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How High School Teachers in Guam Use Facebook for Instructional Purposes to Promote Interactions

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This is to certify that the doctoral dissertation by

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Abstract

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MPhil, Walden University, 2020

MSIDT, Walden University, 2011

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Abstract

Despite the popularity of Facebook amongst students and teachers for personal use, the problem is a lack of understanding of how high school teachers use Facebook for instructional purposes to promote learner-learner and learner-instructor interactions. Focusing on how and why some high school teachers incorporate Facebook in their teaching practice may broaden the range of teachers' instructional tools to use Facebook. The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. Vygotsky's social constructivism theory and Bandura's self-efficacy form the conceptual framework for types of interactions on Facebook and teacher experiences. The 3 research questions for this study dealt with how teachers use Facebook for teaching and factors that influenced the decision to use Facebook. Using purposeful sampling led to 10 high school teachers who used Facebook for at least 3 lessons. Data sources consisted of participant interviews and a review of their Facebook activities. Data were analyzed using attribute, evaluation, in vivo, and values coding as primary coding and code mapping process and pattern coding as secondary coding. Results showed that teachers integrated Facebook to promote learner-learner interactions for grammar, literature, student-led discussions, and documenting service-learning activities. Teachers chose Facebook activities because of its ease of sharing information and establishing student engagement. Obstacles to integrating Facebook are training, experienced a lack of resources, and grading assignments. Educators can use the findings of this study to understand how to integrate Facebook into their lessons in a manner that promotes Digital Citizenship.

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Chapter 1: Introduction to the Study

Introduction

Facebook is the most used social media site by young adults (Duggan & Brenner, 2013; Greenwood, Perrin, & Duggan, 2016; Lenhart, 2015). Facebook (2015) reported that it surpassed 1.5 billion users in June 2015. Greenwood et al. (2016) noted that 79% of U.S. Internet users make use of Facebook for their personal use. There is some resistance to using Facebook and other social media for instructional purposes by students (Benzer & Gül, 2013; Turan, Tinmaz, & Goktas, 2013) and faculty (Jacquemin, Smelser, & Bernot, 2014; Teclehaimanot & Hickman, 2011). Despite Facebook's many features and its large number of users for personal use, the problem is a lack of understanding of how high school teachers use Facebook for instructional purposes to promote learner-learner and learner-instructor interactions (Aydin, 2012; Dalsgaard, 2016). In addition, Aydin (2012) and Dalsgaard (2016) suggested that further studies were necessary to focus on the various uses of Facebook beyond the discussion board. Understanding how and why teachers use Facebook for instructional purposes in the context of building learner-instructor and learner-learner interactions adds to the growing body of knowledge of Facebook acceptance. A social implication of this study is that high school teachers can make use of the examples of incorporating Facebook activities into their practices to engage their students in the learning process. This chapter includes a problem statement, a brief background, the purpose of this case study, research questions, conceptual frameworks, nature of the study, and significance.

Background

Enrollment in online classes has been increasing for the past 10 consecutive years for colleges and universities (Allen & Seaman, 2013). According to Taylor, Parker, Lenhart, and Patten (2011), college presidents predict a substantial increase in online learning enrollment. In addition, colleges are making use of latest technology to reach more students and to serve their education needs (Schulte, 2010). The landscape of college education is changing in favor of more online education courses as student enrollment increase.

The personal use of social media (e.g., Facebook) is increasing, and its popularity can ease students into online education courses (Aydin, 2012). Protalinski (2014) noted that the personal use of Facebook has surpassed 1.35 billion active monthly users in October 2014 and Facebook (2015) reported that it surpassed 1.5 billion users in June 2015. Duggan and Brenner (2013) found that 86% of 164 young Internet users (age 18-29 years) also use Facebook. Wang Lin, Yu, and Wu (2013) proposed that the use of Facebook in an educational context could help merge the students' personal and academic lives by having students relate their social media experience to an online class. Facebook provides student engagement and can empower the e-learning environment (Wang et al., 2013). Furthermore, Whittaker, Howarth, and Lymn (2014) concluded that Facebook is a promising tool to establish an online educational community based on participant numbers and traffic. The popularity of Facebook remains an untapped

potential resource in education and its popularity young Internet users makes this social media tool a suitable environment for study.

Moran, Seaman, and Tinti-Kane (2012) noted that approximately two-thirds of the 3,875 college faculty surveyed had visited a social media site within a month, and Facebook was the most popular. Moran et al. determined that college faculty use social media more for personal use than for teaching purposes, and they have not made the transition to use social media for instructional purposes. In contrast, Tiryakioglu and Erzurum (2011) reported that two-thirds of 67 faculty members agreed that a social media tool (e.g., Facebook) has the potential to promote interactions between students and faculty members. Settle et al. (2011) assessed college agriculture faculty's use of social media in education and found that 61.3% out of 232 used some type of social media for instructional purposes. Online forums were the most popular feature of social media used to post assignments and partake in discussions with peers (Settle et al., 2011).

Despite the popularity of Facebook amongst young adults and professors in the United States for personal use (Duggan, 2015; Lenhart, 2015), some college students resist using social networking sites (SNSs) as a part of class (Benzer & Gül, 2013; Turan et al., 2013). For instance, Benzer and Gül (2013) surveyed 48 high school students who did not use SNSs as a part of a class and found that most of these students used Facebook for personal use, but they do not want to utilize Facebook as a mechanism for learning. Turan et al. (2013) performed a case study to uncover reasons for the lack of personal use

of Facebook by college students and found that they lacked interest and thought it was a waste of time.

In contrast, VanDoorn and Eklund (2013) surveyed 20 college students who used Facebook as a part of a course and reported that all the participants felt Facebook was an adequate tool to receive feedback from college faculty. Likewise, Hurt et al. (2012) concluded that the level of engagement of 107 college students in classroom discussions was higher when using Facebook over a conventional learning management system (LMS). Furthermore, Wang et al. (2013) conducted a survey of 130 college students, and determined that students' use of Facebook encourages student engagement by merging the social and academic lives of students. After experiencing Facebook as a part of an online class, students demonstrated better grades, higher engagement, and greater satisfaction than did the students receiving the non-Facebook instruction, which was the control group. In addition, DiVall and Kirwin (2012) surveyed 123 pharmaceutical students who used an LMS as well as Facebook, and the researchers found students viewed more course content and participated in discussions more frequently on Facebook than they did in the LMS. Furthermore, Moran et al. (2012) suggested that college faculty members preferred Facebook over the use of an LMS when they used Facebook as a medium to deliver online instruction.

Despite this positive attitude to using SNSs as a part of online instruction, Van de Vord and Pogue (2012) noted some faculty members are hesitant to use online courses because of the perceived strenuous time requirements as compared to traditional face-to-

face classes. In addition, Teclehaimanot and Hickman (2011) and Chen and Bryer (2012) noted that faculty members are hesitant to use Facebook due to privacy concerns. However, Göğüş, Nistor, and Lerche (2012) and Venkatesh, Thong, and Xu (2012) concluded that a lack of training and familiarity are some of the reasons that faculty members resist the adoption of new technology.

College faculty (DiVall & Kirwin, 2012; Moran et al., 2012) and students (Duggan, 2015; Lenhart, 2015; Wang et al., 2013) already use Facebook for personal use, but there has not been a greater adoption of Facebook as a part of an instructional class (Duggan, 2015; Lenhart, 2015). Gray, Annabell, and Kennedy (2010), Hurt et al. (2012), Kent (2013), Tung (2013), and VanDoorn and Eklund (2013) postulated that students who experienced the use of Facebook and LMS tend to prefer Facebook compared to LMS for discussion purposes.

Upon analyzing high school students' participation in a chemistry class by way of a Facebook page, Rap and Blonder (2016) noted that the most common interaction dealt with organizing learning (47%), for example, announcements regarding homework and the location of the next class. In essence, the use of Facebook was to provide updates and not a didactic form of communication (Rap & Blonder, 2016). Wessels and Diale (2017) determined that adolescents make use of Facebook for personal use, but these students do not have the opportunity to use Facebook to engage in learning. Aaen and Dalsgaard (2016) observed a Facebook group used for instructional purposes that consisted of only students with no instructor present and found that students assisted each other on

homework and assignments, which blended the students' personal, social life with academic schoolwork. Dalsgaard (2016) furthered the idea that Facebook has an educational potential to promote peer-to-peer learning.

The use of social media as a part of instruction can vary based on the experience of teachers (Kuo, 2014; Matzat & Vrieling, 2016). Kuo (2014) noted that students who used an online learning intervention program found the online modules useful; however, Kuo cautioned that the implementation of the online learning program varied based on teacher training. Likewise, Matzat and Vrieling (2016) suggested that the experience of teachers who use SNSs created engaging activities than teachers who lacked experience in SNSs. Teachers need more training on how to implement social media into their teaching practices to raise the degree of social media use (Matzat & Vrieling, 2016).

Although the aforementioned studies discussed the potential of Facebook and favorability in an online learning environment, none of the studies mentioned the specific implementation of Facebook features by high school teachers. Duggan (2015), Lenhart (2015), and Mao (2014) discussed the popularity of Facebook use for personal use, but they did not state specific features of Facebook that were in use. In addition, Aydin (2012), Dalsgaard (2016), Friedman and Friedman (2013), Margerison (2013), and Wang et al. (2013) noted that further study was necessary to focus, specifically, on the various uses of Facebook within educational contexts. Moreover, Rap and Blonder (2016) found that the use of Facebook was mostly in the form of announcements rather than didactic dialogue. Therefore, a case study is needed to provide a qualitative context on the

specific Facebook activities used by teachers to establish didactic interactions as a part of an online learning environment.

Documenting how some high school teachers decide to use Facebook to promote social interactions may help high school teachers overcome the resistance to using Facebook as a medium to deliver instruction. Focusing on how Facebook promotes learner-instructor and learner-learner interactions may further the use of Facebook for instructional purposes (Aydin, 2012; Duggan, 2015; Lenhart, 2015; Mao, 2014).

Problem Statement

Despite the popularity of Facebook for personal use among adults, inclusive of those outside the academic setting and high school students (Duggan & Brenner, 2013; Lenhart, 2015), the problem is a lack of understanding of how high school teachers use Facebook for instructional purposes to promote learner-learner and learner-instructor interactions (Aydin, 2012; Duggan, 2015; Kuo, 2014; Lenhart, 2015; Mao, 2014). Facebook has many features, but the focus of research has been on the discussion feature (Aydin, 2012; Casey & Evans, 2011; Ching & Hsu, 2013; DiVall & Kirwin, 2012; Hurt et al., 2012; Kent, 2013; Lin et al., 2015; Mao, 2014; Margerison, 2013; Settle et al., 2011; Tung, 2013; Ustati & Hassan, 2013; VanDoorn & Eklund, 2013). For instance, Lin et al. (2015) posited that social media requires careful consideration of scaffolding, modeling, privacy, and course design to go beyond using social media as a tool for reminders posted in discussion board but for actual learning. However, Lin et al. (2015) noted that social media use entailed using discussion posts for reminders most of the

time. Likewise, Kent (2013) noted that students and staff used Facebook discussion posts to share some links, but Kent did not elaborate on how these links related to learning. Furthermore, Mao (2014) suggested that social media needs careful planning and evaluating to develop it into an engaging tool where students play a more active role in shaping their education. Finally, VanDoorn and Eklund (2013) suggested that teachers need intense resource training to make adequate use of all the available features found on social media.

Facebook provides a high level of engagement in classroom discussions and allows students to interact in course content (DiVall & Kirwin, 2012; Hurt et al., 2012). Furthermore, Gray et al. (2010), Kent (2013), and VanDoorn and Eklund (2013) compared the use of LMS discussion boards and Facebook discussions, noting that students preferred Facebook for discussions because of its ease of use. In addition, Wang et al. (2013) noted that Facebook encouraged student engagement because it merges the social and academic lives of students. However, Wessels and Diale (2017) noted that despite Facebook's popularity with the 21st-century adolescent, the use of social media is inadequate in its practice in terms of enhancing teaching and learning beyond the simplistic use of the discussion feature. There is a need to understand how to integrate Facebook into teaching practices (Wessels & Diale, 2017).

Based on the concepts of social constructivism, interactions that promote scaffolding, feedback, and pacing may reduce the achievement gap of students (Friedman & Friedman, 2013). Casey and Evans (2011) and Rodrigo and Nguyen (2013) used a

social networking site called NING, which , like Facebook, allows for social interactions but is not as widely used as Facebook (Lenhart, 2015). Casey and Evans noted that NING allowed the students to provide constructive feedback to their peers without much teacher scaffolding as the students became familiar with the expectation. In addition, Rodrigo and Nguyen concluded that NING and, by extension, other social media sites promote active participation when students have the opportunity to provide feedback to each other. Although Casey and Evans and Rodrigo and Nguyen focused on interactions using NING, Facebook is more familiar to students than NING (Lenhart, 2015), and further investigation is needed to determine on how teachers and students can integrate various features of Facebook to promote social constructivism.

Aydin (2012) conducted a meta-analysis on Facebook and classroom use, finding that there is little discussion on the incorporation of Facebook in teaching activities. Research focusing on the use of Facebook in high school classrooms addresses this concern to some degree (Teclehaimanot & Hickman, 2011). The focus on the use of Facebook is limited to discussion responses (Aydin, 2012; Casey & Evans, 2011; Ching & Hsu, 2013; DiVall & Kirwin, 2012; Hurt et al., 2012; Kent, 2013; Lin et al., 2015; Mao, 2014; Margerison, 2013; Settle et al., 2011; Tung, 2013; Ustati & Hassan, 2013; VanDoorn & Eklund, 2013), but Facebook offers other features that are not mentioned much in research (Aydin, 2012; Friedman & Friedman, 2013; Mao, 2014; Wessels & Diale, 2017). The convergence of social media and teaching practices has the potential to

facilitate knowledge creation beyond its use of reminders in discussion boards (Friedman & Friedman, 2013).

Focusing on the mastery experiences of how and why some high school teachers decide to incorporate other features of Facebook to promote learner-instructor and learner-learner interactions may broaden the range of teachers' instructional tools to use Facebook beyond the discussion board. Based on Bandura's (1997) self-efficacy, teachers can learn from other teachers through vicarious experiences, also known as social modeling, which occurs when a capable person compares their ability to another capable person (Phan & Ngu, 2016). This study adds to the growing body of knowledge that focuses on the specific practices high school teachers use to promote interactions when using Facebook as a learning environment. Teachers could extend the usability of Facebook beyond the conventional discussion feature by learning from the mastery experiences of some teachers to use other features of Facebook to extend student engagement.

Purpose of the Study

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. In addition, in this study, I explored the accomplishments and failures that high school teachers experienced when integrating Facebook for instructional purposes. Göğüş et al. (2012) and Venkatesh et al. (2012) noted that some teachers resist adoption of new technology because they lack training and familiarity with that technology. Understanding how

some high school teachers reach their decisions to use other aspects of Facebook could extend the applicability of Facebook as a multipurpose learning tool. Therefore, the documented use of Facebook to promote learner-learner and learner-instructor interactions will serve as a guide for future training material. The research paradigm for this study is constructivism. Interview responses and documented Facebook activities will provide meaning on how high school teachers incorporate Facebook into their lessons that promote learner-instructor and learner-learner interactions through a case study approach.

Research Questions

The conceptual framework for this study, which includes Vygotsky's (1978) social constructivism, particularly in relation to learner-learner and learner-instructor interactions and Bandura's (1997) self-efficacy form the basis of the following research questions. These research questions build on the understanding of social interactions when instructors use Facebook in the context of online learning. The research questions are as follows:

1. How do high school teachers use Facebook in the context of online learning?
2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?
3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?

Conceptual Framework

Vygotsky's (1978) social constructivism theory stated that a person learns and develops through his or her interactions with the environment and other people in that environment. A person learns with assistance from others until the activity is internalized to a point where the person is able to perform the task on their own (Vygotsky, 1978). Vygotsky called the zone of proximal development as the distance between students' current knowledge and the expected level of expertise they must achieve; and the students could close the gap and attain the next level through scaffolding, feedback, and pacing in the classroom received by peers and the instructor.

