EXPLORING LEARNER-CONTENT INTERACTIONS IN A UNIVERSITY COURSE THROUGH SOCIAL MEDIA USE

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by

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Abstract

A growing body of literature shows that, when meaningfully integrated into a university course, social networking tools can enhance learner-content interactions (Buzzetto-More, 2012; Ozturk, 2015; Shih, 2011; Webb, 2009). While there is a literature base that demonstrates the benefits and uses of social media in online learning, little empirical research details how these tools are meaningfully integrated in support of content interactions in university courses. Using Moore (1997)'s Transactional Distance framework and Pinch and Bijker (1984)'s Social Construction of Technology model, this study explores how social media is adopted and adapted by learners in university courses in service of learner-content interactions. Using site observations, survey data, and interviews, the researcher explored how the tools were purposefully integrated and modified by the instructor and learners throughout a semester-long course in order to develop learners' understanding of and engagement with the material. The findings showed that the social media tools were employed by the instructor in service of learners' professional development, but modified by the learners to emphasize their understanding of the course content. The disconnect between the intentions for and outcomes of the tools' uses suggest a need for purposeful instructional design around how the tools are integrated into a semester-long course, and an understanding of the learners' needs for the technology prior to the tools' implementation into the instructional experience.

Keywords: social media, transactional distance, social construction of technology, instructional design

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APPROVAL OF THE DISSERTATION

This dissertation, Exploring Learner-Content Interactions in University Courses Through Social Media Use, has been approved by the Graduate Faculty of the Curry School of Education and Human Development in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

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DEDICATION

This study is wholeheartedly dedicated to my family, friends, loved ones and many advisors who have loved me, supported me, and nurtured my curiosity while providing me with a structure for my inquisitiveness. I am forever indebted to your gifts.

To my Dissertation Committee (especially Dr. Youngs): thank you for kindness and patience with each step of my data collection, analysis, and write-up processes, and for your mentorship throughout my program. Words cannot express how thankful I am for your presence in my life and throughout this endeavor.

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And to that little girl who dreamed of getting a PhD one day…we're really here!

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CHAPTER 1

INTRODUCTION

Background of the Problem

Social media is becoming an increasingly popular method for developing and sustaining learner interactions in educational settings. In their survey of over 1,900 United States-based higher education faculty, Moran, Seaman, and Tinti-Kane (2011) found that almost 66% of the responding university instructors have employed social media tools in their course instruction, and more than 40% reported requiring students to view social media for a course assignment. With platforms like Facebook, Twitter, and Snapchat becoming increasingly popular, the question of educational benefit moves away from "Does social media improve learner outcomes?" to "How can social media improve learner outcomes?" Understanding the affordances of social media tools in blended and asynchronous instruction and their alignment with learning outcomes can help instructors create educational spaces that foster and sustain learning.

Statement of the Problem

Social media, by itself, does not yield deep and meaningful learning for students in blended and asynchronous courses. As with other technologies, its educational benefits are largely driven by how a given tool is scaffolded and employed in the service of desired learning outcomes. While there is a strong literature base examining the benefits and uses of social media in online learning (especially using the Community of Inquiry framework), few studies explore how it is used in support of specific learning outcomes in university courses. Moreover, the existing literature looks at the benefits of specific platforms (e.g., Ning, Facebook) as either ancillary supports or contrasts to existing learning management systems (LMS). As a result, little

is known about how these tools are specifically used in service of distinct learner interactions or learner outcomes.

Research shows that social media offers particular affordances that can support students in online learning when meaningfully integrated into a course. Little empirical research, however, addresses how to use social media as a conduit for developing and sustaining these interactions in online spaces. Moreover, social media is not consistently considered a stable or valuable tool to employ in online learning experiences. Though Moran et al. (2011) note that over 40% of university instructors have required students to refer to social media for assignments, questions remain regarding how social media is perceived at the instructor and learner levels (Acar, 2013).

Current Research and Limitations

Social networking sites (SNS) provide unique educational affordances for learners. When combined with peer assessments, SNS can improve knowledge construction and student engagement (Buzzetto-More, 2012). Social networking tools also allow learning to be convenient, media-rich, student-focused, and engaging to learners with existing technological knowledge (Buzzetto-More, 2012). While they provide rich opportunities for connection, the usefulness of the tools, as with other technologies, is mediated by decisions at the instructor level. As a result, the tools' use, benefit, and service in relation to defined instructional objectives and learner outcomes need to be clear and aligned throughout the life of a given course to make use of their specific pedagogical affordances.

The majority of the empirical literature exploring the educational benefits and affordances of social media focuses on Facebook versus other SNSs, including Twitter, Pinterest, LinkedIn, Instagram, Tumblr, MySpace, WhatsApp, and Snapchat. This high representation of

Facebook (or imbalance) in the literature can be attributed to several factors. First, of the currently available social networking sites, Facebook is the oldest. The site was famously created at Harvard University in 2004 in CEO Mark Zuckerberg's undergraduate dormitory and was initially restricted to campus use. Though the platform did not become accessible to users without a college or university email address until September 2006 (Facebook, 2018), the site has grown tremendously in the following years. As of this writing, it is one of the most frequently visited websites in the world (Buzzetto-More, 2012) and has 2.2 billion monthly active users (Facebook, 2018). Second, the platform boasts more users than any other social networking site, which, therefore, means that more people are familiar with the site than others. This heavy focus on either comparative affordances of different SNS tools, namely Facebook, or their collective benefits in comparison to an existing LMS leads to an absence of research on how SNS tools are adopted and adapted, and how they serve learners.

Social networking tools afford learners with the opportunity to connect with instructors, content, and peers synchronously or asynchronously. While several social networking platforms and tools exist, their efficacy is ultimately determined by their perceived and observed benefit to online learners and learning outcomes. Existing theories of technological adoption and online learning show that technology needs to be contextually specific, purposeful, and moderated by the instructor (Davis, 2003; Pinch & Bijker, 1984; Rogers, 1962; 2003). While different frameworks may express differing paths to the achievement of learning in online spaces (e.g., Community of Inquiry, Transactional Distance), they collectively show that technology is only useful when it is meaningfully integrated in the service of the course objectives, the learners, and their specific learning needs.

Purpose and Significance of the Study

Social networking tools can help scaffold learner and learning interactions, foster a sense of community, and improve learners' perceptions of mastery and identity development (Buzzetto-More, 2012; Choy & Ng, 2007; Pimmer, Linxen, & Gröhbiel, 2012; Poellhuber, Anderson, & Roy, 2011; Veletsianos & Davis, 2012). In order for these tools to achieve their potential to build learner interactions in online spaces, the technology needs to align with the intended learning outcomes and learning context, and demonstrate benefit to the learners. This dissertation addressed the existing literature gap regarding the use of social media in support of learner-content and learner-instructor interactions in credit-bearing university courses by exploring the method of adoption and adaptation of social networking tools in an online setting, and how a given tool is associated with the content and frequency of learner-content and learner-instructor interactions through a qualitative case study approach. The research, additionally, addressed how a social networking tool is adopted and modified by learners to meet their needs in a semester-long credit-bearing university course.

Research shows that social networking tools provide affordances that can support learning when meaningfully integrated into a course (Jumaat 2016; Veletsianos, 2012). Little empirical research, however, has addressed how to use these tools as a conduit for developing and sustaining learning interactions in blended and asynchronous spaces. While social media provide opportunities for learners to develop connections with the instructor, content, and other learners, their usefulness is mediated by decisions at the instructor level. As a result, their service to the defined instructional objectives and learner outcomes needs to be clear and aligned throughout the life of the course to make use of the tools' specific pedagogical affordances.

Several needs consistently arise in the literature regarding the facilitation of learning interactions and the provision of feedback in blended and asynchronous courses: technical knowledge, learner scaffolding, pedagogical alignment, and cognitive load (Clark & Mayer, 2008; Morrison, Ross, & Kemp, 2007). When employed purposefully in online learning spaces, social networking tools can help instructors address these concerns using technology that is often familiar to the learners and is already embedded in their daily habits and practices. Few studies, however, have explored how the tools are used in the support of specific learning outcomes in university courses. Moreover, the existing literature looks at the benefits of specific platforms (Ning, Facebook) as either ancillary supports or contrasts to existing learning management systems (LMS). As a result, little is known about how social media can be specifically used in service of distinct learner interactions or learner outcomes.

This research study examined the instructional design practices regarding how social networking sites and tools were used by an instructor and her students in a credit-bearing university course. The research explored how to meaningfully employ social networking tools in service of developing learner-content interactions, which has implications for how a course is designed by instructional designers, taught by university instructors, and navigated by students. While the findings benefitted all course stakeholders, including program and department-level administrators, the findings are of particular benefit to university course practitioners and students.

The research project also explored both how social networking tools can be used in university courses and how the tools are employed and modified by instructors and students throughout a course. The outcomes of doing this research were to provide designers, instructors, and learners with the necessary information to make informed decisions regarding how social

networking tools are used in credit-bearing university courses. The implications are that these stakeholders will know how to use the tools to maximize their benefits to learners, and will know what to expect regarding the processes of integration and modification during a semester-long course. Rather than focusing on if the social networking tools provided instructional benefits that other technologies do not, this research addressed how social networking tools scaffolded learners in their interactions with the course content.

This research contributed to the existing bodies of literature on the use of the Transactional Distance (TD) framework and Social Construction of Technology (SCOT) model in online learning. The study was built upon this existing research, and added knowledge about how social networking tools can be used to scaffold learning in university courses. The findings, additionally, contributed knowledge about how social networking tools are selected, employed, and modified throughout a course by the key stakeholders.

CHAPTER 2

LITERATURE REVIEW

Online Learning

Moore and Kearsley (2011) define distance education as "teaching and planned learning in which teaching normally occurs in a different place from learning, requiring communication through technologies as well as special institutional b" (p. 2). The contemporary implications of this definition are as follows: 1) learning is planned, 2) learning involves a teacher and a learner, 3) distance education can be synchronous or asynchronous, 4) asynchronous learning requires technology, 5) asynchronous learning requires institutional support, and 6) asynchronous learning requires organization. Keegan (1996) asserts that distance education is ultimately defined by its emphasis on learning in non-traditional spaces. Benbunan-Fich, Hiltz, and Harasim (2005), however, assert that online learning is marked by the emphasis on collaborative and "group communication," which implies that learning, even in an asynchronous environment, does not occur in isolation.

Features of Online Learning

Online learning can incorporate a variety of features to foster learner-learner, learner-content, and learner-instructor interactions, but it most frequently employs forums and collaborative learning activities.

Forums. Forums are web-based tools that are used to facilitate online discussion (Biasutti, 2017). They are considered staples of asynchronous online learning due to their ability to foster learner-learner and learner-content interactions (Hou, Wang, Lin, & Chang, 2015). Morrison, Watson, and Morrison (2012)'s analysis of traditional versus restricted forum posts in blended and asynchronous courses showed that learners' initial posts demonstrated a statistically

higher quality in posting contexts when the instructor structured the interaction processes so that learners had a specified window of time within which they could make initial posts and responses to their classmates' posts. Traditional posts, where the learner had a seven-day period to read, create, and respond to their individual and overall learners' posts, did not yield the same quality of initial posting and subsequent posting quality that characterized learners in the restricted forums. In comparison, the restricted forums involved a more structured experience where the learners had a specific time frame through which they had to share initial posts and reply to other learners' posts.

Wikis. A wiki is defined as a database of interlinked web pages that can be edited by any user with a compatible web browser (Choy & Ng, 2007). Wikis are popular tools for building within-class collaboration to build interactions between learners and content while being able to observe and see what learners have done. The ultimate goal of wikis is to build authorship among users, which helps expand the notion of a community beyond the confines of a classroom. In comparing the volume and quality of a Microsoft Word-based text editing document and a wiki, Ioannou, Brown, and Artino (2015) found that the wiki and forum outputs yielded similar content from learners, but the wiki did so in a more condensed space.

Blogs. Blogs, like wikis, provide the opportunity for learners to collaborate on web-based artifacts that allow them to gather resources, share and challenge ideas, connect with peers, and create an integrated and unique learning resource that can help themselves and other learners make sense of complex ideas (Kerawalla, Minocha, Kirkup, & Conole, 2009). Blogs allow learners to develop technical skills in tandem with content mastery as they make decisions on different content and technology to employ in service of key ideas. They allow learners to integrate multimedia elements (such as sound, video, and images) to illustrate key ideas and

chunk content, while affording learners a level of ownership that forums and social networking sites do not.

Collaborative learning activities. Collaborative learning activities, where learners are prompted to demonstrate their understanding of the content, express their own point of view and confront and accept multiple points of view, are crucial to learning. Kanuka (2005)'s analysis of different collaborative learning strategies in undergraduate online courses showed that WebQuests, where learners engage research strategies to solve a complex case study problem, yield the highest levels of learning of the examined instructional strategies. This method - which involves a clearly defined problem or case, tasks that are achievable and engaging, a specified process for how to engage in the task, individual research, collective evaluation, and a summary - indicates that learners can engage in higher levels of cognition in online learning experiences when provided with scaffolding and structured learning opportunities.

Interactions in Online Learning

Blended and asynchronous learning provide multiple ways to build connections between and among learners, content, and instructors. The most commonly used methods to foster these interactions are forums, collaborative content development activities (including blogs, wikis, and document sharing platforms like Google Classroom), and social networking sites (including Facebook, Twitter, Snapchat, MySpace, Instagram, and WhatsApp). Each of these approaches offers unique affordances at the instructor and learner levels but requires a similar degree of planning and supervision to ensure their alignment with the instructional objectives and promotion of student learning.

In his presentation of what would become the Transactional Distance model, Moore (1989) highlights three primary interactions in e-learning: learner-content, learner-instructor, and

learner-learner. While early asynchronous learning experiences emphasized these relationships through very simplistic means (including correspondence and video courses where learners were mailed materials to learn on their own), the advent of Web 2.0 technologies has allowed learners to engage with content, instructors, and other learners in synchronous and asynchronous modalities. As a result, the emphasis of learning is not exclusively focused on the content and the learners but on how the learners interact with each stakeholder in the learning process.

Challenges to Online and Blended Learning

Several issues, needs, and challenges consistently arise in the literature regarding the facilitation of interactions and provision of feedback in blended and asynchronous courses: technical knowledge, learner scaffolding, pedagogical alignment, and cognitive load.

Technological Knowledge

Lack of technological knowledge at the learner and instructor levels poses a significant threat to providing quality instruction in asynchronous, blended, and synchronous settings. A lack of familiarity with the technology used in an online course can hinder both learners' and instructors' abilities to make full use of the learning system (Choy & Ng, 2007; Scott, 2013). While some learners may engage their peers, instructor, or other resources for technical support, the use of platforms and technologies that are either foreign or cumbersome can impede learners' self-perception of competence, and can lower the frequency and quality of their engagement. To reduce potential technical knowledge barriers, Garrison and Kanuka (2004) note that online learning requires a "systematic evaluation" of the success and administration of any learning technologies where learners are stakeholders in the evaluation process to assess the benefits and challenges of any technology. In addition to creating a more democratic process of evaluation and implementation, involving learners as stakeholders facilitates more interactions between and

among the learners, instructor, and technology delivery systems and scaffolds their critical analysis of their learning processes.

Learner Scaffolding

An absence of learner scaffolding can hinder the frequency and quality of learner engagement in online instruction. Unlike a technocratic view that postulates that any technology is progress (Marx, 1987), technology in educational contexts needs to be purposeful, planned, and thoughtfully integrated to support the context and learners (Clark & Mayer, 2008; Garrison & Kanuka, 2004). Online discussions (which are a cornerstone of learner interactions in blended and asynchronous settings) are not in and of themselves effective learning tools; participants must be instructed in how to engage with the content and learners and be given feedback regarding these processes (Anderson & Dron, 2011; Kanuka, 2005). Scaffolding learner engagement with technology can yield more thoughtful interactions with the content and learners. Failing to do so can yield discussions where learners share and validate each other's views but do not engage in the creation of new perspectives that reflect a thoughtful analysis of their and their peers' points of view (Garrison, Anderson, & Archer, 2001; Morrison et al., 2012).

Pedagogical Alignment

A key issue facing blended and asynchronous courses is the potential lack of alignment between the technology and the course objectives. Garrison et al. (2001)'s study of cognitive engagement in graduate-level online learning showed that the majority of threaded discussion posts focused on sharing and comparing information. While this is to be expected in contexts where learners express openness and connectivity, the researchers found that comparatively fewer posts reflected integration (13%) and resolution (4%), where learners incorporate different

points of view by creating meaning from the expressed ideas and either implementing or testing the new viewpoint. The focus on resolution reflects the zenith of Bloom's Revised Taxonomy (Bloom, 1956) which emphasizes creation through the generation, planning, or production of an artifact or new knowledge (Anderson et al., 2001). The fact that so few posts (17%) reached the integration and resolution stages highlights the need for "skilled facilitation" (Garrison et al., 2001) to ensure that posts and threads are more than repositories for singular or shared views that stall after the initial share.

A contributing factor to the prevalence of superficial engagement in forums is a lack of structure and instructor supervision. Morrison et al. (2012)'s analysis of forum threads shows how providing learners with structured guidelines for forum engagement yielded higher levels of cognitive engagement and learner preparation for the discussion. The finding shows that legitimizing discussion practices as their own rich learning experience rather than a mandatory task can facilitate deeper learning. As Hewitt (2005) notes, forum discussions in online courses are sometimes treated as a required activity where a specific number of posts must be reached in order to fulfill course requirements. This, in turn, transforms the potentially robust engagement opportunity into something much more rote.

Instructor scaffolding of online discussions must reflect an active process of learner interaction and integration that accounts for the specific technology and context within which the learning exists. As Ioannou, Brown, and Artino (2015) note, the technology (whether it be multimedia, social networking sites, wikis, forums, blogs, or other tools) needs to align with the proposed objectives and desired learning outcomes. If the desired outcome is for students to collectively create an artifact to demonstrate understanding of a complex idea, then a forum thread might not yield the most successful outcomes. Purposeful design of all learning activities,

especially those that involve technology, helps learners identify and practice the knowledge and skills necessary for their success.

Cognitive Load

A key challenge identified throughout the literature, especially with regard to engagement in forums, is cognitive load. In his analysis of online discussions, Scott (2013) found that participants frequently became "lost" in the format of the learning management system (LMS), which hindered their ability to access the necessary content. Hewitt (2005) found that learners engaging in online forums tend to employ "single pass" strategies where they look for the most recent post and reply to it, rather than re-reading previous posts (including their own). This method, while potentially convenient, prevents learners from exploring the thread as its own unique artifact and placing each reply in the broader context of the discussion. Related to this is the high cognitive load that online forums can have for learners. Unstructured threads where participants can choose when and how they post and reply to others can yield an overwhelming amount of information that the learner is required to process prior to replying. As Clark and Mayer (2008) note, strategies that overwhelm learners' working memory impede their learning, and force them to choose which items they can attend based on ease rather than potential learning benefits. In order to reduce the load of any given item, instructors should engage in the purposeful design of activities with a capacity for high cognitive load (e.g., Facebook wall posts, forum threads, comments in shared documents) and structure them so that learners are scaffolded to purposefully engage with the material in a structured manner (Morrison et al., 2012).

Theories of Online Learning

Several theories (i.e., Diffusion of Innovation, Technology Acceptance Model, Social Construction of Technology, Community of Practice, Community of Inquiry, and Transactional

Distance) highlight how a technology is validated and accepted by learners and can be constructed to improve learning in asynchronous and blended spaces. Each of these theories highlight how social networking tools can be employed in online learning to enhance the dynamic interactions possible in these educational spaces. Two specific frameworks - Social Construction of Technology (SCOT) and Transactional Distance (TD) - illustrate how a tool is adopted and adapted by a group in service of specified needs and how a technology can be employed to reduce the pedagogical distance between a leaner and the learning experience.

Social Construction of Technology

Pinch and Bijker (1984)'s Social Construction of Technology (SCOT) model details the process of how a technology is modified by user groups to solve a perceived problem. According to SCOT, the goal for a given technology is the achievement of "closure and stabilization" (p. 164) whereby the stakeholder groups perceive their concerns with the technology as being solved through either an eradication of the problem or a redefinition of the problem in a way that is more palatable to the users. The SCOT model posits that the development and implementation of technology is context-specific. Different social groups have different perspectives and uses for technology; therefore, any technological artifact is responsive to and influenced by these groups and their unique needs.

Pinch and Bijker (1984) describe three stages of the SCOT model: interpretive flexibility, closure and stabilization, and the wider context. Interpretive flexibility refers to the ability of an artifact to be adapted and modified by different social groups, or stakeholders, based on their unique contexts and needs. The Amish's restrictive use of the cell phone, for example, demonstrates how the group modified the technology to align with their cultural values (Rheingold, 1999). Closure and stabilization refer to whether social groups perceive their

concerns with the technology as being solved. Note that issues are not necessarily solved but are viewed as no longer problematic for the stakeholders. Closure can be achieved through two means: rhetorical closure and closure by redefinition of the problem. Rhetorical closure refers to the removal of problems from the stakeholders' perspective; closure by redefinition refers to viewing the "problem" in a way that is no longer problematic for the relevant groups in question.

The third and final stage, the wider context, refers to returning the artifact back to the broader sociopolitical contexts within which the artifact exists. Pinch and Bijker (1984) note that, at the time of their 1984 publication, this stage was not as prevalent in the scientific literature; however, sociocultural analyses can demonstrate ways to view this stage. Johnson (2005) states that the "broader theory of the social construction of technology...remains open to the use of alternative concepts, frameworks, and tools to study the co-creation of technology and society" (p. 1793), including the lenses of economics, politics, and cultural studies. Returning technological artifacts to these broader schools of thought is akin to examining an artifact from a mega level, where the technology is seen in light of its broader cultural impact (Kaufman, 1994).

A SCOT model approach to social networking technology posits that the technology needs to address an outcome that is not being adequately addressed by existing tools and needs to be responsive to a specified learner or learning need. A blended course that emphasizes synchronous collaboration but whose LMS lacks video or web chats, for example, could benefit from incorporating social networking tools (e.g., Facebook Live, Google Hangouts) that foster these interactions. Instructors are, therefore, encouraged to check in with learners regarding how and why they use social networking in their learning and if they are experiencing any issues or challenges with the technologies. Identifying these needs and barriers will potentially facilitate

integration of the technology into the students' learning and help scaffold their experiences for maximum benefit from the social networking tools.

Structured Observation of Learning Outcomes (SOLO) Taxonomy

Meaningful engagement in asynchronous does not occur spontaneously, but requires structure, planning, and continuous moderation to ensure that learners and participating in alignment with the course objectives (Ellis & Hafner, 2008; Holmes, 2005; Salmon, 2003; Slack, Beer, Armitt & Green, 2003). Previous studies have shown that the SOLO Taxonomy is an effective way of assessing student learning through the use/employment of asynchronous online discussion to analyze the complexity of student responses (Chick, 1998; Chick, Watson & Collis, 1988; Hawkins & Hedberg, 1986; Holmes, 2005; Tang & Watkins, 1994). Biggs (1979), in response to Marton (1976) and Marton and Saijo (1976)'s work, devised be SOLO Taxonomy for assessing learning quality.

There are five levels within the taxonomy, ranging from the least to most complex: pre-structural, uni-structural, multi-structural, relational, and extended abstract. Responses coded at the pre-structural stage have no relationship to the prompts or display the student does not demonstrate any connection to the material or the prompts. Responses coded at the uni-structural contain one correct item from the display but do not discuss other items that may miss it; oversimplification of the ideas and issues. Responses coded as multi-structural can include several relevance appropriate items but the achieved closure to the question is premature and does not account for all of the dimensions in the prompt. Replies coded as relational employ most or all of the relevant data to achieve a firm conclusion in their assertions. Responses coded as extended abstract demonstrate an extension of the analysis to include examples and counterexamples to shed new light on the context or situation in question. Arriving at a firm

conclusions is not the goal, but rather, the aim is to shed new light on the problem or issue presented in the prompt (Biggs, 1979; Holmes, 2005).

Asynchronous discussion can promote learning in ways that synchronous face-to-face discussions cannot. Learners can react and respond to comments and points in time-independent ways, and can take the time to read, re-read, and meaningfully reflect upon students' comments (Holmes, 2005; Lim & Tan, 2001; Poole, 2000). The taxonomy provides a framework for analyzing the complexity of written responses to short and long-form essay prompts that can demonstrate how responses can move from simple or inaccurate (Pre-Structural) to complex and open-ended (Extended Abstract).

Transactional Distance

Moore (1997)'s Transactional Distance (TD) framework addresses the types of interactions that are present in online learning and are necessary to facilitate learning by reducing the transactional distance between and among the learner, content, and instructor. There are a variety of transactional distances that exist within distance education (or online learning) programs. TD, as Moore (1997) notes, is a relative rather than an absolute; there are shades of transactional distance, and it exists on a continuum rather than a yes/no of whether TD is present. Moore (1997) does not specifically focus on or address learning outcomes in his theory (only the Community of Inquiry framework makes assertions regarding the relationship between technology and learning); however, the framework shows that using a certain technology comes with user needs that have to be addressed in order for it to yield successful outcomes, regardless of context. As Moore (1997) notes, other theories and frameworks can be juxtaposed against the Transactional Distance framework in order to create a more comprehensive understanding of how to use technology in specific fields or disciplines or contexts, which is a sign of its

flexibility. With that said, however, the framework does shed light on how to purposefully employ social networking tools in the service of learners and learning outcomes in specific contexts.

The TD model asserts that the distance between the learners and instructor is psychological and communicational when learning in asynchronous environments. The three types of interactions present in online learning are learner-content, learner-instructor, and learner-learner (Moore 1989; 1997) and are positioned on a continuum that is mediated by the stakeholders and educational context. TD is meant to work in conjunction with other content and discipline frameworks and theories. As a result, it functions as a sort of canvas against which other theories can be transposed. Transactional Distance is comprised of three sets of variables that encompass teaching and learning: dialogue, structure, and learner autonomy.

