residence time distribution. Describe these detention times for a continuous stirred tank reactor (CSTR) and plug flow reactor (PFR). 2) Describe the two different procedures for testing an existing bioreactor to determine its residence time distribution. 3) Describe the two most common techniques for modeling bioreactors with nonideal flow patterns. 4) Given appropriate data, characterize a reactor with respect to its mixing regime and choose an appropriate model for it. <p>E, G</p>	<ul style="list-style-type: none"> • Read Grady et al. Ch 4 • Watch lecture videos • Quiz (multiple-choice, matching, true-false, fill-in blank) • BioWin exercise •

<p>5 (week 5-6)</p>	<p>Aerobic Growth in a Single CSTR</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Explain the difference between the HRT and SRT of a reactor. Given appropriate data be able to calculate the HRT and SRT of a reactor. 2) Given appropriate data, calculate the soluble substrate effluent concentration from a CSTR bioreactor. 3) Explain why the traditional model presented in chapter is not adequate to describe the performance of a CSTR receiving biodegradable particulate substrate. 4) Describe the Garrett and conventional configurations for biomass wastage. Explain why the Garrett scheme is a simpler method for controlling the SRT. 5) Describe the effects of SRT on the performance of a CSTR receiving soluble substrate and explain why those effects occur. 6) Describe the major impacts of the presence of active biomass in the influent to a CSTR on the removal of soluble substrate. Be able to explain how this can be used as an advantage in treating wastewaters containing specific pollutants which must be removed to low levels <p>E, G, H</p>	<ul style="list-style-type: none"> • Read Grady et al. Ch 5 • Watch lecture videos • Quiz • BioWin exercise
<p>Exam (cover Module 1-5)</p>			

<p>6 (week 7-8)</p>	<p>Other Activities in a Single CSTR</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Describe the how the International Water Association activated sludge model differs from the traditional model. 2) Explain the difference in behavior between activated sludge systems receiving soluble and particulate substrates. 3) Describe how a diurnal flow will affect activated sludge system performance in a dynamic system. 4) Explain why nitrification behaves in an all or none fashion. 5) Explain how nitrification and denitrification can occur in a single CSTR and what is meant by the optimum aeration fraction. <p>E, G</p>	<ul style="list-style-type: none"> • Read Grady et al. Ch 6 • Watch lecture videos • Quiz • BioWin exercise
<p>7 (week 9-10)</p>	<p>Multiple Events in Complex Systems</p>	<p>After completing this module, students should be able to:</p> <ol style="list-style-type: none"> 1) Diagram the conventional activated sludge, step-feed, contact stabilization, MLE, SBR, A/O, and Bardenpho processes and give the main characteristics of each. 2) Describe the effect of the return activated sludge ratio on performance of a contact stabilization system. 3) Describe the effect of nitrate recirculation on the performance of an MLE process. 4) Explain why there is a range of SRTs for the A/O process to function. 	<ul style="list-style-type: none"> • Read Grady et al. Ch 7 • Watch lecture videos • Quiz • BioWin exercise

		5) Describe the operation of an SBR system and how its performance relates to a continuous system. F, G	
Spring Break			
8 (week 11)	Stoichiometry, Kinetics, and Simulations of Anaerobic Biochemical Operations	After completing this module, students should be able to: 1) Describe the hydrolysis, fermentation, and anerobic oxidation reactions occurring in anerobic systems. 2) Explain the function of hydrogen in anaerobic processes and why its concentration is below what would be expected due to equilibrium expressions. 3) Explain why anaerobic systems tend to be more sensitive to inhibition than aerobic systems 4) Describe the effect of ammonia in anaerobic systems. G, H	<ul style="list-style-type: none"> • Read Grady et al. Ch 8 • Watch lecture videos • Quiz • BioWin exercise
Exam (cover Module 6-8)			
9 (week 12)	Activated Sludge	After completing this module, students should be able to: 1) Describe the typical configurations and mechanical equipment used in activated sludge processes. 2) Describe the function of the secondary clairfier and how membrane processes can be integrated into activated sludge systems. 3) Describe how filamentous bacteria affect the performance of secondary clarification and overall system performance.	<ul style="list-style-type: none"> • Read Grady et al. Ch 11 • Watch lecture videos • Quiz (multiple-choice, matching, true-false, fill-in blank) • BioWin exercise