The four types of social interactions in online education are learner-content, learner-interface, learner-learner, and learner-instructor (Moore & Kearsley, 2012). Learner-content interactions are inclusive of content layout and time with the content where the learner constructs meaning from the content (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). Learner-content interactions focuses on how the learner independently learns from resource materials. Learner-interface interactions deal with a learner's computer experience, perceptions regarding technology, and ability to access technology (Hillman, Willis, & Gunawardena, 1994). Learner-instructor interactions assist the learner to understand the course content by scaffolding, feedback, and pacing from the instructor (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). Learner-learner interactions can be synchronous or asynchronous interactions between one learner and another or several peers (Anderson, 2003; Bernard et al., 2009; Moore &

Kearsley, 2012). These learner-learner interactions provide scaffolding and feedback in a peer context (Ching & Hsu, 2013). Using Vygotsky's (1978) social constructivism theory, the interactions documented for this study are learner-instructor and learner-learner.

Bandura (1997) defined self-efficacy as one's belief in their ability to exercise influence on what they can and cannot perform. Zimmerman and Cleary (2006) further defined self-efficacy as the ability of an individual to affect change in their environment. An individual's self-efficacy determines if a person takes a risk or continues to make safe choices (Bandura, 1997). According to Bandura and Zimmerman and Cleary, four primary sources develop self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and psychological and affective states. The teacher participants will share their mastery experiences in the creation of Facebook activities that promote learner-instructor and learner-learner interactions.

Vygotsky's (1978) social interactions and Bandura's (1997) self-efficacy provide the conceptual framework for this study. The learner-instructor and learner-learner interactions, which are the types of interactions of interest for this study, stem from Vygotsky's social interactions. Bandura's self-efficacy applies when the participants share their mastery experiences in the selection process of Facebook activities that promote learner-instructor and learner-learner interactions.

This framework allows for a case study in exploring how the mastery experiences of high school teachers use Facebook to promote interactions in an educational

environment. One part of Bandura's (1997) self-efficacy is self-reflection. This relates to the research question of having the high school teachers reflect on their successes and failures in integrating different features of Facebook to promote interactions with students. The interview questions for this study relies on the self-efficacy of the high school teacher to share their experiences when selecting Facebook activities. Chapter two will provide a more in-depth explanation of the conceptual framework.

Nature of the Study

Yin (2014) postulated that case study methods are used to understand a phenomenon in-depth that is encompassed in contextual conditions where "the boundaries between phenomenon and context are not clearly evident" (p. 16). In-depth descriptions of experiences define a case study approach (Creswell, 2013). The case study approach explores a phenomenon in a real-world context where data are collected to report on events that occurred in a certain context (Yin, 2014). Data in case studies come from more than one source. Data collection may occur from interviews, observations, documents, and artifacts (Creswell, 2013; Yin, 2014). This approach draws on multiple sources of data to triangulate the data. Selecting phenomenology as an approach would not be appropriate for this research because the focus is not to investigate the lived experiences of a particular set of people in relationship to a phenomenon.

Miles, Huberman, and Saldana (2014) stated that a case is the unit of analysis. Moreover, Yin (2014) noted that a unit of analysis could be individuals, an event, an entity, specific programs, decisions, and organizational change. For this study, the

overall case is the decision-making process to integrate Facebook by high school teachers to promote learner-instructor and learner-learner interactions. The logical subunits of this case are the individual high school teachers. This study will not be a multiple-case study because the high school teachers do not represent separate, individual cases themselves to form confirmatory or contrasting views. Instead, the unit of analysis is the decision-making process itself. Therefore, the variant of case study for this research is a single-case embedded design. One-to-one interviews with teachers and screenshot summaries of Facebook posts that promote learner-learner and learner-instructor interactions are sources of data for this case study. I transcribed the interviews and summarized the Facebook posts. Data analysis occurred with attribute, evaluation, in vivo, and values coding as primary coding methods using NVIVO 11 software. Then, the developed codes underwent rearrangement until they fit into categories, which then form central themes or concepts.

Definitions

Constructivism: A learning theory where students are active participants in constructing their knowledge by linking their new knowledge with their prior knowledge (Brooks & Brooks, 1993).

Facebook: A free social media tool, regardless of geographic location, that allows individuals to network with each other through its features (Aydin, 2012; VanDoorn & Eklund, 2013).

Learning management system (LMS): A web-based application where the course developer can allow for online interactions. Features vary from application to application, but some common features consist of reporting of grades, course content delivery, resource management, and discussion boards where students interact.

More knowledgeable other (MKO): An individual or electronic guide that has a better understanding of a concept or task than the learner does. An MKO can be a peer of the learner, but it is usually an older individual.

Scaffolding: A process where a more knowledgeable person assists a student to perform a task or accomplish a goal that would not otherwise be attainable without some assistance (Wood, Bruner, & Ross, 1976). Tasks are controlled by the more knowledgeable person to enable the student to perform a task within their competence level until the student is able to complete the task without assistance (Wood et al., 1976).

Self-efficacy: one's belief in their ability to exercise influence on what they can and cannot perform (Bandura, 1997).

Social networking sites (SNSs): an online platform where users are allowed to input information as a public profile and interact with other users of the website (Duggan, 2015; Lenhart, 2015).

Vygotsky's social constructivism: Vygotsky (1978) posited two major ideas. First, students construct knowledge through the social environment as their foundation, especially for higher thinking ideas. The second idea is in regards to the zone of

proximal development (ZPD), which is the area where the students possess the cognitive capability to perform but are in need of some form of scaffolding.

Zone of proximal development (ZPD): "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (Vygotsky, 1978, p. 86).

Assumptions

One-to-one interviews with teachers and screenshot summaries of Facebook posts that promote learner-learner and learner-instructor interactions are sources of data for this case study. I utilized these two sources to triangulate the data. Several assumptions exist in this study:

1. Participants are open and honest in their responses during the interview. Trustworthiness and transferability of this study is based on open and honest responses from the participants.
2. The participants are knowledgeable of the features for Facebook.
3. The high school teacher represent their respective populations in a reasonable manner.

Scope and Delimitations

The participants for this study were limited to high school teachers. High school teachers chosen for this study come from availability of teachers utilizing Facebook as a part of their instruction and their willingness to take part in a study. Traditionally,

teachers are not required to use Facebook as a part of their instructional repertoire to educate students. However, some teachers do make use of Facebook for instructional purposes. In addition, some school district restricts access to Facebook because it is categorized as a social media network as opposed to an educational tool. Restricting access to Facebook at the school site may lead to only few teachers utilizing Facebook as a part of their course offering. However, teachers and students are free to use Facebook outside of the face-to-face sessions to communicate with each other. Despite having a restricted network where some social networking sites (SNS) are blocked, Pimmer, Linxen, and Gröhbiel (2012) suggested that professionals and students could also access features of Facebook through their mobile devices to communicate with each other—either in class or out of class.

Limitations

The data collected via this qualitative study will be limited to public high schools in one school district. Yin (2014) stated that a case study approach is not generalizable to populations. A generalization from this study may not apply to other schools and populations because of possible differences in demographics, low sample size, and the nature of the investigation being conducted. Using rich descriptors, quoted material, and detailed record keeping addresses this limitation. As Yin recommended, the reporting should not extrapolate probabilities.

Another limitation of this study is the selection process. The participants met the criteria of using Facebook at least three different lessons throughout the school year. To

address this limitation, participants received an invitation sent to all school district teachers through the school district's newsletter. The first ones to accept the invitation who meet the criteria were a part of the study. This way, I did not make a preference of one participant over another.

Due to the geographic remoteness of conducting this study in a remote location in a territory of the United States, this case study is difficult to replicate. Usage of Facebook may vary in other parts of the world due to different restrictions on the site and adoption rate of Facebook.

The socioeconomic status of students may also be a factor to the adoption rate of Facebook. For instance, Lenhart (2015) found that students from middle- to low-income earning families make use of Facebook more often than other types of social media like SnapChat, which is more frequent in high-income households. Students throughout the United States use social media more often on smart mobile devices than on a computer or laptop (Lenhart, 2015), so access smart mobile devices may influence the use of social media such as Facebook.

Using triangulation, member checking, and peer debriefing can mitigate methodological weaknesses inherent to a qualitative approach. Triangulation occurs when multiple sets of data converge to point to a fact (Yin, 2014). Data from face-to-face interviews with teachers and documented postings made on Facebook will enhance confidence in the results. Triangulation improves the credibility and dependability of the research.

Member checking and peer debriefing improves the credibility of the research. Member checking occurred when I allow the interviewees to review the transcripts so they can comment on the accuracy of their statements and ideas. The interviewees will have access to review the transcripts of the interviews to clarify their ideas. Peer debriefing occurs when I enlist the help of another person to review the findings and research process to ensure information followed a logical sequence.

Another limitation of using a qualitative approach is the influence of bias. Pannucci and Wilkins (2010) noted that bias could occur in the planning, data collection, analysis, and publication phases of research. I used a research journal to write down and reflect on any biases that I may harbor. This helped in separating my personal biases from influencing the outcomes of this study. In addition, the participants may also have some biases during this study. Understanding the source of bias and its effect on the study is another way to reduce bias (Pannucci & Wilkins, 2010).

Significance

Duggan (2015) and Lenhart (2015) determined that the personal use of SNSs is increasing amongst adolescents, and Facebook is the most popular. Using Facebook is a current social trend and incorporating these popular SNSs may cause students to become more motivated in their learning. Exploring how high school teachers decide to use Facebook activities for instructional purposes in the context of social constructivism may encourage other high school teachers to begin incorporating Facebook activities as a part of their instructional practices.

Understanding how and why high school teachers utilize Facebook for educational purposes may convince other high school teachers to adopt SNSs like Facebook into their lesson plans and change current educational practices. Noting how high school teachers decide what Facebook activities to incorporate as a part of their class may provide insight to the strengths and limitations of using Facebook in an educational setting. For instance, Lin, Hoffman, and Borengasser (2013) indicated that one type of social media tool, Twitter, was not suitable for delivering online instruction because students found the word limitation and unfamiliar interface too cumbersome.

There are potential contributions to the education discipline because of this study. The online education community can further develop its integration of Facebook for instructional purposes. The education community will have to develop guidelines on how to handle some of the new features of Facebook that they might have not considered before. The traditional teaching practices could change to incorporate more Facebook activities. More students and teachers will ease into distance learning as they become more aware of how Facebook could improve their instructional practices.

This study has potential implications for positive social change. Policy makers and other high school teachers will have an opportunity to realign their online practices to influence how learner-learner and learner-instructor interactions take place. Furthermore, future studies may want to explore commonalities between the Facebook features used by high school teachers in this study and features found in other SNSs and LMSs.

Summary

Chapter 1 included the problem addressed by case study, which is a lack of understanding of how high school teachers use Facebook for instructional purposes to promote learner-learner and learner-instructor interactions. In addition, this chapter included the purpose of this case study, which was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. This chapter included a brief background related to the scope of the study. The nature of the study is a case study to explore the research questions dealing with how Facebook is used for learning activities that promote learner-instructor and learner-learner interactions. The conceptual framework for this study is Vygotsky's (1978) social constructivism theory and Bandura's (1997) self-efficacy. The significance of this study, as discussed in Chapter 1, is to provide insight to the strengths and limitations of using Facebook in an educational setting, which is the most used SNS (Duggan & Brenner, 2013).

Chapter 2 contains an in-depth examination of literature related to online education, SNS, LMS, Vygotsky's (1978) social constructivism theory, and types of social interactions. This literature review describes features that promote interactions and trends of SNSs and parallels between LMSs and SNSs are also discussed. Chapter 3 describes the methodology for the study. This includes the logic for participant selection, instrumentation, data collection methods, and data analysis procedures. Chapter 4 provides a discussion and analysis of the research results. Chapter 5 provides recommendations and implications of the results of the study.

Chapter 2: Literature Review

Introduction

This case study explores how high school teachers decide to use Facebook activities for instructional purposes in the context of social constructivism. Documenting the practices of how some high school teachers decide to use Facebook to promote social interactions may overcome the resistance of using Facebook as a medium to deliver instruction. The literature review to follow consists of five sections: a general description of constructivism, Vygotsky's (1978) social constructivism, social interactions in distance education, social media, and the use of social media in instruction. Vygotsky's social constructivism and Bandura's (1997) self-efficacy serve as lenses for this study.

Constructivism is a learning theory that describes students as active participants in the construction of their knowledge as opposed to passive learners who get filled with knowledge (Brooks & Brooks, 1993). Bruning, Schraw, and Norby (2011) stated that the two major divergences of constructivism are based on Piaget's (1983) and Vygotsky's (1978) views. Piaget differed from Vygotsky because Piaget emphasized that learning is autonomous to the learner and based on age appropriate environments.

Vygotsky (1978) posited that social interactions are critical in forming knowledge. The learner makes use of language and symbols to develop learning within these social interactions (Vygotsky, 1978). A major component of Vygotsky's social constructivism that will be discussed is ZPD, which occurs when a learner is provided some assistance from an adult or peer until the intervention is no longer necessary.

There are three main types of social interactions in distance education courses: learner-content, learner-learner, and learner-instructor (Anderson, 2003). Learner-content interactions focus on how the learner independently learns from resource materials, absent from interacting with the instructor or a peer. Learner-instructor interactions assist the learner to understand the course content by scaffolding, feedback, and pacing from the instructor (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). Learner-learner interactions can be synchronous or asynchronous interactions between one learner and another or several peers (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). These three social interactions are further elaborated this chapter.

Social media platforms allow users to interact with each other and publish content by means of the Internet. With many different types of social media available, Facebook is the most popular amongst teenagers (Lenhart, 2015) and adults (Duggan, 2015). Because of Facebook's popularity, much of the discussion will be on this type of social media.

Friedman and Friedman (2013) asserted there are many integrations of social media in an online learning context. These integrations include using social media features of blogs, wikis, discussions, sharing multimedia, and messaging systems. Other features of social media that promote learner-learner interactions are discussed.

Literature Search Strategy

Some key terms, and variations based on synonyms, for the search include combinations of the following: social media, social constructivism, constructivism, ZPD, Vygotsky, Piaget, Bruner, scaffolding, uses of social media, instructing with social media, online education, online learning, online interactions, social interactions, learner to learner interaction, instructor to learner interaction, Facebook, instruction, and social trends. Search engines include ERIC, EBSCOhost, Google Scholar, Academic Search Complete, ScienceDirect, SAGE Premier, and EdITLib. Each of the key terms produced thousands of results. The use of filters reduced the results to peer-reviewed articles within five years of publication.

Conceptual Framework

Constructivism

Brooks and Brooks (1993) defined constructivism as a learning theory where students construct their knowledge as opposed to traditional theories where students are passive learners in which teachers pour knowledge into their empty vessel. In addition, Baviskar, Hartle, and Whitney (2009) noted that four criteria must apply in order for teaching and learning to take place under constructivism. The first criterion is to stimulate prior knowledge (Baviskar et al., 2009). Without prior knowledge, there is nothing to build upon. The second criterion, which Baviskar et al. called "cognitive dissonance," is when the student is aware of the differences between the prior knowledge and the new knowledge. The third criterion is modifying prior knowledge to account for

the new knowledge (Baviskar et al., 2009). Lastly, the fourth criterion for learning under constructivism is when the student reflects on the change of knowledge, being cognizant that information has been assimilated (Baviskar et al., 2009).

Bruning et al. (2011) and Phillips (1995) stated that there are many variations of constructivism with major different perspectives; however, Lourenço (2012) noted that some authors and researchers do not contend there are different variations of constructivism, just trivial differences of interpretations. In contrast to Lourenço, Piaget (1983) and Vygotsky (1978) are two well-known constructivists that share similarities on students constructing their knowledge but have a major difference on their views of the origins of knowledge (Bruning et al., 2011; DeVries, 2000; Phillips, 1995). Phillips and Lourenço noted that Piaget's cognitive constructivism is based on the autonomous, individual learner to explore and construct knowledge. Vygotsky's social constructivism, as noted by Phillips and Lourenço, states that the learner constructs knowledge that is heavily emphasized through diverse social structures. Hence, there is a divide between Piaget's cognitive constructivism where student learning is autonomous and Vygotsky's social constructivism where student learning relies on social interactions.