Wallace and Young (2010) cite several key studies - including Garrison and Boynton (1987) and Saba and Shearer (1994) - that demonstrate two key findings with regards to learner behavior in distance educational spaces: 1) transactional distance decreased with increasing dialogue between the student and instructor, and 2) transactional distance decreased with increased course structure. These findings suggest that both dialogue and learner autonomy are crucial for ensuring the existence of transactional distance in distance education spaces. Furthermore, as Wallace and Young (2010) note, these assertions imply that each of the elements of Moore and Kearsley's (1996) model are bound together in complex ways so that an increase in learner autonomy does not necessarily mean that an online learning space has less structure. The task, therefore, becomes analyzing how these spaces interact and what is meant for learners.

Dialogue. Dialogue, Moore (1997) notes, occurs when an instructor provides instruction to a recipient (the learner). A dialogue is comprised of positive, purposeful, and forward-moving

interactions that are marked by mutual respect, contributions by both parties, and an improved understanding by the student. An interaction, as Moore notes, is not a dialogue unless it reflects mutuality, respect, and movement towards learning. Any interaction between the learner and the instructor should, therefore, respectfully engage the learner and collaboratively move them towards greater understanding of the content.

Structure. Program structure refers to the design of a course, specifically how it is developed for delivery through the specific technology. As Moore (1997) notes, the variable exists on a continuum from rigid to flexible, and includes the course objectives, pedagogical strategies, and methods of evaluation. The success of a course structure is determined by the responsiveness of a learning experience to individual learner needs. Structure, like dialogue, is heavily influenced by the media and specific organizational context, where each of the individual and organizational stakeholders have a significant bearing on the success of an online learning experience.

Learner autonomy. Learner autonomy is the extent to which the learner, rather than the instructor, determines the learning goals, activities, and means of evaluation in a specific learning program. Rooted in Humanism, Behaviorism, and Knowles's (1968) work on andragogy, Moore (1997) asserts that a key goal of learner autonomy in distance learning is to scaffold learners so that they demonstrate increasing autonomy with regards to establishing their learning goals and activities. The ultimate goal is to scaffold learners so they can engage in a greater degree of control and co-construction of their goals.

Transactional distance and social media. Several studies (Deng & Taveras, 2013; Ozturk, 2015; Scott, 2013; Veletsianos, 2012) show that social networking tools successfully facilitate learner-content, learner-instructor, and learner-learner interactions when the platforms

and features are meaningfully selected and incorporated into the course structure. As a result, the tools used in online learning must be analyzed and carefully chosen in alliance with the learners, context, and learning objectives. Social networking tools need to enable instructor dialogues regarding the learners, content, and course activities, and stimulate critical analysis of course concepts (Moore, 1997). This can be achieved through a variety of techniques (e.g., employing weekly video chat sessions, creating separate learning groups, having "advice threads" where learners can post questions), but are contingent upon the instructor's creation of a productive learning space.

Social networking tools and features also need to be responsive to learners' needs. Learners should be actively engaged in the process of selection and integration of social networking technologies and have autonomy over how the features used in the course (Buzzetto-More, 2012; Moore, 1997; Ozturk, 2015; Wang et al., 2012). This can be achieved through a variety of ways (e.g., creating 1:1 chat or video sessions with learners that throughout a semester, having learners participate in structured group work), but should be structured in alignment with the learning objectives, context, and learners in the course.

Social Media

Social media platforms, also referred to as social networking sites (SNS) or social networking tools, are online services that allow users to connect with other users to share information and receive updates. As Acar (2013) notes, SNS differ from social features on course management sites through the inclusion of both individual profile pages and interactive tools like blogs, forums, and chats. Boyd and Ellison (2007) note that SNS allow users to create identities (or profiles) within a bounded system that enable them to curate and articulate other users with whom they are connected and develop relationships through a variety of synchronous

and asynchronous methods of communication. These tools enable interactions through an "explicit or implicit exchange of social information such as identity, participation, attitude and relationship" (Choy & Ng, 2007, p. 211). The marriage of these features, along with their frequently low cost, reduce the barriers to entry for many instructors and learners, and make them attractive options for facilitating interactions in online learning.

Scott (2013)'s qualitative analysis of SNS use in online higher education courses showed that the social media site offered greater opportunities for engagement than the course LMS due to its greater efficacy and ease of use. Ozturk (2015)'s analysis of Facebook usage and achievement showed that the platform can support high levels of cognitive engagement, which is positively correlated with improved learning outcomes (Garrison et al., 2001; Morrison et al., 2012). Two key features of SNS' success in online learning are course size and instructor control. Learners gain the most from the site when the number of participants in a given group is restricted (Ozturk, 2015). Similarly, learners use the tool most effectively when the instructor manages the group page and provides feedback and support regarding how learners should use the page (Scott, 2013). These findings highlight how the tool can be implemented to support authentic engagement in asynchronous and blended learning courses.

Educational Benefits and Affordances of Social Media

Social networking sites offer several educational benefits, including accessibility to a broad range of learners, convenience, the potential for asynchronous and synchronous connectivity, the ability to share multimedia and text-based content, convenience, and the opportunity to improve users' technical knowledge (Buzzetto-More, 2012; Poellhuber, Anderson, & Roy, 2011). The sites provide transparency and enable learners and instructors to provide feedback and scaffolding for educational tasks (Choy & Ng, 2007). When appropriately

structured by the instructor, SNS can foster rich and meaningful interactions between learners and the content, instructor, and their peers.

Accessibility

Two of the most popular social media platforms used and researched in online learning - Twitter and Facebook - do not require users to pay a monthly or annual fee. While Facebook's leadership team is currently under investigation for privacy breaches (Singer, 2018), the platform is unmatched in its user base and popularity, which come at no financial cost to the learner or instructor. The site's popularity and ubiquity allow for learners to access and connect to a larger user base than any other site (Ozturk, 2015).

Popular SNS also ensure a high level of technical support. Unlike learning management systems (LMS), course management systems (CMS), and other university platforms whose availability is at the discretion of the administration, platforms like Facebook have a large team of continuously available support professionals. This means that learners can access technical assistance whenever they need it, whereas university resources are typically supported during standard working hours. The popularity of the sites also means that learners are likely to have a greater familiarity with the tools, and, therefore, require less scaffolding to interact with the sites' features. Any issues learners may have can be readily addressed by posting a question or comment on their individual profile pages or on the course/group page, which helps foster more learner-learner interactions (Idris & Wang, 2009).

Convenience. Social media enables easier user access to the learning content because the sites are already familiar to the learners. As Deng and Taveras (2013) note, the tools are embedded into learners' daily lives and are technologically accessible to them. Unlike a course LMS, where users have to log into the site from a separate browser tab on their phone or other

device, most learners already check Facebook or Twitter on a regular basis, and have the sites either open on their devices or are logged into the mobile applications. Learners are able to click on the course page in the social networking site as part of their daily browsing habits, which reduces the steps needed for learners to connect to the content and makes their engagement with the course material faster and more organic.

Promoting Learner Interactions

Social networking sites can facilitate a variety of learner interactions. While publicly accessible content (like blogs and wikis) allows for a greater transmission of information than closed systems, Facebook was created with the intention of developing connections with other users (Facebook, 2018). As a result, the features of the site are directed towards communication and sharing ideas in a bounded system that is moderated at the instructor level but can be embedded into the learners' personal networks (Buzzetto-More, 2012).

Learner-content interactions. SNS allow a variety of content, including pictures, audio files, videos, and documents, to be shared with other users (Ozturk, 2015). In a case study exploring the use of a Facebook page and a course Moodle for an online course, the participating earners reported perceiving the Facebook page as offering greater support for content and learner interactions (Deng & Taveras, 2013). Learners reported that communications on the platform felt more immediate, and they believed that they learned more from peers' posts on Facebook than the course Moodle. A key feature of this perception was the "news feed" feature of the tool (also present in Twitter), which provides a chronological list of updates to the users and communities with which the learner is connected that is updated in real time.

Scott (2013)'s case study exploring instructor attitudes towards e-learning similarly showed that social media platforms, including Ning and Facebook, were perceived by instructors

as supporting learner-learner interactions and learner-content interactions more than course management software. The tools, particularly Ning, were perceived as improving the learners' accessibility and usability of the course content due to the design features that allowed materials to be organized and readily accessed by users. The usability of the tools helped contribute to increased perceptions of learner engagement with the course and its participants by the learners. This finding further demonstrates that, when meaningfully integrated into a learning experiences, the tools can seamlessly support engagement.

Learner-instructor interactions. Social media allows instructors to scaffold learning processes by engineering the space to feature the content, feedback, and peer interactions necessary to achieve the desired learning outcomes (Idris & Wang, 2009). Learners can be prompted to interact with specific content by instructors posting articles, media, or comments on the site landing page (e.g., Facebook's "wall") and asking participants to review the material or discuss it with peers. The site can be customized by the instructor with ease, which reduces the administrative load of the instructor and enables greater focus on promoting student learning (Wang et al., 2012). Learners report appreciating the connectivity with their instructors through the platform in support of their learning goals (Jumaat, 2016; Veletsianos, 2012), providing that they can maintain a space that takes advantage of the opportunity for unstructured communication with peers (Deng & Taveras, 2013).

Learner-learner interactions. Social networking sites inherently place learner interactions at the center of the learning experience, because the tools are intended to build community between users (Idris & Wang, 2009). The tools can be used to help learners develop their academic and professional identities within the learning context (Pimmer, Linxen, & Gröhbiel, 2012). The features of the platform, specifically the "wall," allow users to develop and

negotiate their professional identities while sharing important content that helps scaffold their learning. Buzzetto-More (2012)'s analysis of students perceptions of social media use in online learning similarly showed that 63% of participants believed that social media use in the course fostered a sense of community within the course, while 60% reported that social media use made the course more interesting. This further shows that using social technologies can help participants develop a learning community within the course which can, in turn, strengthen connections to the learning experience.

Lurking. A frequently unrecognized benefit of employing social media tools and platforms in online learning is the vicarious learning that occurs through lurking, where learners read but do not respond to discussion posts and threads (Arnold & Paulus, 2010). This type of interaction is purposeful and active, even if it was not visible to the instructor. While lurking is not exclusive to SNS, the variety of synchronous and asynchronous features in these tools (i.e., chat, news feeds, wall posts) further promote indirect connections between and among the learner, content, instructor, and other learners in the course.

Improved Technical Knowledge

Employing social media in blended and asynchronous courses allows learners to expand their technical knowledge in a structured environment using tools they are familiar with. Poellhuber et al. (2011)'s analysis of learner perceptions of social media in online learning found that learners' reports of interest in using social media in their courses exceeded the number of students who reported familiarity or comfort with the tools. This finding is echoed by Buzzetto-More (2012), who found that that the more time that learners spent online, the more they were likely to agree with the statement that "social networking sites can enhance the learning process" (p. 86). Veletsianos (2012) similarly found that exposure to social media technologies in online

courses yielded greater comfort with the tools and reduced reports of apprehensiveness towards the technology. These findings underscore how the tools can improve both learners' pedagogical and technological interactions and can be used to help potentially techno-avoidant learners become comfortable with learning online.

Conditions that Promote Social Media Use in Online Learning

Social networking tools, by themselves, do not yield deep and meaningful learning for students in blended and asynchronous courses. As with other technologies, their educational benefits are largely driven by how the tools are scaffolded and employed in the service of desired learning outcomes. Social networking tools best serves learning in online instruction when they are meaningfully integrated into the course, when the instructor is present, when the learners have control over their social engagement, and when the interactions are authentic.

Instructor Presence

The most significant element in determining student success in online learning is not a specific SNS but, rather, the purposeful integration of the tool in support of the desired learning outcomes. Jumaat (2016)'s analysis of metacognitive scaffolding in online learning through Facebook showed that learners preferred the following interactions from their instructors: 1) acknowledging their opinions on a topic (which corroborate Morrison et al. (2012)'s findings that learners preferred more instructor-structured discussions), 2) evaluating certain types of interactions, 3) clarifying learners' comprehension of the material, and 4) asking discussion questions. Veletsianos (2012)'s case study regarding the use of social media in an asynchronous course also showed that learners reported that the instructors' presence and strong pedagogy were key to their success in the course; the greater the level of instructors' metacognitive scaffolding, the higher students' outcomes were on posttest scores. These findings continue to

support the importance of instructor scaffolding in promoting learner-content interaction in online learning, and the positive impact of learner-content interactions on learning and performance measures.

Purposeful Integration

Online discussions do not organically become interactive or yield high cognitive engagement with the learning content (Kanuka, 2005). In order to facilitate meaningful interaction, the affordances and benefits of the technology need to be clearly articulated and purposefully integrated in the service of desired learning outcomes. Several studies (Garrison, Anderson, & Archer, 2001; Morrison, Watson, & Morrison, 2012; Kanuka, 2005) note that discussions frequently "stall out" at the sharing and comparing stage, which highlights the need for understanding how and when to employ SNS tools. Veletsianos (2012)'s case study on the impact of social media on student learning online showed that learners valued the ability to connect easily with other learners through features (such as creating a profile) that humanized them and made the experience feel more "real." While the embedded features, such as the chat function and profile photos, made connectivity easier to facilitate, the findings also show that students typically restricted their communications to course-focused topics.

Hou, Wang, Lin, and Chang (2015)'s analyses showed that posts that could be coded as analyzing information or creating new meaning accounted for less than 5% of all posts on either platform. Even with those small numbers, comparative analyses between the course Facebook site and the course LMS forum showed that learners' posts on Facebook reflected a higher number of posts that focused on creating new meaning. The analyses also showed that participants were more focused on the discussion topic when using Facebook versus the LMS Forum. These findings suggest that Facebook can be used to foster social knowledge

construction in blended and asynchronous courses. Still, as Hou et al. (2015) note, the most crucial ingredients in fostering meaningful learning are fusing teaching strategies with appropriate technologies that support the desired learning outcomes.

Group size. Class and group size have a significant impact on the perceived value of SNS use in online learning. Ozturk (2015) found that group size had an impact on the level and quality of engagement in the course. Learners in the course with 25 participants demonstrated higher levels of cognitive and social engagement than in group sizes of 77 participants. Reducing the size of the groups (similar to segmenting forum participation into smaller clusters in online courses with high enrollment) can help instructors construct smaller learning spaces where the learners can develop stronger content and learner interactions that limit the learners' cognitive load.

Authentic engagement. Arnold and Paulus (2010) note the importance of employing activities and strategies at the instructor level that are perceived as authentic by the learners (such as blogs and forums) and avoiding tasks that were perceived as inauthentic (such as the chat function). While some of these features may be mediated by the cultural differences in the learners (some of the participants in the study reported having language barriers that made the chat feature cumbersome when translating their language into a mutually understood dialect), instructors are encouraged to employ social media features and activities that are both important to the learners and mirror the types of synchronous activities in which the learners will engage.

Learner Control

While blended and asynchronous learning environments provide media rich learning spaces, they do not inherently promote learner-learner interactions. Some learners are resistant to engaging in discussions in online learning spaces (Camus, Hurt, Larson, & Prevost, 2016), which

can lead to stalled communications that do not exceed sharing and comparing information (Garrison & Kanuka, 2004). The convenience of social media and the tools' existence in the users' lives enables greater opportunities for interaction with the course, learners, and instructor.

Though social networking tools, specifically Facebook, are perceived as convenient, issues regarding its privacy and functioning as an LMS are consistently noted in empirical literature (Buzzetto-More, 2012; Ozturk, 2015; Wang et al., 2012). Wang et al. (2012) found that learners, especially Master's-level students, reported concerns with the lack of privacy or "closure" regarding their activity in the site. Additionally, learners reported not liking how they had to specifically mention who they were replying to in a thread, which singled out some users and further reduced the privacy of their comments (which would then be shown on the "news feed"). Buzzetto-More (2012)'s analysis of learner perceptions of Facebook as an online course LMS showed that 47% of respondents believed that Facebook enhanced course discussions, while 53% of respondents reported hesitance around the using the platform as the primary course website. The dichotomy in these findings shows that learners appreciate the use of Facebook for enhancing the online experience but not as a replacement for the LMS. This also suggests that the Facebook platform does not offer the affordances or features that are necessary for a comprehensive online learning experience.

These findings demonstrate that learners need the ability to exert control over or be involved in deciding which social media features are employed in an online learning course. Instructors can engage learners through a variety of means (e-survey, video chat, private or direct message), but are encouraged to let the learner have agency in determining which features of the platform are employed in the course and also provide learners with the opportunity to moderate or opt-out of features that are perceived as threats to their privacy.

Social Media Use and Transactional Distance

Moore (1997) highlights a series of instructional patterns that must be structured in an online learning experience: Use your words to change this to narrative text. 1) Presentation (how the information is presented, including the media chosen); 2) Support of the learner's motivation (how the learner's interest and engagement is sustained throughout the course); 3) Stimulation of analysis and criticism (as the author notes, these are higher-order cognitive skills that are necessary in higher education courses but can be challenging to promote through asynchronous means. As a result, the selection of activity and technology needs to be purposeful and strongly aligned with the course objectives and desired learner outcomes); 4) Provision of advice and counsel (regarding how to use learning materials, study or prepare for activities, and address issues with studying when they arise); 5) Arranging learner practice, application, testing and evaluation. (which need to take the available technologies into account); 6) Arranging learner creation of knowledge (this aligns with the apex of the Bloom (1956)'s taxonomy, which asserts that the creation of new knowledge and/or understanding is the most important thing to do or know).

The Transactional Distance framework shows that learner interactions need to facilitate content understanding and the learning of a specific content area. Any technology, including social media, needs to lead to content understanding in order to be considered meaningful to learners in a learning context. Moore (1997) draws a distinction between dialogue (which is a meaningful, purposeful, and ultimately enlightening process) and interaction (which occurs anytime a learner has contact with another learner, instructor, or artifact). Applied to the use of social media in a learning experience, this means that any social networking technologies need to be employed in support of enhancing forward-moving interactions so that learners are gaining

something from the experience. The instructor, therefore, needs to attend to both how the learners employing the technology and how their uses of the technology are leading to their improved understanding and mastery of the content.

Research Questions

The research questions explored in the study reflect an effort to contribute to the empirical literature regarding how social media is employed in asynchronous and blended courses, and the conditions that foster its adoption, adaptation to fit specific needs, or rejection. The researcher intends to address the following questions during the dissertation:

1. What is the process of social media adoption and modification in university-level credit-bearing courses?
    a. What are the reasons why specific features are employed or rejected by instructors and students given the context of specific courses?
    b. How do learners perceive benefits of social media adoption and modification?
2. How does social media facilitate learner-content interactions in university courses?
    a. What conditions facilitate its use?
    b. How is it used by instructors to promote learner-content and learner-instructor interactions?

CHAPTER 3

METHODOLOGY

The research study employed a qualitative case study design to explore how social media technology (also referred to in this study as "social networking tools," "social networking sites," and "social media") was adopted and adapted in a university credit-bearing course. The research was conducted at one course site at a medium-size Mid-Atlantic university, which was selected using purposive sampling. The research yielded the following data: two interviews with the course instructor (Dr. Carter), interviews with three course participants (25% of consenting study participants, 15% of course participants), completed surveys by five participants (41.67% of consenting study participants, 25% of the course participants), comprehensive reviews and analyses of the course syllabi, Western Atlantic University - College of Education program and degree structures, and the social media platforms connected to the course.

Research Site

The research took place at West Atlantic University, a mid-size public university in the Mid-Atlantic. The site was purposefully chosen for Dr. Carter's predetermined use of social media in the course and her expertise with using social networking tools in several of her other courses. The instructor used social networking tools in the observed course to help students develop relationships with the content and to build course-specific professional communities using unique features of the platforms. She allowed learners to use either Facebook, Twitter, or Pinterest to develop these connections, which allowed the researcher to explore both learners' decision-making in choosing the technology and how they used the technologies to facilitate their understanding of the course content and the broader areas of early childhood education and literacy education. The inclusion of learner choice in deciding which social networking tool to

employ allowed the researcher to explore how learners engaged in systemic decision-making to decide which tool best served their needs in the specific instructional context, and how the different tools were adopted and adapted by learners throughout the course.

University Context

West Atlantic University (WAU) is a medium-size public liberal arts university in the Mid-Atlantic region with an undergraduate enrollment of approximately 8,000 students. The current group of enrolled students (Class of 2022) has a median composite SAT score of 1100 (out of 1600) and a median composite ACT score of 21 (out of 36) (Cappex, 2018). The university accepts 64% of all applicants, with 68% of all matriculated students receiving institutional aid to attend the school (Cappex, 2018). The annual cost of attendance is $18,980, and the average financial aid package from the university is approximately $4,010 per student per year.

The university has a robust online learning presence, with over 200 online courses, four online undergraduate degree and certificate programs, and 10 online graduate degree and certificate programs offered as of Fall 2018 (West Atlantic, 2018). The rationale is to provide learners who are unable to attend synchronous face-to-face courses with a rigorous educational experience. The Master's degree offerings are specifically aimed at learners who are interested in completing their advanced degrees in two years or fewer and who do not need or want to travel to the university to complete their education (West Atlantic Online, 2018). West Atlantic Online's resources page highlights the quality and affordability of their online program by noting their accreditation by the Mid-Atlantic Association of Colleges and Schools Commission on Colleges and their recognition as a "top college and university" by both Forbes and US News and World Report (West Atlantic Online, 2018).

The most current US News and World Report (2018) rankings position the school as a top public university in the Mid-Atlantic. Unlike many other public universities, WAU is almost exclusively focused on undergraduate education (with a total graduate enrollment of approximately 1,000 students). The instructors' primary focus, therefore, is on developing undergraduate versus graduate students. The university is invested in supporting its online initiatives. Their blended and asynchronous offerings are intended to align with the university's synchronous courses and expand access to the university for individuals who cannot complete in-person degrees (Brown, 2018). The school has professed a commitment to expanding their online courses and ensuring their quality reflects the quality of their synchronous undergraduate degree offerings, which demonstrates both the administrative buy-in to their online offerings and support for providing quality instruction in online spaces (Brown, 2018).

Instructional Context

The observed course was part of the university's course offerings in the College of Education (CoE). The course was targeted at providing preservice teachers with an understanding of the "social, cultural, and developmental factors that influence children's emergent literacy processes" and enable their understanding of literacy as a continual and recursive process (WAU Syllabus, 2018). The instructor, Dr. Carter, noted that her course is the first course that education majors complete that requires participants to complete lesson plans and think critically about educational theories and practices.

The course site in the research study employed both synchronous and asynchronous instruction. Dr. Carter possesses a Doctorate (PhD) in Education and has over three years of university-level instructional experience. The course site at West Atlantic University was an

undergraduate course and was structured on a traditional semester schedule that lasted for 16 weeks. There were 20 students enrolled in the course.

Dr. Carter's course existed within larger program, department, and university contexts. The specific features of the course, including the structure and objectives, were responsive to both the needs of the participants and the contexts that they exist within. Using a Contextual Analysis Framework (Jacobson & Spiro, 1994), the researcher acknowledged how the specific features of the course and Dr. Carter's use of technology were responsive to both the participants and the broader programmatic and institutional contexts that the course is a part of. In her observations and interviews, the researcher considered how the course structure, complexity of the concepts, and learning activities reflected the different stakeholders influencing the learning experience. She paid specific attention to how the instructors' and students' behaviors responded to their individual needs and those of the systems that influenced the course.

The total enrollment for the course was 20 students, and course meetings were held synchronously face-to-face three times per week (50 minutes per session). All assignments and course activities were listed in the course syllabus and distributed via the course Moodle. Students were expected to use mobile technologies during the course sessions to connect with each other and the course activities. Dr. Carter required that course participants choose a social networking tool – Facebook, Pinterest, or Twitter – to engage in professional development using specific features and affordances of each platform per the Professional Identity (ID) Project (Appendices A-B).

The course was focused on providing learners with the theories and best practices supporting reading and literacy education in learners ages birth through 8 years of age, and required a four-hour per week practicum, which means that the candidates were able to employ

the skills and concepts in an applied setting. The three major course objectives were to: 1) provide preservice teachers with a greater understanding of the social, cultural, and developmental factors that influence children's emergent literacy processes; 2) enable preservice teachers to gain an understanding of emergent literacy as an ongoing recursive process characterized by the inter-relationship of speaking, listening, reading, and writing; and 3) present developmentally appropriate strategies for beginning reading and writing instruction (WAU Syllabus, 2018).

There were two primary texts in the course, with additional readings presented on the course Moodle. Dr. Carter noted that the course Moodle was not an "actor" in the course in the same way that a LMS is, but acted as a landing page for the course lectures, assignments, and readings that were outside of the course texts. She noted that the course employed a "reflective practitioner" approach to teacher education, which was aligned with the university's aim to cultivate educators that are "effective leaders, sound communicators, and competent problem solvers" and who "integrate technology, demonstrate professional behavior dispositions, engage in reflective practice, work with diverse populations, and apply content and pedagogical knowledge to the teaching and learning process." (WAU Syllabus, 2018). The "reflective practitioner" model is a hallmark of the university's College of Education (CoE), and is employed in all of its education courses that lead to state certification. The aim of this model is to ensure both educator competency and adherence to state and national standards that will enable graduates of the CoE to find meaningful employment. Each of the course objectives, including those that were specific to the Professional Identity Project, were connected to the specific CoE, state and national accreditation standards. As a result, each of the stated learning

activities was intended to support the leaners' academic and professional development en route to their graduation, certification, and employment as an early childhood or elementary educator.

Overview of the Selected Social Media Tools

Social networking sites were employed at Western Atlantic University (WAU) as part of the Professional ID Project, where learners were asked to curate professional identities through a social networking tool of their choice (i.e., Facebook, Pinterest, or Twitter). The project was part of the course, which was the first educational practice-specific course in the learners' education major. All of the learners who participated in the course were enrolled in WAU's College of Education (CoE) and were pursuing an undergraduate major in early childhood or elementary education.