		<p>4) Explain the relationship between aeration basin volume, mixing, and oxygen transfer.</p> <p>5) Identify operational problems with activated sludge systems such as filamentous bulking and denitrification in the secondary clarifier and how to correct those problems.</p> <p>A, F, G</p>	
<p>10 (week 13)</p>	<p>Biological Nutrient Removal</p>	<p>After completing this module, students should be able to:</p> <p>1) Design a multi-reactor system with aerobic, anoxic, and anaerobic zones to accomplish various treatment objectives.</p> <p>2) Describe the competition between biological phosphorus and nitrogen removal and how to optimize both.</p> <p>3) Explain the effect of the various nutrient removal systems on alkalinity, sludge settleability, and oxygen requirements.</p> <p>4) Describe the effect of sludge processing on side stream wastewater and return of nutrients to the main stream.</p> <p>A, F, G</p>	<ul style="list-style-type: none"> • Read Grady et al. Ch 12 • Watch lecture videos • Quiz • BioWin exercise
<p>BioWin Simulation and Modeling Project (week 14-15)</p>			
<p>Final Exam TBD (week 16)</p>			

APPENDIX T. EXAMPLES COURSE ASSESSMENT AND ACTIVITIES OUTLINE DOCUMENT

Example 1

Course Learning Outcomes

By the end of the course, students should be able to:

- Identify their oral communication issues [LO1]
- Utilize relevant strategies and techniques to practice and improve their English speaking skills [LO2]
- Incorporate appropriate US university classroom behaviors in their classroom interactions [LO3]
- Present information coherently and effectively using different techniques [LO4]

Assessments

Assessment Type	Purpose	Format	Resources
	Why this assessment is important for your students? OR How does this assessment measure the course outcomes?	A more detailed description of this assessment. E.g. Frequency, Requirements, Deliverables, Platform	What additional resources are needed for supporting this assessment? E.g. software instructions, links to external website
Self-needs analysis and personal mission statement	<ul style="list-style-type: none"> • Students must be able to identify areas of learning so that they can pay attention to specific topics. (LO1) • The personal mission statement serves to identify action items that they are willing to work on during the semester. Feedback from the instructor can help to address action items that should take priority while incorporating additional action items as necessary. 	<ul style="list-style-type: none"> • One-time assessment – upload into the Assignment area. • This can be a word document. 	<ul style="list-style-type: none"> • Template with sample questions.
Weekly homework	<ul style="list-style-type: none"> • The weekly homework activities will provide practice for students. • The instructor will also use the weekly activities as formative assessment to see if 	<ul style="list-style-type: none"> • Weekly homework will be used as formative assessment to see if students need supplementary practice. 	<ul style="list-style-type: none"> • Links to external links within the

	students are incorporating the strategies and techniques effectively after reviewing the instructional content. [LO2]	<ul style="list-style-type: none"> Examples of homework: Watch a TedTalk clip and complete a mirroring exercise, complete listening and vocabulary quiz, record word lists with correct pronunciation, recorded conversations with native speakers. 	Assignment tools.
Individual Video-recorded presentations	<ul style="list-style-type: none"> The three recordings are the most important part of the course. (LO 1,2, 3,4) These recordings allow the instructor to review the progress and provide formative feedback. 	<ul style="list-style-type: none"> Three times during the semester. Videos will be submitted through Canvas Assignment (ARC) Students can choose topics from their academic field Need to write on whiteboard during presentation (physical board or Surface screen) Length of the presentations: 5 minutes 	<ul style="list-style-type: none"> Instructions on how to record presentations with camera or surface Instructions on how to use Arc to submit video assignment
Self-evaluations of presentations	<ul style="list-style-type: none"> The three self-evaluations of the presentations are also important because students have to review their recordings based on specific topics. They will try to identify if they have made progress in the specific areas. (LO1, LO2, LO4) 	<ul style="list-style-type: none"> Three times during the semester. Students complete the self-evaluation and upload to the Assignment tool (Word document) 	<ul style="list-style-type: none"> Template (word document) for self-evaluation Access to uploaded videos.
Conferences with instructor	<ul style="list-style-type: none"> The three conferences with the instructors are also important because the instructor will evaluate if there are gaps in the students' self-evaluation and provide formative feedback. (LO1, LO2, LO4) 	<ul style="list-style-type: none"> Three times during the semester. Synchronous one-on-one (or face-to-face if preferred) conference to discuss 	<ul style="list-style-type: none"> Synchronous via Zoom or face-to-face in Pearson Hall.