Piaget's (1983) cognitive constructivism stated that the student progresses through four continuous stages: the sensory-motor (0-2 years old), the pre-operational (2-7 years old), the concrete operational (7-11 years old), and the formal operational stage (after 11 years old). A student undergoes adaptation based upon the student's cognitive development through these continuous stages. Therefore, the teacher needs to be aware

of the student's age and develop appropriate environments for learning because the student's age determines the student's stage of development (Piaget, 1983). According to Piaget, the student constructs meaningful knowledge when provided an appropriate learning environment, which is tailored to the student's development stage.

DeVries (2000) stated that practical applications of theories can clarify the theories. The Montessori's (1967) Method is an application of Piaget's (1983) cognitive constructivism. Montessori noted that the student's independence in an exploratory setting allows for a self-learning process. A classroom that makes use of Piaget's cognitive constructivism contains hands-on experiences tailored to the student's age. Young children make use of their sensory abilities and build meaningful knowledge on previous experiences. Older children can understand abstract ideas and generate new knowledge in relation to previous experiences.

Vygotsky's (1978) social constructivism deviated from Piaget's (1983) cognitive constructivism in the development of cognition. Piaget emphasized that the main constructor of knowledge is the individual. Therefore, the willingness to change and adapt to the presentation of new knowledge comes from within the student (Piaget, 1983). On the contrary, Vygotsky stated that social interactions play a fundamental role in the development of cognition. Lourenço (2012) described Vygotsky's social constructivism as a change that is undertaken by a student in response at a social level before the student exhibits an intrapersonal response.

The role of language further differentiates Piaget's (1983) cognitive constructivism and Vygotsky's (1978) social constructivism. Lourenço (2012) stated that a Piagetian subject is ultimately responsible for all his or her actions and knowledge development. The role of language in Piaget's cognitive constructivism aides in learning, but it is not required. On the contrary, Lourenço noted that, under Vygotsky's view, a learner is an individual who acquires meaning primarily through social behavior and social interactions.

Vygotsky's Social Constructivism Theory

Vygotsky (1978) posited that social interactions are critical in forming knowledge. Furthermore, development occurs through the use of tools such as language and symbols inherent to each culture (Vygotsky, 1978). Language is the most important tool in forming knowledge and moves from social speech to personal speech to inner speech (Vygotsky, 1978). In contrast, Bereiter (1994) provided some thoughts where young children are capable of figuring out how the world functions long before they have an opportunity to learn from language and culture. Despite not having a rebuttal to Bereiter, Vygotsky's social constructivism is still applicable to the participants of this research, consisting of high school students and their teachers who already possess language and culture.

Another component of Vygotsky's (1978) social constructivism is ZPD. Vygotsky defined ZPD as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as

determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86). ZPD is necessary when individuals are not capable of accomplishing a task by themselves. In addition, ZPD is often associated with Bruner's (1984) scaffolding, which occurs when tasks are controlled by a more knowledgeable other (MKO), allowing the learner to focus on tasks with some assistance until no assistance is required.

Nordlof (2014) defined the process of scaffolding as a temporary intervention that provides the appropriate level of support for a student and removed once a student is no longer in need of assistance. Likewise, Van de Pol, Volman, and Beishuizen (2010) declared that scaffolding contains three key parts: adapting support to the needs of the student, fading support over time, and transferring responsibility for learning from the MKO to the student. In support of scaffolding, Rassaei (2014) noted how 78 college students were divided into a control group and an experimental group who received scaffolding treatment by the instructor. Rassaei concluded that those students receiving scaffolding showed greater benefits than those who did not receive the scaffolding treatment. Moreover, Van de Pol, Volman, Oort, and Beishuizen (2014) noted that teachers increased their teaching quality when they were familiar with adapting their scaffolding support to the needs of the students. However, ZPD goes beyond scaffolding and covers ideas such reciprocal teaching (Bruner, 1984), peer collaboration (Bruner, 1984), and apprenticeship (Rogoff, 1990). Furthermore, the MKO providing the

scaffolding is not limited to the instructor because the students are able to provide scaffolding to each other (Bruner, 1984).

ZPD consists of an area where the learner is capable of completing tasks at an independent level and another area where assistance is required by an MKO (Vygotsky, 1978). The role of students in ZPD is not always that of a learner; instead, students can take on the role of an MKO when teaching their peers (Andersen & Ponti, 2014; Cicconi, 2014; Fernández, Mercer, Wegerif, & Rojas-Drummond, 2015; Sadykova, 2014). Sadykova (2014) explored 12 international graduate students with a two-stage mixed methods study and found that students become invaluable mediators of knowledge when satisfying the interest of international students for the host culture. Moreover, Fernández et al. (2015) opined that students may not be intentional in providing scaffolding to each other, but they still achieve this by using effective communication strategies. In addition, Cicconi (2014) noted an MKO could go beyond just the teacher in a Web 2.0 course to computer adaptive programs, another introvert student in school, and, with the advent of technology, another student across the world.

Sadykova (2014) recommended that course developers create an online environment conducive to peer-to-peer interactions where one student can take on the role of an MKO in assisting others. However, Andersen and Ponti (2014) cautioned in the creation of peer-to-peer collaboration in online classes to meet the levels of its participants. The course creator cannot simply take high achieving students and mix them with low achieving students, hoping for the higher achieving student to take on the

role of the MKO (Andersen & Ponti, 2014). Tasks need to be meaningful and relevant to all the students (Andersen & Ponti, 2014). Otherwise, advanced students will lose interest on the easy tasks, and beginning level students may feel overwhelmed with the difficult content (Andersen & Ponti, 2014). Vygotsky (1978) did not define who can be an MKO to a learner other than being willing and capable of assisting others in shaping their knowledge.

Baviskar et al. (2009) stated that, in order for teaching and learning to be considered constructivist, four criteria have to be met. Recalling prior knowledge is the first criterion for learning to be considered constructivist (Baviskar et al., 2009). The second criterion is creating cognitive dissonance, which is when the learner is aware of the difference between the past and new knowledge (Baviskar et al., 2009). The third criterion occurs when the student interprets the new knowledge and modifies prior knowledge to accommodate the context of the new knowledge (Baviskar et al., 2009). Lastly, the final criterion is reflecting and being aware that learning has taken place (Baviskar et al., 2009).

A similar idea as Baviskar et al. (2009), Brooks and Brooks (1993) stated that a teacher applying constructivism theory in the classroom does not admonish a student who answers a question wrong. Instead, the teacher tries to understand the student's current thinking process and assists the student to recognize the difference between the past knowledge and new knowledge (Brooks & Brooks, 1993). Through proper questioning and scaffolding, the teacher is able to correct the student to construct a new

understanding and acquisition of corrected skills (Brooks & Brooks, 1993). Despite not making an overt mention of the final criterion of reflecting as Baviskar et al. did, Brooks and Brooks implied that students are aware of their new knowledge when applying their new skills.

In similar fashion, Bächtold (2013) made use of the four criteria, as stated by Baviskar et al. (2009), from the viewpoint of balancing the dissonance between Piaget's (1983) cognitive (personal) constructivism and Vygotsky's (1978) social constructivism in the application of teaching science. Bächtold noted that having scientific classroom activities (i.e. laboratory and hands-on practice) in the context of ZPD allows the students to receive appropriate scaffolding to reinforce changes to accommodate the new idea. To address the criterion of reflection, Bächtold recommended that students study real-life problems to reinforce their newly formed constructs. The application of the four criteria of Baviskar et al. will provide support in determining if activities using Facebook contribute to the application of social constructivism.

Despite Vygotsky's social constructivism (1978) being based on face-to-face interactions, the concepts are broad enough to be applicable to distance education. For instance, Vygotsky noted that a concept of ZPD entails a MKO assisting another to attain learning. In application, Sadykova (2014) noted that students of different cultural backgrounds could help scaffold each other in an online setting to learn each other's culture. The students who are familiar with a culture become the MKO to assist others to cope with the cultural norms when communicating online (Sadykova, 2014). In addition,

Cicconi (2014) stated that some students in an early childhood mathematics course took on the role of an MKO when they used Web 2.0 tools such as VoiceThread, Voki, and Vodcasts to teach others. Annotations, video comments, and presentations allowed dialogue between students to promote learning through scaffolding by using Web 2.0 applications (Cicconi, 2014). Furthermore, Andersen and Ponti (2014) expounded the concept of ZPD when students co-created tasks in massive open online courses (MOOCs) to expand each other's ZPD. Students who were more familiar with a concept allowed less competent students to learn the concepts through scaffolding to fulfill the requirements of co-creating tasks (Andersen & Ponti, 2014).

Ozan (2013) expanded the concept of scaffolding in mobile technologies by categorizing scaffolding into four areas: instructional, social, technical, and managerial. Instructional scaffolding occurs when students learn in a network setting (Ozan, 2013). Social scaffolding occurs when students promote human relationships and work together (Ozan, 2013). Technical scaffolding occurs when students promote their comfort and ease in using the system (Ozan, 2013). Managerial scaffolding occurs when students manage their own learning in a connected environment (Ozan, 2013). Based on Ozan's study of 48 college sophomore students enrolled in an educational graphics and animation course, most participants preferred social scaffolding while their instructors preferred the use of managerial scaffolding.

Fernández et al. (2015) noted the concepts of ZPD and scaffolding need to be re-conceptualized. The asymmetrical teaching and learning process from a teacher or an

MKO to supporting a learner does not account for the dynamic processes occurring when students dispute and expand each other's ideas (Fernández et al., 2015). Furthermore, Fernández stated, "ZPD is no longer the product of a teacher's conscious intention. It is better understood as a symmetrical version of the concept of the intermental development zone, in which language is used to in a dynamic and dialogical way to maintain and develop a shared context" (p. 69).

Cheng (2010) studied the impact of computer-mediated communication on graduate level students who did not speak English as their primary language. Cheng concluded that two-way collective scaffolding is important in facilitating the participants' literacy skills. Furthermore, Cheng noted that students assisted each other through peer questions, sharing of experiences, and corrections in academic citation practices. The findings support the ideas of re-conceptualizing ZPD and scaffolding as postulated by Fernández et al. (2015), who stated that learning is dynamic and symmetrical. Vygotsky's (1978) concept of scaffolding, despite not formulated during the digital age, is still applicable in an online environment when the concepts of ZPD is expanded to include the symmetrical dialogue taken by students where the role of the MKO is shared among students learning in a simultaneous manner.

Social Interactions in Distance Education Courses

Moore (1989) and Anderson (2003) postulated that there are three main types of interactions in a distance education course: learner-content, learner-learner, and learner-instructor. Hillman et al. (1994) mentioned an additional type of interaction in distance

education courses, which is learner-interface. Learner-interface interactions occur when the learner interacts with a technology medium in some form as a part of course requirements (Zimmerman, 2012). In addition, Anderson (2003) mentioned instructor-instructor, instructor-content, and content-content interactions. With the advent of many types of interactions, Wang, Chen, and Anderson (2014) merged the types of interactions named in various pedagogies (i.e., cognitivism, social constructivism, connectivism) based on levels of cognitive engagement into categories called operation interaction, wayfinding interaction, sense-making interaction, and innovation interaction. Despite using a theory building methodology to create a new theoretical framework through the merging of pedagogies, Wang et al. concurred that learner-content, learner-learner, and learner-instructor interactions are necessary forms of interacting with information in a distance learning environment to process complex information in the environment. Although the additional interactions introduced by Hillman et al., Anderson, and Wang et al. may be of some importance in a larger distance education context, they are not reported in a large number of distance education studies yet. Consequently, these interactions are not included in this research.

Moreover, Bernard et al. (2009) reiterated the importance of three main types of interactions (i.e., learner-content, learner-learner, and learner-instructor) through a meta-analysis and concluded that all three are associated with achievement outcomes in distance education. In addition, Anderson (2003) argued that there is support for learning so long as one of the three interactions is present at a high level. Vygotsky's (1978)

social constructivism theory provides the context for these three types of interactions (i.e., learner-content, learner-learner, and learner-instructor).

Learner-Content Interactions

Learner-content interactions focus on how the learner independently learns from resource materials, absent from interacting with the instructor or a peer. Kuo, Walker, Schroder, and Belland (2014) defined learner-content as a process where an individual learner reflects on the topic or course content. Bernard et al. (2009) noted that learner-content may consist of reading texts, making use of study guides, watching videos or other forms of multimedia, using simulations, interacting with software, searching for information (e.g. using a search engine), and completing assignments or projects. In addition, Cecilia, Rodriguez, and Armellini (2015) mentioned other learner-content activities: multiple choice questions with automated feedback, personal wiki used as a diary, and a poll area to see responses of others. Furthermore, Anderson (2003) contended that due to an increase in storage capacities and computational power in modern technologies, there may be some pressure to convert learner-learner and learner-instructor interactions into learner-content interactions. In concurrence, Ustati and Hassan (2013) stated that universities use content management systems and learning management systems for content delivery in distance education because of its simplicity and ability to deliver information in a user-friendly environment.

Kuo et al. (2014) surveyed 221 college students and determined that learner-content is the strongest indicator of course satisfaction in distance education courses

when compared to learner-learner and learner-instructor interactions. In addition, Zimmerman (2012) evaluated the effectiveness of learner-content interactions and course success, finding that students who spent more time interacting with the content performed better on quizzes. On the contrary, Cecilia et al. (2015) offered three course designs—one for each type of interaction—and noted no significant difference between the types of interactions. Cecilia et al. noted that students who underwent the learner-content course design needed to apply extra effort to make sense of the content in comparison to the other types of interactions. Moreover, Horzum (2015) concluded that a rigid course structure has a negative correlation with student interactions with each other and with peers. Furthermore, Horzum elaborated that high social presence resulted in more satisfaction with the course; however, a rigid course structure negatively affects social presence. Thus, increasing dialogue and reducing course structure promotes students' social presence (Horzum, 2015).

Learner-Instructor Interactions

Learner-instructor interactions assist the learner to understand the course content by scaffolding, feedback, and pacing from the instructor (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). Lin et al. (2015) stated that once a teacher provides a scaffold to one student to generate a thought in a distance education course discussion board, others students will provide some responses as well. Furthermore, Lin et al. (2015) concluded that a teacher's influence on dialogue between students is that of a catalyst. Ching and Hsu (2013) noted a similar situation where the instructor provides a

guiding question or interaction to garner more appropriate student discussions where students have a framework to provide feedback.

Ustati and Hassan (2013) provided perceptions from two students, noting that they differed on the role of learner-instructor interactions. One student wanted immediate feedback through a dialectic simultaneous two-way interaction while another student was content with an asynchronous feedback process. In conclusion, Ustati and Hassan generalized that students have different learning needs but both could benefit from synchronous opportunities with their instructor due to receiving immediate feedback.

Lin et al. (2015) noted that the learner-instructor interactions do not have to voluminous to influence peer collaboration. However, Lin et al. stated, "without teachers' support, students undoubtedly would have missed opportunities to infer the logical relations among various components of their arguments" (p. 626). Hence, Learner-instructor interactions provide guidance to the learner to understand the course content (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012).

Learner-Learner Interactions

Learner-learner interactions can be synchronous or asynchronous interactions between one learner and another or several peers (Anderson, 2003; Bernard et al., 2009; Moore & Kearsley, 2012). These learner-learner interactions provide scaffolding and feedback in a peer context (Ching & Hsu, 2013).

Johnson, Cascio, and Massiah (2014) cautioned that learner-learner interactions are less favorable in online courses than face-to-face courses on features of warmth and competence. Johnson et al. ventured that students do not want to interact with unfamiliar individuals and suggested that the role of the instructor mediate student relationships and keep discussions on relevant topics. In fact, Kuo et al. (2014) stated that a focus on learner-learner interaction might provide negligible results in course satisfaction unless the facilitator directs the learners to engage each other. In concurrence, Johnson et al. noted that students in distance education courses do not want to interact with unfamiliar individuals.