Per the Professional Identity Project, learners in the course were required to "research a professional organization…[and] write a synopsis of your selected professional organization which will be assessed using the rubric on Moodle [and] create a professional online profile using Twitter, Facebook, or Pinterest. This profile should follow professional organizations, educational bloggers, educational websites, etc." (WAU Syllabus, 2018). Dr. Carter's rationale for choosing these tools, versus other tools such as Instagram or Snapchat, was not explicitly mentioned in her conversations with the researcher. The instructor did note, however, that she gained professional benefit from using Twitter and Facebook in her coursework and early career as an educator, which may have informed her selection of the tools for the project. While other tools, such as Instagram and Snapchat, allow users to engage with other users via temporal and visually based methods (i.e., Snapchat allows messages to be removed from users accounts upon being opened, and Instagram uses tile-size thumbnail images of the posts to curate a virtual picture wall of posts), these tools lack the affordances of synchronous communication (e.g.,

Twitter chats, Facebook Live) and community development (e.g., Facebook groups, professional hashtags) that Facebook, Pinterest, and Twitter provide.

Course participants' choice of technology was made at an individual level; each learner could decide which of the three tools would be most useful to them in terms of the project. As a result, the learners could consider the affordances and features of the tools in the context of their individual goals for the course and the project, and not how the tools fit with their classmates' unique interests or goals for the project. Learners notified the instructor of their choice via email or during the synchronous course sessions. Learners who chose to use Facebook for the project were then admitted to the closed Facebook group; learners who chose Pinterest shared their "boards" with the instructor following the end of each lesson unit.

Of the 20 learners in the course, 13 learners (65% of course participants) chose to use Facebook for the project, while seven learners (35% of course participants) chose Pinterest for the project. None of the students chose Twitter for the project. When asked her view about the lack of Twitter users in the course, Dr. Carter reported that Twitter tends to be a more popular tool with secondary educators, while Facebook and Pinterest tend to be more popular with elementary and early childhood educators. Each of the interviewed participants - Students Brady, Collins, and Engram - reported choosing Facebook (Students Brady and Engram) or Pinterest (Student Collins) because the tools were familiar to them and already embedded in their daily personal and professional habits. Student Collins specifically noted that she did not choose Twitter because of the text limitations (i.e., users cannot Tweet posts that are more than 280 characters in length), which she felt would negatively impact her ability to engage with the course content.

Facebook. Participants who chose to use Facebook for the ID project were admitted into a closed Facebook group that was administered by the instructor. Learners were then asked to engage in the group at least once per week through posts/shares, "likes," and "comments." Participants were required to provide weekly evidence of their participation in the group via screenshot or a screen recording of their engagement in the site, which would then be submitted to the instructor with a brief overview of what they learned as a result of participating in the group during the week (Appendix A). Participants were not required to "friend" the instructor, which allowed them to have a division between their personal and professional identities within the site. The instructor's Facebook page was set to "public" so that her current and previous students could observe her activity and uses of the tool (including who she follows, her likes, her posts and comments), and use her activity as a scaffold for their completion of the project.

Pinterest. Learners who chose Pinterest for the project were required to curate "boards" and either share them with Dr. Carter or electronically submit screenshots of the boards along with a discussion of each of the "pinned" items and their rationale and value added to the topic (Appendix A). Unlike participants in the Facebook group, who were asked to submit weekly evidence of their participation, participants in the Pinterest group were required to submit eight boards for each of the eight topic areas covered in the course (phonics; phonemic awareness; comprehension; language acquisition and development; differentiation; motivating readers and writers; literacy programs; family literacy partnerships). None of the available options (i.e., Facebook, Pinterest, Twitter) required leaners to pin, post, or tweet a specific number of times to satisfy the needs of the project. Instead, learners were required to demonstrate their engagement in the tools through routine submissions including discussions of what they learned via participation in the tool (and, for Facebook users, in the course community).

Hurricane Florence

During the beginning of September, a large scale hurricane forced the instructors, staff, and learners to evacuate the campus for three weeks due to flooding on the university's grounds. Students who lived on-campus were forced to evacuate their residences from early September through the end of the month. Students who were enrolled at WAU but lived off-campus were able to return to their residences approximately two weeks after the storm, but were unable to attend courses on the university's grounds until October 1st.

Learners in Dr. Carter's course reported that some instructors provided WAU students with assignments while away, while other instructors required students to make up the missed class time by way of weekend classes and additional assignments that were completed upon return to campus. The hurricane also truncated the amount of hours that education majors, including the learners in Dr. Carter's course, could spend in their student teaching sites. While the Dean of the College of Education did not express any concerns with the education majors' reduced time in the field (Praloux, 2018), all of the interviewed participants noted that the hurricane resulted in them having less time to build relationships with their students and led to fewer opportunities to shadow teachers practice and practice their own classroom instruction.

While the storm had a negative impact on many of the university's operations, including the academic schedule, student scholarships, and graduation timelines for Fall 2018 graduates, Dr. Carter's course participants were not negatively impacted by the hurricane. During the storm, she required her learners to complete course readings and assignment asynchronously. Though she did not meet with learners synchronously, participants in her course were required to meet with their classmates and complete group work and assignments through the course Moodle during the evacuation. All of the interviewed participants (Students Brady, Collins, and Engram)

praised Dr. Carter's response to the storm and her ability to ensure that they and their classmates did not have to make-up classes or complete additional assignments following their return to campus in early October. The only observed adjustment made to the course was an assignment requiring participants to create an infographic about a key issue in literacy education. The assignment, which was due during the third week in September, was moved to the third week in October. All of the other course assignments and projects were completed within the original timeframes assigned in the course syllabus.

Context of the Assignment

Learners were required to engage with social networking sites by way of the Professional Identity Project. The project required learners to curate professional identities through sharing resources, following leaders in the fields of literacy and early childhood education, and developing networking communities through one of three social networking platforms: Facebook, Pinterest, or Twitter. Dr. Carter provided written guidance for each of the tools that addressed how the tools can be used (i.e., affordances and features) and how learners should use tools in service of the desired project outcomes (Appendix A). Learners who chose Facebook were required to post items that were relevant and of high-quality in the field of early childhood education and literacy, and engage with their peers via "likes" and "comments." Facebook users were asked to submit weekly evidence of participation via screenshots or video recordings detailing their engagement in the tool and submit a brief review of what they learned from participating in the tool during the week.

Learners who selected Pinterest were required to create boards based on each different unit of study (i.e., phonics, phonemic awareness, literacy development, comprehension, language acquisition, differentiation, motivation, and family literacy partnerships), and include

descriptions of the board's relevance, value to, and alignment with the topic. Participants were required to share their boards with the instructor via Pinterest, and include a description of the Pins and their alignment with the topic area. Learners who selected Twitter were asked to engage with a professional organization or online learning community by way of engaging in weekly chats by using and reviewing use of education-specific hashtags, including #edchat, #edureal, #sunchat, #ellchat, or #kinderchat. As with participants in the Facebook group, users were asked to submit weekly evidence of participation via screenshots or video recordings detailing their engagement in the tool and submit a brief review of what they learned from participating in the tool during the week.

Of the three available tools, 65% of the course participants (13 learners) chose to participate in the Facebook group, and 35% of the course participants (seven learners) chose to use Pinterest for the ID Project. None of the learners chose Twitter for the project. The survey responses showed that the learners were less inclined to use social media features that allowed them to join synchronous sessions (i.e., Twitter Live Chats) or search for content-specific hashtags to see what their peers are saying about the course readings, both of which are affordances of Twitter. Student Collins, similarly, noted that she did not choose Twitter for the project due to its lack of perceived benefit to her work for the ID project and for the course. She specifically cited Twitter's character restrictions as a reason for her rejection of the tool, noting that the character limits would have prevented her from processing the course content in deep and meaningful ways.

Population

The target population for the study was university faculty employed by and university students enrolled at West Atlantic University. Students were enrolled in credit-bearing courses

that led to the achievement of a degree or certificate. Participants were between the ages of 20-34 years of age, with a median age of 22 years of age. There were 20 learners enrolled in the course. Sixteen of the 20 learners were Caucasian and female (80%), two of the learners were male (10%), and two of the learners were students of color (10%). The researcher paid attention to the role of gender regarding the use or avoidance of certain social media features (including ones that may include a real or perceived threat to individual privacy) and noted the potential influence of gender and sex in how a tool was used and/or modified.

Of the 20 learners in the course, 13 chose to use Facebook for the Professional ID Project (65% of course enrollment), and seven learners chose to use Pinterest for the ID Project (35% of course enrollment). Ten of the 13 learners who chose the Facebook option were Caucasian and female (76.92% of Facebook users in the course, 62.50% of all Caucasian women in the course). Two of the Facebook users were male (100% of men in the course), and one of the participants was a student of color (50% of the students of color in the course). Six of the seven Pinterest users were Caucasian and female (85.71% of all Pinterest users in the course, 37.50% of all Caucasian women in the course), and one of the Pinterest users was a student of color (14.29% of all Pinterest users in the course, 50% of all students of color in the course)

A total of 12 learners consented to take part in the research study (60% of total course enrollment). Nine of the consenting participants chose to use Facebook for the Professional ID Project (69.23% of all Facebook users in the course), and three of the consenting participants chose to use Pinterest for the project (42.86% of all Pinterest users in the course). Eleven of the consenting participants identified as female (68.75% of all women in the course), and one of the consenting participants identified as male (50% of all men in the course). Two of the participants were students of color (100% of all students of color in the course).

Participant and Events Selection

Units of Study

The Transactional Distance model states that the following interactions are necessary to reduce the pedagogical distance present in blended and asynchronous learning: learner-content, learner-instructor, and learner-learner (Moore, 1997). The Social Construction of Technology (SCOT) model asserts that a social group's process of integrating a new technology into their habits involves establishing the usefulness of a tool, identifying barriers to its integration, and addressing those barriers through either their removal or redefinition (Pinch & Bijker, 1984). Using the Transactional Distance (TD) and SCOT models, the following units of analysis were featured in the study: individuals, groups, artifacts, and interactions. Instructors and students were interviewed at the individual level and coded using the TD and SCOT models. Observations of the course site were conducted in real-time. Course documents (PowerPoint presentations, videos, and content modules), program websites, and an introductory student survey were reviewed and coded using both the TD and SCOT model according to the coding scheme listed in this chapter.

Sampling Plan for Participants and Events

Purposive sampling was used to select the course meetings, artifacts, social media sites, and interviews included for review in the dissertation, with the researcher achieving approximately 200 hours of observation, contact, and document review. The selection of students, artifacts, and meetings for observation were chosen in collaboration with the dissertation advisor based on the research questions, method of research, and theoretical framework. The sampling plan was largely influenced by time and access to the instructor and students.

Surveys. Within the first month of receiving IRB approval, the researcher sent all of the consenting participants (12 learners) a brief survey with questions about their experience with and perception of social media use in education and the course. The researcher emailed a total of three survey requests over the course of six weeks, which netted a total of five responses. Student email addresses were not collected, in order to protect participant confidentiality. The responses were de-identified and assigned a unique code based on the location and chronological order of participation. All responses were kept in a password-protected and encrypted cloud storage system that only the researcher was able to access. A full list of the survey items can be found in Appendix C.

Observations. Though travel logistics and delayed IRB approval prevented multiple site visits, the researcher conducted a week-long visit to the research site to observe a full week of synchronous course meetings (three total), obtain participant consent, send out initial surveys, and conduct an initial interview with the instructor. As a result, the researcher observed 10% of the synchronous class sessions. Course sessions were audio recorded with instructor and student approval and were transcribed via a third-party transcription service. Transcripts were coded using the features of the Transactional Distance and Social Construction of Technology frameworks. Hand-written notes were completed during the observations, with emerging codes and themes recorded in the margins during the observations. Reflexive notes and methodological notes were recorded in a methodological journal and a reflexive journal immediately following the observations. The date was noted at the top of the notes to place the observations in a specific time frame in relation to the collection of other data. The notes and transcripts were reviewed and coded following the observations and turned into analytic memos. Codes were continuously

generated during the observations and analyzed throughout the collection process. The analysis process, therefore, was iterative and continuous throughout the data collection.

Observations of course social media sites. The researcher was granted student-level access to the course social media sites; she reviewed the volume and content of the individual posts, likes, replies from students and Dr. Carter, course-specific content, length of posts, and individuals who are tagged in the posts. The data was recorded via field notes using the SNS Observation Protocol (Appendix D) three-to-five times per week. Observational data was coded at the end of each week using the coding scheme listed in this chapter (Table 1).

Observations of the course site. The course site observations were selected and completed in accordance with Dr. Carter's input and student participant feedback regarding the course elements that were notably challenging or seamless. Any synchronous face-to-face sessions and meetings were be observed as frequently as possible, with the researcher observing a total of 10% of the synchronous course sessions at West Atlantic University. Administrative logistics at WAU prevented the researcher from being granted access to the course Moodle, however, the instructor did allow her to observe the asynchronous space during their initial and follow-up interviews. All observations were conducted using the protocol in Appendices E and F. Observation notes were verified by emailing the instructor to ensure the recorded details were accurate. Notes were coded and analyzed using the analysis protocol in Table 1 of this chapter.

Document analyses. The researcher analyzed the following documents during her data collection process: course syllabi, course readings, WAU newspapers and journals, WAU CoE program guidelines, and state-level certification guidelines for graduating educators. The researcher took notes using the document analysis protocol in Appendix G. Notes were coded using the analysis protocol in this chapter. Questions about the documents were addressed via

researcher email to Dr. Carter. Any changes to the researcher's notes were marked with an asterisk (*) to signify a change in the record. The date and time was noted at the top of the notes to place the document reviews in a specific time frame in relation to the collection of other data.

Interviews. The researcher audio-recorded all interviews, with participant consent, and had the interviews transcribed via a third-party transcription service. Transcripts were coded and analyzed using the protocol in this chapter (Table 1). The interviews were conducted according to a script (Appendices H-J), however, participants were given the space to explore topics of interest throughout the interview. Each student participant interview lasted approximately 20 minutes and each interview with Dr. Carter lasted approximately 60 minutes, for a total of three hours of participants interviews conducted throughout the course of the study.

Hand-written notes were recorded during the interviews, with emerging codes and themes noted in the margins during the interviews. Reflexive notes and methodological notes were recorded in a methodological journal and a reflexive journal immediately following the interviews. The notes and transcripts were reviewed and coded following the interview and turned into analytic memos. Codes were continuously generated during the interviews and observations and analyzed throughout the collection process. The analysis process, therefore was iterative and continuous throughout the data collection.

Interviews with students. A total of 12 students were invited to participate in single 20-minute interviews with the researcher. The researcher sent three weekly interview requests to the participants. The first email yielded four interview sign-ups, the second email yielded one interview sign-up, and the third email did not yield any interview sign-ups.

All of the learners who consented to participate in the research study were invited to meet with the researcher for an interview. Participants were emailed using the invitation to interview

in Appendix K, and were asked to select time to meet with the researcher during the times allotted. Participants were able to conduct interviews during the time period of December 3rd - 21st, and January 3rd - 10th, which were scheduled by the participant using the free scheduling tool Calend.ly. Participants who completed an interview were provided with a $20 electronic gift card to either Amazon.com or Starbucks, which was emailed to them within three hours of meeting with the researcher.

A total of five participants scheduled to meet with the researcher (41.67% of consenting participants, 25% of course enrollment) and only three learners successfully completed interviews with the researcher (25% of consenting participants, 15% of course enrollment). The other two students did not show up to the interview. Follow-up emails were sent to participants who did not show up to the interview, however, these participants did not attempt to reschedule the interview for another time.

The interviews were conducted using the protocol listed in Appendix I. The interviews were recorded through the Zoom web-conferencing platform, and transcribed using a third-party transcription service. Each interview lasted approximately 20 minutes. The researcher took handwritten notes during the interviews, and noted emerging codes and themes in the margins of her notes. When necessary, the researcher's interview notes and transcripts were confirmed with participants to ensure their accuracy. Adjustments were noted with an asterisk (*) in the notes to signify that adjustments were made in the record.

Interviews with the instructor. The researcher completed two interviews with Dr. Carter during the project: one at the beginning of the semester, and one at the end of the semester following the completion of the course. The interviews were conducted using the protocols listed in Appendices H and J. The initial interview with Dr. Carter was completed during the

researcher's site visit to WAU during the third week of October, and lasted approximately 60 minutes. The researcher's second interview with Dr. Carter was conducted via the Zoom web meeting platform during the 2nd week of December, after course grades were completed. The second interview also lasted approximately 60 minutes. Each interview was audio recorded and transcribed using a third-party transcription service. The researcher took handwritten notes during the interviews, and noted emerging codes and themes in the margins of her notes. When necessary, the researcher's interview notes and transcripts were confirmed with participants to ensure their accuracy. Adjustments were noted with an asterisk (*) in the notes to signify that adjustments were made in the record.

Analytic Strategies

The researcher began collecting observation, interview, and survey data in late-September to allow time for Dr. Carter and the learners to settle into the course, without allowing too much time to elapse in the semester. The following data was collected by the researcher during the study: observations of the course sessions and social networking sites; interviews with instructors and students; surveys of students; and reviews of course artifacts. The researcher conducted an initial 60-minute interview with Dr. Carter to gather information on her professional experiences and expertise with using the social networking sites (SNS) in her work along with her intentions for using SNS in the course being observed in the project. This interview also served as a baseline for the instructor interview data that was collected at the end of semester by the researcher.

While conducting her initial interview with the instructor, the researcher also conducted a survey of the learners' social networking habits in personal and professional/academic contexts. The survey items addressed the features and affordances of SNS in informal and structured

educational contexts, and took approximately 10-15 minutes to complete (see Appendix C). The researcher conducted semi-structured interviews three students at the end of the course (mid-November to mid-December). The interviews lasted 20 minutes in length and focused on learners' perceptions of social networking site use in the course.

The researcher conducted observations of the synchronous and asynchronous class sessions and course social networking sites beginning in late September through the end of the courses in early-to-mid December. Reviews of course artifacts were conducted from mid-September to mid- to late-December. Analytic memos were written following each observation, interview, and document analysis that summarized what happened in the space, new information that was added to the data, emerging codes, and reflexive thoughts from the researcher. The coding and analysis processes were iterative and ongoing throughout the collection of data. The researcher recorded observation notes during the collection of each piece of data, which she then coded and turned into analytic memos.

Coding Schemes

Primary codes. An initial set of codes was derived from the theoretical frameworks (i.e., Instructional Design, Social Construction of Technology, Transactional Distance) and emerging themes in the data. The codes were refined as the data was reviewed, and condensed based on their interconnectivity and alignment with the theories. The coding structure was used to identify initial codes in the data; any data that did not align with the proposed coding framework was elaborated upon in the analytic memos and coding framework (see Table 1). The applied codes were derived from analyses of the data and from Biggs (1979); Holmes (2005); Moore (1997); Morrison, Ross, and Kemp (2007); and Pinch and Bijker (1984).

Table 1. Coding Scheme

Primary Codes	Secondary Codes
Learner-Content Interaction	Pre-Structural, Uni-Structural, Multi-Structural, Relational, Extended Abstract
Consistency with the Course Content	Lesson Unit alignment
Features of the Technology	Learner-Learner Interaction, Learner-Instructor Interaction
Learner-Learner Interaction	
Learner-Instructor Interaction	
Consistency with the Professional Identity Project Objectives	
Consistency with the Technology Descriptions	
Length of the Post	
Quality of the Source	
Timeliness of the Interaction	

Emerging codes were noted in the table and conferred through multiple sources of data. The researcher coded the data herself, but confirmed her coding decisions with members of her dissertation committee to ensure the validity of her assertions. The initial codes applied to the data include: learner-content interaction, consistency with the course content, features of the technology, learner-learner interaction, learner-instructor interaction, consistency with the project objectives, consistency with the uses of Facebook and Pinterest descriptions stated in the syllabus, length of the post, quality of the content, quality of the source, and timeliness of the interaction.

Secondary codes. A second set of codes was applied to all learner-content interactions using the Structured Observation of Learning Outcomes (SOLO) Taxonomy (Biggs, 1979:

Holmes, 2005), which allowed the researcher to provide an organizational structure to the observed changes in the complexity of the learners' posts as the semester progressed. The secondary codes, as noted in this chapter (Table 1), align with the five levels of the taxonomy and include: pre-structural, uni-structural, multi-structural, relational, and extended abstract.

The researcher applied secondary codes to the learners' posts rather than learners' comments on other learners' posts. Her rationale for excluding learners' comments from the secondary analyses was rooted in the observed levels of engagement between learners in their comments. The learners' posts, and not their comments, demonstrated engagement with the course content. With few exceptions, the observed and analyzed comments never exceeded surface-level agreements with the posts or quick recaps of the material, with no further insights by the learners regarding the material or its applicability to the classroom teaching setting. As a result, the researcher omitted learner comments from the secondary analysis.

The researcher also applied a set of secondary codes to the primary "Features of the Technology" code to denote what interactions (i.e., learner-content, learner-instructor, and learner-learner) twere being facilitated by the learners' uses of specific tool elements.

Description of Codes

Each of the codes reflected the key theories that informed the design of the research study (i.e., Transactional Distance, SCOT, Instructional Design, SOLO Taxonomy) and the researcher's observations of how learners engaged with the content, instructor, and other learners throughout the course.

Learner-content interactions. Derived from the Transactional Distance framework, this code referred to if and how the learners engaged with the course content through their participation in the course Facebook group and in the observed Pinterest boards. Using the

SOLO Taxonomy (Biggs, 1979; Holmes, 2005), the following secondary codes were applied to learner-content interactions: pre-structural, uni-structural, multi-structural, relational, and extended abstract. Table 2 (see below) provides a descrtipon of each SOLO Taxonomy code and an example of posts that were coded at each level.

Table 2. SOLO Taxonomy Description and Sample Coded Posts (Holmes, 2005; Chan, Tsui, Chan & Hong, 2002)

Level	Description	Example
Pre-Structural	The response has no relationship to the prompts or display the student does not demonstrate any connection to the material or the prompts.	I felt a bit confused before, but the unit on differentiation has really confused me. I think I need to work through the information on exceptionalities section again. But students with learning needs don't really do well in public school anyway.
Uni-Structural	Student response contains one correct item from the display but does not discuss other items that may miss it; oversimplification of the ideas and issues.	You made me see that by differentiating my teaching practices for my students, they would have a greater chance of learning the material presented in class.
Multi-Structural	The response can answer or includes several relevant appropriate items but the achieved closure to the question is premature and does not account for all of the dimensions.	Employing differentiated instruction in the ELA classroom can improve all learners' confidence with reading, and helps everyone get better grades.
Relational	The student employees a range, most or all, of the relevant data to achieve a firm conclusion.	While employing differentiated instruction in the ELA classroom can improve all learners' confidence with reading, specific attention needs to be paid to how English Learners are scaffolded in inclusive classrooms.
Extended Abstract	The student extends their analysis to be on the seat in contacts and provide examples in counterexamples wood shed new light on the context or situation in question; if firm conclusion or closure as a result is not the goal	While employing differentiated instruction in the ELA classroom can improve all learners' confidence with reading, specific attention needs to be paid to how English Learners are scaffolded in inclusive classrooms. As a result, educators need to move beyond differentiation and into a dimension I call

	but shedding new lights on the problem or issue is the focus of their response.	"Culturally Responsive and Differentiated Instruction," where each learner's linguistic and cultural point of view are acknowledged in light of their impact on the student's ability to read and create new schema in their literacy education.

Pre-structural. Responses at the pre-structural level did not demonstrate any connection to the course material or the contexts of early childhood education or literacy education, or contain inaccurate information.

Uni-structural. Posts coded as uni-structural reflected either an oversimplification of the concepts or focus on one feature of the content that is not connected to the broader contexts of theory and practice.

Multi-structural. Posts coded as multi-structural included several relevant concepts, but did not account for all of the dimensions in the discussed idea or concept.

Relational. Posts coded as relational demonstrated a range of data that led to the learner's arrival at a firm conclusion about an idea. None of the observed posts were coded as relational.

Extended abstract. Posts coded as extended abstract demonstrated a complex analysis of an idea or concept that incorporated counter examples and led to a new understanding by the learner about the concept. None of the observed posts were coded as extended abstract.

Consistency with the course content. This code referred to how well the content of the post aligned with the overall course material as stated in the course syllabus, including the eight different topic units presented in the course.

Lesson unit alignment. Facebook posts were not coded for content unit alignment, while the content in the Pinterest posts were coded with this alignment in mind. This is due to Dr. Carter's requirements that each submitted Pinterest board (eight total) reflect the unit material

being discussed in the course at the time of submission. Facebook users, however, were not required to limit their posts to the content being covered in the course at the time of their posts. As a result, their posts were not coded for unit alignment.

Features of the technology. This code referred to features of the technology that were being employed by the users in each interaction. This included "posts," "pins," "shares," "tagged users," "likes," "views," "comments," "replies," "shared posts," and other related features that were specific to each tool. Secondary codes were created for learner-content, learner-instructor, and learner-learner interactions to denote the interaction being facilitated through the users' employment of different tool features.

Learner-content interaction. This code referred to features of the technology that were being employed to build the learners' understanding the course content. An interaction where the user "shared," "pinned," or "uploaded" content, for example, would be given a secondary code of "learner-content interaction."

Learner-instructor interaction. This code referred to features of the technology that were being employed by users to develop connections with the instructor. "Liking" Dr. Carter's post, for example, would be given a secondary code of "learner-instructor interaction."

Learner-learner interaction. This code referred to features of the technology that were being employed by users to develop connections with other learners. "Liking" or "commenting" on a learner's post, for example, was given a secondary code of "learner-instructor interaction."

Learner-learner interaction. Derived from the Transactional Distance framework, this code referred to how learners engaged with other learners through the technology. This included "views," "likes," "replies," "comments," "sharing media," "emojis," and other features of the tool that the users used to connect with other learners and develop their understanding of the

course content. Unlike the "Features of Technology" code, this referred to how the learners used the tools to interact with each other, and not just a listing of the specific features that the users employed to facilitate the interaction.