		feedback, progress, and things to work on.	
--	--	--	--

Learning Activities

Activities	Purpose How does this activity help students learn and achieve learning outcomes	Format A more detailed description of this activity. E.g. Frequency, Requirements, Deliverables, Platform	Resources What additional resources students will need to complete this activity?
Student self-introduction	<ul style="list-style-type: none"> Getting to know other students and instructor – community building. Diagnosis – Instructor will use this video for additional diagnosis of language proficiency. 	<ul style="list-style-type: none"> Students should upload a video recording in Week 1 Discussion Forum: Introductions. 	Own recording devices, e.g. smartphone or https://screencast-o-matic.com/ with instructions. ARC
Read course materials, watch videos and PPTs	<ul style="list-style-type: none"> These instructional materials contain the key ideas about the topics. Students learn about the strategies and techniques before completing weekly homework activities. [LO1,2,3,4] 	<ul style="list-style-type: none"> There will be one page per topic or subtopic that will contain necessary content. 	Links to videos or PPTs or text.
Listening and Vocabulary Exercises	<ul style="list-style-type: none"> Listen to a conversation, answer questions, and answer comprehension questions. Read the definition of vocabulary and expressions. (LO2) 	<ul style="list-style-type: none"> One listening exercise per week. Created as a weekly quiz. Complete/not complete 	<ul style="list-style-type: none"> Audio files inside Canvas/ website Quiz questions OR Assignment with a link to external website, students submit screenshot
Complete Speaking Exercises	<ul style="list-style-type: none"> One discussion topic per week, e.g. “Discuss the Pros and Cons of a College Degree” or a summary from a news clip. 	<ul style="list-style-type: none"> One topic per week. Posted under Discussions 	https://www.procon.org/ https://www.npr.org/

	<ul style="list-style-type: none"> • Allow students to practice responding to prompts on various topics. [LO 2, 4] • 	<ul style="list-style-type: none"> ▪ No interactions necessary, but posts under Discussions allow students to see different responses and ideas. (post first then see others) 	Arc (NOT ENABLE COMMENTING)
Have Individual tutoring sessions with English speaking consultants	<ol style="list-style-type: none"> 1. Session 1 – Practice different scenarios 2. Session 2 – Dry-run for Presentation 2 plus responding to potential questions 3. Session 3 – Dry run for Presentation 3 plus responding to potential questions. (LO 1,2,3,4) 	<p>Three recorded sessions (can be face-to-face or via zoom)</p> <ol style="list-style-type: none"> 1. Role play conversation 2. Dry run for Presentation 2 3. Dry run for Presentation 3 	<p>Video recording of the session and feedback from consultants (students summarize)</p> <p>Arc and file upload to Assignment link</p>

Other course Activities (not core learning activities)

Activities	Purpose	Format	Resources
	•	•	•
		•	

Example 2

Assessments type	Description/Summary	Why this assessment is important for students/how does it achieve the learning outcomes/objectives	Aligned with overall course-Learning Outcome
Online Discussion	Discussion of primary sources (i.e. the readings and/or artefacts)	The students will read key texts and/or visually examine photos of artefacts (i.e., primary sources) that provide evidence for major historical developments (outcomes #1 & 2). Through discussion prompts, students will learn to interpret evidence (outcomes #2 and 4) and formulate more effective arguments (outcome #5).	1, 2, 4 and 5
Reading Response	Short (150-250 words) responses to questions about either a reading or an artefact.	The students will read a key text or texts and/or visually examine photos of artefacts (i.e., primary sources) that provide evidence for major historical developments (outcomes #1 & 2). Prompts will ask the students to interpret this evidence in a brief but focused manner (outcomes #2 and 4).	1, 2, and 4
Peer Evaluation	Short responses to questions about the function of the discussion groups.	Students will evaluate how well their discussion groups are functioning.	2
Quiz	'Open book' quiz on key names, dates, terms, places via multiple choice and matching questions.	Questions will highlight the most important facts, terms, concepts, and developments covered in each particular module (outcome #1). This knowledge is the essential foundation for the more sophisticated evaluation and discussion expected on the exams.	1
Midterm	Traditional midterm exam with short answer and essay questions.	Short answer questions will test student recall and understanding of major historical developments (outcome #1). Essays questions will ask students to analyze the causes and effects of complex event and phenomena (outcome #3) and construct historical arguments (outcome #5) based on that analysis.	1, 3, and 5
Final Exam	Traditional final exam (non-comprehensive) with short answer and essay questions.	Short answer questions will test student recall and understanding of major historical developments (outcome #1). Essays questions will ask students to analyze the causes and effects of complex event and phenomena (outcome #3) and construct historical arguments (outcome #5) based on that analysis.	1, 3, and 5