However, Horzum (2015) determined that students' social presence in an online course is a positive predictor of student satisfaction in the course. Increasing students' ability to dialogue with each other promotes course satisfaction (Horzum, 2015). In addition, Ching and Hsu (2013) explored 21 graduate students' participation and perceptions of providing peer feedback on an online class to complete a project-based learning activity. Ching and Hsu found that students demonstrated higher order learning opportunities when students provided peer feedback. In addition, providing guiding questions promoted structured quality-filled peer feedback (Ching & Hsu, 2013). In fact, a lack of proper guiding questions resulted in low quality of peer feedback (Ching & Hsu, 2013). Moreover, preference for learner-learner interaction is not universal amongst students (Croxton, 2014). In concurrence, Grandzol and Grandzol (2010) and Arbaugh and Rau (2007) showed a significant and negative correlation with course completion and

delivery medium for learner-learner interactions. Therefore, Croxton (2014) recommended that having an appropriate balance of learner-learner interactions is critical to student satisfaction and online course completion.

Self-Efficacy

Bandura (1997) defined self-efficacy as one's belief in their ability to exercise influence on what they can and cannot perform. Zimmerman and Cleary (2006) further defined self-efficacy as the ability of an individual to affect change in their environment. An individual's self-efficacy determines if a person takes a risk or continues to make safe choices (Bandura, 1997). Self-efficacy is not the same as self-esteem (Bandura, 1997; Zimmerman & Cleary, 2006). Bandura (2006) stated that self-efficacy is a reflective judgement on capability while self-esteem is a reflective judgement on self-worth. However, Hajloo (2014) and Baumeister, Campbell, Krueger, and Vohs (2003) noted that levels of self-efficacy can predict self-esteem. Furthermore, Hajloo remarked that high self-esteem is not indicative of high self-efficacy.

According to Bandura (1997) and Zimmerman and Cleary (2006), four primary sources develop self-efficacy: mastery experiences, vicarious experiences, verbal persuasion, and psychological and affective states. Mastery experiences focuses on one's personal accomplishments and failures (Bandura, 1997). Successful experiences increase self-efficacy beliefs (Bandura, 1997). Likewise, mastery experiences that are not successful decrease self-efficacy beliefs (Bandura, 1997). In support of mastery

experiences, Snyder and Fisk (2016) concluded that self-efficacy increases when individuals experience a sense of mastery in the classroom when provided opportunities.

Another source of self-efficacy is vicarious experiences, also known as social modeling (Bandura, 1997; Zimmerman & Cleary, 2006). Vicarious experiences pertain to observing the success of similar individuals or role models to raise one's self-efficacy (Bandura, 1997). Likewise, Phan and Ngu (2016) noted that this type of vicarious experience occurs when a capable person compares their ability to another capable person. Bandura (1997) cautioned that the influence on self-efficacy is negative if the observer sees failure or unsuccessful attempts. Hence, self-efficacy is increased or decreased through social comparisons to the extent the observer identifies with the model (Steyn & Mynhardt, 2008).

Bandura (1997) and Zimmerman and Cleary (2006) stated that verbal persuasions is another source to develop self-efficacy. Unlike the idea of self-talk, verbal persuasion occurs in a social context when one individual encourages or discourages another individual. This would be akin to encouraging another individual using a pep talk or providing words of encouragement. Individuals who receive encouragement are likely to have higher self-efficacy (Snyder & Fisk, 2016). In contrast, individuals who face discouragement will likely have lower self-efficacy (Snyder & Fisk, 2016).

The last source of self-efficacy is an interpretation of physiological and affective states (Bandura, 1997; Zimmerman & Cleary, 2006). Entertaining positive feelings while performing a task promotes self-efficacy (Snyder & Fisk, 2016). Likewise, interpreting

physiological stress such as nervousness as normal during a task promotes positive self-efficacy (Snyder & Fisk, 2016). In comparison, attributing nervousness or stress to a lack of ability will reduce self-efficacy (Snyder & Fisk, 2016).

The four sources of self-efficacy are not equal in the creation of self-efficacy (Phan & Ngu, 2016). In a longitudinal study, Phan and Ngu (2016) found that during their first time interval, mastery and vicarious experiences affected self-efficacy more than verbal persuasion and interpretation of physiological and affective states. In the latter parts of the longitudinal study, mastery experiences affected self-efficacy more than the other sources (Phan & Ngu, 2016). Pajares and Urdan (2006) noted similar findings in the study of adolescents where mastery experiences affected self-efficacy more than the other sources. Usher and Pajares (2008), who conducted a critical review of research on sources of self-efficacy in schools, noted that mastery experiences is more evident in predicting self-efficacy than the other sources. In addition, Steyn and Mynhardt (2008) noted that mastery experiences of police officers in South Africa affected the development of self-efficacy more than the other sources. Furthermore, Pfitzner-Eden (2016) concluded the same findings that mastery experiences affect the development of self-efficacy more than the other sources for pre-service teachers.

Teacher-Efficacy

Woolfolk Hoy and Davis (2006) defined teacher-efficacy as the belief a teacher has in their ability to structure, organize, implement, and execute their lessons in a successful manner. Teacher efficacy is the result of a teacher's reflection regarding their

capability of influencing student learning (Bandura, 1997; Woolfolk Hoy & Davis, 2006). Bandura (2006) noted that teachers who possess high self-efficacy tend to create mastery experience for their students. Furthermore, Bandura (2006) elaborated that teachers who possess low self-efficacy tend to undermine their students' cognitive development.

Teachers with high self-efficacy become risk takers who are eager to try new ideas and experimenting with new teaching methods for their students (Bandura, 1997, 2006; Guskey, 1988; Tschannen-Moran & Barr, 2004). In addition, Bandura (1997) suggested that teacher efficacy determines the preparedness a teacher feels when dealing with instructing students. Teachers that demonstrated high self-efficacy in their computer skills had shown positive affects toward applying computer-supported education (Yeşilyurt, Ulaş, & Akan, 2016). Furthermore, Yeşilyurt et al. (2016) concluded that improving self-efficacy, academic self-efficacy, and computer self-efficacy of teachers entering into the field are crucial in developing a positive attitude for using technology in the classroom. However, Pajares and Urdan (2006) cautioned that self-efficacy by itself does not provide the necessary skillsets to become successful. Instead, self-efficacy is the confidence level to undertake challenging tasks (Bandura, 1997).

Allinder (1994), Guskey (1988), and Marzano, Pickering, and Heflebower (2011) concluded that teachers with high self-efficacy tend to be better at planning and organizing lessons, demonstrate greater enthusiasm, and are committed to improving their teaching profession. Marzano et al. (2011) noted that enhancing teacher efficacy shows a positive correlation with classroom management and instructional practices.

Teachers have to believe in their ability to develop challenging academic tasks to encourage student learning (Marzano et al., 2011). Teachers who have high self-efficacy tend to provide better feedback to students (Marzano et al., 2011). Furthermore, Kim and Park (2006) concluded that teachers with high self-efficacy tend to influence student achievement when students learn how to develop their self-efficacy. Ozder (2011) suggested that the teacher's ability to accommodate the various learning styles of students could affect student achievement in a positive manner. Moreover, Marzano et al. (2011) noted that teachers with high self-efficacy are better at accommodating the needs and background of students such as low socioeconomic status, behavioral issues, lack of motivation, and developing English learners.

Dweck (2006) and Ozder (2011) concluded that teachers who have low self-efficacy on their ability to teacher tend to avoid new techniques and methods in their classroom. Furthermore, Dweck noted that low self-efficacy contributes to negative thoughts regarding performance, which hinders the individuals from becoming risk takers due to their lack of confidence. In addition, Bandura (2006) affirmed that teachers with low self-efficacy create stifling classroom environments due to self-doubts that hinder students' cognitive development.

Social Media

Social media platforms allow users to interact with each other and publish content by means of the Internet. Some popular social media platforms consist of Facebook, Pinterest, Instagram, LinkedIn, Twitter, Tumblr, WhatsApp, Kik, iMessage, Snapchat,

and Wickr. The most used social media platform among teenagers (Lenhart, 2015) and adults (Duggan, 2015) is Facebook.

Campbell (2010) detailed Mark Zuckerberg's history of creating Facemash to Facebook. In October 2003, Mark Zuckerberg created Facemash as a Harvard college student during his sophomore year to compare pictures of students. Zuckerberg gave access to Facemash to Harvard students so they could rate one random picture of a student over another. Despite the shutdown of Facemash by Harvard administrators due to a breach of security and invasion of privacy in a few days since its release, half of the students in Harvard had accessed the site.

Campbell (2010) further detailed that Mark Zuckerberg's success of Facemash inspired him to launch Thefacebook in February 2004. Thefacebook allowed its users to search for other people, see friends, visualize their social network, and make their own individualized profile page. Thefacebook had its initial launch geared toward Harvard students before branching out to other colleges across the United States. By 2005, Mark Zuckerberg renamed the site to Facebook and opened registration to anyone with an email address and above the age of 13. Some interactive features added over the years of history of Facebook include items such as gaming, leaving comments, sharing multimedia, and posting an emotional icon in response to a post.

Lapowsky (2014) provided a chronological financial history of Facebook, noting that the company's mobile strategy is the reason for its success. Facebook, which was available exclusively for viewing on a computer system, had embraced mobile

accessibility by redesigning their content to engage smartphone and tablet users in 2012. Facebook has been enhancing the ability for users to individualize their profile page by either developing or purchasing companies to improve the user experience. One such example is its purchase of Instagram, which allows users to share mobile photos. Lapowsky noted Facebook's success with its finances, amount of users, and duration of use caused by its ease of accessibility and new features.

Facebook added new features over the years to its initial feature, the profile feature. The profile feature entails a user or business forming a descriptive page to promote themselves to other users. The second feature of Facebook is its ability to view personalized newsfeeds of their groups, friends, events, and pages. People can respond with a like, emotion icon, or a comment to these posts. Another feature is the ability to send private messages to each other and to view the status of others if they are active on Facebook or have the application on their mobile device. *Facebook Groups* was the next leap of sending private messages, which expanded to encompass more users at the same time. Facebook has also allowed third party add-ons in the form of applications, games, events, and other products.

Nearly1.5 billion people use Facebook as of June 2015 (Facebook, 2015). Facebook is the most used social media site by young adults, wherein 82% of 1,907 individuals surveyed between 18 and 29 use Facebook (Duggan, 2015). In addition, 72% of 1,060 American teenagers surveyed between the age of 13 and 17 make use of Facebook (Lenhart, 2015). The amount of Facebook users has plateaued since 2012 with

72% of online adult users making use of that social media site (Duggan, 2015; Lenhart, 2015). However, 70% of the online adults make use of Facebook on a daily basis (Lenhart, 2015).

Approximately 67% of 3,875 college faculty members use a social media site, which Facebook is the most popular, at least once a month (Moran et al., 2012). Moran et al. (2012) asserted that college faculty use social media more for personal use than for teaching purposes, and they have not made the transition to use social media for instructional purposes. In contrast, Tiryakioglu and Erzurum (2011) suggested that two-thirds of 67 faculty members agreed that a social media tool (e.g., Facebook) has the potential to promote interactions between students and faculty members. Settle et al. (2011) assessed college agriculture faculty's use of social media in education and found that 61.3% out of 232 used some type of social media for instructional purposes.

Göğüş et al. (2012) noted that performance expectancy (perceived benefits of the technology), effort expectancy (ease of use), social influence, facilitating conditions (age, gender, and experience), and computer anxiety influence the acceptance and use of social media by Turkish college professors for learning purposes. Furthermore, Moran et al. (2012) stated that younger college faculty members used social media more often for teaching purposes than older college faculty members. In addition, Moran et al. noted that faculty members who teach natural sciences show the lowest usage rates of social media for teaching, and faculty members who teach humanities and arts show the highest usage rates of social media for teaching. In relation to effort expectancy, Van de Vord

and Pogue (2012) noted that faculty members are hesitant to use online courses in comparison to traditional face-to-face courses because they perceive online courses taking more time to provide feedback.

The use of Facebook with teenagers varies on family income levels and gender (Lenhart, 2015). Teenagers that come from a lower income household make use of Facebook more often than a higher income household does (Lenhart, 2015). Teenagers from higher income households use social media sites such as Snapchat, but some also continue their use of Facebook (Lenhart, 2015). Mazman and Usluel (2011) noted a gender difference, stating that men make contact through Facebook more often than women do. In addition, men are more comfortable when compared to women in using Facebook when communicating with an instructor (Mazman & Usluel, 2011).

The primary purpose of using Facebook is to maintain communication between people (Aydin, 2012). Communication occurs through a private chat, discussion groups, posts on personal profiles, tagging others in pictures or comments, upload video, link to URL, and by "poking" others to get their attention (Facebook, 2015). As a precautionary measure, instructors are encouraged to form new a profile and discussion groups to limit communicating personal information and to maintain focus on group discussions (Hurt et al., 2012).

Understanding how and why teachers use Facebook for instructional purposes adds to the growing body of knowledge of Facebook acceptance (Aydin, 2012). Students who use Facebook as a part of an instructional course participated more often than a

traditional learning management system (DiVall & Kirwin, 2012). For instance, students who enrolled in a university communications class had used Facebook discussions more often than a Blackboard LMS discussion board during a 13-week course (Kent, 2013). In support of these findings, Gray et al. (2010) noted that students found the Facebook interface easier to use than most college LMSs.

VanDoorn and Eklund (2013) surveyed 20 college students who used Facebook as a part of a course and stated that all the participants felt Facebook was an adequate tool to receive feedback from a college faculty. Likewise, Hurt et al. (2012) noted that the level of engagement of 107 college students in classroom discussions were higher when using Facebook over a conventional LMS. Furthermore, Wang et al. (2013) conducted a survey of 130 college students, concluding that students' use of Facebook encourages student engagement by merging the social and academic lives of students.

Using Social Media for Instruction

Friedman and Friedman (2013) suggested that using social media in an online learning context promotes communication, collaboration, creativity, community, and convergence. In addition, Friedman and Friedman noted that communication for social networking sites include the use of student blogs, class wiki projects, Twitter discussions, use of a virtual world, discussion forums, sharing of lecture notes, messaging each other in formats similar to email, and video presentations. The development of collaboration and community occur when students learn how to communicate and work with other (Friedman & Friedman, 2013). Moreover, Students display creativity when they generate

new content by connecting and manipulating information (Friedman & Friedman, 2013). Lastly, Friedman and Friedman noted that convergence occurs when different ideas, roles, and technologies overlap. An example of convergence occurring is when students make use of different technologies to form a multimedia product that has a discussion thread or forum to improve upon the work.

Casey and Evans (2011) used a social media website called NING, which has features similar to Facebook, as a classroom environment, noting that most students mastered the interface except for five to ten students out of 150 students. The instructor set the objectives, goals, and activity for the students; however, the students took the initiative to create discussion groups, engage in discussion groups, and create multimedia products that assists others. At first, the instructor prompted their students to provide constructive feedback toward multimedia products and discussions. Afterwards, students provided constructive feedback themselves without prompting. Casey and Evans concluded that using social media allows students to become active participants in the learning process by supporting and assessing their peers.

Rodrigo and Nguyen (2013) noted that students used NING, a SNS, to submit assignments, read comments and feedback, and look at other students' work as their top uses. Rodrigo and Nguyen concluded that the use of NING is more passive while Facebook, another SNS, allows for more participation that is active. Rodrigo and Nguyen cautioned that some students might be hesitant to submit their assignments for review, fearing that their peers would copy their assignment. Using social media like

Facebook in an educational context promotes active participation amongst students (Rodrigo & Nguyen, 2013).