Learner-instructor interaction. This code, which was also derived from the Transactional Distance framework, referred to how the learners and instructor engaged each other through the technology. This included "views," "likes," "replies," "comments," "sharing media," "emojis," and other features of the tool that the users employed to connect with the instructor. Like the "Learner-Learner Interaction" code, the focus of this code was on how the learners and Dr. Carter used the tools to foster engagement with each other, and not just a listing of the different features employed by the users.

Consistency with the professional identity project objectives. This code referred to how the content of the observed posts and learners' interactions within each post aligned with the objectives of the Professional Identity Project (see Appendix B).

Consistency with the technology descriptions. This code referred to how the learners' uses of the tools aligned with the stated descriptions for how the technologies should be used in service of the Professional Identity Project, per the course syllabus (see Appendix A).

Length of the post. This code referred to the length of each Facebook post and comments in terms of the words (i.e., not characters). For the observed Pinterest posts, this code referred to the length of the learners' board descriptions and, when provided by the learners, the length of their description of each Pin.

Quality of the source. This code referred to the quality of the sources that were being posted, shared, or Pinned. High quality sources included resources, websites, and articles that are grounded in the theories of early childhood education or literacy education and are empirically

validated. Lower quality sources included resources, websites, and articles that were written by someone without professional knowledge in the fields of early childhood education or literacy education, or a resources (including blogs, videos, and websites) that did not include empirical evidence or citations to support their assertions.

Timeliness of the interaction. The timeliness of the interaction referred to how quickly the learners and instructor engaged with the posted content. The limitations of her role in the Facebook group prevented the researcher from identifying when a post was viewed or liked, but she was able to identify when a participant commented on a post in relation to when the participant posted the material. This code was contingent upon the presence of an interaction, and was not applied to the observed Pinterest posts, which, per Dr. Carter and the ID project guidelines, did not require learner-learner or learner-instructor interactions.

Notes were recorded in the observation records to highlight emerging ideas and potential codes that did not fit into the initial coding frameworks. The constant comparative method of coding (Strauss & Corbin, 1990) was used to ensure the validity and reliability of the researcher's coding decisions, and she confirmed her decisions with members of her dissertation committee to ensure their accuracy. Missing information was noted in the observation notes and was addressed by the researcher within 24-36 hours of data collection to ensure that she did not develop initial codes based on incomplete data.

Throughout the data collection (mid-September through mid- to late- December), the researcher reviewed the recorded data and codes to identify emerging themes, sub-themes, and outliers. She paid specific attention to data that did not align with the categories and frameworks initially proposed in her project. She continued to engage in coding reflexivity throughout the

data collection process and sought out disconfirming evidence for codes that appeared particularly well-represented in her analyses to ensure their validity.

Final Analysis

After the data was collected and analyzed and the major themes were identified, the researcher conducted a final comprehensive review and analysis of the data to seek disconfirming evidence for the assertions. She reviewed the observation notes, transcripts, and audio recordings of interviews to ensure the accuracy of her notes and validity of her codes, which she confirmed with her advisor to ensure their accuracy. Alignment between the data and the initial assertions was noted with a check (✓); misalignment between the data and initial assertions was noted with an asterisk (*). The researcher created a separate analytic memo for each piece of misaligned data, and reviewed her collection, analysis, and coding procedures with her advisor to ensure the alignment of the data and her assertions.

The findings helped inform understanding and practice around how social networking tools can be used in support of learning in structured credit-bearing courses at the university level. While this research study did not establish causal relationships between SNS use and student learning, the outcomes provided insights into how social technologies, especially technologies that are familiar to college-age students, can be used to scaffold academic development.

Timeline

Data collection and analysis were conducted during the following time frame:

- Overall Project Timeline: September 15 - April 1
- Student Survey: October 20 - December 15
- Initial Interviews with Instructors: October 1 - November 1

- Follow-Up Interviews with Instructors: December 5 - January 1
- Observations of the Space: October 15 - October 30
- Document Analysis: September 15 - February 1
- Participant Interviews: December 1 - December 15
- Analysis and Write-Up: September 15 - April 1

The timeline for data collection was bound by the Fall 2018 semester schedule. While there were not distinct phases of data collection, the data was gathered in accordance with the progression of the semester so the interviews, surveys, observations, and artifact reviews aligned with Dr. Carter's and the learners' experiences in the course. Per the observation, interview, survey, and artifact review protocols (Appendices D-I), the researcher noted what occurred in the spaces, who the actors were, the key or critical incidents, and the processes employed. Notes were developed during the observation/interview/artifact review sessions and were transformed into analytic memos during the coding and analysis processes.

Analysis was ongoing throughout the project. The research reflected an iterative analysis process, whereby the information was collected, analyzed, and turned into data. Emerging themes were identified and noted by parenthetical references to indicate their sources of origin (interview transcripts, observation notes, reflexive notes, analytic memos). The researcher confirmed data through notation in multiple locations and, when necessary, followed-up with study participants via email to ensure the accuracy of the record. Any areas of confusion were be marked with a star (*) in both the typed and written notes to indicate that further review and/or re-connection with the study participant was required.

Risks for Participants

Participant risks for the research study were minimal. Participation was voluntary, and students could choose to have their information omitted from the observation, analysis, and write-up processes. Participants were assigned a number, de-identified in all the analyses and write-ups, and assigned a pseudonym in all of the written reports. All notes and analytic documents (including analytic memos) were kept in a password-protected and encrypted file that only the researcher could access. Students had the choice to be observed and not interviewed, and could revoke their participation in any of the research activities (observation, survey, interviews) at any time throughout the life of the research study.

Researcher as Instrument

Researcher Bias

The researcher did not have any authority over the learners by way of teaching or supervision. She did, however, carry power in her role as a researcher, and was aware that her previous experiences and expertise may have biased her interpretations. To counter this bias, she sought out disconfirming evidence of her observations and views in order to strengthen the findings and reduce the potential for bias. She also communicated with her advising team (who did not supervise or teach the participants) regarding her data collection and analysis process to examine and address the impact that her privilege and experiences may have had on her data collection and analysis.

Researcher's Role

Throughout the project, the researcher acted as an "observer," where she observed the course activities but did not engage in a supervisory or advisory role with the Dr. Carter or the course participants. She was not be responsible for providing feedback to students on any part of

their course experience, nor was she be responsible for grading peer feedback or issuing grades (which are responsibilities of the instructor). As a result, her activities were be limited to observing and recording interactions and data that were pertinent to the project.

Researcher Background

Using Denzin and Lincoln (2008)'s identification of the researcher as instrument, the following elements of the researcher as an instrument are explored in relation to the researcher's completed research: relevant aspects of self, expertise, biases, assumptions, and etic vs. emic role in the study. The researcher is a Caucasian cis-gender female from a middle-class home in the Mid-Atlantic region of the United States. At the time of this writing, she has completed two bachelor's degrees (in English and Psychology), a Master's degree in Secondary School Counseling, and is enrolled in a full-time Ph.D. program in Curriculum and Instruction (concentration: Instructional Technology).

Though she is a first-generation college student and a woman in a STEAM (science, technology, education, arts, and mathematics) field, she has an undeniable level of privilege that influenced what she observed and how she interpreted her observations. First, she has educational privilege. The researcher possesses three post-secondary (high school diploma) degrees and is in the process of completing a fourth degree that is terminal (Ph.D.). She has access to technology, electricity, academic resources, friends and family, and personnel resources that scaffold her learning processes and help her make meaning of difficult or puzzling incidents. Second, she has professional privilege. In addition to her previous experiences as a researcher and an instructional designer of asynchronous online courses, the researcher was granted access to the Dr. Carter's decision making processes regarding her employment of social

networking tools in the course and her perceptions of learner performance in the course and the Professional Identity Project, which the course participants could not and did not share.

As of this writing, the researcher has served as a research project coordinator for two multi-site federally funded research studies where she managed the site activities, adherence to the approved IRB protocol, data collection, and assisted with the data analysis and reporting. These studies were completed from a post-positivist research perspective, which privileges the "observer" instead of the participant point of view in the data collection and analysis. To confront her post-positivist training, the researcher privileged the participants', especially the student participants', experiences in her observations and analyses. She examined how her lens and choices influenced what she does and does not observe in a given situation, and identified her potential biases and perceptions during her field notes, write-ups, and analyses. Additionally, she engaged in triangulation and member-checking throughout her data collection and analyses to ensure that the facts and themes were accurate and supported by multiple lines of data rather than exclusively by her own interpretations.

Social media. The researcher has prior experience with social networking tool use, which influenced her perceptions of the tools and their potential educational benefit and value. Her previous experiences as a secondary school counselor have, specifically, shaped her views on social networking tool use in education. The researcher graduated with her M.Ed. in Secondary School Counseling from Penn State in 2005 (one year after the creation of Facebook), and was hired as a school counselor with West Middle School (Westminster, MD) shortly thereafter. Much of her work with her students (ages 11-14) focused on their relationships with social media and how their activities on SNS, specifically Facebook, informed their personal relationships and academic habits. She observed her students using the tools as an avatar for their face-to-face

worlds, where they created alternate personas that allowed them to do and say things that they may not have done and said in synchronous face-to-face settings.

The researcher's school counseling work, particularly her work with social networking tools in educational settings, heavily influenced her interest in studying educational technology and the educational benefits of using social networking tools in credit-bearing courses. Though much of her work with SNS as a school counselor focused on addressing the negative consequences of her students' choices on the social networking sites, she also witnessed that her students' use of the tools could yield positive consequences when the students were provided with guidance and structure for how to use them. When properly educated on which tools and features supported their academic work, and when prevented from utilizing features that resulted in poor decision making, the researcher observed that her students connected more with the content and expressed greater interest in learning than when they did not use the social networking tools in their academic work.

While the researcher attempted neutrality in her data collection processes, she possesses biases around the use of social networking technologies. Firstly, she believes that social networking tools can increase learning opportunities when purposefully integrated into a course. In order to counter for this bias, she sought out disconfirming evidence in each of her observations and looked for how social media did not lead to increased or enhanced learner-content interactions.

Secondly, she believes that social networking tools can empower negative behaviors from users in unmoderated settings. To reduce the impact of this bias, the researcher named the bias in her observation notes, memos, and analyses, and sought out disconfirming evidence from users who were using the tool positively in any non-academic posts that she was allowed to access.

Thirdly, the researcher does not use social networking tools for personal communications or relationship building and has not done so in over six years. While she acknowledges the educational benefit of the tools, she does not subscribe to their ubiquity across users' lives. She attempted to counter this bias by naming it in her notes, memos, and analyses, and by seeking out guidance from advisors on the impact of the bias on her observations and analyses.

Validity

Drawing upon Erickson (1986) and Guba and Lincoln (1994)'s work on validity in qualitative research and Flybjerg (2001)'s emphasis on phronesis in the data collection and analysis processes, the following strategies were employed to ensure the validity of the data: credibility, triangulation, disconfirming evidence, a reflexive journal, and transparency.

Credibility

Direct quotes and references to notes were used to explain the phenomena from the participants, specifically the students, perspectives. Biases and influences from the researcher and non-student leaders were acknowledged and identified in the notes in terms of how they did or did not influence the perceptions and coding of the data.

Triangulation

Multiple sources of data were used to identify initial codes and themes, with the aim of saturation across the sources. The codes were identified across the forms of data to demonstrate the presence of multiple pieces of data that resulted in the identified code and, later, theme. The researcher aimed to identify how her biases and perceptions influenced the data, and sought out disconfirming evidence to counteract these biases.

Disconfirming Evidence

Throughout the development of the initial and thematic codes, the researcher looked for instances of disconfirming evidence. This process strengthened the coding process by looking for codes and themes that were not unanimous or had conditions around or their existence. Additionally, disconfirming evidence helped privilege voices that may have disagreed with the prominent themes identified by participants.

Reflexive Journal

An interpretivist perspective of research notes that reflexivity is critical to acknowledging how data are collected and meaning is made for the researcher and participants. The researcher's entry into the course site automatically changed both the construction of the course site and the participants' experiences. Though the impact may not have been explicit or observable, acknowledging a researcher's presence in the course transforms the course from a purely academic setting where the experiences solely belong to the participants to one where the experiences are shared by the participant and an observer.

Regardless of intention, the researcher's presence in the course transformed the experience in a myriad of implicit and explicit ways. To hold herself accountable throughout the data collection and analysis process, the researcher recorded a reflexive journal during the observations and interviews to identify her biases, her ways of making meaning, and how her role in the course may have impacted the learners' experiences. Additionally, the reflexive journal helped the researcher identify how her unique lens and experiences may have impacted what she privileged and/or disregarded throughout the study.

Transparency

Throughout the interview and observation process, the researcher aimed to acknowledge her privilege as an educated woman with access to technical knowledge and materials that were used in the course and as an administrator who was be granted access to information about the students and how decisions were made regarding the course. While she could divorce herself of these perspectives and experiences, the researcher noted them in her data collection and analyses to reduce their impact on the findings.

CHAPTER FOUR

PROCESS OF SOCIAL MEDIA ADOPTION AND MODIFICATION

Introduction

The use of social media tools in Dr. Carter's course was structured as a parallel to the instruction rather than as an integral part of the learning experience. The learners, in turn, modified their interpretation of and uses of the tools to make sense of the course material, and rejected the features of both the Professional Identity (ID) Project (the specified context for the learners' use of the social media tools) and the social media tools that did not align with their intended uses of the technologies and goals for the project. The learners, specifically, rejected features of the ID Project and corresponding technologies that emphasized professional development as defined by the project objectives (i.e., experiencing professional growth as a result of interacting with empirical literature in the fields of early childhood education and literacy education and developing a "reflective mindset" regarding the learners' continued professional development and role as an advocate) (WAU Syllabus, 2018).

While the overall course was well-structured and demonstrated alignment across the course objectives, readings, synchronous meetings, activities, and assessments, the misalignment between the desired and intended uses of social networking tools shows that several features of the instructional design framework, as defined by Morrison, Ross, and Kemp (MRK) (2007)'s Instructional Design model, were not fully planned out in accordance with the desired outcomes of the project and social media use. These areas include: identifying the instructional problem; identifying the learner characteristics that support the specific instructional objectives associated with the use of social media and the of overall use of social networking tools (including entry level behaviors); developing learning objectives for the use of the tools that are clear, observable,

and measurable; designing instructional strategies for effective use of the tools in service of both the project outcomes and related course objectives (including generative strategies, namely integration, organizational, and elaboration strategies).

Overview of Findings

The learners employed features of the social networking tools that supported their desired outcomes, and rejected features of the technologies that did not align with their goals for both the ID Project and the intended uses of social networking tools in the course. Using the Social Construction of Technology (SCOT) model to assess the learners' processes of adoption, modification, and rejection of the technologies, the learners employed the technologies to address their specific instructional problems, and rejected features that either lacked relevance to their needs or did not effectively "solve" (Pinch & Bijker, 1984, pg. 411) their stated problems for the instruction and technology. The learners rejected features of the project and technology that did not support their desire to deepen their content knowledge (learner-content interaction), promote interactions with their peers (learner-learner interaction, or scaffold their teaching practices.

Development of the Instruction

Morrison et al. (2007)'s Instructional Design framework provides a comprehensive learner-oriented method for designing effective instruction for synchronous, asynchronous, and blended contexts. The model is circular, which reinforces the notion that instructional design of any instructional experience is iterative and systemic. The researcher chose Morrison et al. (2007)'s model over other instructional design models (i.e., ADDIE, Dick & Carey, TPACK, SAMR) for use in analysis for the following reasons: 1) the MRK model is systems-focused and articulates instructional design as an iterative and learner-driven process, and 2) the model

situates instructional experiences in broader organizational and institutional contexts, but defines the success of an instructional experience at the learner level.

The framework is comprised of nine elements that are interrelated, including: identifying the instructional problem, examining learner characteristics, analyzing task components that support instructional objectives, identifying the instructional objectives, sequencing the instructional content, identifying instructional strategies, designing the instructional message, developing the instructional content, and developing evaluation instruments (Morrison et al., 2007; Akbulut, 2007; Obizoba, 2013). Each of these elements, when appropriately employed, will yield a successful instructional experience for the learners.

In applying the framework to Dr. Carter's course, the researcher found that the instructor intended to use social media to scaffold learners' professional development as part of the ID project, which emphasized features of the technologies (i.e., Facebook and Pinterest) that helped learners connect with other professional networks, organization, and resources. The learners, however, used the tools to help scaffold their understanding of the course content (learner-content interactions), and rejected features of the tools and of the project that did not service these outcomes. The disconnect between the intended and observed uses of the technologies can be explained through the instructional design of the ID Project using MRK Framework, and the learners' Social Construction of the Technology (SCOT Model; Pinch & Bijker, 1984). An analysis of the instructional design of the project highlighted the following instructional design needs: identification of an instructional problem that is solved by the project, a greater understanding of the learners' needs and characteristics, clearly defined instructional objectives for the project, and the development and implementation of instructional strategies to support the desired outcomes and uses of social media throughout the ID Project.

Identifying the Instructional Problem

Instruction, according to Morrison et al. (2007) needs to address a specific problem that can only be solved through an instructional experience. This is somewhat analogous to the SCOT model (Pinch & Bijker, 1984), where a technology needs to solve a problem for the specific user groups. The MRK model, however, states that instruction should be employed only when it is the best solution to the presenting issue. In this situation, the proposed methods of using social media did not successfully address the problem that it intended to solve, which is how learners can demonstrate professional growth by interacting with empirical literature and media in the field, and how learners can develop a "reflective mindset about their professional development" (WAU Syllabus, 2018). There was not a clear rationale for how or why social media was the best solution for the stated problems at the learner level, nor did the instructor identify why the stated outcomes were necessary for learners in the specific course.

Learner characteristics. Prior to providing instruction, the instructor needs to identify the learner characteristics that influence the learners' access to in engagement within the course content. These include general characteristics (e.g., gender, age, and ethnicity) and performance-specific characteristics (e.g., ability, exceptionalities) that influence the learners' interaction with the instruction or ability to achieve the desired objectives. (Akbulut, 2007). The focus is on having a clear idea of both who the learners are and what they bring to bear, including their abilities and skill proficiencies with the content and tools associated with the instruction. Dr. Carter did not possess or demonstrate an understanding of the learners' needs from the ID project and the broader course. As a result, social media was employed at the learner level very differently than how the instructor intended. This could have been solved by implementing a quick survey at the beginning of the course, where the instructor collects key information about

the learners' technological proficiencies, desired goals and outcomes for the course, rationale for taking the course, and intended uses for the course in their professional practice and development.

Learning objectives. The learning objectives for any instructional unit define the desired outcomes for the learner. Morrison et al. (2007) note that instructional objectives provide three functions: 1) they provide a framework for the instruction for both the designer and the learner; 2) they provide a framework for evaluating student learning; 3) objectives provide guidance to the learner regarding the skills, behaviors, and knowledge they should achieve during the instructional experience. The objectives for any learning experience need to specific, logically organized, observable, and measurable, with clear metrics for determining whether or not the objective was successfully met by the learner.

The objectives for the Professional ID Project (see Appendix B) were not expressed in measurable or observable terms, which made it difficult for learners to know whether or not they achieved the desired outcomes for the project as stated in the syllabus. The objectives, which included an emphasis on scaffolding professional growth by way of interacting with professional organizations, field-specific literature and resources, and encouraging reflection on professional practice, did not include scaffolds or strategies for their achievement. In addition, Dr. Carter did not provide quantitative metrics to help inform learners of what successful achievement of the objective (in this case, use of social media tools) looks like.

While none of the interviewed learners (Students Brady, Collins, and Engram) reported this as an issue, observations of the posted and pinned content did not show or demonstrate that the learners actually achieved these goals. This was further reinforced by observations of the synchronous class meetings, where learners were observed asking questions about how to apply

the technologies for the project and how Dr. Carter defined successful use of the tools. During her interviews with the researcher, she reported that students reached out to her throughout the project to ensure that they were using the technologies and meeting the desired outcomes for the ID Project. Dr. Carter, additionally, noted that the learners repeatedly and consistently use the tools but did not do so in alignment with how she intended them to be used before the project or in the course as a whole.

Stating the objectives and actionable ways with clear targets for success would have reduced learners' observed and reported confusion around the project, and likely yielded more consistent levels of participation across both Facebook and Pinterest users, which, Dr. Carter and Students Brady, Collins, and Engram all cited as being problematic throughout the semester. While this was observed and reported as more of an issue with users in the Facebook group (which provided more opportunities for learner-learner engagement), than for users in the Pinterest group (which provided more opportunities for learner-content engagement) neither of the technologies yielded high levels of learner-learner interaction. One thing that was observed, however, in the Pinterest posts was a lack of consistency regarding the volume of pins across each board. There was no student metric for success for any of the other technologies, but an emphasis on the "quality of engagement" which was not explicitly codified at the learner-learner, learner-content, or learner-instructor levels.

Instructional strategies. The instructional strategies for a learning experience "prompt or motivate a learner to actively make...connections between what the learner already knows" and the new information that the learner is being presented with (Morrison et al., 2007, p. 146). Strategies help move the learner through the content, and help scaffold their learning as they progress throughout the learning experience. In the case of Dr. Carter's course, the overall

course content was well-structured and sequenced in a way that was logical and aligned with the course objectives, course activities, readings, and university/state/national standards for accreditation. Dr. Carter, however, did not make reference to the social networking tools during the synchronous course meetings or in the overall course content, and did not include any specific instructional strategies to help scaffold learners towards the project intended outcomes (see Appendices A-B). The use of social media was kept separate or distant from the actual course instruction. The instructor did not make reference to the use of social media in the synchronous meetings, nor did she scaffold its use into the material presented throughout the semester (which was confirmed by Dr. Carter and by the interviewed learners - Students Brady, Collins, and Engram). As a result, the tool ran parallel to the course rather than as a scaffold to support the instruction.

Additionally, Dr. Carter's implementation of social media did not reflect any specific instructional strategies for its use, nor did Dr. Carter's use of social media serve as a stable form of an instructional strategy to help learners master the course content. This connects back to the tool's original design as a means to help learners become more aware of their professional selves rather than support their understanding of the course concepts. The outcome is that learners used the tools for their desired outcomes, which included building their understanding of the course material and resources to scaffold their future instructional practice. A review of the syllabus, however, showed that the focus of the project was on developing a professional identity rather than mastering the course content. As noted, the learners never achieved this outcome.

Perception of Benefit

The features that were adopted by the learners reflect both their desired uses of the technologies and their perceived outcomes of the project. Features that were adopted by the

learners aligned with what they perceived to be the needs of the project, and in ways that were familiar or deemed beneficial to them (see Appendix K). Similarly, the features that were rejected by learners did not align with the intended uses and outcomes for both the technologies and the project. The technologies were not modified by the learners, however, their interpretation of the project was changed.

Drawing from the SCOT model's articulation of the closure and stabilization process (Pinch & Bijker, 1984), which refers to whether or not the social groups perceive their concerns with the technology as being solved, the relevant social group (the learners) rejected parts of both the ID project and corresponding features in their chosen social networking tools that did not align with their desired uses of the technology and with their own goals for and interpretation of the project. The learners used and reported benefit from using the tools to build content knowledge in the course, developing connections with their peers in the course, and practicing more "professional" ways of engagement in the sites (specifically Facebook). The learners rejected features of the tools that promoted engagement with non-WAU professional communities or prompted deeper reflection on their professional development.

Learners employed the social networking tools to develop their understanding of the course content. Observations of the synchronous class meetings, observations of the course-related social networking sites, and interviews with the instructor and participating students showed that the learners derived the following benefits from using the tools: interacting with other learners to scaffold or deepen their understanding of the course content (i.e., learner-learner interaction), curating resources and articles to scaffold educational practice (i.e., learner-content interaction), and using instructor feedback (i.e., learner-instructor interaction) to improve and refine their understanding and application of course concepts. Learners adopted features of the

tools and the project that facilitated these processes, modified the stated project and tool requirements to meet their needs for the tools, and rejected features of the technologies and ID Project that did not support their desire for learner-content interaction.

Adoption of Tool Features

Learners enrolled in the course used the selected social networking tools to improve their overall understanding of the course content and individual topics of interest. The learners used the features of the technologies that allowed them to deepen their learner-content interactions, including: posting/pinning, sharing, liking, commenting, and viewing. The features that were not employed by the learners were either ignored by the instructor or did not align with the learners' intended uses of the tools (see Appendix B, Appendix K). While the focus of the project was on the development of professional connections within the fields of early childhood education and literacy education, the participants used the tools to scaffold and expand upon the course content and their understandings of the topics discussed in the readings and synchronous class sessions and actual practice in these fields. This is echoed in the survey results, where 80% of respondents reported that their desired benefit from using SNS is "improved understanding of the course material."

The features of the tools that were most frequently observed being used by the learners aligned with the project requirements (as stated in the course syllabus) and reflected the ways that the instructor engaged with the content and other learners. The learners primarily used the tools to build their knowledge of topics related to the course content and their educational practice. While none of the features of each technology were outright rejected by the learners, very few of the features of Facebook and Pinterest were employed. The features most frequently employed by the users in the tools include: posting/pinning, commenting, liking, sharing, and

viewing. Less frequently used features include replying to comments and like-backs of comments on the learners' original posts.

Learner-content interactions. Learners used social media to scaffold their communication with their peers in a way that they become more aware of the content and the interpersonal impact of what they shared in the site. All of the interviewed participants (Students Brady, Collins, and Engram) reported that using the tools allowed them to practice "professional communication" with their peers, where they used more formal language and supported their assertions with observations from their student teaching practice and from course readings and lectures. While the learners' comments and posts did not reflect deep analysis of the course content (which can lead to exploring contradictions and limitations of different theories, and can prompt difficult conversations about young students' needs) (Biggs, 1979; Holmes, 2005), the learners' posts and comments remained respectful throughout the semester. None of the observed posts and comments contained offensive or inflammatory language, and many of the observed posts (especially those in the Facebook group) included discussions of learner exceptionalities and the impact of learner context on developing literacy skills in young learners.