Assessment Format

Assessment Type	Detailed Format, Frequency and deliverable
Online Discussion	Small-group Canvas discussion. 7 discussions total (one per module). Instructor will post a prompt relating to a reading, readings, or photo of an artefact. Each student must post an initial response (ideally during week 1 of the module) and then must respond to at least one post by a peer (no later than week 2 of the module). A (rotating) group leader will post a summary of the discussion or, when appropriate, describe the consensus response to the prompt. Posts will be worth 10 points each (but only a maximum of 20 points can be earned per discussion). The summary post of the group's consensus will be worth an additional 40 points. <i>Note (August 1, 2020): assuming groups of 5 and assuming no student should be expected to summarize twice, we may want to omit summaries from modules 4 and 7 (the ones right before exams) so there's an even distribution.</i>
Reading Response	In response to an instructor-provided prompt relating to a text(s) or artefact(s) associated with that module, each student submits an individual response via [REDACTED]. Responses are to be short (at least 150 but no more than 250 words). 6 total responses (one per module except the first module). Responses will be worth 20 points each.
Peer Evaluation	At the end of the fourth module the students will answer some questions about how well their discussion groups are functioning. ([REDACTED] to suggest some questions?) <i>Results presumably to be shared with groups in some form so as to improve quality of discussions in second half of semester? Worth 10 points to encourage completion?</i>
Quiz	'Open book' quiz on key names, dates, terms, places via multiple choice and matching questions. 7 quizzes total (one per module). The quizzes will be on [REDACTED] and, as they are open book, will not require the use of the testing centers. Each quiz will be worth 20 points.
Midterm	One midterm exam (covering modules 1-4) consisting of a series of short answer questions (i.e., automatically graded) and one essay question. Not open book, must be taken in an online testing center, submissions via [REDACTED]. This exam will be worth 100 points. Note: In the event that the testing centers are unavailable, the short answer portion of the exam will be replaced with a second essay question and the exam will be a "take home" exam (submitted via [REDACTED]).

Final	One non-cumulative final exam (covering modules 5-7) consisting of a series of short answer questions (i.e., automatically graded) and one essay question. Not open book, must be taken in an online testing center, submissions via Canvas. This exam will be worth 100 points. Note: In the event that the testing centers are unavailable, the short answer portion of the exam will be replaced with a second essay question and the exam will be a "take home" exam (submitted via Canvas).
-------	--

Assessments	Alignment to Module Objectives
Online Discussion #	
Reading Response #	
Quiz #	
Midterm	
Final	

APPENDIX U. MEETING MINUTES SAMPLES FROM INSTRUCTIONAL DESIGNERS

Initial Meeting Minutes Sample

Initial Meeting Agenda

This is the agenda I sent to the instructor by email:

- Talk about the course overall (background, design ideas, concerns, questions, etc.)
- [REDACTED] briefly introduce [REDACTED]'s workflow and services
- Discuss how to collaborate on this project (each's role, communication methods, timeline)

This is what I prepared for the meeting:

- Talk about the course (background, concerns, questions, etc.)

Grant Application	Questions & Notes
7 students enrolled in 2017, course not taught in 2018	Do you expect increased enrollment if this course offered online in 2020?
Students will learn simulation software BioWin and use it to design a system	Could you let me know more about this software? E.g. Do students need to purchase it? If not, how do students access it? Are there existing instructions on how to use this software or will you create instructions? How often will students use it in this class? What activities will students do with it?
The course has been taught before as f2f	Did you teach this course before as f2f? What did you enjoy about teaching this course? Were there any struggling/challenges you had? Or something you'd like to change?
Would like to meet Quality Matters criteria	How much do you know about QM? Have you taken any workshops?
Need [REDACTED]'s assistance to meet usability and accessibility	Refer to QM
5 level course, target students are graduate students, senior undergraduate students and engineering practitioners.	Use verbs for higher level of thinking in writing course learning objectives
Instructor developed an online course in 2012	How's your experiences of developing and teaching an online course before?

- Suhan briefly introduce [REDACTED]'s workflow and services
 - Statement of work
 - Assessments and activities table
 - Module map
 - Template for course syllabus, homepage, navigation
- Discuss how to collaborate on this project (each's role, communication methods, timeline)
 - [REDACTED] (TA)'s role
 - Create [REDACTED] box folder
 - Schedule biweekly meetings

- o CC [REDACTED]
- o Timeline ([REDACTED]'s schedule in Fall)

Follow-up Meeting Minutes Sample 1

Follow-up email after initial meeting

Hi [redacted] and [redacted],

It was nice to meet and talk with you both! I'm excited to get the project started.

I uploaded a few documents to our [redacted] [box folder](#) including meeting minutes, Quality Matters rubric and Statement of Work. Please feel free to review them and let me know if you have any questions.

Tim, here is a quick to-do list for you:

- Return the signed grant MOU to [redacted] [ASAP]
- Figure out with department IT about off-campus students' access to BioWin software [when you have time recently]
- Draft course-level learning objectives and outcomes in the Statement of Work document. [before our Sep 12 meeting]

Follow-up email after regular meetings

Hi [redacted] and [redacted],

Please find the meeting **action items** below. It would be safe to get course material ready (or at least first few modules) within three weeks, by Dec 27. So, we will have one week to wrap up the course before [redacted] leave for vacation.