Furthering the notion that social media promotes active participation, Tung (2013) noted that students take ownership and remain an active participant of their discussion group if they are able to form their discussion topic and group membership. Tung said that students enjoy reading the blogs and posts of their peers despite some concern of being time-consuming. On the contrary, Johnson et al. (2014) noted that students in distance education courses do not want to interact with unfamiliar individuals. Therefore, as a precaution, Croxton (2014) recommended that the instructor balance the learner-learner interactions by creating meaningful student engagement.

VanDoorn and Eklund (2013) noted that students preferred to use the discussion and chat features in Facebook than using the discussion features in an LMS because Facebook allows for quicker responses from the professors. Lampe, Wohn, Vitak, Ellison, and Wash (2011) further elaborated on Facebook social interactions between learner and instructor, noting that it consisted of the learner seeking help from the instructor through a chat feature. Students who actively seek out an instructor on Facebook tend to do so to ask questions pertaining to the lesson (Lampe et al., 2011). In support of this idea, Margerison (2013) determined that teachers benefit from discussion forums because the students have the ability to communicate to each other and not be reliant on the teacher only. Furthermore, Margerison noted that discussion forums are

beneficial to teenagers because they can take ownership over their learning environment, and the discussion forums allow an avenue to exchange ideas.

DiVall and Kirwin (2012) surveyed 123 pharmaceutical students who used an LMS as well as Facebook and found students viewed more course content and participated in discussions more frequently on Facebook than the LMS. Likewise, Settle et al. (2011) noted that online forums were the most popular feature of social media used to post assignments and partake in discussions with peers. Tung (2013) stated that students prefer a SNS to a LMS due to the ability to easily share and discuss ideas with peers. Students who have used Facebook recommend its use for future courses because the students are familiar with its interface (Demirbilek, 2015; McCarthy, 2017; Moran et al., 2012). In support of students who used Facebook, Venkatesh et al. (2012) said that being familiar with a technology might indicate a positive correlation with accepting and using that technology. Escobar-Rodrguez, Carvajal-Trujillo, and Monge-Lozano (2014) surveyed 956 Spanish university students, noting they consider Facebook as a relevant social media platform as a learning tool when they have a habit of using Facebook for individual use.

In addition to chat and discussion features of Facebook to promote learner-instructor and learner-learner interactions (VanDoorn & Eklund, 2013), Wang (2013) noted that students also spent time on Facebook to comment on posts, update status, start projects, and view photos. Furthermore, Wang found that starting projects on Facebook led to a positive correlation to a positive grade in the class. In contrast, some Facebook

activities that were not conducive to receiving positive grades include playing games and using non-game applications (Wang, 2013). Wang concluded that how students use a technology is more important than time spent on the technology in predicting student outcomes.

Demirbilek (2015) gathered the perceptions of students to compare the uses of Facebook to Wikispaces. Demirbilek reported that students had positive experiences with Facebook's ability to compare their work with others and its relative familiarity. The ability to chat with peers on Facebook and share photos of assignments is another perceived benefit held by students (Demirbilek, 2015). A downside of Facebook, as reported by Demirbilek, is that Facebook contains more advertisements than Wikispaces.

The use of Facebook as a tool to communicate between students and an instructor comes with caution (Gray et al., 2010; Teclehaimanot & Hickman, 2011; Turan et al., 2013). Denny (2010) stated that teenagers may not recognize their different forms of writing, and using Facebook requires instructors to employ strategies to teach students how to differentiate between formal and informal writing. Benzer and Gül (2013) surveyed 48 high school students who did not use social networking sites (SNS) as a part of a class and found that most of these students used Facebook, but they do not want to utilize Facebook as a mechanism for learning. Furthermore, Benzer and Gül found that some students do not want to use Facebook for online classes because they prefer to use Facebook for recreational purposes only. Moreover, some students do not find the informal discussion on social media sites as an avenue for learning due to its lack of

formal structure (Chen & Bryer, 2012). Turan et al. (2013) performed a case study to uncover reasons of non-use of Facebook for personal use by college students and found that they lacked interest and thought it was a waste of time. Likewise, VanDoorn and Eklund (2013) expounded on students' hesitation to use Facebook by wanting to keep their personal life away from the instructor and an intrusion of privacy.

Teclehaimanot and Hickman (2011) provided anecdotal evidence that faculty members hold similar viewpoints on privacy concerns. Chen and Bryer (2012) support this notion for privacy concern and further the idea that faculty are cautious of their professional reputation and ratings that may endanger their employment. In addition, Chen and Bryer noted that some faculty members hold concerns of identity theft by having personal information available to the public.

In comparison, Göğüş et al. (2012) noted that some faculty members lacked training on how to integrate social media to overcome their anxiety of using the technology. In regards to a lack of training, Venkatesh et al. (2012) determined that being familiar with a technology indicates a positive correlation with accepting and using that technology. Furthermore, McCole, Everett, and Rivera (2014) cautioned that faculty members have to strike a balance on how to grade the informal discussion responses. Casting the focus of the grade on the quality of posts will result in fewer posts with higher quality; meanwhile, focusing on the quantity of posts will result in more posts but with less quality (McCole et al., 2014). Implementing a training program may ease the

adoption of technology, among other criteria for the adoption on technology (Venkatesh et al., 2012).

Aside from privacy concerns as reasons to avoid the use of Facebook as a part of a class, Hinduja and Patchin (2012) noted that cyberbullying occurs online; though, it is not as frequent to rule out social media from schools. Smith et al. (2008) noted that cyberbullying is less frequent than traditional bullying. Hinduja and Patchin recommended that schools should not rule out social media use because of cyberbullying; however, schools need to develop rules to safeguard against such actions.

Huang and Hsiao (2012) and VanDoorn and Eklund (2013) advised that faculty members who do use Facebook have to remain cognizant of the amount of time needed to respond to posts to maintain a synchronous environment over Facebook. Casey and Evans (2011) noted that using social media to teach online requires some extra time to monitor posts, provide resources for the course, and provide appropriate feedback to the students. In addition, Ocak (2010) noted that faculty members perceived that using blended teaching strategies requires more time and commitment from the faculty. Likewise, Turan et al. (2013) focused on students' perceptions of not wanting to use Facebook as a part of a learning activity, noting that they were not motivated and thought it was a waste of time. Tervakari, Silius, and Kailanto (2013) noted a similar issue that some students miss deadlines caused by their lack of motivation, inability to manage time, and being unfamiliar with the features found on the social media site. Teachers and

students have to remain cognizant that time management is a factor when using social media as a part of an online class.

Friesen and Lowe (2012) noted that Facebook posts are not conducive in promoting analytical thinking where students can debate their points of views. Instead, students exchange good-natured remarks and "like" one another's posts (Friesen & Lowe, 2012). Hurt et al., (2012) recommended that instructors be mindful of creating activities that engage students; otherwise, students may hesitate on making meaningful comments.

Hurt et al. (2012) suggested some ideas to overcome student hesitation on using Facebook to communicate online with the instructor. Instructors should create a profile that is separate from their personal profile and use university-sponsored images (Hurt et al., 2012). Instructors need to be mindful of their online presence, favoring a passive role for the instructors while students engage each other more often (Hurt et al., 2012; Teclehaimanot & Hickman, 2011). In addition, Chen and Bryer (2012) cautioned that discussion posts have to remain informal, absent from teacher review prior to students posting their content. Chen and Bryer noted that discussion forums are not summative assessments for grading purposes; rather, it is a diagnostic tool to facilitate learning.

Summary

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. The study used Vygotsky's (1978) social constructivism and Bandura's self-efficacy as conceptual frameworks for this study, which emphasizes social interactions. Even though social

media was not in existence during Vygotsky's time, the ideas of social constructivism are applicable in online learning as illustrated with examples throughout this chapter. Moreover, this chapter elaborated on the importance of learner-learner and learner-instructor interactions. In addition, there has been discussion on the history of social media and Facebook. The research findings for this study may broaden the understanding of the types of interactions sought by the teachers when using Facebook for instructional purposes. Understanding how and why high school teachers use Facebook for educational purposes may convince other high school teachers to adopt SNS like Facebook into their lesson plans and change current educational practices. Chapter three will consist of the methodology for this study.

Chapter 3: Research Method

Introduction

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. Chapter 3 contains the research questions, research design, and data collection methods. The selection process and context for the participants, my role as a researcher, validity, reliability, and ethical considerations are also described in this chapter.

Research Questions

1. How do high school teachers use Facebook in the context of online learning?
2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?
3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?

Research Design and Rationale

A case study approach provides an in-depth view of why and how some high school teachers use Facebook. The case study approach uses the conceptual framework to focus on interactions taking place on Facebook. The frequency of interactions taking place on Facebook is not studied in this approach. Rather, the intent for this case study approach allows investigation for the reasoning for selecting an activity, documented actions taken throughout the activity, and perceptions of high school teachers who use

Facebook for instructional purposes. Furthermore, this approach draws on multiple sources of data to triangulate the data.

Case Study

A single qualitative case study allows for the exploration of how high school teachers use Facebook activities to promote learner-instructor and learner-learner interactions. Yin (2014) stated that case study methods are used to understand a phenomenon in-depth that is encompassed in contextual conditions where "the boundaries between phenomenon and context are not clearly evident" (p. 16). In-depth descriptions of experiences define a case study approach (Creswell, 2013). In addition, Yin stated that a case study approach explores a phenomenon in a real-world context where collected data report on events that occurred in a certain context. Furthermore, Miles et al. (2014) noted that a case study is a detailed and intensive analysis of an event, situation, organization, or social unit bound in time. Lastly, one criterion of a case study is that it seeks to answer the questions of how and why. The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction.

Criticisms of a case study method include a lack of rigor, uniqueness of a case, time constraints, and a lack of comparative advantage (Yin, 2014). To address these shortcomings, Yin (2014) noted that a case study is strong when it adheres to these four design tests: construct validity, internal validity, external validity, and reliability. In contrast, Stake (1995) said that a thick description that guides the reader is the key to

overcoming these shortcomings. To clarify, Stake applied the four design tests as mentioned by Yin, but greater emphasized rich, thick descriptions. Stake addressed the components of validity in part through triangulation and reliability through thick descriptions.

Yazan (2015) noted differences on case study between Yin (2014) and Stake (1995), which is Yin holding a positivistic orientation while Stake's epistemologies are embedded in constructivism and existentialism. Yazan noted that Yin focuses more on a rigid and systematic design while Stake seeks a flexible design that may change from the design to research phase. Merriam and Tisdell (2016) also compared differences between Yin and Stake, noting that Yin "defines case study in terms of the research process" (p. 37) while Stake focuses on the interpretations of a case. Yazan and Merriam and Tisdell emphasized that Stake's definition of a case is more fluid as the research develops while Yin showed a preferred adherence to a case. Despite these differences, I used Yin's positivistic orientation for this case study because of its clear process for validity and reliability.

Yin (2014) posited four basic types of case studies, which are single-case holistic, single-case embedded, multiple-case holistic, and multiple-case embedded. The differences between these four basic types of case studies depend on the unit of analysis of a case (Yin, 2014). Defining a case for a study is a critical step in performing a case study research (Stake, 1995). The use of a single-case study is justifiable when the case represents a critical test of existing theory, an extreme or unusual case, a common case, a

revelatory case, or serves a longitudinal purpose (Yin, 2014). A multiple-case study depends on the replication of two or more cases to show confirmatory or contrast between the cases (Yin, 2014, p. 57). As a caution, Yin stated that a multiple-case study requires "extensive resources and time beyond the means of a single student or independent research investigator" (p. 57).

A difference between a holistic and embedded design is that a holistic design focuses on the global nature of an organization or program while an embedded design focuses on the subunit level (Yin, 2014). A holistic design allows for flexibility and is applicable either when the theory is holistic in nature or when no identifiable logical units (Yin, 2014). In contrast, an embedded design focuses a case study inquiry and prevents unintended shifts on the original intent of the research itself (Yin, 2014).

For this study, the overall case is the decision-making process to integrate Facebook by high school teachers to promote learner-instructor and learner-learner interactions. The logical subunits of this case are the individual high school teachers. This study will not be a multiple-case study because the high school teachers do not represent separate, individual cases themselves to form confirmatory or contrasting views. Instead, "the objectives is to capture the circumstances and conditions of an everyday situation" (Yin, 2014, p. 52), which meets the rationale for a single common case. Therefore, the variant of case study for this research is a single-case embedded design.

Mixed Methods

I considered a mixed methods approach for this study. Using pre- and post-data could show impact of the administered interventions. Frequencies of activities conducted by the high school teachers could show the tendencies to favor one form of activity over another. This approach would also allow a survey instrument to gather perceptions from more participants. Despite the potential to gather quantitative data for this study, doing so would not be suitable to investigate the type of research questions for this study. Instead, a case study method allows for the exploration of how and why high school teachers decide to use Facebook for instructional purposes in the context of social constructivism. The use of a case study is more amenable to investigate the research questions.

Phenomenology

Phenomenology research describes the commonalities of individuals as they experience a phenomenon (Creswell, 2013). The focus of inquiry in a phenomenology may be emotion, relationship, organization, program, culture, or any other shared human experience that a group may share (Patton, 2015). The researcher typically interviews the participants and brackets their responses into meaningful commonalities (Patton, 2015). A core assumption of phenomenology is that there is a core meaning that the participants mutually understand (Patton, 2015). For instance, if a culture is a defining characteristic of the study, then the researcher approaches the study with an emphasis of the culture. Selecting phenomenology as an approach would not be appropriate for this research

because the focus is not to investigate the lived experiences of a particular set of people in relationship to a phenomenon.

Role of the Researcher

My role as a researcher for this study was to conduct face-to-face interviews and review documented Facebook activities. I am a high school teacher within a large school district; therefore, I will not collect data from teachers within the high school that I work at to avoid any bias. I do not perceive myself to have an influence on teachers in other high schools due to limited contact with teachers in other high schools. As a precaution, I did not seek participants who have known me personally or professionally prior to this research.

Saldaña (2016) and Yin (2014) noted that remaining objective and demonstrating trustworthiness in the data collection procedures can benefit by using a reflective journal and bracketing to identify biases, which I had done. Furthermore, I was open to contrary evidence and adhered to ethical procedures. I collected data in the form of face-to-face interviews and documentation. I recorded and transcribed the individual teacher interviews without the use of a transcribing service. I also analyzed the data using NVIVO 11 software, and I formed conclusions from the data.

I did not collect data until the Walden Institutional Review Board (IRB) and school district grant me permission to collect data. I conducted myself in a professional manner when collecting data. I safeguarded the identity of the participants by using codes in place of names and other identifiers. Furthermore, digital files are stored as

encrypted files on a password protected thumb drive in a locked filing cabinet with any hard copy notes. I will destroy the data after a span of five years, as required by Walden University.

Methodology

Participant Selection Logic

The participants consist of high school teachers who use or have used Facebook as a part of their classroom instruction. The use of Facebook should consist of more than random posts; hence, Facebook activities should incorporate some degree of a classroom structure. The demographics of the high school teachers consist of adults who have received some form of educator certification at some time in order to gain employment with the school district. There is no restriction placed on the teachers by their school district from engaging in social network sites. The purpose of my selection was to understand how high school teachers incorporate Facebook into their lessons.

The sampling method in selecting participants is purposive. Merriam and Tisdell (2016) noted that this non-probabilistic selection is preferred over a random probabilistic sampling method since the researcher wants to gain an understanding from a source where there is much information to learn. Patton (2015) affirmed the need of purposive sampling because it allows the researcher to gain an understanding of their participants' special experience and competence. Furthermore, Patton mentioned that researchers call upon experts who go beyond an average opinion to represent the entire field. In contrast, Yin (2014) cautioned against using the term purposive and references to sampling

because this may reduce the ability to generalize results of the study (p. 44). However, the term purposive is suitable for this study since the selection of the participants are done on purpose because the high school teachers who use Facebook as a part of their instruction will be knowledgeable on what best promotes learner-learner and learner-instructor interactions.

The process began by obtaining a Letter of Cooperation from the Superintendent or designee. The contact information of potential participants came from within the school district via their mass email list. I did not receive the list of potential participants; instead, the school district maintained a list of potential participants consisting of emails of their employees and stakeholders who choose to receive weekly electronic newsletters from the school district. Furthermore, the list of emails remained confidential with the school district until participants emailed me of their interest to participate.