Dr. Carter required the course participants using both tools to post content from respected sources so that they could engage in critical thinking about the "what" and the "who" of their posts. In this way, she promoted digital citizenship within her learners, namely the ethics of "digital communication" (i.e., appropriate exchanges of electronic information), "digital literacy" (i.e., safe and meaningful uses of web-based tools), and "digital etiquette" (i.e., engaging in appropriate and respectful communication via web-based tools) (Ribble, 2015).

Lurking. The most-frequently employed feature across both Pinterest and Facebook was "viewing" the posts, also referred to as "lurking." Of the coded interactions, viewing posts were

the most-frequently employed feature, with 96% of the Facebook posts being seen one or more times (average views per post: 11). This suggests that the participants were more likely to look at the content shared in the tool without actually engaging with the posts or the learners. While lurking can be considered a form of inactivity in online spaces, several studies (Kearsley & Shneiderman, 1998; Lave & Wenger, 1991; Muller, 2012) show that lurking can be purposeful and help scaffold learners toward both content mastery and greater engagement in their learning community. This finding was echoed by the interviewed participants, who expressed deriving benefit from other learners' posts, even if they did not directly interact with the content or learners in observable ways.

Learner - learner interactions. The learners used social networking tools to connect with other learners in the course regarding the course content and mutual areas of interest.

Facebook. The most frequently employed features of the tools by the learners include: Likes (258 likes across 97 posts), Comments (86 comments across 97 posts), and Views (1026 views across 97 posts) (see Appendix L). The features that the learners employed show that they privileged cursory and asynchronous forms of connectivity through the sites rather than synchronous connections. The most popular forms of learner - learner engagement (likes and views) demonstrate recognition that the learners acknowledged each other and their posts, but did not necessarily provide deeper feedback or input on the content.

Student Brady reported being driven by "the socialization aspect" and reported that using Facebook "kind of brought us together and...like talking about like, 'oh we need to, you know, respond to and everything and you know, get it done or whatever.'" As result, Student Brady most frequently used the features of Facebook that allowed her to connect with the posts and leaners, including posting/sharing, commenting, liking, and viewing posts. Student Engram

reported using the tool (namely her peers' posts) to address real and perceived content gaps, and to explore readings and media that helped address her content needs. Student Engram did not, however, connect with her peers' comments beyond liking or commenting on their feedback to say "thank you" or "I agree!" Her rationale for this lack of deeper connectivity was connected to the assignment description, which stated that students were required to like and comment on posts, but not necessarily engage in deeper connectivity with each other and the content through the tool.

None of the features employed by the learners demonstrated synchronous connectivity. This can be partially attributed to the learners' engagement in a group chat with their cohort, which (as Student Engram and Student Brady noted) can become overwhelming due to the high volume of communication. The focus of the group chat included details about the course and other courses that the learners were enrolled in, including attendance, assignments, and group projects. As a result, the learners did not have a need for the synchronous features that Facebook offers; they were already synchronously connecting through a different medium (text messages).

Pinterest. Student Collins' technology choice for the project aligned with her stated interest in completing the Professional Identity Project in a way that limited the requirement of interacting with other learners through the tool. As a result, the features employed by her demonstrate a lack of synchronous and asynchronous connectivity with her peers. The only features that she used during the semester are Pins (94 Pins across eight boards) and descriptions (eight descriptions across eight boards) (see Appendix M).

Observations of Student Collins' boards showed no learner-learner or learner-instructor interactions in the tool throughout the semester. Collins reported purposefully choosing Pinterest in order to curate a series of tools and resources that could scaffold her professional practice

without requiring her to interact with her classmates and Dr. Carter. Like her peers, Student Collins reported participating in the cohort group text chain, which supplemented her need for synchronous connections with other learners. According to Collins, relying upon her peers to complete the assignment would have negatively impacted her ability to complete the project. The outcome is that she had the single highest number of unique content shares (Pins and posts) than any of the observed learners (94 unique Pins out of a 191 unique Pins and posts) (see Appendices L-M).

Modification of Tool Features

Learners modified features of the technology and ID project to support their understanding of the course content. Project objectives and social networking tool features that scaffolded professional development by way of engaging with national organizations were modified at the learner level to emphasize engagement with the course content rather than engagement in broader discussions about the fields of early childhood education and literacy education. The initial structure of the assignment included a requirement that participants in each social networking site provide evidence of their weekly engagement within the tools, and provide a brief discussion of what they learned by way of engaging with their peers and in the technology. As the semester progressed (and in response to the learners' patterns of participation the SNS), Dr. Carter de-emphasized parts of the ID Project the required learners to connect with their peers synchronously and develop professional relationships with other educators outside of WAU.

Facebook. Facebook users created a total of 97 posts, 16 of which were created by the instructor. This means that the totals combined posts for the 13 Facebook members was 81 posts throughout the semester, which means that each user created fewer than seven (6.23) unique

posts during the entire 16 weeks of the course. The researcher did not have access to submitted reports or synopses of Facebook users' participation, however, neither the instructor nor the interviewed participants reported submitting a weekly review of their interactions and "lessons learned" during their involvement in the Facebook group. The researcher observed the instructor communicating to learners that the focus of the project was less on producing a high quantity of posts, but on the quality of the shared content and the learners' interactions with the content, instructor, and other learners. The quantity of the posts decreased as the semester progressed but the volume of the comments did not increase (even though the length of each individual post increased, as did the quality of the posted sources).

Pinterest. Much like participants in the Facebook group, the observed Pinterest participant (Student Collins) demonstrated a consistent use of the tool's features throughout the semester that did not align with the intended uses of the technology for the project. Dr. Carter repeatedly reported issues with receiving submissions from the learners in the Pinterest group, and considered the use of Pinterest to be an "opt out" for the assignment as a result of its greater emphasis on individual curation rather than learner-learner engagement. While participants could curate boards that allowed them to "Pin" more resources than their peers (as evidenced by the total observed Pins by Student Collins, which exceeded the highest volume of a single user's Facebook posts by 580%), participants in the Pinterest group did not have the requirement of group participation, nor did they have the opportunity to deepen their learner-content interaction by way of connecting with their peers.

The observed boards and pins in the Pinterest group demonstrated a consistent use of the Pinterest features - pinning and sharing content - throughout the semester, and a decrease in the number of pins per board as the semester progressed. Student Collins did not discuss why the

volume of her Pins decreased as the semester progressed, however, she did note that the demands of other courses influenced her ability to employ the desired features of the tool for the project, namely following professional organizations and joining professional learning communities within the tool. Like her peers in the Facebook group, Student Collins did not report submitting a weekly review of their interactions and "lessons learned" during her semester. Additionally, Collins did not report connecting with her peers or throughout the life of the project, including following other course participants' personal Pinterest accounts or exploring their course-specific boards.

While the participants in the course did not engage in explicit communication or connectivity with professional organizations and professional learning communities, the learners, namely those in the Facebook group, did use the tool to create mini professional communities with their peers. Student Brady reported using Facebook to connect with her peers and expand her knowledge about topics of interest. She reported using the tools as a starting point for exploration of interest to her practice, and being driven by communication with her peers in her program and outside of her program (like a personal or professional network) to better understand these concepts. Similarly, Student Engram reported using Facebook to identify who shared similar content interests in the course (e.g., supporting English Learners, differentiation) and connecting with her peers to identify tools and resources that scaffold her understanding of the concepts.

Rejection of Tool Features

Learners rejected features of social networking sites, by way of the ID Project, that did not align with their intended uses for the tools. Learners, specifically, rejected features of the

tools that focused on engaging with professional communities outside of their immediate cohort, and of the project that emphasized reflection upon their professional practice.

None of the observed course participants used the tools to participate in professional communities outside of WAU or to reflect upon their professional development. None of the observed features or interactions involved synchronous or asynchronous connection with professional communities, including: connecting with professional organizations; using hashtags in posts to search for key ideas, topics, and leaders or highly engaged users in the field; tagging leaders in the field (including other WAU professors or respected educators) to develop connections with other education practitioners; participating in Facebook Live feeds of professional organizations; following professional organizations and educational leaders While the learners' lack of participation in professional communities remained constant throughout the semester, their choices stand in contrast to their reported perceptions of benefits from using social networking tools in the course, where 60% of the respondents reported that "develop[ing] professional connections" is a benefit of using SNS tools in the course.

Though they reported (via surveys and interviews) that professional development was a key benefit from using social networking tools in the course, none of the observed learners used features of the tools that led to developing meaningful connections with professional communities and other educators. While the participants in both tools shared and posted content from professional organizations and respected educational sites (Reading Rockets, Cult of Pedagogy, We Are Teachers), the learners engagement with professional organizations or other educators did not exceed sharing content and briefly summarizing the content in their posts.

Conclusion

Learners perceived the benefits of the technologies when they meet their explicit needs for the technology. In this case, their needs for the technology were to build upon their understanding of the course material through either direct content with articles and resources (i.e., Facebook users, Pinterest users), connect with their peers to share and explore resources that built upon readings and activities in the course (i.e., Facebook users), and connect with the instructor to confirm their understanding of the course content and their uses of the technology. The conditions, however, needed to be directly connected to the users' needs for the technology.

As observed in the course, the learners rejected features of the project, and subsequently, features of the technology, that emphasized professional development (including developing professional connections with learners outside of their cohort and participating in professional organizations at the local, state, and national levels). The processes of employment, rejection, and modification are contingent upon the perceptions of benefit regarding the specific features of the tools as they were structured in service of the learning outcomes and as they were stated in the course syllabus. This underscores the need for clear instructional design and engagement in the instructional design model, and of a clear understanding of the learners and their needs for the course, the project, and the technology.

CHAPTER FIVE

SOCIAL MEDIA AND THE FACILITATION OF LEARNER-CONTENT INTERACTIONS

Introduction

Social media can facilitate learner-content interactions, learner-learner interactions, and learner-instructor interactions when it is scaffolded well by the instructor, when there is a clear articulation of the desired outcomes that are relevant to the users, and when learners have agency regarding which tools are used and how they are employed in the course. The conditions that facilitated the users' perceived benefit of the tools include: learners' intrinsic motivation to use the tools, alignment with users' goals for the tools, project, and course, clear guidance for use, employment in the course (beyond just the project), and scaffolding by the instructor to remove barriers to use (i.e., technological knowledge). To be considered meaningful, have value to the users, and be employed by the users, there needs to be a level of buy-in at the learner level where the learners' uses of the tools are aligned with their goals for both the technology and the course. Features that are not immediately accessible to the users, either through technological proficiency or perceived benefit of use, need to be meaningfully scaffolded to remove access barriers (by way of improving technological knowledge) and be connected to users' needs. In the terms of the Social Construction of Technology (SCOT) model (Pinch & Bijker, 1984), the technology and how it is employed in the course needs to "solve" a problem for the user or be explained in terms of the users' identified problems or needs (i.e., getting a good grade in the class).

The conditions that facilitated learners' use of the tools in Dr. Carter's course were heavily contingent upon the context in which the tools were embedded. In her course, the tools

were integrated into the learning by way of the Professional Identity (ID) Project, which required the learners to scaffold their professional development by using social media to engage with the empirical literature, resources, and media in the fields of early childhood education and literacy education. The specific conditions that facilitated learners' uses of the tools were rooted in the instructional design of the project and the learners' desired uses of the tools, including: the objectives for the project, the alignment between the prescribed uses of the tools and the learners' needs, scaffolding for the learners' use of the tools, and use of the tools in the course meetings and activities.

Dr. Carter used social media to facilitate learner-content interactions in the context of the Professional ID Project, which emphasized the learners' development of a professional identity by way of interacting with the empirical literature, educators, leaders, and resources in the fields of early childhood education and literacy education. Learners, in turn, rejected the features of the tools and of the project that did not promote direct interaction with the course content (learner-content interactions), and, instead, engaged their peers (learner-learner interactions) and the instructor (learner-instructor interactions) to develop their understanding of the topics and ideas presented throughout the course.

Overview of Findings

An analysis of the project structure using Morrison, Ross, and Kemp (MRK) (2007)'s Instructional Design Model and the SCOT model shows that Dr. Carter did not design the Professional ID Project and social media tool use with a full understanding of the educational space, learners' needs, or the transfer of the project outcomes to the learners' worlds of content and practice (see Appendices A-B). An analysis of the learners' posts and comments using the Structured Observation of Learning Outcomes (SOLO) Taxonomy (Biggs, 1979; Holmes, 2005)

showed that, while the learners did use the tools to engage with the content (i.e., Facebook, Pinterest), the instructor (i.e., Facebook) and their peers (i.e., Facebook) in the tools, the complexity of their comments and posts did not exceed the multi-structural level as the course progressed. Furthermore, learners did not employ the social networking sites (SNS) as intended by the instructor (Appendices A-B; Appendix L), which required Dr. Carter to modify the assignment and her requirements from learners as the semester progressed. These findings underscore the need for more purposeful design for the technology that takes into account who the learners are, what their goals are for the course, how they want to use social networking technology in service of the learning objectives, how the desired use of the social networking tools aligns with both the learners' goals for the course and their professional development, and explicit scaffolding for learners with a range of technological proficiencies that yield both greater learner-instructor engagement and an increased likelihood that the tools will be used as intended in a structured learning experience.

Instructional Design

The conditions that facilitated the use of social media in the course were rooted in Dr. Carter's instructional design of the course. While the overall course objectives were well-structured, her instructional decisions around the use of the technology for the ID project demonstrated a lack of contextual analysis or consideration of the educational context, with specific regards to orienting and transfer context. Using the language from MRK (2007)'s Instructional Design framework, the tensions between Dr. Carter's intentions for the technology and user groups' desired uses of the technology could have been resolved through a more substantial understanding of the learner context and the learners themselves. The instructor did not create clear behavioral objectives and procedures for how the learners were meant to employ

the technologies, nor did she scaffold learners' uses of the tools from more simple procedures (e.g., posting content) to more complex procedures (e.g., participating in professional communities, engaging in self-reflection). Furthermore, she structured the learners' uses of the technologies so they ran parallel to the course experience, rather than integrating the tools into the course meetings to scaffold their engagement with the course content and scaffold their achievement of the desired ID project outcomes.

Dr. Carter did not situate the chosen social networking tools or their stated use in the ID project in the context of how they "solve" (Pinch & Bijker, 1984, p. 411) a problem for the users. Though the objectives provided some guidance around how the tools were intended to be used, there was not a clear "problem" or deficit that was being solved or addressed by way of the learners' use of the tools. While the other objectives in the course clearly responded to or addressed the skills deficits that were being addressed by way of the instruction (see Appendix B), the rationale for the learners' use of the social networking tools was not clearly articulated in the context of the real or perceived deficits that the instructor wanted to address.

Learner Analysis

While Dr. Carter reported having a clear rationale for employing social media in the course, there was an observed discrepancy between how the tools were intended to be used per the instructor's guidance (see Appendices A-B), and how they were actually employed by the learners. While the requirements of the course structured the learners' uses of the social networking tools in very specific ways relating their development of a professional identity, the overwhelming majority of observed posts showed that learners used the tools to develop deeper learner-content interactions. The most frequently coded objectives were 10d ("Experience professional growth that results from interacting with instructional resources") and 10e

("Experience professional growth that results from interacting with available media to support early literacy instruction"), with these two objectives comprising over 90% of the observed and analysis posts.

All of the interviewed learners - Student Brady, Student Collins, and Student Engram - stated that the most beneficial outcomes of using Facebook and Pinterest relate to their ability to delve more deeply into content areas of interest and fill in content gaps (Student Engram), curate resources for later use (Student Collins), and discover topic areas of greater interest (Students Brady and Engram). None of the interviewed participants, however, cited the development of professional growth from reading journals or engagement in broader professional groups as a benefit from their use of the tools. Professor Carter noted the she observed the learners using the tools to "to kind of put together what their philosophy of education was, which...was really interesting because that was not the purpose of the project, but they felt like it allowed them to tie what we were doing in the course and the content of the course into what they believed about education in general." She noted the benefit of this task, even though it was not something that she anticipated and nor was it the main focus of the project.

Interestingly, participant survey responses demonstrated an interest in using social networking sites (SNS) to develop connections within their professional communities, albeit a lesser interest than understanding the course material. The most frequently reported desired benefit from using SNS is "improved understanding of the course material" (80% of respondents reported this as a desired benefit). 60% of respondents reported a desire to develop professional connections as a benefit of using SNS tools in the course. 40% of respondents reported that connecting with peers is a desired outcome from using the SNS tools, and 40% of the respondents reported that a desired outcome of using the SNS tools is "improved confidence with

using social media for academic research." The majority of learners hoped to use the tools to build their understanding of the course material (learner-content interaction). Less than half (40%) of respondents reported a key desire to develop professional connections, which was a key focus of the project.

When asked about the lack of alignment between the focus of the project and learners' use of Pinterest and Facebook, Dr. Carter noted that the learners may not have been ready to employ the desired features of the tools. Class observations, interviews with students (Students Brady, Collins, and Engram), and observations of the social networking posts showed a greater focus on "posting," "commenting," "liking," and "viewing" learners' posts and content rather than engaging in the community-focused features of the tools (e.g., following professional organizations, participating in Facebook Live events with local/state/national educational agencies). Additionally, participants demonstrated a greater focus on volume of content rather than the quality of their engagement with their peers or broader early childhood education and literacy communities. The instructor reported that "they're still undergrads and since they're still on this whole counting pages, how many pages is the assignment...instead of quality or content. And they approached Facebook the same way. How many times do I have to post? How many times you have to respond. And so I talked to them about [their engagement]...[that] there's no magic number [of posts]...." The outcome, as she noted, was a decrease in the volume of posts but an increase in the quality of some posts as the semester progressed.

Hurricane Florence. A potential factor affecting learners' needs from the technologies was the impact of Hurricane Florence, which shut down the university for three weeks (early September through the end of September 2018). The learners - most of whom were novices to the field of education and for whom Dr. Carter's course was their first engagement with

education major-specific content - were required to complete readings and assignments for course while away from campus. Additionally, participants were required to complete one day of student teaching per week, which was halted during their evacuation of campus. Each of the interviewed participants, including the instructor, noted that several accommodations had to be made to the course to support asynchronicity, including delaying assignment due dates.

Observations of the Facebook posts, which are time stamped and were coded on a week-by-week basis, showed that the weeks where participants were evacuated (course weeks 3-6) had some of the highest volumes of weekly engagement in the site (a total of 35 unique posts across the weeks, with an average of nine unique posts per week). An observation of the accessible Pinterest boards also showed that the boards created during weeks 3-6 had a total of 41 pins, which accounts for 43.62% of the 94 pins created by the participant during the course. Though none of the interviewed participants (Students Brady, Collins, and Engram) specifically cited the Hurricane as a factor influencing their behavior with the tools, each of them noted that the Hurricane affected their semester, their ability to synchronously connect with the course content and their peers, and their student teaching experiences.

Orienting and Transfer Contexts

Dr. Carter's instructional decisions around learners' uses of the technology demonstrated a lack of contextual analysis or consideration of the educational context, with specific regards to orienting and transfer context. She did not create clear behavioral objectives and procedures for how the learners were meant to employ the technologies, and, instead, focused on assignment outcomes that did not align with learners' needs. Using Morrison et al. (2007)'s Instructional Design model, this comes from a poorly executed or non-existing learner analysis.

Scaffolding of the tools. While Dr. Carter provided clear written guidance for how learners were supposed to use social media for the ID project, observations of synchronous class meetings showed that some learners experienced confusion regarding the assignment requirements and what "good" participation in the sites looked like. Several learners reported feeling "confused" about the assignment and feeling aware of the cognitive load of keeping up with the volume of learner posts. The instructor echoed this sentiment in her second interview with the researcher, where she reported receiving questions about how many posts were required for the assignment.

Dr. Carter did not demonstrate consistency with regards to her requirements for learners' uses of tools or with her scaffolding around learners' barriers to engaging with the technologies. Part of the issue was the lack of consistency regarding how the tools were supposed to be used in the course (per the project description in the syllabus), and how she allowed the tools to be used in real time. Facebook users were asked to submit weekly evidence of their participation in the site by way of screenshots or videos and a review of what they learned during the week. Interviewed learners reported, however, that this was not required from the participants in the Facebook group. Additionally, reviews of the Facebook group feed showed that not all of participants engaged in the site on a weekly basis. In fact, two of the group members each had only one unique post during the entire semester.

One student in particular, Student Archie, struggled with technology use, including the use of features in Facebook, repeatedly throughout the course. Observations of his questions and comments during the synchronous class meetings, along with direct communications with the participant, demonstrated a lack of familiarity with what other would consider "basic" web-based tools (e.g., social media platforms, web conferencing tools). While Dr. Carter reported providing

direct scaffolding to the student, and demonstrated a high level of engagement on his posts and in the synchronous class meetings, she reported that Student Archie's hesitations around technology use were not unique. This was echoed in participant survey responses, where 50% of respondents reported a lack of familiarity with the platforms used in the course.

In order to reduce the barriers to access, the instructor provided direct feedback for how to use the tools and helped support their use of the sites through modeling and synchronous feedback, but did not develop or incorporate concrete scaffolds to move the learners' comfort with the technology from a place of novice to a place of familiarity. Dr. Carter also failed to provide scaffolds that directly addressed how learners should move from a place of "posting and sharing content" to actually engaging in the professional development activities articulated in the ID project objectives. Though learners continued to use the sites to share tools and resources throughout the semester, very few posts demonstrated meaningful engagement with professional organizations. Furthermore, none of the observed posts endorsed professional learning communities or connecting with professional organizations outside of "posting" and "following" key individuals from the field.

Instructional modeling of the tools. While Dr. Carter provided strong written guidance and feedback regarding how to use the tools (and engaged in a great deal of transparency regarding her own accounts), her posts and comments in the different sites did not always demonstrate consistency with how she wanted learners to use the technologies. While the instructor had the greatest volume of engagement in the Facebook site versus any of the student participants (a total of 16 unique posts and 65 "likes" on participant posts), she did not prompt participants on how to meaningfully use the tools in the ways that she wanted learners to employ them. Neither her posts nor her comments on learners' posts prompted them to follow

professional organizations or engage in the tools as she requested in the syllabus. Many of Dr. Carter's posts were simply links to other Facebook posts, with little content or context regarding how the resource aligned with the focus of the course (early childhood education, literacy education).

Dr. Carter "liked" most (65 likes, 84.42%) of the participants' Facebook posts during the semester, including posts that were not aligned with the desired goals and outcomes for the project. She reported "liking" the posts as an acknowledgement of learner participation in the group, and as a way of letting the participants know that she is engaging with them through the site. While literature repeatedly shows that positive engagement is more beneficial to modifying learner behavior than negative engagement, the issue remains that there was a discrepancy between how the instructor wanted learners to participate in the sites and how she, herself, engaged with learners through the tool. None of the interviewed learners reported this as a negative; in fact, they all agreed that the tools provided a great deal of value and meaning to their learning and work this semester. The issue remains, however, that the learners' use of the tools differed from the desired practice as stipulated in the syllabus and desired by the instructor.

Employment in the synchronous course context. While learners used the social media sites in service of their learning, the sites were not employed in the course context. During her observations of the synchronous class meetings, the researcher observed the tools being discussed by Dr. Carter and the learners in the context of the ID project, but not as an explicit tool that could help scaffold their comprehension of the class content or support a deeper analysis of the topics being presented during the lectures. While the learners, themselves, used the tools to explore topics of interest (both Student Engram and Student Brady noted this as a key benefit of using social media in the course), the instructor did not provide explicit

opportunities for the learners to connect with the tools in class, nor did she make explicit references to the synchronous meetings in her posts and comments.

Each of the interviewed participants - Student Brady, Student Collins, Student Engram, and the instructor - noted the benefit of incorporating the sites into the course context, and suggested that the instructor do so in future iterations of the course. Dr. Carter noted that she was not sure how to meaningfully incorporate the tools in the course without avoiding redundancy, and therefore, avoided using or referring to social media during the synchronous meetings. She noted that "[because] it's an introduction course...I want them to have exposure, but on the other hand, I don't want to beat them over the head with [the content]. So, you know, I wasn't sure how to, we would go over a topic in class. They would post about it. And so then I felt like I wasn't sure what that next step should be to tie it back into the class because I didn't just want to go talk about it again."

Dr. Carter's comments, however, speak to how the learners made use of the tool to conduct their own exploration of the course content outside of the meetings. Student Engram reported using the tool as a means of doing "deeper dives" into the course context outside of the synchronous meetings, and valuing the use of the technology in the course experience. Student Collins noted that she would have liked to "take time in the class to work on [the sites], like after certain activities" where students could research or post resources or ideas that directly connected to the course content. While she did not cite this as a limitation of the tool, Student Collins reported being aware that the tool (i.e., Pinterest) kept separate from the synchronous sessions. Student Brady, likewise, noted that the tool (i.e., Facebook) was kept separate from the class sessions, but did not perceive the separation as a weakness. Rather, she used the

synchronous meetings as an opportunity to engage in deeper research regarding the presented content or topics of interest, instead of waiting for instructor prompting to explore the content.

Part of this differential speaks to the different features of the chosen sites - Pinterest and Facebook - and how they were integrated into the class as part of the ID project. Learners who chose the Facebook option were required to engage both with relevant content, their peers, and their instructor (who had an active presence on the site); they could forge deeper connections with the content and share resources in ways that participants in the Pinterest group were not required to do. Participants in the Pinterest group were only required to curate their "boards" and "pins," and did not have the requirement of learner-learner engagement. While Student Collins cited this as a benefit of Pinterest (and a reason why she chose Pinterest for the ID project), the result is that the Pinterest participants were in more of an academic silo than their Facebook counterparts. Dr. Carter corroborated this during her initial interview with the researcher, where she stated that the Pinterest option was, more or less, the "opt out" option for the ID Project since it did not have the mandate of learner-learner engagement or weekly posts and comments in the course group site.

Adoption, Rejection, and Modification of Social Networking Features

Social media was not used by Dr. Carter to directly promote learner-content interactions, but, rather, indirectly through her prompting of learners' development of professional connections and engagement in professional communities. The learners, instead, modified their interpretation of the ID project to respond to their needs for both the project and the technology, which was to develop their understanding of the course content. The instructor, in turn, modified her expectations of the project in order to address the learners' needs of and from the project and the technology.