- [redacted]
 - Record lecture videos
 - Get quiz questions ready and share with [redacted], best by Dec 15 (you can send to me once you have one quiz ready, don't need to wait for all ready)
 - Work on syllabus (describe course assessments, grading policy and other course policies if any)

- [redacted]
 - Continue creating BioWin tutorial videos and use name conventions
 - Set up Biowin exercise due dates in [redacted] once schedule document is ready (I will let you know this)

- [redacted]
 - Create course schedule document and specify due dates
 - Follow up course banner
 - Create quizzes in [redacted] once [redacted] come up with questions

Follow-up Meeting Minutes Sample 2

HISTORY [REDACTED]
 Fall 2020
 Instructor: [REDACTED] and [REDACTED]
 Instructional Designer: [REDACTED]

TABLE OF CONTENTS

1. Meeting Minutes & Course design Progress, Thursday, February 6 2020	4
A. Action Items	4
B. Course Background (as discussed)	5
C. Details-Asynchronous Online Course development	5
i. Course outcomes-objectives.....	5
ii. Modularizing the course.....	6
D. Learning Resources and technology (TBD)	6
E. Accessibility - TBD	7
F. Assessments - TBD	7
G. Interactions (TBD)	8
H. Housekeeping	8
I. Next Meeting Agenda, February 20 at 1PM in [REDACTED]	8
2. Meeting Minutes & Course design Progress, Thursday, February 20 2020	8
A. Action Items	8
B. Discussions/Updates	9
i. Tasks Accomplished.....	9
ii. Discussion on Learning Outcomes	9
iii. Discussion on Assessments.....	9
iv. Course Promo Video	10
v. Resources	11
C. Next Meeting, March 5 at 1PM-2PM in [REDACTED]	11

3. Meeting Minutes & Course design Progress, Thursday, March 5 2020	11
A. Action Items.....	11
B. Discussions/Updates.....	11
i. Tasks Accomplished.....	11
ii. Discussion on Assessments - Discussion.....	11
iii. Discussion on Assessments – Reading responses	12
iv. Discussion on Assessments – Quizzes	12
v. Discussion on Assessments – Exams (midterm and final).....	12
vi. Resources	12
C. Next Meeting – March 19 at 1PM [REDACTED].....	13
4. Meeting Minutes & Course design Progress, Thursday, March 19 2020	13
A. Action Items.....	13
B. Discussions/Updates.....	13
i. Tasks Accomplished.....	13
ii. Canvas Studio – recording instructions	13
iii. Engagement.....	14
C. Resources	14
D. Next Meeting – April 2 at 1PM in via WebEX.....	14
5. Meeting Minutes & Course design Progress, Thursday, April 2 2020	15
A. Action Items.....	15
B. Discussions/Updates.....	15
i. Tasks Accomplished.....	16
ii. Discussion on Course Promo video	16
iii. Discussion on Mid-term and Final Exams.....	16
iv. Discussion on Conversational Lecture Videos	17
v. Discussion on Module Quizzes.....	17
C. Resources	18
D. Next Meeting – April 16 at 1PM in via WebEX.....	18

6. Meeting Minutes & Course design Progress, Thursday, April 16 2020	19
A. Action Items	19
B. Discussions/Updates	19
i. Tasks Accomplished.....	19
ii. Discussion on Mid-term and Final Exams.....	19
C. Resources	20
D. Next Meeting – May 14 at 1PM in via WebEX	20
7. Meeting Minutes & Course design Progress, Thursday, May 14 2020	20
A. Action Items	20
B. Discussions/Updates	21
i. Tasks Accomplished.....	21
ii. Discussion on podcast platforms.....	21
iii. Tentative timeline for development.....	21
C. Next Meeting – May 28 at 1PM in via WebEX	22
8. Meeting Minutes & Course design Progress, Thursday, May 28 2020	22
A. Action Items	22
B. Discussions/Updates	23
i. Tasks Accomplished.....	23
ii. Tentative timeline for development.....	23
iii. Module Overview Videos	23
iv. Video Feedback.....	24
C. Resources	24
D. Next Meeting – June 11 at 1PM in via WebEX	24
9. Meeting Minutes & Course design Progress, Thursday, June 11 2020	25
A. Action Items	25
B. Discussions/Updates	25
i. Tasks Accomplished.....	25
ii. Tentative timeline for development.....	26

C. Resources	26
D. Next Meeting – June 25 at 1PM in via WebEX	26

COURSE DEVELOPMENT PROGRESS

1. MEETING MINUTES & COURSE DESIGN PROGRESS, THURSDAY, FEBRUARY 6 2020

A. Action Items

- Share any imagery with [REDACTED] for the course banner and other visual.
- First stab at the objective-outcomes- [objective-outcome document](#).
 - List the course learning outcomes
 - Modularize the course
 - List the module learning objectives
 - Align the module objectives to overall course outcomes.
- First stab at the [Learning materials Map document](#)
 - List the module objective
 - List the Topics
 - List the external videos needed.
 - List the Videos to be recorded by you (you may not need to record lecture videos if content is covered by other resources).
 - Include Module overview video in the list of videos to create for each module.
 - List the Readings students have to do/ any other learning resource.