The initial contact to participants came through the mass emailing system provided by the school district after IRB approval. The IRB approval number for this study is 12-06-18-0226637. The school district sends out mass emails on a weekly manner as a general newsletter to its employees and to those who completed a sign-up process to be on this mailing list. The employees were not required to respond to the initial email unless they want to participate in the study. The managers were not be aware of the participants, nor do the managers exert any implied pressure to compel the participation of the employees. Furthermore, the employees did not respond to the initial email, nor was there a tracking mechanism to determine who clicks on the email.

Instead, the initial email instructed the willing participant to notify me via email about their interest to participate. The initial email sent by the school district consisted of the research questions, the background information of the study, participation requirements, procedures, some sample questions, voluntary nature of the study, risks and benefits of the study, payment information, privacy information, expected length of the interview process, requirement to display the Facebook group, my name, and my email address.

Even though all employees received this initial email, I was selective on choosing participants. The participants must have used Facebook for at least three different lessons with students throughout the school year. I confirmed the criterion of using Facebook for instructional purposes during the data collection phase when I documented their Facebook activities.

Furthermore, I declined the voluntary participation of my teacher colleagues who work with me. I did this to avoid any conflict of interest that can result in biases toward me showing favor to my workplace. In addition, declining the voluntary participation from my teacher colleagues from my school limited socially desirable responses from the participants since we are familiar with each other. Hence, I selected teachers from other subject areas or other high schools within the same school district that are not a part of my immediate team of teachers. I ensured that I do not have any personal or professional relationship with any of the selected participants. Due to the geographic remoteness of this school district, a face-to-face interview was not probable for high school teachers in other public school districts since that would require a significant amount of travel time.

I sent a follow up consent form in an email format to the participants who replied to the initial email for their review prior to the face-to-face interview. Since the participants participated in a face-to-face interview, I read the consent form to the participants, and I had the participants sign the consent form prior to the interview session.

Sampling. The sample size in a qualitative methodology serves a different purpose when compared to a quantitative methodology. A quantitative methodology focuses on gathering data to validate a theory while considering alpha, power, effect size, and attrition rates to determine the range of participants (Frankfort-Nachmias & Nachmias, 2008). Quantitative research focuses on attaining a large sample size to represent statistically a population when testing a theory. Qualitative research is not as straightforward as quantitative research for sample size. A qualitative methodology focuses on gathering data to describe a phenomenon until there is a saturation of data (Creswell, 2013). In-depth findings from a few participants outweigh a large sample size with few in-depth details as long as there is saturation in the data.

Qualitative research is posed to provide descriptions to enhance a theory or in creation of a new theory. The results in qualitative research do not statistically represent a population. The process of data collection in qualitative research has to lend itself to credibility, transferability, and dependability of data. Increasing the sample size does not provide an improvement on data collection for these three areas. The findings have to reach saturation, and the results need consistency with a given population.

Qualitative research has many approaches, Creswell (2013) mentioned five types, and Patton (2015) mentioned more than 10 approaches. The variations in qualitative research provide differences in sample size suggestions to reach saturation of data. Yin (2014) stated that sample size is a judgmental choice in case studies, noting that saturation of data is pertinent. Mason (2010) noted that the mean average of case study participants/interviews were 36 with a range of 1-95. Bertaux (1981) and Mason (2010) observed that the minimum participants/ratios should not be less than 15. However, Guest, Bunce, and Johnson (2006) found the occurrence of saturation with approximately 12 participants. Corbin and Strauss (2007) suggested that the researcher should cease the collection of data when the new findings become counter-productive by not adding value to the overall theory development. In addition, Mason noted that large sample sizes are not necessary for a qualitative research so long as saturation of data is obtainable from the population. The notion of saturation is elastic as there is no quantifiable amount that determines saturation.

Yin (2014) stated that a single case with a common case rationale captures the circumstances for an everyday event. For this study, the single, common case is the integration of Facebook to promote learner-instructor and learner-learner interactions by high school teachers. The multiple units of analysis of this case are the individual high school teachers from various high schools who utilize Facebook as a mechanism for student learning. The use of a multiple case study approach might form a comparison between the integration of Facebook amongst the teachers; however, this is beyond the

scope of this study. Therefore, target number of participants was 10 to 12 high school teachers as a goal. This allowed for some attrition of participants during the course of the study.

Interviews

Interviews allow the researcher to delve into the interviewee's perceptions, emotional state, thoughts, and provides the researcher an opportunity to ask follow up questions to capture data that other sources cannot fulfill (Patton, 2015). Interviews are more personal than using questionnaires. Using a questionnaire through email would be convenient over typing up a transcript from the interviews, but the questionnaire through email may take a while to collect information and does not allow immediate probing questions to clarify a statement. Creswell (2013) said that face-to-face interviews allow the interviewer to collect verbal and nonverbal communication. This is advantageous for the interviewer because gestures made by the interviewee might trigger further questioning or need of clarification. Creswell recommended that a comfortable interviewee might share information more freely than an interviewee who is not comfortable.

I emailed and called all teacher participants to determine the best time to conduct the interviews. I conducted the interviews in each teacher's classroom to make the teachers feel comfortable in an environment that is familiar to them. The amount of time for the interview was no more than two hours to allow for documentation of Facebook activities after the questions have been asked. All interviews were scheduled outside of

normal duty hours (after school or on weekends). The time for the interview did not interfere with normal duties such as grading, preparation, and meetings. The interviews were recorded using two electronic recording devices in the event one of the devices fail. Along with the recording devices, I wrote some notes and asked clarifying questions.

Janesick (2011) and Miles et al. (2014) noted that being prepared with structured questions assist the novice researcher. Yin (2014) recommended that the interviewer should use scripted questions or provide guiding information on what questions to ask for a case study approach. Patton (2015) advised that using a structured open-ended interview approach ensures that the participants receive the same question in the same order. This study made use of a structured protocol to guide the interview process. I made use of interview questions that were self-generated to gather information from the one-to-one teacher interviews. The focus of the questions was to gather how Facebook is used to promote learner-instructor and learner-learner interactions.

Creswell (2013), Janesick (2011), and Yin (2014) recommended that the use of a recording device during the interview can eliminate biases, inaccuracies, and frees the researcher to collect other forms of data such as body language and to take notes. I used an electronic recorder to assist me during the face-to-face interview when the participant permits such usage. I brought a backup up electronic recorder with me in case of failure of the first device.

Interview questions for teachers. I generated 17 structured interview questions for teachers that are in alignment with the research questions and conceptual frameworks

(see Appendix A). The first 14 questions relate to how the high school teachers decide to use Facebook as a part of their instructional practices that promote learner-learner and learner-instructor interactions. Some questions deal with Vygotsky's (1978) concept of scaffolding since this could influence the types of interactions. The last three questions relate to accomplishments and failures faced by teachers when integrating Facebook activities to promote learner-instructor and learner-learner interactions. These questions pertain to the strengths and weaknesses of their assignments, the design of Facebook, or a combination of their thoughts. Bandura's (1997) self-efficacy is evident in the questions based on teachers sharing their mastery experiences when they state their thoughts on what were successful and unsuccessful Facebook activities. The teachers received these 17 questions at least one day in advance to reflect on the questions. Some of these questions serve as prompts so that I may ask for clarification and use probing questions to allow the teacher to elaborate on the responses.

Documentation of Facebook Activities

This case study will use Facebook activities as a source of data. Facebook allows many opportunities for interaction. The Facebook activities conducted by the high school teachers may include, but not limited to, posts, comments, likes, private chat, chat groups, uploading of multimedia, and sharing of links. In addition, the Facebook activities maintain a log of all interactions, so this allows a review of learner-learner and learner-instructor interactions.

I used a checklist to aid the documentation process (see Appendix B). This checklist consisted of Facebook features that the participant used to establish and maintain learner-learner and learner-instructor interactions, as mentioned throughout the interview. Examples of these interactions varied on the type of tools used on Facebook but may include posts, links, group chats, and other type of media. Moreover, the Facebook activities mentioned by the participant during the interview received a description of assignments used. The participants reviewed this checklist. Then, as a part of validation of the data, I asked the participant to show some of their activities and assignments.

I asked the teachers, to the extent that they are comfortable, to login to their Facebook account to show me some of their activity in regards to using Facebook as a part of their instruction. The viewing of their Facebook use occurred during their interview time by asking the participant to transition from the interview to displaying their Facebook use. I viewed the documented activities as the teacher scrolls through their content and explains the activities to me. As I document the Facebook activities with the participant on what they used, I wrote down their statements as they explain the activity.

For Facebook features that show learner-learner or learner-instructor interactions, I asked that I take a screenshot using the print screen button on the keyboard. I blurred usernames, pictures, and other identifiers on these screenshots after I have rephrased any dialogue and summarized the event. I did not use unmodified screenshots since it

contained identifiers where group participants can identify each other. These Facebook activities helped to triangulate and validate the statements on how teachers integrated or promoted interactions that support their lesson.

The documented Facebook activities provided data to illustrate what features of Facebook the participants used to build interactions. The classification of these activities formed into the categories of learner-learner and learner-instructor interactions. While the participants showed their uses of Facebook, the participants elaborated on what led them to choose that type of activity. Furthermore, the participants shared what they thought were the strengths and weaknesses of the Facebook features that they used for their activities. This is in line with the first research question of what factors influence the high school teacher's decision on selecting Facebook activities to promote learner-learner and learner-instructor interactions.

The documented Facebook activities and clarifications by the participants at this data collection stage relate to the interview questions found in Appendix A. These Facebook activities and clarifications validated the interview responses given by the participant and added to their responses. For example, showing a Facebook activity that corresponded to a lesson furthered the discussion of what activities first came to mind.

Facebook does not allow any downloading of information from its website for group settings, nor does it allow the export of individual chats. The use of a Facebook Application Program Interface (Facebook API) does allow for the downloading of pictures and videos that a user has uploaded, but this is not relevant for this study since

discussions, even group discussions, are not a part of the download package. Therefore, viewing Facebook activities can only occur through a logged in account. Rather than creating an account for myself in every group, the viewing of Facebook posts was limited to items shown by the high school teacher participants.

The information gained by reviewing documented Facebook activities through teacher accounts come with some precautions to comply with the IRB requirements. Teachers have to be comfortable to share their Facebook account for examination. I omitted usernames and private communications, from the study. In addition, I took precaution to remove all information that can identify an individual. I paraphrased posts on Facebook as to hide the identity of the original author. The information gathered complied with the IRB process on collecting information.

Data Collection Procedures

The focus of this case study was to explore how Facebook is used for learning activities that promote learner-instructor and learner-learner interactions. One-to-one interviews with teachers and documented Facebook posts were sources of data for this case study. The interviews and documentation of Facebook activities lasted no more than two hours and occurred in locations familiar with the participants. These interviews commenced at least a month into the school year to ensure some student exposure to the teaching practice. I used two recording devices during the interview process in case one device fails. In addition, I took notes during the interview in a field notebook of the participant's mannerisms and emotional expressions, and I bracketed any of my biases

onto the same field notebook. Furthermore, I used a checklist (see Appendix B) to keep track of lessons and topics per Facebook activity.

I transcribed the interviews by listening to the audio recording. Furthermore, I allowed the participants to check for accuracy of the transcription within a week of completing the transcription. I did not make use of a transcription service, nor did I use transcription software.

I asked the high school teacher participants to demonstrate their Facebook activities that promote learner-learner and learner-instructor interactions by having participants login into their Facebook accounts. I viewed the Facebook posts of the participants as a source of data to validate their statements made during interviews.

Since I had a limited time with the participant and their access to the Facebook posts, I sought permission to take a screenshot of Facebook features that promote learner-learner and learner-instructor interactions. I stored the screenshots onto a flash drive until analyzed. Then, I omitted the names of the participants on the screenshots immediately after I have paraphrased any dialogue, omitting any identifiers of the individuals involved.

After the interview and viewing of the Facebook features that promote learner-learner and learner-instructor interactions, I thanked the participants. This included a thank you letter. In addition, I ensured that I gathered an updated contact information from the participants so I can contact the individuals to verify the transcription for accuracy.

Data Analysis Plan

I transcribed the interviews from the electronic recordings by typing responses verbatim. I did not employ a transcription service, nor did I use transcription software for this process. I checked for errors by replaying the recording as I read the transcription. Once I completed the initial transcription, I asked the participants to review their section for accuracy. Once the participants have verified the transcription, I began the coding process with the assistance of NVIVO 11 software. Yin (2014) cautioned against using software for the coding process for new researchers because of its level of difficulty. Despite Yin's (2014) caution against new researchers using coding software, I will still made use of NVIVO 11 because it is an intuitive software.

Saldaña (2016) concluded that researchers conducting a case study approach use primary coding. For this study, I used the following primary coding for data collected through interviews and the documented Facebook activity: attribute, evaluation, values, and in vivo.

Attribute coding consists of basic descriptive information of the participants, inclusive of demographics, characteristics, fieldwork setting, and other variables of interest (Saldaña, 2016). Attribute coding is appropriate for all qualitative studies and, in particular, studies that have multiple participants and sites (Saldaña, 2016). For this study, I had multiple participants, and their demographics and content area appeared different. Therefore, I coded using attributes of the participants and their uses of Facebook.

Next, I coded using evaluation coding. Evaluation coding assigns judgments regarding the merit or worth of a program or policy (Saldaña, 2016). This is particularly useful in coding the responses of the participants when gauging their thoughts on the quality of learner-learner and learner-instructor interactions, which is the second research question. If the recorded responses from the participants show judgment, then it also received an evaluation code.

Similar to evaluation coding, I made use of value coding. Value coding reflects the participant's values, attitudes, and beliefs through their perspective (Saldaña, 2016). This enabled me to identify the attitudes of the participants on the features of Facebook that promote interactions.

The last coding style that I employed is in vivo coding. The use of in vivo coding means that I used words or short phrases from the participant and make that into a code (Saldaña, 2016). Saldaña (2016) noted that this style of coding is appropriate for all qualitative studies, and it is more appropriate for beginning researchers who are learning how to code. Certain explanations or phrases from the participants may not readily fit into the other types of coding; therefore, I coded those responses using in vivo.

Saldaña (2016) recommended that researchers reflect on the first cycle coding prior to using a second cycle coding method. One such recommendation is to undergo a code mapping process. Code mapping entails the analysis process of how codes get categorized (Saldaña, 2016). The codes underwent rearrangement several times until they fit into categories. Then, the categories formed central themes or concepts.

Furthermore, this process provided a summary of the study. I assessed my coded data by reorganizing them until they fit into categories and themes by using the code mapping process. At this level, categories are refined until major themes develop from the data (Miles et al., 2014).

Issues of Trustworthiness

Yin (2014) and Merriam and Tisdell (2016) mentioned that the quality of research design could be judged on its handling of trustworthiness, credibility, confirmability, and data dependability. Several aspects of this research design address these areas. Triangulation through the use of multiple sources of data, elaborate descriptions, coding, and a reasonable development of themes contribute to the trustworthiness of this research design.

Credibility

Identifying patterns, establishing causal relationships, and using multiple sources of data addresses credibility, which is also known as internal validity (Yin, 2014). The use of multiple sources of data allows for comparing and crosschecking ensuring that inferences are correct (Merriam & Tisdell, 2016; Yin, 2014). This study made use of data from interviews with high school teachers who used Facebook for instructional purposes and through documented Facebook activities by these teachers. Furthermore, the selection of the participants allowed for diversity since they may not be teaching the same content. Spending adequate time on the data collection process where I purposely looking for variation in the understanding of the phenomenon added to the credibility of

the research (Merriam & Tisdell, 2016). The committee members throughout this process lent themselves to a peer review process, which is yet another strategy to address credibility (Merriam & Tisdell, 2016).