User Groups

In the case of Dr. Carter's course, the relevant social group was the learners in the class; the learners' desired uses of the technology, however, differed according to the technology they choose for the project. Of the available networks, 13 of the 20 class participants chose Facebook (65% of the course) and 7 of the 20 participants chose Pinterest (35% of the course) for the ID project. None of the learners chose Twitter. Professor Carter allowed students to choose which platform they used for the project in response to a previous graduate course at WAU, where the learners reported experiencing difficulty with having a lack of choice regarding which tool they could use for a course assignment. Dr. Carter reported tailoring the ID project significantly this semester in order to allow participants greater choice in what social media tools they use and how they use them, and to respond to concerns from teacher educators who were told they "should never be on social media and shouldn't have any social media profiles."

The observed course had two user groups: Facebook users and Pinterest users. Each of the user groups had mutual or shared goals for the project, but differed in how they wanted to execute them. Facebook users and Pinterest users had a mutual interest in completing the projects and of completing the course. Interviews with members of each group revealed a mutual desire to develop an improved understanding of the course content and of how their posts could improve their teaching practices. Each of the interviewed student participants reported valuing the tools as a feature of their learning experience, and reported choosing a technology that was familiar to them and embedded into their daily habits. When asked about her rationale for selecting her chosen technology, Student Collins, for example, noted that she chose Pinterest over Twitter because of the Twitter's character restrictions; she did not feel that she could meaningfully engage with the course information in 280 characters or fewer. Additionally, she

reported feeling more comfortable using Pinterest, which is a tool that she had already employed in her daily life and habits. Students Engram and Brady echoed similar sentiments regarding their selection of Facebook, noting that they chose Facebook because they "already use it" every day.

The two groups differed, however, in their desired execution of the tasks. Where the Facebook users intended to develop their content understanding by sharing resources with the instructor and their peers, the observed Pinterest users demonstrated a desire for improved understanding of the course content and of the development of toolkits to scaffold their synchronous instructional practices. Where Facebook users develop content understanding through learner-learner, learner-instructor, and learner-content interactions, the Pinterest users did so without engaging with other learners and the instructor.

This is shown in both the engagement metrics for Facebook and Pinterest posts, and in the quantity of pins (i.e., Pinterest) and posts (i.e., Facebook) for each tool. The observed Pinterest posts from one user outnumbered the highest volume of Facebook posts by 580% (16 posts by Dr. Carter versus 94 pins by Student Collins). Student Collins noted that she chose Pinterest specifically for the ability to engage with the content without the requirement of engaging with her peers, including looking at their posts, commenting on or liking their posts, and replying to their comments on her posts. Additionally, users in the Pinterest group were required to curate the boards around course lesson units, which prevented them from going deeper into a singular expression of a content topic across multiple weeks. Where this limited the volume of engagement in a single idea or a single topic, it ensured that learners in the Pinterest user group had a broader range of activities and content for each of the different course lesson

topics, versus being able to conduct deeper content dives into specific topics, which Students Brady and Engram reported valuing in their uses of Facebook.

The observed Pinterest user (Student Collins) also noted that she chose the Pinterest tool for the project in order to curate resources for her teaching practice. Unlike the observed posts in the Facebook group, the observed Pinterest pins demonstrated a higher percentage of activities and lesson plan ideas versus articles or readings that addressed the course content. Student Collins noted that she chose Pinterest for this reason – so she could curate content and resources to scaffold her future educational practice. In this way, the two user groups actually showed two different ways for developing an understanding of the course material (i.e., learner- content engagement). Facebook users demonstrated an interest in: learner content interactions through content focused pose, engagement with the instructors, and engaging with their peers posts. Pinterest users, on the other hand, demonstrated an interest in learner-content interactions through activities and the application of content, and not in engaging with their peers (learner-learner engagement) or the instructor (learner-instructor engagement) to curate and expand upon these concepts or ideas of practice.

Adoption of Tool Features

The user groups (i.e., Facebook users and Pinterest users) modified their use of the technologies - Facebook and Pinterest - in service of their goals of the project, which resulted in the rejection of project objectives that focused on professional development over developing an understanding of the course content in academic and applied contexts. Facebook users and Pinterest users mutually rejected both the features of the project and technologies that focused on the development of professional connections with educators outside of their cohort (third year education majors at WAU) and with established professional organizations.

The emphasis on professional development, as reported by the learners, observed in the posts and pins, and noted by survey respondents, was not an immediate need for the user groups and did not address their needs for the course, project, or technologies. Dr. Carter‘s response to this was to informally modify the requirements of the project (i.e., through acceptance of multiple ways of interpreting the project). Dr. Carter continued to post content from professional organizations and resources, and stated that learners should emphasize the quality of their engagement with the content (by using only “high quality” resources) and with other learners, rather than focusing on the frequency of their posts or pins or engagement with professional and educational communities. In this way, Dr. Carter modified the conditions of how the project was constructed rather than the specific technologies or artifacts.

Rejection and Modification of Tool Features

In the case of Dr. Carter’s course, the problems for each user group (i.e., Facebook users and Pinterest users) were solved by redefining the problem through both the instructor’s and user groups’ modification of the ID project requirements and corresponding uses of Facebook and Pinterest. While the needs of the project were not satisfied in the eyes of the instructor, the problem was solved by re-negotiating the assignment to meet the needs of each user group. Dr. Carter stated that the requirements for the assignment were not satisfied throughout the semester, however, she noted that learners reported deriving benefits from the technology and were observed taking the ID project seriously. She reported that, on a few occasions, the learners asked about the quality and content of their posts and pins to ensure that their uses of the technologies met the requirements of the project regarding the quality of what they shared and how they interacted with their peers. This further demonstrates the users’ emphasis on the features of the technologies and project that supported their desired learner-content interactions,

by way of focusing on differentiating resource quality, and rejecting features of the project and technologies that emphasized the creation of or engagement in professional communities.

Quality of Learner Interactions

Learner-Instructor Interactions

Dr. Carter used the social networking tools to promote learner-instructor interaction by posing, commenting, sharing, liking/loving, and viewing learners' posts. The course Facebook thread had a total of 13 learner participants, and a total of 97 posts across all participants (including the instructor). The most frequently employed forms of engagement by the instructor in the site were comments and likes. Professor Carter "liked" more posts than any other participant in the thread (68 likes, 26.36% of all "likes," and 70.1% of all posts). In contrast, the highest volume of "likes" by a student participant was 50 (19.38% of all "likes" in the group). The instructor also had the highest number of unique posts in the group - a total of 16 unique posts (16.49% of the posts in the thread). The second most frequently commenting or participating learner in the thread, in contrast, had 12 unique posts (12.37% of the posts in the thread).

Learner-Content Interactions

Though Dr. Carter fostered learner interactions through a variety of methods, including scaffolding learner-learner and learner-content engagement, providing input on the use of the social media tools in the course, and encouraging their use of the technologies to create knowledge, the focus of the project remained on the learners' development of a professional identity rather than their understanding of the course content. While Dr. Carter provided learner scaffolds for the use of social media in service of the project, there was an observed disconnect between the focus of the project (i.e., improving learner competence through engagement in

professional communities and organizations, and by sharing empirical literature) and desires of the users groups (i.e., improving content knowledge by locating and sharing articles and resources that expanded upon course topics).

Employed features of the technologies. The features of the tools that were most frequently used by the course participants and instructor were: posting (Facebook), viewing (Facebook), Liking (Facebook), Commenting (Facebook), Sharing (Facebook, Pinterest), Pinning (Pinterest). Sixty percent of survey respondents stated that they were "most likely" to use the Facebook and Pinterest to "connect with other classmates to discuss the content." The learners' reported uses of the tools' features is consistent with how both Pinterest and Facebook users engaged with the technology throughout the course. While some participants, including Student Engram, expressed lament that more features of the technologies (e.g., Facebook Live and Chat) were not employed by the instructor and other learners throughout the course, the observed use of each tool's features was consistent with both the learners' expressed intentions of tool use, Dr. Carter's stated requirements for each technology's use, and how the instructor modeled usage of the technology through her posts and interactions.

While the learners used the tools to find and post information about early childhood education and literacy education, they did not engage with the relevant professional organizations beyond sharing and "liking" something or providing a brief comment on the learners' and instructor's individual posts. The features that respondents reported being most likely to use - joining a professional group, following professional leaders in the field, commenting on posts written by professional leaders - were aligned with the most prominent features of Facebook and Pinterest. Interestingly, though, the students were not observed (nor did they or the instructor report) using the tools to develop these professional connections with

individuals outside of their course or aside from posting things from other sites. Very few of the posts were "shared" from professional sites, which would be another form of engagement, as they are posting something directly from the organization, and sharing would indicate either following or viewing their page. Additionally, the shared posts were from practitioner sites rather than professional organizations, especially in Pinterest; this further indicated a disconnect between the intended uses of the tools by the instructor and the actual uses and reported benefits of tool use by the course participants.

Learner motivation. Learners who were intrinsically motivated to connect with the material were more likely to derive meaning from the content than individuals who were focused on external metrics (i.e., grades) as markers of their success. This can be seen in participation rates, where the learners who had the highest volume of participation in the course were more likely to have both higher quality posts and more complex comments. Learners did not have a required amount of posts for the project; they were required, instead, to focus on the quality of their interactions. The learners who posted the most frequently also had the greatest volume of comments and likes, and had more complex answers than individuals who posted less frequently, even without the requirement of posting a specific number of times throughout the semester. This is also shown in the timeliness of interactions, where users who commented or liked posts outside of a two-week window of when the original post was made tended to have both lower volumes of posts and interactions, and lower quality of posts.

Quality of post content. Analyses of posts using the SOLO (Structured Outcomes of Learning Objectives) Taxonomy framework (Biggs, 1979; Holmes, 2005) were employed using a purposive sample of the consenting participants so that a student of color (Student Richardson; 50% of students of color in the course), a male student (Student Archie; 50% of male students in

the course), a moderately engaged student (Student Jurevicius), a student with a lower rate of engagement (Student Greeley), and the two interviewed participants in the Facebook group (Student Brady and Student Engram - both highly engaged in the course Facebook group) were included in the analyses. A selection of 25% of Student Collins' pins were analyzed (a total of 24 pins, at an average of three pins per board). A total number of 64 pins and posts that were coded at the secondary level using the SOLO taxonomy, which is 33.51% of the 191 total pins and posts that were observed and coded throughout the course.

An analysis of the quality of the posts using the Structured Observed Learning Outcomes (SOLO) Taxonomy framework showed that, while the length of the posts increased, the complexity of the learners' content did not advance beyond the multi-structural level. Learners were required by Dr. Carter to post and share information that was of "high quality" (WAU Syllabus, 2018), but were not required to demonstrate a deepening understanding of the content or of the nuances of what was being posted by other users, including the instructor. As a result, the complexity of the content in the observed Facebook and Pinterest posts did not substantially increase as the semester progressed.

Facebook. The complexity of the learners' posted content did not exceed the multi-structural level of the SOLO Taxonomy, and many of the comments remained at the uni-structural level, where the learners focused on one specific idea (rather than exploring multiple ideas and how they interconnect, analyze the topics/ideas, or create new theories or ideas from the observed resources). Interestingly, the learners reported finding a lot of value from the materials, but their comments did not reflect a deeper connection with the information presented in each post. None of the secondary-coded posts, and only a few of the originally coded posts, made direct reference to the class readings. None of the coded posts drew connections across

multiple posts, or attempted to integrate the posts with the class readings and their practicum placements.

Additionally, none of the observed posts reflected any level of critical thought of the reading, other learners' posts, or of the learners' observed practicum teaching practices. The content was, essentially, focused on a pattern of "share and summarize," and did not deviate from or move beyond this for the duration of the semester. Only one of the SOLO-coded posts, however, was coded as "pre-structural" (Student Archie, Week 4), which means that, though the complexity of learners' responses did not exceed the "multi-structural" level throughout the life of the course, the learners' posts demonstrated relevance and accuracy with regards to the explored content. The length of the posts coded with the SOLO framework demonstrated a moderate increase as the weeks continued (average post length: 38.45 words). While the length of the posts did not demonstrate a clear or linear relationship with the quality of the content using the SOLO taxonomy, posts that were longer were more likely to be coded as "multi-structural" rather than "uni-structural," though some exception exist (e.g., Student Archie's Week 8 post that was 33 words long but coded as "multi-structural;" Student Jurevicius' Week 12 post that was 88 words long but coded as "uni-structural").

Pinterest. Each of the observed Pinterest boards included a brief description of the board content, but none of the actual "Pins" included a description of or comment on the content. While this is both a feature of the technology and a requirement for the Professional ID Project, the observed learner (Student Collins) did not provide any descriptions of the Pins. As a result, the researcher coded the descriptions of all of the boards rather than a random selection of three Pins per board. Like the posts in the Facebook group, the content of the observed Pinterest board descriptions did not exceed the "multi-structural" level.

The length of the descriptions did not have a direct or linear relationships with the quality of the description (the average length of each board's description is 24.88 words), however, the descriptions became longer and more complex as the semester progressed. By the end of the semester (Boards 7 and 8, or Weeks 12-16 of the course), Student Collins' descriptions were consistently "multi-structural," which contrasts with some of the learners' posts in the Facebook group during the same time frame that were still "uni-structural" in quality. This can be attributed to a variety of factors, namely the lower volume of Pin comments and descriptions available to the researcher, however, it does indicate a steady progression of complexity in the learner's discussions of the content as she became more engaged in the course content and familiar with the tool.

Conclusion

Class observations, reviews and analyses of social media posts, surveys of students, and interviews with the course instructor and students yielded several key themes regarding the conditions that facilitate learners' use of social media, including: scaffolding tool integration into the classroom, providing examples and exemplars for how the tools should be used, and allowing student input regarding their choice of social networking tools. Dr. Carter used the tools to facilitate learner-content - along with learner-learner and learner-instructor - interactions by allowing users to choose a technology and develop posts (Facebook) or pins (Pinterest) that allowed them to grasp the content. The conditions that facilitated the technologies' use is rooted in the perception of benefit. As discussed in Chapter 4, in the context of the SCOT model, learners used features of the social networking sites that supported their desired outcomes for the course, which include a greater understanding of the course material.

The learners, however, rejected these features of the project and the corresponding technologies, and focused on developing learner-content interactions by using their interactions with the instructor and their peers to identify topic areas of interest and deepen their understanding and application of the content. From the perspective of the SCOT model, this suggests that Dr. Carter did not possess a clear understanding of each user group's needs. From the perspective of Morrison et al. (2007)'s Instructional Design model, the instructor did not have a clear understanding of the learners, the instructional context, or how her desired uses of the technology supported the transfer of information to future and applied contexts.

CHAPTER SIX

DISCUSSION

Summary of Findings

This research study explored how social networking tools, also referred to as "social media," "social networking sites," and "social media tools," were employed in service of learner-content interactions at a credit-bearing, semester-long undergraduate education course at a mid-sized university in the Mid-Atlantic region of the United States. Over the course of the 16-week semester, the researcher collected several forms of data, including: surveys, artifact reviews, observations of synchronous class meetings, observations of course social networking platforms, interviews with the instructor, and interviews with course participants. The researcher used the following theories and frameworks to code and analyze the findings: Transactional Distance, SCOT model, SOLO Taxonomy, and Morrison et al. (2007)'s Instructional Design framework. These theories were chosen by the researcher because they shed light on the nature of how the technology was employed in the course in service of the project-specific and overall course objectives, how the instructor (Dr. Carter) used the tools to help learners improve their understanding of the course content, and how the tools were enacted upon by both the instructor and the learners to address their needs within the course context. The researcher found that the most salient influences on the learners' uses of the technologies in service of their learning were the instructional design of the course and Professional Identity (ID) Project, their goals for the ID project, and their needs for and from the social networking tools.

Dr. Carter chose technologies that allowed her to address her needs for the course, including scaffolding new learners towards understanding the foundations of literacy education and of early childhood education (learners ages three through eight years old), developing

content that met the state and national requirements for accreditation, aligning with Western Atlantic University (WAU)'s College of Education (CoE)'s Teacher Practitioner framework, and ensuring that learners have the skills necessary to complete in the 21st century marketplace (Mishra & Kereluik, 2011). The features of the tools that she selected aligned with her needs for the course.

The learners' employment of the social networking tools reflected the expectations of how they were asked to use the technologies, and how they observed the instructor engaging with the technologies throughout the course. Pinterest, as noted in Appendix A, was structured in a way that yielded fewer learner-learner and learner-instructor interactions. Student Collins reported using the features of the technology that allowed her to build content and practitioner knowledge in the field of education (i.e., pinning resources from educational sites and blogs), which yielded a high degree of unique pins, but very little engagement with or commenting on other users' pins or boards. Her practices were aligned with what she believed was required for the ID project and her intention for the project, which was to build greater learner-content knowledge without having the requirement of commenting on or interacting with her classmates' posts.

The perceived benefits of the tools by the learners was focused on their use or employment of the tools in service of developing understanding of the course content (learner-content interactions) through the following means: interacting with other learners (learner-learner interactions) in service of deepening their understanding of the course content, curating resources and articles to scaffold educational practice (learner-content interactions), and using instructor feedback (learner-instructor interactions) to improve and refine their understanding and application of course concepts. The learners perceived the technologies as being beneficial when

the tools meet their explicit needs, which included building upon their understanding of the course material through either direct content with articles and resources (i.e., Facebook users, Pinterest users), connecting with their peers to share and explore resources that built upon readings and activities in the course (i.e., Facebook users), and connecting with the instructor to confirm their understanding of the course content and their uses of the technology (i.e., Facebook users, Pinterest users).

The use of social media in Dr. Carter's course was contingent upon the instructional design of the project, how the instructor designed the tools to be used in service of the learning objectives, and whether or not the tools were perceived as meeting learners' needs for the Professional ID Project and the course. The conditions that facilitated the use of social media in the course were connected to the instructional design of the project, specifically how the project was created and embedded within the course. The conditions that prompted learners' uses of the tools were rooted in the perceived usefulness of the tools at the learner level. The learners did not use the tools or features of the tools in ways that did not serve their needs.

The conditions of the tools' use, however, needed to be directly connected to the users' needs for the technology. As observed in the course, the learners rejected features of the ID project and features of the technologies that emphasized professional development, including developing professional connections with learners outside of their cohort and participating in professional organizations at the local, state, and national levels. Dr. Carter did not directly use social networking tools to promote learner-content interactions, but did so indirectly through the attempted scaffolding of the learners' professional connections. The learners, instead, modified the project to develop their understanding of the content. In response, Dr. Carter modified her

expectations of the project in order to address the learners' needs from the project and the technology.

Interpretation of Findings

My findings build upon existing theory and research in the field of instructional design and sociological analyses of technology which note that technology in and of itself is not purposeful or meaningful unless its intended uses and consequences are clearly stated and are meaningfully or purposefully integrated into a given context (in this example, a credit-bearing semester-long university course). This study is one of the few studies that explores the comparative merits of two different social networking sites in service of learner-content interactions through a Social Construction of Technology (SCOT) model approach to examining how learners employ, reject, or modify social networking tools in a \course context. The study is also one of the few studies to examine instructional design decisions around which features of two different social networking sites (e.g., Facebook and Pinterest) are used through the lens of Morrison, Ross, and Kemp (MRK) (2007)'s Instructional Design model. It reinforces that social media is not a panacea, and, even with explicitly stated and reinforced instructions and scaffolds, the media or technology is only as useful as its perceived benefit to the users.

The outcomes of my study reinforce the existing research on instructional design, the Social Construction of Technology (SCOT) model, and the Transactional Distance framework; each of these frameworks and models emphasize that learning with technology needs to be meaningfully organized, planned, and scaffolded with clear behavioral objectives that respond to the learners' needs for the learning and their existing knowledge and comfort with the presented material and technologies.

Instructional Design

The instructional design of a course has a huge bearing on how learners navigate through and makes sense of the content through the use of a given technology. Learners need to be meaningfully scaffolded towards the desired learning outcomes through a variety of activities that move them towards the desired performance goals. Instruction needs to begin with a problem statement that asserts or defines why the instruction is necessary or is appropriate for the stated problem. After a problem is clearly defined, the instructor needs to have a clear idea of who the learners are and what their needs are for both the instruction and the technology. This includes what Morrison et al. (2007) refer to as general characteristics (e.g., age, gender, cultural background) and entry characteristics (e.g., language fluency, existing content knowledge, technological proficiency, exceptionalities). All of the decisions around the use of the tools, including what features of the tools are employed in the course and how they are employed in service of discrete learning outcomes, need to respond to who the learners are and what they bring to bear and need from the learning experience.

SCOT Model

As Pinch and Bijker (1984) note, any technological "solution" (p. 411) needs to respond to the stated problems of the users group(s). Pinch and Bijker (1984) and Morrison et al. (2007) both highlight that any instruction or technology needs to be responsive to the learners' needs. The execution of the learning and related technology need to connect to what the learners' needs are for and from the learning, even if their needs differ from what the instructor (Dr. Carter)'s needs are for the course. Learners require clear and explicit objectives for each step of the learning that are stated in observable, measurable, and behavioral terms so that both the learners and the instructor can determine if the desired outcomes have been achieved.

Transactional Distance

Moore (1997) notes that several processes need to be structured in a learning experience to reduce the Transactional Distance and foster learner interactions, including: how the instruction material is presented; how learners are motivated; how learners are scaffolded towards analysis, criticism, and evaluation of the instructional content; how learners are advised on the use of instructional materials; and how learners are scaffolded towards knowledge creation. Each of these processes are highly contingent upon both the design of the course and the integrity of the learner-instructor interactions to ensure the adequate support of and scaffolding for the learners' engagement in the course. In order to promote meaningful engagement with social media, the tools need to be meaningfully embedded into the course. While the use of the tools do not necessarily have to be connected to a specific letter grade or some other form of performative metric, the technology does need to be embedded into the fabric of the course in order to yield engagement that exceeds superficial use of the tool, or what Biggs (1979) and Holmes (2005) would label as "pre-structural" or "uni-structural" levels of comments and statements.

Objectives. Course objectives need to be scaffolded in such a way that the learners make sense of the material and are structured in such a way that the objectives are ordered from simple to complex. The focus needs to be on who the learners are and what they need from the instruction. The instructor needs to provide concrete examples and scaffolds for each step of the learning, specifically around the use of the technologies, and needs to ensure that the learning connects to the goals for the instruction. The learning also needs to lead to the transfer of the instruction to future practice (i.e., transfer context) that aligns with the academic or vocational contexts that the learners will operate within following the course or learning. This reinforces

what Morrison et al. (2007) and Fiorella and Mayer (2016) refer to as generative strategies, where the new knowledge is reorganized and integrating into learners' existing knowledge frameworks. To facilitate this, the instructor needs to purposefully select and employ learning strategies that allow learners to transfer the knowledge from being seen as "content" to actual understanding. The learners in Dr. Carter's course were not observed enacting any generative strategies in other areas of the course that enabled the learning to move from content to practice in the Professional ID Project. As a result, the learners' employment of the social networking tools remained at the stage of post-share-comment, rather than moving towards the desired outcomes of professional community engagement and reflection.

Social Media

This research study builds upon the existing empirical literature on the educational benefits of social media by showing that social media tools can foster learner-content interactions when meaningfully organized and structured by the instructor in service of the desired learning outcomes (Deng & Taveras; Ozturk, 2015; Scott, 2013; Wang, Woo, Quek, Yang, & Liu, 2012; Veletsianos, 2012). The existing literature on social media use in service of learner-content interactions shows that the tools are as meaningful to learning as their organization and scaffolding at the instructor level. In other words, the educational value of a given social media tool is determined by the instructor's structuring of the technology in service of the stated learning outcomes. Social media does not facilitate learning without planning and integration that is responsive to the learners' needs, abilities, and goals for the learning experience and the technology. In the case of Dr. Carter's course, the technologies, by themselves, did not yield the desired learning outcomes for the Professional Identity Project.

The learners in Dr. Carter's course used the tools to scaffold their knowledge of the course content, but they modified the tools and re-interpreted the ID project to meet their needs from the project and the social networking technologies. In this way, the learners did not demonstrate straightforward or literal use of the tools in service of the learning outcomes as designed by the instructor. Instead, the learners' choices around their uses of the tools was rooted in their needs and goals from both the project and the social media tools. This reinforces the findings that, to be perceived as beneficial to the learners, social media tools need to be used in service of stated learning outcomes in ways that are accessible and meaningful to the learners, and that allow the learners to exhibit agency over how the specific features of the tools are employed (Buzzetto-More, 2012; Moore, 1997; Ozturk, 2015; Wang et al., 2012). As a result, the tools used in online learning must be analyzed and carefully chosen in alliance with the learners, context, and learning objectives.

Implications of Findings

Research

This is one of the few qualitative case-based research studies that explores: how learners in a synchronous undergraduate course modified social media tools from their initial (instructor-driven) purpose and transformed them into something that met their needs; how learners enacted upon a social networking tool when unexpected asynchronicity was presented in the course; and how learners made choices regarding which social networking tool they used in service of a course project to meet their desired learning outcomes. While the outcomes of this research study reinforce the existing literature on instructional design and Transactional Distance - specifically regarding the need for a problem statement, learner analysis, and clear behavioral objectives - the

findings show that learners can derive meaning from a social networking tool even when it was employed differently than how the instructor intended the tool to be used.

Social media use as a sociocultural practice. This research study sheds light on how learners make meaning from a technology in a structured learning experiences when their goals for the technology and the learning differ from the instructor's stated learning outcomes for the project and uses of the technology. The findings shed light on how social media can be structured in service of specific learning outcomes and how learners respond to that structure. The findings, specifically, highlight how learners respond to a learning activity and connected social media tools to fit their needs from the learning experience and the associated technologies. The findings indicate that each user group, Facebook users and Pinterest users, had their own meaning fora technology and employed their agency by way of modifying, adapting, accepting, or rejecting the features of the technology and the conditions in which the technologies were employed. This study shows that the learners in Dr. Carter's course privileged tools and technologies that were familiar to them and that addressed their needs for learner-content interactions by way of either higher learner-learner engagement (Facebook) or less learner-learner engagement (Pinterest). This underscores the importance of learner agency in choosing which technologies are employed in service of a learning outcome, how the tools are used by the learners in ways that are organic to their current practices, and align with both the learners' values for the technology and goals for the technologies used in a learning experience.