- List the assessments for that module.
- First stab at the [Assessment document](#)

See details below.

B. Course Background (as discussed)

HIST [redacted] is a popular course among students and is kind of the entry-level course for the department and most students end up taking this course. It has attracted students from all different majors and majority have been from engineering, business and general LAS. The student population is mostly 1st/2nd year students and seldom there are 4th year students.

It has primarily has been taught face-to-face as a lecture-based class with a discussion section which is often led by TAs. The discussion section is structured in multiple ways – students do their reading and discuss it in class, the TAs may give them a prompt ahead of the class and then the discussion follow. It has also been used as an avenue here supplementary resources are shared with the students and as exam preparation.

Assessments have mainly been two major exams – mid-term and a final. Both in-class sit exam and proctored exam of Canvas MCQs have been tried by both instructors. Other assessments include class participation and written assignments.

The bulk of the material development will be done in Summer. Spring will mostly be spend on getting all the design document ready and getting the course blueprint ready.

ID Input: From the first discussion, it appears that course will a good fit for implementation ‘[digital storytelling](#)’ as a pedagogical and instructional tool. Will discuss with the instructor as the development progresses

C. Details-Asynchronous Online Course development

i. Course outcomes-objectives

The first step will be to work on the course outcomes and objectives. This will be an iterative process. You start filling out the [objective-outcome document](#).

[Samples](#) have been provided in the [redacted] resources folder in [redacted] box. You can also refer to the [bloom’s taxonomy action verbs](#).

The following points may be helpful:

Course rationale/goal

Describe what you want to teach and why - core course, etc.

Describe what you think is the best way of teaching this course and the best way students can learn the content of this course.

Learning Outcomes (for the over-all course)

Learning outcomes represent the skills that learners can expect to demonstrate after completing the course. Learning outcomes are more general. It would be helpful to think the following question while writing the learning outcomes:

What I want students to remember, know, and use 1 or 2 years after they took the course? How, when, and where they can use the things they learned in real life.

Module/Topic level Objectives (for each module /topic)

Module/Topic objectives are intended results or consequences of instruction or activities. These are specific to the course, and tell the story of the course. They should be **specific, measurable, attainable, relevant and targeted** to the learners and to the desired level of learning.

Formulating course learning outcomes and module objectives is the most critical step. These will guide all aspects of the course-topics, learning materials, assessments, activities, interaction, technology used in the course.

ii. **Modularizing the course**

Divide and group the course content into reasonable modules. Think of the number of weeks for each module as you are doing this. Modules can vary in size in terms of the number of weeks allocated to it.

D. **Learning Resources and technology (TBD)**

- v. Resources
 - o [Considerations for Assessment Design](#)
 - o [Sample Discussion Structures](#)

Next Meeting, March 5 at 1PM-2PM in [REDACTED]

- o Agenda
 - o Discuss Assessments
 - o First draft of the course banner, icons and PPT template
 - o Schedule course promo video recording and Carver/recording technology walkthrough
 - o Course offering
 - o Other questions

3. MEETING MINUTES & COURSE DESIGN PROGRESS, THURSDAY, MARCH 5 2020

A. Action Items

- Update the promo script
- Update the Assessment document

B. Discussions/Updates

- i. Tasks Accomplished
 - Objective-outcome document updated
 - Learning Material Map updated
 - Assessments updated
- ii. Discussion on Assessments - Discussion
 - Every module will have a discussion. Structure will be a primary post, one response post and a summary/consensus post by a group leader.
 - These discussion prompts can have 2 formats –
 - o specific to a reading/learning source or a broader/more open ended that will cover all the sources.

- The content of the Module can guide which type will be more suitable along with the learning objectives of the module.
 - Concerns regarding the group leader not doing his/her job or being absent –
 - The role and responsibility will have to clearly listed.
 - Any planned absence should be notified so that an alternate arrangement can be made.
 - The discussion has to be monitored by the TA/instructor to look for any signs of non-engagement.
 - All aspects of the discussion should have a point value.
 - There should be clear rubrics for the primary and response post.
 - Providing an example of how to address a prompt and a response will be helpful. (in a video format as suggested by [REDACTED])
- iii. Discussion on Assessments – Reading responses
- These will be based on a specific reading.
 - Will be applicable to all Modules.
 - *ID Question- If reading responses and one of the discussion format(ties to one source)- both based on a specific reading, how would you differentiate between the two? What, in that case, is the rationale behind having both?*
- iv. Discussion on Assessments – Quizzes
- These will be end-of module quizzes.
 - Low stake, multiple attempts and timed
 - Mainly to check if the students have done the readings/watched the videos
 - These questions can be made in to Question Pool and Respondus can be used to upload the Questions to Canvas. Formatting the word document with the questions will be needed and the Respondus guidelines will be provided.
 - The types of questions better suited for auto-graded assessment will be – multiple choice, multiple answers, true and false and matching.
- v. Discussion on Assessments – Exams (midterm and final)
- These will be proctored exams.
 - Essay and short answer type questions
 - Students will upload to Canvas.
- vi. Resources