Transferability

Transferability, also known as external validity, occurs when a study's findings apply to a larger population when generalized. Forming a description on the participant's demographics add to this study's transferability. Including samples of participant's responses into the study further transferability. Merriam and Tisdell (2016) said that providing sufficient, detailed descriptions allows the reader to compare this study's context with their situation. Hence, I provided detailed descriptions in my notes when reviewing documented Facebook activities and throughout the coding process.

Dependability

Triangulation and maintaining an audit trail enhanced the dependability of this study, which is a qualitative counterpart to reliability. I kept track of the methods, procedures, and decisions throughout the study. This means that when I analyzed the data, I provided sound reasoning behind my choices on the treatment applied to the codes when categorizing.

Confirmability

Confirmability refers to the degree that others can confirm the results. Merriam and Tisdell (2016) noted that confirmability occurred when the results are consistent with the collected data. Therefore, I allowed the participants to check for accuracy of the

transcription within a week of completing the transcription. In addition, I made use of an audit trail to maintain confirmability. Furthermore, I reflected on my progress from time to time to see if I introduced bias, which is another way to address confirmability.

Ethical Procedures

Reports coming out of this study did not share the identities of individual participants. I did not share any details that might identify participants, such as the location of the study. I did not use personal information for any purpose outside of this research project. I kept data in the form of field notes and recordings in a locked filing cabinet. I stored digital files as encrypted files on a password protected thumb drive in the same locked filing cabinet. Codes replaced names and any identifiers throughout the transcription process and with any notes that I took. Pseudonyms replaced names during the narrative write up. I will keep data for a period of at least five years, as required by the university.

The nature of the study is voluntary and the participants provided their informed consent. Miles et al. (2014) suggested that bias could be reduced by conveying the conceptual framework to the participants, so I conveyed this to the participants. The purpose of the study, amount of time, and plans for using the results was disclosed to the participants upon the interview process. The participants retained the right to stop the interviews at any time with no consequences or questions asked. Participants who withdraw from the study, cease the interview process, refuse recording of the interview, or limit sharing of their Facebook activities would not have had an adverse effect on the

study because another participant could replace them. If there were insufficient usable data from the limited interactions due to the participant withdrawing from the study, then I would seek another participant until the research has sufficient saturation. To maintain integrity, I planned to report any adverse actions in the findings and conclusions of the study. Since there were no adverse actions, such reporting was not necessary. I did not approach any of the participants until I received all institutional permissions, including Walden's IRB approval.

Participants did not receive any incentives to taking part in this study. Instead, the participants received a letter of appreciation along with a brief two to three page summary of the study.

Summary

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. The study took place within a school district within the United States. This qualitative research employed a case study approach using interviews of teachers and data from Facebook activities to determine how teachers use Facebook for instructional purposes. The participants consisted of 10 high school teachers for one-to-one interviews. The data was coded using descriptive coding and In Vivo coding methods in NVIVO 11 software. Making use of detailed descriptions, triangulation, and an audit trail ensured reliability and validity of the research findings. The research findings for this study may broaden the understanding of the types of interactions sought by the teachers when using

Facebook for instructional purposes. Understanding how and why high school teachers use Facebook for educational purposes may convince other high school teachers to adopt social network sites like Facebook into their lesson plans and change current educational practices. Chapter four consists of the data results from this study.

Chapter 4: Results

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. The conceptual framework for this study, which includes Vygotsky's (1978) social constructivism, particularly in relation to learner-learner and learner-instructor interactions and Bandura's (1997) self-efficacy form the basis of the research questions. These research questions build on the understanding of social interactions when instructors use Facebook in the context of online learning. The research questions are as follows:

1. How do high school teachers use Facebook in the context of online learning?
2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?
3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?

The organization of this chapter is set in the following order: Setting, Demographics, Data Collection, Data Analysis, Evidence of Trustworthiness, Results by Research Question, and a Summary of the Data.

Setting

With the approval letter to collect data in the school district and IRB approval, the school district distributed my teacher invitation letter via email using their monthly

newsletter. High school teachers received a follow up email consisting of my teacher invitation. Sixteen high school teachers showed interest in becoming participants by either sending me an email or calling me to schedule the interview. However, only 10 could confirm their availability to meet after school in their classrooms. I called each participant to schedule a meeting time in his or her respective classroom. I conducted a one-time face-to-face interview with these 10 participants individually. I was able to interview seven of the participants during April 2019 to May 2019 at the end of the 2018-2019 School Year. The other three participants kept rescheduling until we met toward the end of August 2019, which was the start of the new 2019-2020 School Year. All the face-to-face interviews occurred on separate days and after school hours in the respective high school teachers' classrooms when no students were present.

Four participants had to reschedule due to unanticipated delays. All public high schools end near the same time, including the high school where I teach. The dismissal procedures at each high school are different and some affect the parking area for guests. The school buses and pickup line for students had priority over guest parking since the buses occupy the parking area during school release. In addition, I had to sign in the main office as a guest after being able to park. One participant's classroom was at another side of campus, which was another delay that I had not anticipated. In all, the four participants rescheduled their individual meetings because I did not factor in the transition times, which caused them to wait 30 to 45 minutes. Each of the four participants called me on the day of their scheduled interview day to reschedule to

another day to accommodate the full interview time because I did not account for this transition period. Nonetheless, I was able to reschedule for an interview time and complete the interview with these four participants when time permitted. The other six participants of the study had no issues waiting afterschool in their own classroom for the interview.

The individual face-to-face interviews and review of the documented Facebook activities occurred in the respective classroom of the participants after school. Making use of each respective participant's classroom placed the participants at ease since it was a familiar environment. In addition, the participants used either their desktop or laptop to login to Facebook.

Each of the school sites place restrictions on the use of Facebook within the classroom, as reported by the participants, so the use of Facebook came by either using a mobile hotspot through the participants' cell phones or a virtual privacy network to circumvent access restrictions. This use of a mobile hotspot was also the method applied by the participants to enable their students to participate in Facebook activities for those students that did not have access to the Internet on their phones.

Demographics

All participants except for one had over a decade of teaching experience. The ethnic background of the participants were Chamorro, Filipino, a combination of Chamorro and Filipino, and Asian. These ethnic backgrounds of Chamorro, Filipino, and a mix of these two ethnicities represent the vast majority of the employees of the school

district (Fernandez, 2019) and the island of Guam. All participants are certified teachers with at least a bachelor's degree. The subject areas represented by the participants comes from the following subject areas: English, social studies, and science. Specific details regarding the years of experience and level of certification may expose the identity of the participants because personnel information for government employees are publicly accessible, so this information will remain vague. In addition, pseudonyms replaced the participants' names as found in table 1 below that lists the demographics of the participants.

In order to be a participant in this study, the teacher invitation letter stated that the participants must have integrated Facebook for at least three different lessons and be able to demonstrate its use. All participants integrated Facebook throughout the school year for at least three lessons. Two participants integrated Facebook in their classroom instruction for more than three years. Three participants integrated Facebook for two to three years in their classroom. Three participants integrated Facebook in the classroom for one year. Two participants integrated Facebook less than one year; though, they at least had three different lessons of integration. Of the 10 participants, eight of them were male teachers and two were female teachers. Table 1 summarizes the demographics of the teacher participants.

Table 1

Demographics of Teacher Participants

	High school teacher participants	Gender	Subject Area	Years of experience with Facebook in the classroom	Years of teaching experience
1	Mr. Smith	Male	English	2-3	10+
2	Mr. Johnson	Male	Social Studies	1	10+
3	Mr. Williams	Male	English	2-3	10+
4	Mr. Brown	Male	Science	2-3	10+
5	Mr. Jones	Male	Social Studies	> 3	10+
6	Mrs. Miller	Female	Science	< 1	10+
7	Mr. Davis	Male	Science	1	7
8	Mrs. Garcia	Female	Science	> 3	10+
9	Mr. Rodriguez	Male	English	1	10+
10	Mr. Wilson	Male	Social Studies	< 1	10+

Data Collection

I used two sources of data for this study. I collected data from face-to-face interviews with the participants, and I documented their Facebook activities that demonstrated learner-learner and learner-instructor interactions. I used a list of interview questions (Appendix A) to facilitate the face-to-face interviews. For documenting the Facebook activities, I used a checklist with space to describe the assignment and type of interaction (Appendix B) and collected screenshots of activities that the participants showed me. Collecting data from 10 high school teacher participants enabled an in-depth exploration of how high school teachers integrate Facebook activities for instructional

purposes. In addition, I explored the accomplishments and failures that the participants experienced when integrating Facebook for instructional purposes.

The participant selection process began after receiving a letter of cooperation from the school district and IRB approval. The school district sent an email and a follow up email via high school principals to their respective high school teachers. The emails contained my teacher invitation that entailed the nature of the study, requirements to become a participant, and how the high school teachers can contact me if they wanted to participate in this study. The emails directed the interested participants to make contact with me and not to reply to the emails. Upon receiving communication from the interested high school teachers, I sent the participants a consent form, a list of interview questions (Appendix A), and a list of Facebook activities (Appendix B). Each participant provided a preferred interview time and date for the interview that occurred in his or her classroom.

Interviews

I conducted individual, face-to-face interviews with each participant using a list of interview questions that aligned with the three research questions (Appendix A). The interviews lasted 30 minutes to an hour in the privacy of the participant's classroom after school hours. I reviewed the consent form with the participant, allowed time for any questions, and I asked the participant to sign the consent form before proceeding with the questions. I informed the participants that the interviews were recorded digitally using a microphone attached to a computer and through a microphone on a mobile phone.

Furthermore, I reminded the participants that they could end the interview at any time without retaliations or repercussions. The interviews occurred using structured questions. When the participant stated the feature of Facebook that they used, I asked follow up questions according to the scripted questions. After transcribing the interviews, I asked the participants to conduct a member check on their transcribed interview where the participants review their transcription for accuracy and credibility. All participants responded with no changes to the accuracy of their respective transcription within a week of receiving it.

Documentation of Facebook Activities

At the end of each face-to-face interview, I asked the participant to validate his or her integration of Facebook activities with me as mentioned during the interview. I used a checklist with space to describe the assignment and type of interaction (Appendix B) during the interview and the review of documented Facebook activities. The checklist helped me keep track of what activities the participant mentioned during the interview. In addition, the checklist enabled me to document Facebook activities not mentioned during the interview once I saw its integration. Furthermore, I collected screenshots of the activities.

The participants controlled access to their Facebook activities. They logged into their Facebook account and provided me access to view the content as I sat beside them. Mrs. Miller scrolled to a Facebook page that she set up for her class while the other participants scrolled into their groups that represented each class period. A difference

between a page and a group is that a page is publicly viewable while a group is viewable to whomever the administrator allows into the group. Each participant displayed the activity and interactions as discussed during the interview. The participants used their personal Facebook page to log in and they did not want me to peruse through their account unsupervised. Hence, the participants remained in control of their Facebook access. I was able to the view the documented Facebook activity as long as the participant remained logged in on their Facebook account.

Because I had a limited time with the participants and their access to the Facebook posts, I sought permission to take a screenshot of the Facebook features that promote learner-learner and learner-instructor interactions. I stored the screenshots onto a flash drive until analyzed. Then, I edited the screenshots to leave out any names immediately after I have paraphrased any dialogue, omitting any identifiers of the individuals involved.

The documentation of Facebook activities began when the participant would either enable a virtual privacy network (VPN) on their computer or enable a hotspot on their mobile phone to connect to Facebook. The participants stated their school site blocked access to Facebook, so using a VPN or a hotspot enabled them to bypass their school's firewall. Then, the participant would login onto their Facebook account. Nine of the participants used their personal Facebook account, and they accessed the classes that were set up as groups by class period. Mrs. Miller created an account that was separate from her personal account that students visited for updates.

I took note of the participants' Facebook activities to corroborate their interview responses. Once the participants had their Facebook group or page accessible for my review, I asked the participants to show the integration of Facebook activities that they mentioned during the face-to-face interview. I validated the participants' use of Facebook by reviewing their documented Facebook activities mentioned during the interviews, which I tracked by using a checklist (Appendix B), by checking to see if the activity corresponded with one another. Table 2 consists of a breakdown of Facebook features mentioned by the participants during the interview process and validated by their corresponding Facebook activities. I validated all activities that the participant mentioned during the interview when I reviewed their Facebook activities.

Table 2

Facebook Activities Used by Participants

Facebook Feature	Mr. Smith	Mr. Johnson	Mr. Williams	Mr. Brown	Mr. Jones	Mrs. Miller	Mr. Davis	Mrs. Garcia	Mr. Rodrique	Mr. Wilson
News Feed	X	X	X	X	X	X	X	X	X	X
Wall and status updates	X	X	X	X	X	X	X	X	X	X
Timeline	X			X					X	
Pages						X				
Groups	X	X	X	X	X		X	X	X	X
Comments	X	X	X	X	X	X	X	X	X	X
Messages and inbox (Messenger)	X						X	X		
Notifications										
Likes and Reactions	X	X	X	X	X		X	X	X	X

(table continues)

Facebook Feature	Mr. Smith	Mr. Johnson	Mr. William	Mr. Brown	Mr. Jones	Mrs. Miller	Mr. Davis	Mrs. Garcia	Mr. Rodriqu	Mr. Wilson
Events					X			X		
Facebook Questions/Polls			X				X	X		
Photos	X	X	X	X	X	X	X	X	X	X
Videos	X	X	X	X	X	X	X	X	X	X
Live Streaming					X				X	
Poke and Greetings	X									
Subscribe					X					
Tagging people				X	X			X		X

All the asynchronous interactions on Facebook started when the participants posted a prompt, picture, video, a link, or other resources that the students can see. The participants would make a general announcement during class time to have their students check the Facebook group or page for an assignment after school. The directions from the participants varied, but they all instruct the students to respond to the post and to each other. Their students had a deadline to post their responses, and these responses occurred outside their regular class time. The earliest date of Facebook integration as a class activity spanned from March 2010 to November 2010 when Mr. Jones asked his students to engage the community by using Facebook to campaign for a social cause. This activity began at the end of one academic school year and resumed with a different set of students for the following academic school year. He asked his students to share a petition, tag community leaders, and spread the word of their social cause. Mr. Jones

kept track of each student by way of how many shared the petition and how many community leaders he or she tagged. Figure 1 is a sample of what one of Mr. Jones's student shared based on the assignment.

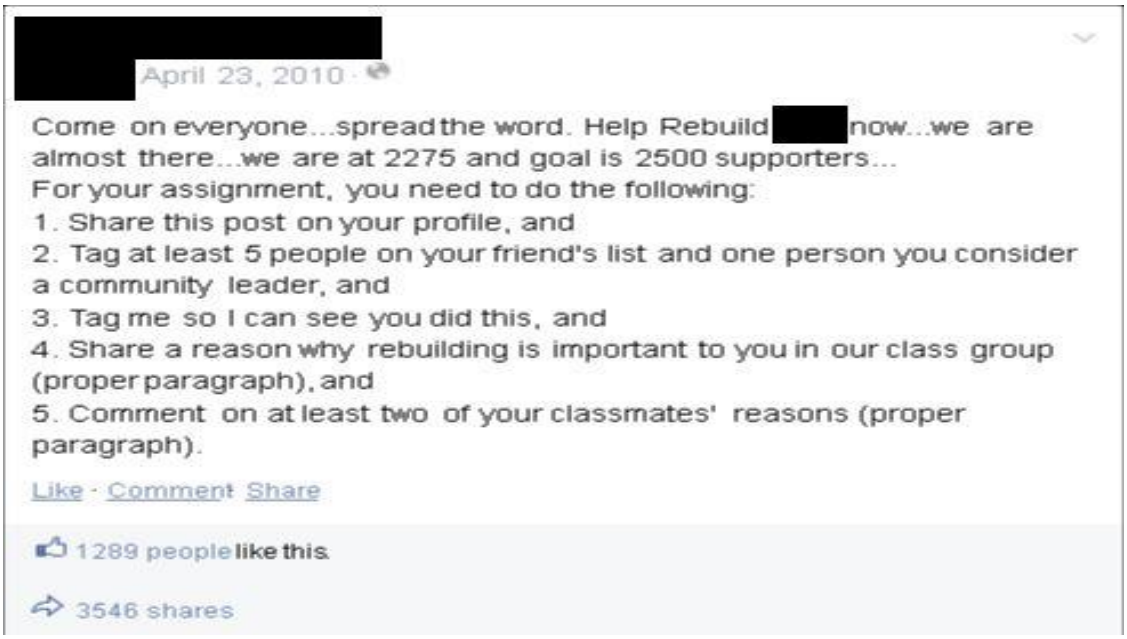


Figure 1. Earliest assignment given by Mr. Jones.