Dr. Carter's introductory and secondary interviews showed that the learners' interpretation and modification of both technologies (i.e., Facebook and Pinterest) and the overall Professional Identity Project assignment have broader implications for both her future uses of social media in this and other courses. The instructor noted that, though she observed the

learners' consistent use of the tools throughout the semester, they did not employ the technologies in alignment with the originally stated project guidance. She also noted that learners in other courses at both the undergraduate and graduate level either rejected the use of social media altogether or were using the tools in such a way that her intentions for their use (e.g., creating a professional footprint in a digital space) remained unaddressed. This statement is contrasted by the interviewed learners (Students Brady, Collins, and Engram), who reported that the tools helped them become aware of their professional selves, and expanded their knowledge of both the course content and of the materials and resources that can scaffold their instructional practices. This contrast underscores the need for greater understanding of both the learners and the instructional context in which the technologies were employed, and what the learners need from an introductory education course.

Social media as a scaffold for learning and professional development. A driving consideration in Dr. Carter's use of social networking sites in her course was ensuring that the learners are competitive in the education marketplace. Her goals for the ID project were to ensure that the learners both were conversant in frequently used social networking technologies and possessed an online identity that was professional and in alignment with their occupational goals (i.e., early childhood or elementary education). Dr. Carter noted that, to be competitive in the field, educators need to be familiar with social networking sites and educational technology tools. While the learners did not employ the tools in the service of their explicit professional development, they did use social media in ways that began to scaffold their conceptualization of a professional identity.

The focus of the context in which the tools were employed, therefore, was three-fold. First, learners were asked to identify a tool to use that would allow them to engage in the tasks

required by the ID project. Secondly, learners were asked to identify their values and beliefs as an educator, and to use social networking tools to help them explore and codify these values and beliefs. Thirdly, the learners were asked to use the tools to develop their content knowledge in the fields of early childhood education and literacy education, and make meaning from the information to inform their emerging professional identity. Therefore, the focus was not just on the actual media, but on how the social networking tools' affordances and features could support the desired outcomes of the activity, which included professional identity development, knowledge building, and community development.

As Dr. Carter noted, learners need to know how to curate a separate professional identify from their personal identity in order to gain familiarity with currently employed technologies and engage in critical thinking about what they post online. Having her learners consider their choices regarding what they share, like, and pin/post is part of a greater move towards digital citizenship, where the course participants and other learners were encouraged to cultivate online identities through healthy and constructive methods that supported other participants and the course experience (Mossberger, Tolber, & McNeal, 2008; Ribble, 2015; Ribble, Bailey, & Ross, 2004). Dr. Carter's use of the tools in this context, though the learners did not employ the technologies as desired, reinforces the need for greater understanding of how social media can support the integration of learner-content interactions and professional identity development in structured learning contexts.

Practice

There are several implications for practice including: having clear objectives for social media use in service of learner-content interactions, scaffolding learner engagement towards

desired learning outcomes, and developing guidance that is responsive to the learners' needs and the affordances of each social networking tool.

Clear objectives for social media use. Observations of the course social media platforms and interviews with both Dr. Carter and the course participants showed that the implementation of social media networks in service of the Professional ID Project were not well scaffolded in service of the corresponding project objectives. The learners used the tools differently than desired by the instructor, and demonstrated substantial variations in the frequency of their engagement, especially among participants in the Facebook group. Moreover, several of the participants attempted to cram their likes, views, comments, and posts into the final weeks of the course so that their overall participation metrics demonstrated a high volume of engagement, even though it was completed far outside of the real-time asynchronicity. The instructor attempted to employ some regulations and guidance around the timeliness of the interactions and how the tools were used, however, she did not enforce them throughout the life of the project (and even walked back on the strictness of her requirements as the semester unfolded). Rather than rejecting this feature of the project guidance surrounding technology use, the instructor would have been better served by maintaining the regulations and providing scaffolds for how to have more timely interactions (which include connecting the tool to synchronous class activities) and consequences for either late or non-existent participation. In order to avoid the substantial or significant discrepancy in terms of the timeliness of how the technologies are employed, clear guidance for use needs to be implemented and maintained throughout the use of the tool in the given context.

Scaffolding learner engagement. Observations of the posts and interviews with Dr. Carter showed that the quality of the learner-content interactions did not exceed the multi-

structural level of complexity. While this is, perhaps, unsurprising given the context - the learners' first "real" course in the education major, the first time the learners engaged with theories of education and practice, the first time the learners were asked to reflect upon their individual philosophies of education - the outcome is that the quality of the learner-content engagement never really grew or expanded upon very basic or secondary levels of understanding the material or its complexities or applications. In order to yield more meaningful interactions, the tools and their intended uses need to be structured so that the participants do not "stall out" at the post/share and comment phase of interaction in the sites. Scaffolding for how to use the tools that includes specific written in visual guidance for moving learners to more complex interactions may have improved both the quality and quantity of learner engagement in the course social networking sites.

Developing responsive guidance for social media use. Observations and participant interviews demonstrated clear differences between how the Pinterest and the Facebook tools were used by the learners in the course. Facebook and Pinterest have unique affordances. The ways in which the tools were employed yielded different outcomes for the users. Dr. Carter noted that the course was comprised of "non-traditional learners," in that a variety of both ages and professional experiences were present in the course. There was not a set "average" or "guaranteed" level of technological knowledge or proficiency, which yielded different decisions and usage habits from the learners, including Student Archie, who had demonstrated difficulties using the available technologies. As a result, the use of the social networking tools needs to be differentiated at the learner level to yield the quality of outcomes desired by the instructor.

Modifications, alterations, and alternatives to the tools need to demonstrate equitably across the platforms for users who require accommodations or who have the option of choice in

which social media tool they employ. As Dr. Carter noted, the Pinterest option was treated like an “opt out” option for the project, due to how the tool was constructed to be used for the ID project. While having a pseudo opt-out procedure was useful for learners who required project modifications, the outcomes show that Facebook and Pinterest did not yield a similar richness of engagement or opportunity for interactions between the learners and the instructor, content, and other learners. In order to prevent this imbalance, instructors should consider the affordances of each tool and how they uniquely support the desired learner interactions, and explicitly enforce how the tools are intended to be used by the learners in order to avoid such steep differentials across learners’ experiences.

Limitations

While the structure and execution of the research study reflected the collection of multiple forms of data to account for the researcher's asynchronicity, the research reflects limitations that are common to qualitative research, namely low participation rates from learners, limited time in the field, and self-selection biases amongst interviewed participants.

Access

Due to location differences between the researcher and the research site, the researcher experienced difficulty observing all of the class meetings in the semester. She was able to observe three synchronous class meetings, which were held two weeks after students returned to campus after the Hurricane. The researcher, additionally, experienced difficulty gaining access to some of the students’ posts, namely participants who used Pinterest for the ID Project. Of the three consenting participants who chose Pinterest for the ID Project (25% of study participants), only one student shared their boards with the researcher (Student Collins). The researcher, however, was an included member of the course Facebook group and had full access to all of the

learners' posts, comments, and observable activities within the Facebook group. As a result the analyses heavily favor one student's Pinterest boards, which may or may not be representative of the overall participation patterns by Pinterest users in the course. The research, additionally, reflects a heavier focus on participants in the Facebook group, which had the highest overall level of engagement and is the site that the researcher had the most access to during her research.

Timeline of Research Activities

The researcher received IRB approval to begin her study in early October, 2018, which allowed her approximately 10 weeks to collect all of her data, including site observations, surveys, and multiple participant interviews. In order to allow her enough time to observe the activities within the course social media sites and synchronous class sessions, the researcher did not begin conducting participant interviews until the third week of November. This timeline was complicated by the Hurricane, which rendered learners unable to meet synchronously in any of their classes until the first week in October, and which condensed the timeline for their assignments, activities, and, in some cases, synchronous class meetings towards the end of the semester.

Of the 12 consenting participants, only five scheduled interviews with the researcher. Of the five scheduled interviews, only three participants met with the researcher; the other two participants did not show up, and did not respond to emails requesting to reschedule the interview at another more convenient time. Though incentives were provided to student participants (in the form of a $20 e-gift card to either Starbucks or Amazon.com) and the participants were able to meet with her through the first week of January, 2019, the researcher did not successfully meet with student participants beyond the second week of December, which coincided with the end of the learners' Fall semester.

Self-Selection

Each of the interviewed participants demonstrated moderate to high engagement with their peers (Facebook users) and the content (Facebook and Pinterest users) throughout the semester. As a result, the data from their interviews with the researcher reflects the opinions of learners who demonstrated use of and proficiency with the technologies. While little could be done to amend this issue, which is well-reported in empirical literature, the researcher aimed to provide information on how all students used the tools through a variety of means, including observations of student posts, surveys (which did not collect student emails, and could not be traced back to the specific respondents), and classroom observations.

Race and gender. While the researcher aimed to privilege the voices of male learners and students of color in the course, only one male (Student Archie; 50% of the male learners in the course) consented to participate in the research study. Despite multiple attempts to interview him, he and the researcher were unable to conduct an interview. While his comments and posts were noted in the findings, Student Archie did not participate in an interview, and, thus, his perspective as one of the two male students in the course is not elaborated upon in the analyses. The researcher also obtained consent from the two students of color in the course (100% of the students of color in the course), but neither of them agreed to participate in an interview with the researcher. Though she reached out to them and other study participants multiple times, she was unable to discuss their experiences in the course. Their posts and comments, however, are reflected in the findings, and the researcher did note times when they made explicit mention of their race or racial identity during her observations of the synchronous class meetings and their Facebook posts.

REFERENCES

Acar, A. (2013). Attitudes toward blended learning and social media use for academic purposes: An exploratory study. *Journal of e-Learning and Knowledge Society, 9*, 107–126.

Akbulut, Y. (2007). Implications of two well-known models for instructional designers in distance education: Dick-Carey versus Morrison-Ross-Kemp. *Online Submission*.

Akyol, Z., Arbaugh, J. B., Cleveland-Innes, M., Garrison, D. R., Ice, P., Richardson, J.C., & Swan, K. (2009). A response to the review of the community of inquiry framework. *International Journal of E-Learning & Distance Education, 23*(2), 123-136.

Anderson, L. W., Krathwohl, D. R., Airasian, P. W., Cruikshank, K. A., Mayer, R. E., Pintrich, P. R., Raths, J. & Wittrock, M. C. (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy o educational objectives, abridged edition*. White Plains, NY: Longman.

Anderson, T. (Ed.). (2008). *The theory and practice of online learning*. Edmonton, AB: Athabasca University Press.

Anderson, T., & Dron, J. (2011). Three generations of distance education pedagogy. *The International Review of Research in Open and Distributed Learning, 12*(3), 80-97.

Annand, D. (2011). Social presence within the community of inquiry framework. *The International Review of Research in Open and Distributed Learning, 12*(5), 40-56.

Arnold, N., & Paulus, T. (2010). Using a social networking site for experiential learning: Appropriating, lurking, modeling and community building. *The Internet and Higher Education, 13*(4), 188-196.

Benbunan-Fich, R., Hiltz, S. R., & Harasim, L. (2005). The online interaction learning model:

An integrated theoretical framework for learning networks. *Learning Together Online: Research on Asynchronous Learning Networks*, 19-37.

Bernard, R. M., Abrami, P. C., Borokhovski, E., Wade, C. A., Tamim, R. M., Surkes, M. A., & Bethel, E. C. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research, 79*(3), 1243-1289.

Biasutti, M. (2017). A comparative analysis of forums and wikis as tools for online collaborative learning. *Computers & Education, 111*, 158-171.

Biggs, J. (1979). Individual differences in study processes and the quality of learning outcomes. *Higher Education, 8*(4), 381-394.

Bloom, B. S., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives*. *The classification of educational goals, by a committee of college and university examiners*. *Handbook I, Cognitive domain*. New York, NY: Longmans, Green

Boyd, D., & Ellison, N. B. (2007). Social network sites: definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210-230.

Brown, T. (2018, July 30). *FDTC, WAU recognized for having two of the best online programs in state.* Retrieved from https://wpde.com/news/local/fdtc-wau-recognized-for-having-two-of-the-best-online-programs-in-state.

Buzzetto-More, N. A. (2012). Social networking in undergraduate education. *Interdisciplinary Journal of Information, Knowledge, and Management, 7*(1), 63-90.

Camus, M., Hurt, N. E., Larson, L. R., & Prevost, L. (2016). Facebook as an online teaching tool: Effects on student participation, learning, and overall course performance. *College Teaching, 64*(2), 84-94.

Cappex (2018, May 30). *West Atlantic University*. Retrieved from

https://www.cappex.com/colleges/West-Atlantic-University.

Carey, J. (2016, January 14). *CIC grant brings online classes to Crabtree*. Retrieved from http://cc.edu/news/cic-grant-brings-online-classes-to-crabtree/.

Carter, M. K. (2018). *Course syllabus*. Milwaukee, WI: West Atlantic University.

Chick, H. L. (1998). Cognition in the formal modes: Research mathematics and the SOLO taxonomy. *Mathematics Education Research Journal, 10*(2), 4-26.

Chick, H. L., Watson, J. M., & Collis, K. F. (1988). Using the SOLO taxonomy for error analysis in mathematics. *Research in Mathematics Education in Australia*, May-June 1988, 34-47.

Choy, S. O., & Ng, K. C. (2007). Implementing wiki software for supplementing online learning. *Australasian Journal of Educational Technology, 23*(2), 209-226.

Colvin Clark, R., & Mayer, R. E. (2008). *E-learning and the science of instruction. Proven Guidelines for Consumers and Designers of Multimedia Learning*. San Francisco, CA: Pfeiffer.

Correia, A., & Davis, N. (2008). Intersecting communities of practice in distance education: the program team and the online course community. *Distance Education, 29*(3), 289-306.

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*, 319-339.

Davis, F. D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies, 38* (3), 475-487.

Deng, L., & Tavares, N. J. (2013). From Moodle to Facebook: Exploring students' motivation

and experiences in online communities. *Computers & Education, 68*, 167-176.

Deng, L., & Yuen, A. H. (2011). Towards a framework for educational affordances of blogs. *Computers & Education, 56*(2), 441-451.

Denzin, N. K., & Lincoln, Y. S. (2008). *The landscape of qualitative research (Vol. 1).* Thousand Oaks, CA: Sage.

Ellis, T. J., & Hafner, W. (2003). Engineering an online course: Applying the 'secrets' of computer programming to course development. *British Journal of Educational Technology, 34*(5), 639-650.

Ellison, N. B. (2007). Social network sites: Definition, history, and scholarship. *Journal of Computer-Mediated Communication, 13*(1), 210-230.

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing ethnographic fieldnotes.* Chicago, IL: University of Chicago Press.

Erickson, F. (1986). Qualitative methods. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (3rd ed., pp. 119-161). New York, NY: Macmillan.

Facebook (2018). *Facebook stats*. Retrieved from http://newsroom.fb.com/company-info/.

Fiorella, L., & Mayer, R. E. (2016). Eight ways to promote generative learning. *Educational Psychology Review*, *28*(4), 717-741.

Flyvbjerg, B. (2001). *Making social science matter: Why social inquiry fails and how it can succeed again.* Cambridge, UK: Cambridge University Press.

Garrison, D. R., Anderson, T., & Archer, W. (1999). Critical inquiry in a text-based environment: Computer conferencing in higher education. *The Internet and Higher Education, 2*(2), 1–19.

Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking, cognitive presence, and computer conferencing in distance education. *American Journal of Distance Education, 15*(1), 7-23.

Garrison, D. R., Anderson, T., & Archer, W. (2010). The first decade of the community of inquiry framework: A retrospective. *The Internet and Higher Education, 13*(12), 5-9.

Garrison, D. R., & Arbaugh, J. B. (2007). Researching the community of inquiry framework: Review, issues, and future directions. *The Internet and Higher Education, 10*(3), 157-172.

Garrison, D. R., Cleveland-Innes, M., & Fung, T. S. (2010). Exploring causal relationships among teaching, cognitive and social presence: Student perceptions of the community of inquiry framework. *The Internet and Higher Education, 13*(1-2), 31-36.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education, 7*(2) 95-105.

Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. *Handbook of Qualitative Research, 105*(2), 163-194.

Hawkins, W & Hedberg, J. (1986). Evaluating LOGO: Use of the SOLO Taxonomy. *Australian Journal of Educational Technology, 2*(2), 103-109.

Henri, F., & Pudelko, B. (2003). Understanding and analysing activity and learning in virtual communities. *Journal of Computer Assisted Learning, 19*(4), 474-487.

Hewitt, J. (2005). Toward an understanding of how threads die in asynchronous computer conferences. *The Journal of the Learning Sciences, 14*(4), 567-589.

Holmes, K. (2005). Analysis of asynchronous online discussion using the SOLO Taxonomy. *Australian Journal of Educational & Developmental Psychology*, *5*, 117-127.

Hou, H. T., Wang, S. M., Lin, P. C., & Chang, K. E. (2015). Exploring the learner's knowledge construction and cognitive patterns of different asynchronous platforms: comparison of an online discussion forum and Facebook. *Innovations in Education and Teaching International, 52*(6), 610-620.

Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. *Qualitative Health Research*, *15*(9), 1277-1288.

Idris, Y., & Wang, Q. (2009). Affordances of Facebook for learning. *International Journal of Continuing Engineering Education and Lifelong Learning, 19*(2-3), 247-255.

Ioannou, A., Brown, S. W., & Artino, A. R. (2015). Wikis and forums for collaborative problem-based activity: A systematic comparison of learners' interactions. *The Internet and Higher Education, 24*, 35-45.

Jacobson, M. J., & Spiro, R. J. (1994). A framework for the contextual analysis of technology-based learning environments. *Journal of Computing in Higher Education, 5*(2), 3-32.

Johnson, D. (2005). Social construction of technology. *Encyclopedia of Science, Technology, and Ethics*, *4*, 1791-1795.

Jumaat, N. (2016). A framework of metacognitive scaffolding in learning authoring system through Facebook. *Journal of Educational Computing Research, 54*(5), 619-659.

Kanuka, H. (2005). An exploration into facilitating higher levels of learning in a text-based internet learning environment using diverse instructional strategies. *Journal of Computer-Mediated Communication, 10*(3), 10-32.

Kanuka, H., Rourke, L., & Laflamme, E. (2007). The influence of instructional methods on the quality of online discussion. *British Journal of Educational Technology, 38*(2), 260-271.

Kaufman, R. (1994). A needs assessment audit. *Performance and Instruction, 33*(2),

14-16.

Kearsley, G., & Shneiderman, B. (1998). Engagement theory: A framework for technology-based teaching and learning. *Educational Technology*, *38*(5), 20-23.

Keegan, D. (1996). *Foundations of distance education*. New York, NY: Routledge Psychology Press.

Kerawalla, L., Minocha, S., Kirkup, G., & Conole, G. (2009). An empirically grounded framework to guide blogging in higher education. *Journal of Computer Assisted Learning, 25*(1), 31-42.

Kivunja, C. (2015). Exploring the pedagogical meaning and implications of the 4Cs "super skills" for the 21st century through Bruner's 5E lenses of knowledge construction to improve pedagogies of the new learning paradigm. *Creative Education*, *6*(02), 224.

Knowles, M. S. (1968). Andragogy, not pedagogy. *Adult Leadership, 16*(10), 350-352.

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.

Lim, C.P. & Tan, S.C. (2001). Online discussion boards for focus group interviews: An exploratory study. *Journal of Educational Enquiry, 2*(1), 50-60.

López-Pérez, M. V., Pérez-López, M. C., & Rodríguez-Ariza, L. (2011). Blended learning in higher education: Students' perceptions and their relation to outcomes. *Computers & Education, 56*(3), 818-826.

Maddrell, J. A., Morrison, G. R., & Watson, G. S. (2017). Presence and learning in a community of inquiry. *Distance Education, 38*(2), 245-258.

Markham, A. N. (2006). The methods, politics, and ethics of representation in online ethnography. In N. Denzin and Y. Lincoln (Eds.) *The Sage handbook of qualitative*

research (pp. 793-820). Thousand Oaks, CA: Sage.

Marton, F. (1976). "What Does It Take to Learn? Some Implications of an Alternative View to Learning," in Entwistle, N. J., ed., *Strategies for Research and Development in Higher Education*. Amsterdam, Netherlands: Swets and Zeitlinger.

Marton, F., & Säljö, R. (1976). On qualitative differences in learning: I—Outcome and process. *British Journal of Educational Psychology, 46*(1), 4-11.

Marx, L. (1987). Does improved technology mean progress. *Technology Review, 90*(1), 33-41.

Meadows, D. H., & Wright, D. (2008). *Thinking in systems: A primer*. Hartford, VT: Chelsea Green Publishing.

Mishra, P., & Kereluik, K. (2011). What 21st century learning? A review and a synthesis. In *Society for Information Technology & Teacher Education International Conference* (pp. 3301-3312). Association for the Advancement of Computing in Education (AACE).

Moore, M. G. (1989). Three types of interaction. *American Journal of Distance Education, 3*(2), 1-7.

Moore, M. G. (1993). Theory of transactional distance. *Theoretical principles of distance education*, *1*, 22-38.

Moore, M. G. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22–38). New York, NY: Routledge.

Moore, M. G., & Kearsley, G. (2011). *Distance education: A systems view of online learning*. Boston, MA: Cengage Learning.

Moran, M., Seaman, J., & Tinti-Kane, H. (2011). *Teaching, learning, and sharing: How today's higher education faculty use social media.* Boston, MA: Babson Survey Research Group.

Morrison, J. R., Watson, G. S., & Morrison, G. R. (2012). Comparison of restricted and

traditional discussion boards on student critical thinking. *Quarterly Review of Distance Education, 13*(3), 167-176.

Mossberger, K., Tolbert, C. J., & McNeal, R. S. (2008). *Digital citizenship: The internet, society, and participation*. Boston, MA: MIT Press

Muller, M. (2012). *Lurking as personal trait or situational disposition: Lurking and contributing in enterprise social media*. Paper presented at the Association for Computing Machinery, Seattle, WA.

Obizoba, C. (2015). Instructional design models: Framework for innovative teaching and learning methodologies. *International Journal of Higher Education Management*, *2*(1).

Öztürk, E. (2015). Facebook as a new community of inquiry environment: An investigation in terms of academic achievement and motivation. *Journal of Baltic Science Education, 14*(1), 20-33.

Pimmer, C., Linxen, S., & Gröhbiel, U. (2012). Facebook as a learning tool? A case study on the appropriation of social network sites from mobile phones in developing countries. *British Journal of Educational Technology, 43*(5), 726-738.

Pinch, T. J., & Bijker, W. E. (1984). The social construction of facts and artifacts: Or how the sociology of science and the sociology of technology might benefit each other. *Social Studies of Science, 14*(3), 399-441.

Poellhuber, B., Anderson, T., & Roy, N. (2011). Distance students' readiness for social media and collaboration. *The International Review of Research in Open and Distributed learning, 12*(6), 102-125.

Poole, D.M. (2000). Student participation in a discussion-oriented online course: A case study. *Journal of Research on Computers in Education, 33*(2), 162-177.

Praloux, O. (October 15, 2018). 'Hurrication' is over...what happens now? Retrieved from https://www.thewesternatlantic.com/single-post/2018/10/05/Hurrication-is-over-what-happens-now.

Rheingold, H. (1999). Look who's talking. *Wired*, *7*(1), 1-6.

Ribble, M. (2015). *Digital citizenship in schools: Nine elements all students should know*. Washington, D.C.: International Society for Technology in Education.

Ribble, M. S., Bailey, G. D., & Ross, T. W. (2004). Digital citizenship: Addressing appropriate technology behavior. *Learning & Leading with Technology*, *32*(1), 6.

Rogers, E. M. (1962). *Diffusion of innovations*. New York, NY: The Free Press of Glencoe.

Rogers, E. M. (2003). Elements of diffusion. *Diffusion of innovations* (5th ed.). New York, NY: The Free Press of Glencoe.

Rourke, L., & Kanuka, H. (2009). Learning in communities of inquiry: A review of the literature. *International Journal of E-Learning & Distance Education, 23*(1), 19-48.

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *Turkish Online Journal of Educational Technology, 5*(2), 14-23.

Salmon, G. (2003). *E-moderating: The Key to Teaching & Learning Online*. 2nd Ed. New York, NY: Routledge.

Scott, K. M. (2013). Does a university teacher need to change e-learning beliefs and practices when using a social networking site? A longitudinal case study change in beliefs and practices using an SNS. *British Journal of Educational Technology, 44*(4), 571-580.

Shih, R.-C. (2011). Can Web 2.0 technology assist college students in learning English

writing? Integrating Facebook and peer assessment with blended learning. In J. Waycott & J. Sheard (Eds), Assessing students' Web 2.0 activities in higher education. *Australasian Journal of Educational Technology, 27(*Special issue, 5), 829-845.

Singer, N. (2018, April 11). *What you don't know about how Facebook uses your data.* Retrieved from https://www.nytimes.com/2018/04/11/technology/facebook-privacy-hearings.html.

Slack, F., Beer, M., Armitt, G., & Green, S. (2003). Assessment and learning outcomes: The evaluation of deep learning in an online course. *Journal of Information Technology Education: Research, 2*, 305-317.

Strauss, A., & Corbin, J. M. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Thousand Oaks, CA: Sage Publications.

Szeto, E. (2015). Community of Inquiry as an instructional approach: What effects of teaching, social and cognitive presences are there in blended synchronous learning and teaching?. *Computers & Education, 81*, 191-201.

Tang, T & Watkins, D. (1994). Towards a taxonomy of teacher thinking. *Educational Research Journal, 9*(1), 38-43.