- [Considerations for Assessment Design](#)
- [Sample Discussion Structures](#)

C. Next Meeting – March 19 at 1PM [REDACTED]

- Record the Promo Video
- Walk through of the recording Technologies
- Discussion on engagement
- Sharing some articles on vodcast/podcasts -Styles/strategies
- Lecture recording best practices and guidelines

4. MEETING MINUTES & COURSE DESIGN PROGRESS, THURSDAY, MARCH 19 2020

A. Action Items

- View/read the [recording Guidelines](#)
 - Start making the pre-recording preparations
 - Preparing the [lecture PPT](#) for the module you want to start with
 - Upload [it to \[REDACTED\] box](#)
 - Creating the outline for the lecture
 -
- View the resources for making course [materials accessible](#).
- Add in the Module outcome-objective document and/or in the Learning Material Map how the modules will be divided between [REDACTED] and [REDACTED].

B. Discussions/Updates

- i. Tasks Accomplished
 - Canvas Studio walk through
- ii. Canvas Studio – recording instructions
 - CANVAS Tutorial - [How to record screen capture using canvas studio](#)

- [In-house Tutorial \(\[REDACTED\] \)](#)

iii. Engagement

- A brief discussion was on student engagement. In asynchronous online courses, engagement plays a critical role in student motivation and performance. Typically, we talk about student-student interaction, student-instructor interaction and student-content interaction---- all of these together encompass engagement.
- Since this course will be particularly lecture heavy, it is important to make these lectures engaging. Employing various ways of presenting the content, such as in the form of story-telling, employing artifacts to start the lecture and weaving the story around it, using interactive elements like maps and other multimedia even music and last but not the least employing engaging ways of narrating your lecture.
- Discussion of engagement will continue in our following meetings as well.
- View the [podcast Styles](#)
- Some articles on [Engagement via lecture videos in online courses](#)

C. Resources

- CANVAS Tutorial - [How to record screen capture using canvas studio](#)
- Canvas Studio - [In-house Tutorial \(\[REDACTED\] \)](#)
- Canvas Studio – [In-house tutorial\(word doc-\) – Ignore Step 2](#)
- Course PowerPoint template: [lecture PPT](#)
- [Recording Guidelines](#)
- How to make course [materials accessible](#).
- Articles-[Podcast Styles](#)
- Engagement-[Engagement via lecture videos in online courses](#)

D. Next Meeting – April 2 at 1PM in via WebEX

- Discuss Lecture PPTs

- You can just make this an auto-graded Canvas Quiz. OR
 - You can just have a 'take-home exam using Canvas Assignment.
 - Resource- [Canvas Online Exam Options](#)
 - Pedagogically, another way of rethinking the mid-term and final exam-
 - Making the formative assessments in your course – Quizzes and reading responses a higher stake assessment. OR
 - Creating 3 high-stake summative assessment in your course
 - Rethinking the traditional exam style summative assessment and thinking of alternate assessments.
 - One feasible option is a project-based assessment.
 - We will discuss more about these summative assessment in our next meeting
- iv. Discussion on Conversational Lecture Videos
- With the current situation, social distancing could be the norm for the rest of the summer.
 - In such a situation, here are a few options to think about the conversational 'format' of the videos:
 - Firstly, please mark in the learning material map which videos will be conversational.
 - I think all module overviews were planned as 2-person videos.
 - Recording Logistics
 - Option1: Setting up a [WebEX](#) or a [Zoom](#) (will have a 40 minute limite) meeting and recording your session.
OR
 - Option 2: Recording each of your parts separately and uploading to box. will piece it together.
 - Uploading the Mp4 [video to Cybox](#)
 - Before recording
 - Chalk out what each one will say either aa a script or an outline
 - Storyboard before recording – decide who goes first and how the flow will be
 - Do a test recording/session for both the styles
 - Upload it to for feedback from
- v. Discussion on Module Quizzes
- Create separate word document for each module.

APPENDIX V. ALIGNMENT BETWEEN RESEARCH QUESTIONS AND STUDY METHODS

Data Source	Item/Question	Research Question	Method	Focus
Director	1	1	Semi-structured interview	<ul style="list-style-type: none"> • Director’s description of the ID process outlines and informs the researcher about the intended ID process to be followed in the design and development of online courses by the IDers as well as SMEs (faculty) • Director’s answers to this question and follow-up questions outline how this ID process guides IDers’ interactions with subject matter experts (faculty) through the tasks that each party need to perform while they design and develop online courses
Instructional Designers	1	1	Semi-structured interview	<ul style="list-style-type: none"> • IDers’ descriptions of the ID process provide the details of the applied ID process that they follow during the design and development of online courses • IDers’ answers to this question provide <ul style="list-style-type: none"> ○ rich descriptions regarding to the details of the ID process that is previously outlined by the director; ○ insights on how (if) this ID process influence IDers’ professional identities and vice versa; and ○ insights on how this ID process shape IDers’ interactions with the subject matter experts (faculty)
Instructional Designers and Director	N/A	1	Artifacts: IDs design documents/tools, OLU’s website explaining the ID process	<ul style="list-style-type: none"> • IDers will be asked to share any documents/tools/strategies that they employ while working with SMEs (faculty) to design and develop online courses. These

Data Source	Item/Question	Research Question	Method	Focus
				<p>artifacts aide to tell a more holistic narrative regarding to the ID process followed by the team of IDers.</p> <ul style="list-style-type: none"> • OLU’s website provides details regarding to the ID process as well as roles of IDers and SMEs (faculty). Considering the dynamic nature of the ID process and the roles of IDers, these information kept up-to-date as the nature of the work that group does changes. Again, the information from the website aide to complete the narrative regarding to the ID process
Director	2	3	Semi-structured interview	Director’s description of the role of IDs provides details on how this intended instructional design process shape the roles of IDers.
Instructional Designers	3	2	Semi-structured interview	IDers’ description of the role of themselves provides details on how they see their role within this instructional design process
Director	3	3	Semi-structured interview	Considering the co-dependent/complementary nature of the relationship between IDer and SME, director’s description of the role of faculty in this ID process provides details on how the role of faculty may affect the role of IDers in this instructional design process
Instructional Designers	2, 4, 5	3, 4, 5	Semi-structured interview	<ul style="list-style-type: none"> • Considering the dynamic nature of IDers and subject matter experts (faculty) relationship shaped by many variables (e.g., resource constraints, needs analysis, skills of IDer as well as faculty, etc.), IDers’ identification and explanation of the factors provide <ul style="list-style-type: none"> ○ insights regarding to how these factors

Data Source	Item/Question	Research Question	Method	Focus
				<p>potentially influence (positive or negative) the ID process and hence the roles of IDers in a given ID project;</p> <ul style="list-style-type: none"> ○ insights on how IDers build and utilize tacit knowledge, how they bring this knowledge to their community of practice, how they turn this into explicit knowledge, and how they bring this explicit knowledge back to the ID process to tackle the challenges posed by the ID project at hand
Instructional Designers	N/A	4	Artifacts: Resource repository site (Box & Website), IDers design documents/tools, IDers weekly meeting minutes	<ul style="list-style-type: none"> ● IDers discuss and document the professional challenges that they face during their weekly meetings. They also document the solutions that they individually and/or collectively produce to tackle those challenges in the meeting minutes. Thus, an examination of the meeting minutes provides insights regarding to the process that they follow as the community to transform tacit knowledge into explicit knowledge as well as how they share this knowledge among themselves. ● After their discussions, IDers catalogue, store, and share the produced/explicit knowledge in group's Box and/or website to share and utilize among the group as well as with the SMEs (faculty) during the ID process. During the individual interviews as well as focus group IDs are asked to point out how they utilize these resources while they perform their craft. Thus, including these resources to the study

Data Source	Item/Question	Research Question	Method	Focus
				provides a more holistic picture regarding the explicit knowledge is employed to facilitate the design and development of online courses.
Unit Director	4	4	Semi-structured interview	<ul style="list-style-type: none"> • Unit director's description of how the team of IDs transform tacit knowledge into explicit knowledge provides details on how IDs build knowledge base related to their profession individually and as a community; and how they share now-explicit knowledge among this community (and maybe other communities of practice) • Answers to a follow up question also provides insights on what type of tools are made available to the community of IDs' use to transform their tacit knowledge into explicit knowledge to create this knowledge base
Instructional Designers	6, 7, 8	4	Semi-structured interview	<ul style="list-style-type: none"> • IDs' explanations on how they collaborate with each other unveil how they define community of practice; how they contribute toward building community of practice; and how they utilize and supported by the community of practice to perform their craft • Based on previous literature, follow-up questions are posed to assist IDers unpack some of the characteristics of communities of practice and knowledge management within the communities of practice
Instructional Designers	1	4	Focus Group	<ul style="list-style-type: none"> • This focus group question is designed to prompt the team of IDers to reflect on their tacit and then explicit knowledge within

Data Source	Item/Question	Research Question	Method	Focus
				<p>their community of practice as a team. Previous literature argues that when asked during individual interviews IDers have difficulty in identifying/pointing out their own tacit knowledge. This is due to the nature of how tacit knowledge resides within individuals. Thus, posing such a question in a focus group study would be conducive for a richer conversation, and hence richer data points for the study.</p>