Twitter (2018). *About Twitter*. Retrieved from https://about.twitter.com.

US News and World Report (2018). *West Atlantic University.* Retrieved from https://www.usnews.com/best-colleges/west-atlantic-university-3278.

Veletsianos, G. (2012-01). Online social networks as formal learning environments: Learner experiences and activities. *International Review of Research in Open and Distance Learning, 13*(1), 144-166.

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance

model: Four longitudinal field studies. *Management Science, 46*(2), 186-204.

Wagstaff, K. (2012, July 6). *AOL's longest running employee on the history of AOL chat rooms*. Retrieved from http://techland.time.com/2012/07/06/aols-longest-running-employee-on-the-history-of-aol-chat-rooms/.

Wang, Q., Woo, H. L., Quek, C. L., Yang, Y., & Liu, M. (2012). Using the Facebook group as a learning management system: An exploratory study. *British Journal of Educational Technology, 43*(3), 428-438.

Webb, E. (2009) Engaging students with engaging tools. *Educause Quarterly, 32*(4), 1-7.

West Atlantic Online (2018, May 30). *Online course and program offerings*. Retrieved from https://www.westatlantic.edu/online/programsandcourses/.

Appendix A: Social Media Requirements for the Professional Identity Project
(Excerpted from the WAU Syllabus, 2018)

For the Professional Identity Project, you will:

1. Write a synopsis of your selected professional organization which will be assessed using the rubric on Moodle;
2. Create a professional online profile using Twitter, Facebook, or Pinterest. This profile should follow professional organizations, educational bloggers, educational websites, etc.;
3. OPTION 1 (Twitter users):
    a. Engage with a professional organization or online professional learning community through a social media chat. You will provide weekly evidence of participation via screenshot or screen-recording of your participation, as well as a brief synopsis of your learning from the weekly chat.
    b. Recommended chats:
        i. #ellchat: ESOL related topics
        ii. #WAUESOL: WAU ESOL Course
        iii. #shelfietalk: literacy educators
        iv. #educoach: instructional coaches
        v. #EduReal: general education
        vi. #sunchat: general ed
        vii. #edchat: general ed
        viii. #kinderchat: early childhood and elementary educators
4. OPTION 2 (Facebook users):
    a. Join the closed Facebook page XXXX. You will participate weekly in our group, including activities such as sharing professional resources, inspirational quotes, and engaging with group members through "Likes," "Comments," and other activities as assigned. You will provide weekly evidence of participation via screenshot or screen-recording of your participation, as well as a brief synopsis of your learning from the week.
5. OPTION 3 (Pinterest users):
    a. You will create boards for each unit in the course (Phonics and Phonemic Awareness; Comprehension; Language Acquisition and Development; Differentiation; Motivating Readers and Writers; Literacy Programs; Family Literacy Partnerships). These boards will include links to professional organizations, high-quality Instructional resources, lesson plan ideas, activities, etc. Cutesy activities, prepared worksheets, or resources from TeachersPayTeachers will not be meet the expectation of "high-quality." You MAY create new pins using materials you create in class. Each pin should include a description as to the value of the pinned resource and why you selected it for curation. You will provide weekly evidence of curation via screenshot or screen-recording, as well as a brief synopsis of what you learned through curation that week.

6. You will write a 2-3 page reflection in which you will use your experiences throughout this project to define your educational philosophy, what you value as an educator, and who you are as an educator.

Appendix B: WAU Course Objectives
(Excerpted from the WAU Syllabus, 2018)

Objectives 1 - 9
1. Understand the concept of emergent literacy that reflects the historical background of literacy instruction in U.S. schools
2. Explain the nature of first and second language and language acquisition from birth through early elementary school years that includes awareness of the influence of social, cultural, and economic factors on language development
3. Describe the stages of reading and writing development
4. Describe the interrelated language arts processes: listening, speaking, reading, writing, viewing, and visually representing
5. Explain the differences among major reading approaches and their implementation with early readers, including: holistic approaches, balanced literacy, guided reading, reader's and writer's workshop, and basal approaches
6. Plan developmentally appropriate lessons for enhancing listening, speaking, reading, writing, and viewing skills of young children
7. Identify strategies to enhance the oral language development of young children
8. Demonstrate effective strategies for sharing books with children
9. Plan developmentally appropriate lessons to develop vocabulary, word recognition skills, including phonemic awareness, phonics, structural analysis, and context clues
Objectives 10 - 11 **(Specific to the Professional ID Project)**
10. Experience professional growth that results from: a. Interacting with major reading journals b. Interacting with major language arts journals c. Interacting with major early childhood journals d. Interacting with instructional resources e. Interacting with available media to support early literacy instruction
11. Acquire a reflective mindset about his/her professional development to include: a. A commitment to continuous learning b. A commitment to developing an advocacy role for young children

Appendix C: Student Survey

Experiences with Social Networking Tools

Items 1 through 3 address the frequency and type of social networking tools you use in your personal life and in your academic/work experiences.

1. How many years have you been using social networking tools?
    a. 12+
    b. 9-12
    c. 5-8
    d. 1-4
    e. Less than one

2. How frequently do you use the following social media platforms in your personal life each day?

	More than 2 hours	1-2 hours	30-59 minutes	15-29 minutes	5-14 minutes	Less than 5 minutes
Facebook						
Instagram						
LinkedIn						
Pinterest						
Snapchat						
Twitter						
Other						

3. How frequently do you use the following social media platforms in your academic and professional life each day?

	More than 2 hours	1-2 hours	30-59 minutes	15-29 minutes	5-14 minutes	Less than 5 minutes
Facebook						
Instagram						
LinkedIn						
Pinterest						
Snapchat						
Twitter						
Other						

Perceptions of Social Media

Items 4 through 8 address how useful you perceive social networking tools as being in your personal and academic/work experiences.

4. What value or benefit do the following consequences of social networking tool use add to your personal (non-academic, non-professional) life?

	Most benefit	A lot of benefit	Some benefit	Less benefit	Little benefit	Least benefit
Creating a virtual scrapbook of images for later reference						
Developing new connections						
Directly connecting with others easily						
Learning new information						
Maintaining existing relationships						
Staying up-to-date on current events						

5. What value or benefit do the following consequences of social networking tool use add to your academic/professional (non-personal) life?

	Most benefit	A lot of benefit	Some benefit	Less benefit	Little benefit	Least benefit
Creating a virtual scrapbook of images for later reference						
Developing new connections						
Directly connecting with others easily						
Learning new information						
Maintaining existing relationships						
Staying up-to-date on current events						

6. How much benefit do the following social networking features add to your personal (non-academic, non-professional) experiences?

	Most benefit	A lot of benefit	Some benefit	Less benefit	Little benefit	Least benefit
Chat						
Direct messaging						
“Liking” something						
Posting links and videos						
Retweeting						
Sharing links						

7. How much benefit do the following social networking features add to your academic and professional experiences?

	Most benefit	A lot of benefit	Some benefit	Less benefit	Little benefit	Least benefit
Chat						
Direct messaging						
“Liking” something						
Posting links and videos						
Retweeting						
Sharing links						

8. How much hesitation, if any, do you have about using social networking tools in your courses?

	Most Hesitation	A lot of Hesitation	Some Hesitation	Less Hesitation	Little Hesitation	Least Hesitation
Concerns with privacy						
Inability to “opt out” of certain features						
Lack of familiarity with the platform						
Perceived lack of usefulness of the sites						
Other (please specify)						

Adoption and Adaptation

Items 9 through 14 address how you engage with or ignore specific features of social networking tools in your personal and academic/work experiences.

9. How open are you to using social networking tools in your coursework?
    a. Completely open
    b. Very open
    c. Mostly open
    d. Open
    e. Somewhat open
    f. Not very open

10. How often do you engage in the following actions to address features of social networking tools that you do not find useful?

	Most Often	Very Often	Often	Somewhat Often	Less Often	Rarely
Ignore them						
Stop using the tool						
Adjust the settings						
Other						

11. How many times have you used social networking tools for coursework in the past year?
    a. I have not used social media in my classes this past year
    b. At least once
    c. 2 - 3 times
    d. 4 - 7 times
    e. 8 - 10 times
    f. 10+ times

12. What scaffolds did your instructor(s) provide for how to use the social networking tools in your coursework?
    a. Publicly accessible social media sites
    b. Student examples
    c. Sample posts
    d. Written guidance
    e. My instructor did not provide me with any scaffolds
    f. Other

13. How comfortable are you with requesting modifications to the social networking tool (ex: disabling comments, using an avatar for a profile photo) in your coursework? (1= extremely comfortable, 6 = extremely uncomfortable) **Click to the left of each item to drag it into the appropriate order, with 1 at the top and 6 at the bottom**
    a. Extremely comfortable
    b. Moderately comfortable
    c. Slightly comfortable
    d. Slightly uncomfortable
    e. Moderately uncomfortable
    f. Extremely uncomfortable

14. What workarounds do you want offered to you in the event that you do not want to use social media in your coursework? (Check all that apply)
    a. Not using the social media platform
    b. Modify certain features of the platform that you find problematic
    c. Using the platform only in specific instances that you and the instructor agree upon
    d. Choose another platform
    e. Other

Facilitating Learner Interactions

Items 15 through 18 address how you intend to use social networking tools in your coursework this semester.

15. What do you hope to get out of the experience of using social networking tools in your classes? (Check all that apply)
    a. Developing professional connections
    b. Improved understanding of the course material
    c. Connecting with peers
    d. Improved confidence with using social media for academic research
    e. Other

16. What academic benefits do you anticipate receiving from the use of social networking tools in your class?

	Most Benefit	A lot of Benefit	Some Benefit	Less Benefit	Little Benefit	Least Benefit
Improved understanding of the course material						
Improved confidence with using social media for academic research						
Developing professional connections						
Creating a professional presence on social media sites						
Other						

17. How do you intend to use the tools to learn more about the course content?

	Most Likely	Very Likely	Likely	Less Likely	Little Likelihood	Least Likely
Connecting with other classmates to discuss the content						
Looking at hashtags to see what others are saying about the readings						
Connecting with the social media accounts of individuals discussed in the class						
Joining synchronous sessions (ex: Facebook Live, Twitter Live Chats) where the material is being discussed by your peers and others						
Other						

18. How do you intend to use the tools to develop connections with individuals in your field of interest?

	Most Likely	Very Likely	Likely	Less Likely	Little Likelihood	Least Likely
Joining a professional group with a community on the platform						
“Friending” or following leaders in the field						
Using field-specific hashtags in your posts						
Commenting on posts written by individuals in your field of interest						
Other						

Appendix D: Social Networking Tool Observation Protocol

Site Set-Up

1. What tool is being used?
2. How is the tool embedded into the class?
3. How is the tool accessed?
4. Who can access the tool?
5. What is happening in the site?
    a. Is there a specific assignment?
6. How is the tool being used?
    a. Who is using it?
    b. How are they using it?

Process of Adoption and Adaptation

1. How is the tool being used?
    a. What features are being employed by the users?
    b. What individuals or groups are using the tool?
2. Who is determining what features are being used?
3. Who is determining how the features are being used?
4. How does the tool's use align with how the instructor intended the tool to be used in the course?
5. What are the consequences for not using the tool as it was intended to be used?

Consequences of Not Employing Social Networking Tools

1. Who is not using the tool?
    a. Is there a stated reason for their decision to not use it?
2. What workarounds are presented for individuals who do not want to use social media?
    a. What are the workarounds?
    b. How are they employed?
    c. What is their ease of integration into the course?
    d. How do other students engage with the students who choose not to use the tool?

Facilitating Learner Interactions

1. What types of interaction are being facilitated through the social networking tools?
2. How are students engaging with the material through the tools?
    a. What are they asking about?
    b. What are they commenting on?
    c. Who are they communicating with?
3. How does the students' use of the tools align with the specific instructional objectives?
4. How does the instructor interact with the students through social networking tools?
    a. What is the content of her interactions?
    b. What is the perceived tone of her interactions?

Appendix E: Synchronous Class Observation Protocol

Organization of the Space

1. How is the site set-up?
2. How many students are in the class?
3. Where are the students located?
4. Where is the instructor positioned?
    a. What is her position in relation to the students?
5. What or who do the students face?
6. What or who does the instructor face?

Class Structure

1. How is the class structured?
    a. How long is the class?
    b. What activities take place
    c. How long is each activity
    d. How is the structure communicated to the students?
2. Who or what determines how the class is structured?

Participation

1. Do all of the students participate in the discussion?
    a. If not, who participates?
    b. Who does not participate?
    c. How does the instructor promote or prompt full participation in the class?

Alignment with Course Objectives

1. What is the alignment between students' comments and participation online and in-person?
    a. Are the threads and comments addressed in the LMS and social media mentioned in the synchronous discussion?
    b. How is the discussion continued?
    c. What, if any, resolution is provided?
2. How does the discussion or use of social media align with the instructors' intended use of the tool?

Experiences with Social Networking Tools

1. How are social networking tools referenced in the class?
    a. Who mentions it?
    b. In what context(s) is it mentioned?
    c. Is it used in the class?
2. What are participants' experiences with social networking tools?
    a. Who mentions the tool?
    b. How is it addressed?
    c. What comments or feedback are provided?
    d. What issues are discussed?

Appendix F: Course LMS Observation Protocol

Site Set-Up

1. Where is the class LMS located?
2. How is it accessed?
3. What features are located on the main page?
4. How do students navigate the site?
5. What technical knowledge do students need to have to access the LMS?
6. Is it accessible by students with disabilities?

Course Structure

1. How is the class structured?
2. How are students graded?
3. How are students encouraged to take in information?

Alignment with Instructional Objectives

1. What types of interaction are being facilitated through the social networking tools?
2. How are students engaging with the material through the tools?
    a. What are they asking about?
    b. What are they commenting on?
    c. Who are they communicating with?
3. How does the students' use of the tools align with the specific instructional objectives?
4. How does the instructor interact with the students through social networking tools?
    a. What is the content of her interactions?
    b. What is the perceived tone of her interactions?

Process of Adoption and Adaptation

1. How are social networking tools being used in the LMS?
    a. What features are being employed by the users?
    b. What individuals or groups are using the tool?
2. What scaffolds are provided to support student use of social networking tools?
3. How are the students using social networking tools in the class space?
4. How are social networking tools being integrated into the class lesson?
5. Who is determining what features are being used?

Facilitating Learner Interactions

1. How are the students engaging with the course material?
    a. What connections are they making?
    b. How do their actions align with the class objectives?
2. How are students being scaffolded in the site to connect with the material?
3. How are students using their peer relationships to deepen their understanding of the course material?
4. What feedback or re-direction does the instructor provide when a student has a question or does not understand something?

Consequences of Not Employing Social Networking Tools

1. Who is not using the social networking tools?
    a. Is there a stated reason for their decision to not use it?
2. What are the consequences for not using the tools as they were intended to be used?
3. What workarounds are presented for individuals who do not want to use social networking tools?
    a. What are the workarounds?
    b. How are they employed?
    c. What is their ease of integration into the course?
    d. How do other students engage with the students who choose not to use the tool?

Appendix G: Document Analysis Protocol

1. What is the document
2. What is its significance to the course
3. What is its significance to the participants
4. How is the document important to the research
5. What is the document's relationship to the:
    a. Class
    b. Instructors
    c. Students
6. What does the document show the researcher about:
    a. Who is involved in the site
    b. Who is making decisions
    c. How the participants are engaging with the class
    d. How the participants are engaging with social media
    e. How the participants are engaging with the course material

Appendix H: Interview Protocol for Instructor (Initial)

Script

Thank you for taking the time to meet today! Over the next 30-35 minutes, you will be asked questions about your experiences with using social networking tools in your courses and your approach to using the tools in your work. By taking part in this interview, you will be contributing to the body of literature on how using social media in university courses helps students interact with the course content. The questions are open-ended and focused on what you found useful and challenging during the semester, and your recommendations for future use of social media in the course. Your participation is completely voluntary; you can choose to skip any questions that you do not feel comfortable answering. You can, also, choose to end the interview at any time without penalty.

Using Social Media in Teaching

1. How did you decide to employ social networking tools in your online teaching?
    a. What approaches or frameworks guide your efforts regarding the implementation?
2. How have you structured the tools to be used in your course?

Process of Adoption and Adaptation

1. How do you scaffold learners towards social networking tool use in your classes?
    a. What guidance do you provide students?
    b. What exemplars, if any, do you use to provide students?
2. What features of social networking tools do you consider to be most useful in the course?
    a. Why do you perceive these features as being useful?
3. What features of social networking tools do your students consider to be the most useful in the course?
    a. How do you observe them being useful to the students?
4. What social networking tools features do you or your students report finding difficult or problematic?

Consequences of Not Employing Social Media

1. What opt out procedures do you provide to students who are not comfortable with using social networking tools in your class?
    a. How are they requested
2. What accommodations do you make for students who do not use social networking tools to ensure they are engaging with the content?
    a. In your opinion, how do these students' experiences differ from the experiences of students who choose to use social media in the class?

Facilitating Learner Interactions

1. How do you want students to engage with the course content through social networking tool use this semester?
    a. How do you want students to use the tool?
    b. What features do you want to employ?
2. How do you demonstrate alignment between the class objectives and the technology?

Appendix I: Interview Protocol (Students)

Script

Thank you for taking the time to meet today! Over the next 30-35 minutes, you will be asked questions about your experiences with using social media in your course. By taking part in this interview, you will be contributing to the body of literature on how using social media in university courses helps students interact with the course content. The questions are open-ended and focused on what you found useful and challenging during the semester, and your recommendations for future use of social media in the course. Your participation is completely voluntary; you can choose to skip any questions that you do not feel comfortable answering. You can, also, choose to end the interview at any time without penalty.

Checking In

1. How was your semester?
2. What did you enjoy most about the class?
3. What, if anything, did you not enjoy or have difficulty with?

Adoption and Adaptation

1. What features of social networking tools do you consider to have been most useful in the course?
    a. Why do you perceive these features as being useful?
2. How did the use of social media in the class align with how you would have liked the tool(s) to be used in the class?
3. How was the tool integrated into the class?
    a. Who determined how the tool was used?
    b. What features of the tool were used?
    c. What features of the tool were ignored?
4. Can you think of a time where the tool was helpful during the semester?
    a. How was it used?
    b. What made its use successful?
    c. What types of interactions did you observe?
    d. How did intended use of the tool align with its actual use?
5. Can you think of a time where the tool was not used well during the semester?
    a. What were the conditions of its use?
    b. What happened that make its use unsuccessful?
    c. What types of interactions did you observe occurring?
    d. How did its use align with the intended use of the tool?

Consequences for Not Employing Social Media

1. What, in your opinion, were the consequences for not using social media in the class?
    a. How did choosing to opt out of the tool impact student performance?
    b. How did choosing to opt out of the tool impact engagement with the material?
2. What workarounds were offered by the instructor for students who did not want to use social media in the class?
    a. In your opinion, how useful were they to the students?

Developing Learning Interactions

1. What did you perceive as being the key benefits of using social media in the course?
2. How did the tool help you engage with the course content?
3. How did the tool help you develop a professional community with your peers or other people in the field?
4. If you could advise your instructor on how to use the tool in future courses, what would you recommend they do?
    a. How would you recommend that they structure the use of the tool?
    b. What scaffolds, of any, would you recommend that they use?

Appendix J: Interview Protocol for Instructor (Follow-Up)

Script

Thank you for taking the time to meet today! Over the next 30-35 minutes, you will be asked questions about your experiences with using social media in your course throughout the Fall 2018 semester. By taking part in this interview, you will be contributing to the body of literature on how using social media in university courses helps students interact with the course content. The questions are open-ended and focused on what you found useful and challenging during the semester, and your recommendations for future use of social media in the course. Your participation is completely voluntary; you can choose to skip any questions that you do not feel comfortable answering. You can, also, choose to end the interview at any time without penalty.

Reflection Upon Using Social Media this Semester

1. How did this semester influence your desire to use the social networking tools in future semesters?
    a. What lessons did you learn?
    b. What changes would you make to how you employed social media in the class?
    c. What interactions would you promote in future courses?
    d. What features would you encourage, employ, or work around in future semesters?
2. How did you scaffold learners towards social networking tool use in your classes?
    a. What guidance did you provide students?
    b. What exemplars, if any, did you use to provide students with?

Consequences of Not Employing Social Media

1. What workarounds did you employ for students' who did not feel comfortable using the tools?
2. What was the impact of these workarounds on students' engagement with their peers?
3. What was the impact of these workarounds on students' engagement with the overall course?

Facilitating Learner Interactions

1. What features of the social networking tools did students report finding useful to the development of their understanding of the material?
    a. How did you scaffold their use of the technology?
    b. How did they use the technology in service of the learning objectives?
2. What features of the social networking tools did students report finding difficult or problematic in the development of their understanding of the material?
    a. How did they bring this to your attention?
    b. How did you respond to the issue?
    c. Did you keep the technology?
        i. If so, how did you resolve the issue?

Appendix K: Student Participant Interview Request

Dear Students,

Good afternoon! I hope this note finds you well and warm on this wintery Sunday :) I know that you're in the thick of finals - I hope that you're studying hard and taking good care of yourselves :)

As you know, I have been observing your class and use of Facebook and Pinterest over the course of this semester for my doctoral dissertation. As the semester draws to a close, I am interested in meeting with you for a brief 20 to 30-minute interview to discuss your experiences with using the tool in the class during the past 15 weeks.

As a thank you for your participation in the interview, you will be given a $20 e-gift card to either Starbucks or Amazon upon completion (which will be mailed to you electronically within 72 hours of completing the interview). The interview is completely voluntary - your participation in it will not have any bearing on your grade in the class. You can choose to skip any questions or end the interview early without penalty (you will receive the gift card electronically regardless of either scenario).

Additional information can be found below:

Scheduling the Interview
To participate, please click on the link below to sign up for a time:
https://calendly.com/cea5h/interview-using-social-networking-tools-in-your-course/12-03-2018

Meeting Location
The interview will be held via Zoom using the following meeting room:
https://zoom.us/j/3965731111

Additional Information
Interview questions are listed below. Participants that arrive more than 10 minutes late will need to be rescheduled to meet at another time.

Interview Questions
Checking In
1. How was your semester?
2. What did you enjoy most about the class?
3. What, if anything, did you not enjoy or have difficulty with?

Adoption and Adaptation
1. What features of Facebook/Pinterest did you consider to have been most useful in the course?
2. How did Dr. Carter's use of Facebook/Pinterest in the class align with how you would have liked the tool to be used?
3. How was the tool integrated into the class?
4. Can you think of a time where the tool was helpful during the semester?

5. Can you think of a time where the tool was not used well during the semester?

Developing Learning Interactions
1. What did you perceive as being the key benefits of using Facebook/Pinterest in the course?
2. How did the tool help you engage with the course content?
3. How did the tool help you develop a professional community with your peers or other people in the field?
4. If you could advise Dr. Carter on how to use the tools in future courses, what would you suggest?

Thank you for letting me be a part of your experience this semester. I have learned so much from you, and am looking forward to connecting with you in the coming weeks :)

Warmly,

Christianna

Christianna Andrews
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Curry School of Education
University of Virginia
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Appendix L: Learner Interaction Metrics (Facebook)

Week (Dates in Parentheses)	Number of Posts	Number of Likes	Number of Views	Number of Comments	Number of Like Backs
Week 1 (8/20-8/26)	0	0	0	0	0
Week 2 (8/27-9/2)	0	0	0	0	0
Week 3 (9/3-9/9)	10	40	127	7	3
Week 4 (9/10-9/16)	10	25	126	7	5
Week 5 (9/17-9/23)	7	15	86	6	3
Week 6 (9/24-9/30)	8	19	98	4	0
Week 7 (10/1-10/7)	7	19	97	11	6
Week 8 (10/8-10/14)	12	19	149	9	4
Week 9 (10/15-10/21)	9	24	88	14	10
Week 10 (10/22-10/28)	5	13	27	6	4
Week 11 (10/29-11/4)	7	12	51	2	2
Week 12 (11/5-11/11)	6	21	47	8	2
Week 13 (11/12-11/18)	5	15	16	1	0
Week 14 (11/19-11/25)	0	0	0	0	0
Week 15 (11/26-12/2)	7	23	72	5	3
Week 16 (12/3-12/5)	4	13	42	6	3
Total	**97**	**258**	**1,026**	**86**	**45**

Appendix M: Learner Interaction Metrics (Pinterest)

Board (Dates in Parentheses)	Topic	Pins	Number of Pin Descriptions	Number of Comments	Number of Replies
1 (8/20-9/2)	Phonics	13	0	0	0
2 (9/3-9/16)	Phonemic Awareness	11	0	0	0
3 (9/17-9/30)	Reading Comprehension	17	0	0	0
4 (10/1-10/14)	Language Acquisition and Development	13	0	0	0
5 (10/15-10/28)	Differentiation	12	0	0	0
6 (10/29-11/11)	Motivating Readers and Writers	11	0	0	0
7 (11/12-11/25)	Literacy Programs	7	0	0	0
8 (11/26-12/5)	Family Literacy Partnerships	10	0	0	0
Total	**8 boards**	**94**	**0**	**0**	**0**

Appendix N: Email to Potential Sites

Dear _____,

Good morning/afternoon! I hope this note finds you well.

My name is Christianna Andrews, and I am a PhD student in the Curry School of Education (Program: Curriculum and Instruction), where I am focusing on Instructional Technology.

I am currently working on my Dissertation Proposal and am interested in studying the role of social media in online learning (specifically as it relates to perceptions of learning and improved outcomes in blended and asynchronous courses) at the graduate or university level.

I am interested in observing classes in a few undergraduate and graduate courses during the Fall 2018 semester, and wanted to know if you would be willing to meet sometime to discuss your work and, potentially, the use of your class as a possible site for inclusion in my dissertation.

Regardless of your decision, I thank you for your time and consideration. I hope you are enjoying your summer, and I look forward to hearing from you soon.

Sincerely,

Christianna Andrews
Doctoral Student
Curry School of Education - Curriculum & Instruction
Concentration: Instructional Technology