The most recent assignment given was by Mrs. Miller, which was on April 2019. She posted a prompt that instructed the students to read a passage on a website for naming chemical equations and to observe a video on YouTube. The prompt further instructed students to write a reflection and comment on two of their peers. Previous assignments from Mrs. Miller had similar characteristics where a prompt instructed students to review a material, write a reflection, and leave comments for their peers.

Data Analysis

Interviews

I used NVIVO 11 software to assist in the coding process. I used the following primary coding for data collected through interviews and the documented Facebook activities: attribute, evaluation, values, and in vivo. Saldaña (2016) noted that attribute coding consists of basic descriptive information of the participants, inclusive of demographics, characteristics, fieldwork setting, and other variables of interest. I used attribute coding to establish demographic information on the participants. Furthermore, I used this coding to sort types of activities used by the participants. Table 3 shows types of activities on Facebook that each participant stated during the interview process and showed during the Facebook documentation process.

Table 3

Attribute Coding on Types of Lessons on Facebook Mentioned During Interview

High school teacher participants	Types of lessons on Facebook
Mr. Smith	Teacher sharing resources (articles, videos, pictures) with students to improve grammar Students sharing resources on major themes of British literature Students debating viewpoints on major themes of British literature
Mr. Johnson	Teacher-led class discussions on current events Class discussion on historical events with shared resources Student-led discussions on their assigned era
Mr. Williams	Class discussions on current events Class discussions on the evolution of literature Students comparing online resources to their textbooks

(table continues)

High school teacher participants	Types of lessons on Facebook
Mr. Brown	Flipped classroom concept Students' participation on service-learning events Students' responses to classroom resources (videos and pictures)
Mr. Jones	Students' analyze public comments on current events Evaluate public sentiment Community engagement activities and planning Livestream cultural exchange sessions
Mrs. Miller	Teacher sharing resources (videos and class notes) with students Teacher sets reminders for tests and due dates Students sharing links to a project done on an online resource (timeline)
Mr. Davis	Students sharing their research on uses of elements on the periodic table Students posting group video project to the class Teacher-student tutoring over Facebook Messenger
Mrs. Garcia	Students' participation on service-learning events Students sharing science fair ideas Teacher sharing resources (articles, videos, pictures) with students
Mr. Rodriguez	Students reflecting on American literature passages Students peer editing written assignments Students share and comment on American literature viewpoints
Mr. Wilson	Teacher-led class discussions on current events Student-led class discussions on current events Students' participation on service-learning events

The next type of primary coding process used were evaluation coding and value coding. Saldaña (2016) mentioned that evaluation coding assigns judgments regarding the merit or worth of a program or policy. In addition, Saldaña noted that value coding reflects the participants' values, attitudes, and beliefs to represent their perspective or worldview. For this study, this entailed coding the responses of the participants on the quality of learner-learner and learner-instructor interactions and their viewpoints on

features of Facebook as either a positive or a negative sentiment. For instance, Mr. Smith stated,

> And then that's when it got crazy, was just going to each group and just like, okay, I gotta check this group. And you know, I had a, my spreadsheet split, my screen on my spreadsheet open on one side, uh, Facebook on the other side, and I'm just back and forth. So, you know, it was a lot of it was, it was new. So organization definitely would have to be, uh, uh, one of those challenges. Sometimes you're on, sometimes you're, you're off.

Mr. Smith viewed the organization structure of Facebook as a negative for grading. He had to switch between screens showing discussions on Facebook and a spreadsheet of students' names to keep track of grades. I coded this response as "difficulty to keep track of frequency and quality of student responses for grading." On another instance, Mrs. Garcia said,

> Using Facebook to keep track of service [learning] events like Coastal Clean Up helped a great deal. If a student shows up late to an event where I'm in the field cleaning, I don't have time to stop what I'm doing for each one that shows up late. I just can't, so what I do is, is I have them take a picture with their phones, and they all have one these days. Then to remind myself to give them a grade later, I have them post that picture onto our class group on Facebook. This is great because it also encourages others to see the service-learning event and participate in the next one.

Mrs. Garcia experienced two positive features of integrating Facebook in her class. The first instance was using Facebook to keep track of students' participation in a service-learning project by having them post pictures onto Facebook. I coded this response as *students documenting involvement through pictures*. The second instance occurred when students encouraged their peers to participate in other service-learning events. I coded this response as *students encouraging other students*.

Some of the coding that I used is a simplification of the statements made. For instance, Mr. Williams stated,

> One of the greatest fears before for me is starting a unit or doing some sort of instruction set of instruction using this sort of a platform has been, again, bypassing that, that professional relationship and sometimes students, they, I, in the last three weeks, it seemed to me that the students have become so comfortable online with me that, that they forget that their instructor and some of the things they share with me or some of the comments they make are not, they're not, I'm trying to tactful here. They're not a professional, you know. Sometimes I see profanity, which is something I frown upon in class. They, they share things that otherwise really should be peer to peer and not peer to teacher. And, some of the materials and they share, although exciting and interesting and a lot of ways there's not to make for, for professional interaction solely on, on the basis of language used the materials. For example, I wouldn't want a very nearly explicit picture to be used in any one of my Facebook posts. I don't want any music than

> has a profanity as part of their lyrics that because from a professional standpoint I'm accountable for the sorts of things that I, that I make available to my students. And when I accept them as friends into my classroom on Facebook, I, I'm accepting everything that comes along with it. So setting the parameters for the, for the type of material that they share, setting the parameters for, for the, the language that is acceptable and what is not has to be a very, very strong and a very important part of setting up a structure like this. And that's something I realized belatedly and, and next school year when I, when I implement something like this, that has to be a very important part of starting it out with them at the beginning of the school year setting those parameters. It's your classroom rules having it online.

Mr. Williams raised several issues. He started with the concern that the dialogue between him and the students have become less professional. Mr. Williams raised concern that it would be easy for students to use profanity, share suggestive images, and share some music that contained profanity. He noted that he will inforce his classroom rules at the beginning of next school year to maintain professionalism. I coded this passage as *hard to maintain professionalism*.

Table 4 consists of the coded positive and negative sentiments from the participants on their integration of Facebook activities. I reached saturation of sentiments when I saw no new sentiments.

Table 4

Positive and Negative Sentiment on Facebook Integration

High school teacher participants	Positive Sentiments	Negative Sentiments
Mr. Smith	Ease of uploading content by teacher and students See popular comments with likes and comments Student engagement, better than face-to-face Messenger for one-to-one assistance Students sharing material	Difficulty to keep track of frequency and quality of student responses for grading Some students lacked Internet access Need to allow for time for discussions Approving students into the groups Lack of focus in discussions Lack of training Other LMS easier to use
Mr. Johnson	Ease of uploading content by teacher and students Student engagement, better than face-to-face Ease of sharing current events from news organizations	Lots of advertisements Some students lacked Internet access Some students lacked an electronic device to get online Some students dominating the discussions Discussions veer off topic Other LMS easier to use
Mr. Williams	Ease of setting up groups to represent classes Ease of sharing current events from news organizations Ease of uploading pictures and videos Covered a lot more content High level of student engagement Easy to incorporate polls	Lack of training Privacy concerns Hard to maintain professionalism

(table continues)

High school teacher participants	Positive Sentiments	Negative Sentiments
Mr. Brown	Students view resources at home Engaging content Students documenting involvement through pictures Immediate response Timeline of learning activities Student engagement, better than face-to-face Easy to incorporate polls	Difficulty to keep track of frequency and quality of student responses for grading Discussions veer off topic Privacy concerns Some students lacked Internet access Some students lacked an electronic device to get online
Mr. Jones	Interact with other classes through livestreams Evaluate public sentiment See popular comments with likes and comments Student engagement, better than face-to-face Create social change by engaging community leaders in discussion Ease of sharing current events from news organizations Distance learning for those out sick (long-term) Immediate response	Students described Facebook as old people social media Students hesitant to use Facebook Privacy concerns School blocks access
Mrs. Miller	Ease of uploading pictures and videos by teacher	Other LMS easier to use Lack of training Privacy concerns School blocks access Some students lacked Internet access Some students lacked an electronic device to get online Some Students hesitant to use Facebook Unable to track student usage Used Facebook as a page instead of a group Receiving student work is unorganized

(table continues)

High school teacher participants	Positive Sentiments	Negative Sentiments
Mr. Davis	Student engagement, better than face-to-face Ease of uploading pictures and videos by teacher and students Student engagement, better than face-to-face Most students have electronic devices Most students familiar with Facebook Student-led discussions	School blocks access Discussions veer off topic Lack of training
Mrs. Garcia	Students documenting involvement through pictures Students encouraging other students See popular comments with likes and comments Student engagement, better than face-to-face Ease of uploading content by teacher and students Easy to incorporate polls Messenger for one-to-one assistance	Lack of training School blocks access Privacy concerns Difficulty to keep track of frequency and quality of student responses for grading
Mr. Rodriguez	Student-led discussions Engaging content Covered a lot more content Ease of uploading content by teacher and students Timeline of learning activities Interact with other classes through livestreams	School blocks access Privacy concerns Lots of advertisements
Mr. Wilson	Immediate response Students documenting involvement through pictures Ease of sharing current events from news organizations	Difficulty to keep track of frequency and quality of student responses for grading Other LMS easier to use

The last primary coding process that I employed was in vivo coding. According to Saldaña (2016), in vivo coding assigns a code to words or short phrases from the participant. I started this process by using NVivo 11 software to look for word frequency for all participants, omitting words less than three characters and using stemmed words, e.g. talk, talks, talking, and talked would be grouped together. The common keywords consisted of the following: *students, like, Facebook, using, class, comments, features, activities, videos, interactions, learn, sharing, questions, posts, group, access, information, respond, pictures, and assignment.* I coded the keywords by highlighting the short phrases from the participants. For example, the 10 participants mentioned *comments* 79 times. I coded some excerpts from Mr. Smith that entail the use of the word *comments*, "I would have a student's comment about what was being uploaded… don't forget to comment on one of your other classmate's post." Likewise, I coded Mr. Wilson's use, "Students provide immediate responses to each other by using comments on each other's posts… the pictures shared by students for their service-learning are filled with positive comments that make others join in the next time around." I coded all the common keywords used by the participants.

Documented Facebook Activities

The primary coding I used for the documented Facebook activities were attribute and in vivo coding. I used attribute coding to establish the process of how the participants logged in to Facebook and to sort types of activities used by the participants.

In addition, I used in vivo coding to assign a code to words or short phrases to the instructor-led interactions.

As a part of attribute coding, I detailed how the participants logged into Facebook. When logging in, Mr. Brown and Mr. Davis used a Virtual Privacy Network (VPN) on their desktop because of the restrictions placed on Facebook by their school district. The other eight participants used the Internet from their phone in order to circumvent their restriction on accessing Facebook. Mrs. Smith created a separate Facebook account from her personal account to login. All others logged into their personal Facebook account to interact with their students. Once logged in, all participants, except for Mrs. Smith, used Facebook Group as a place to establish learner-learner and learner-instructor interactions. On the other hand, Mrs. Smith use Facebook Page to post materials such as links, articles, videos, and images as supplemental material for students.

When sorting the participants Facebook activities as a part of attribute coding, the documented Facebook activities validated the three type of lessons that each participant mentioned during the interview. Table 5 includes extra Facebook activities that I documented in addition to the lessons mentioned during the interview.

Table 5

Attribute Coding on Types of Lessons on Facebook in Addition to Interviews

High school teacher participants	Types of lessons on Facebook
Mr. Smith	Teacher shared lessons on MLA formatting and report writing with student reflections Students debating and analyzing interpretations of a production Peer-edit of writing assignment
Mr. Johnson	Class debate on pros and cons of legislation introduced in Congress Class debate on self-determination options for Guam
Mr. Williams	Students gather examples of common English mistakes made by celebrities Students share analysis of literature and compare with peers
Mr. Brown	Student activity on information gathering for fire prevention
Mr. Jones	Students critique peer-made videos regarding US history
Mrs. Miller	N/A
Mr. Davis	Student activity on information gathering for fire prevention
Mrs. Garcia	N/A
Mr. Rodriguez	N/A
Mr. Wilson	Student-led class discussion on differences in culture based on geographic region Students sharing examples of different ecosystems based on geographic region

Continuing with attribute coding in regards to student-led contact with the participants, the participants all received questions from some of their students using Facebook Messenger, which is a direct messaging feature on Facebook. Students sent private messages that the participants received, which remained in the personal messaging inbox of the participant. The questions that the participants received fell into two categories. The first is student's concern over their grades, and the second category was to clarify an assignment. Mr. Smith, Mr. Davis, and Mrs. Garcia used Facebook

Messenger to reach out to students. They sent reminders to students to leave feedback on discussion prompts. In addition, Mr. Davis sent assignments and notes to students who were absent during their face-to-face session. Aside from Mr. Smith, Mr. Davis, and Mrs. Garcia, the other participants did not initiate contact with their students; rather, the students reached out to them first.

The last primary coding process that I employed was in vivo coding. I looked for word frequency in all participant instructions given to their students. The common keywords consisted of the following: *comments, post, constructive, positive, clean, respond,* and *at least two other*. A screenshot from Mr. Williams, which represents most of the instructions by participants, provided the following instruction to his students,

> The Tax Cuts and Jobs Act was just signed into law. State two positives and two reasons why people would be against this. Do not repeat what was already stated. Then, I want you to comment on two of your classmates' posts. Remember to keep your comments constructive and civil. No name-calling. Watch your language. Do not take a political position. You are evaluating policy.

A commonality between the instructions provided by Mr. Williams and the other participants is that they encourage students to comment on at least two other peers.

The code mapping process of merging attribute, evaluation, values, and in vivo coding from interviews and documented Facebook activities led to me to establish common themes by synthesizing the findings in response to the research questions. Miles et al. (2014) and Saldaña (2016) mentioned that pattern coding entails the grouping of

summaries into manageable, smaller units. These generalized, smaller units are called themes (Miles et al., 2014). The theme for research question one was that participants used Facebook to promote learner-learner interactions for grammar, literature, student-led discussions, and documenting service-learning. For research question two, the two themes were that participants used Facebook because it provided an ease to share information and it created student engagement. For research question three, the participants needed more training, experienced a lack of resources, and faced a challenge to grade with Facebook.

Evidence of Trustworthiness

Trustworthiness, credibility, confirmability, and data dependability establish the quality of research design (Merriam & Tisdell, 2016; Yin, 2014). Several aspects of this research design address these areas. Using multiple sources of data from interviews and documented Facebook activities establish triangulation. In addition, using elaborate descriptions, coding, and a reasonable development of themes contribute to the trustworthiness of this research design.

Credibility

I established credibility, also known as internal validity, by identifying patterns, establishing causal relationships, and using multiple sources of data (Yin, 2014). Using multiple sources of data allows for comparing and crosschecking ensuring that inferences are correct (Merriam & Tisdell, 2016; Yin, 2014). I used data from two sources, which are interviews with high school teachers who integrated Facebook for instructional

purposes and by their documented Facebook activities. In addition, the selection of the participants allowed for some diversity since the content taught by the participants covered English, science, and social studies. Merriam and Tisdell (2016) noted that credibility of research improves by spending adequate time on analyzing the data by looking for variation in the understanding of the phenomenon. Furthermore, I used the peer review process, which entailed having the committee members provide their guidance throughout this research process.

Transferability

Transferability, also known as external validity, occurs when a study's findings apply to a larger population when generalized. I can account for transferability by providing sufficient, detailed descriptions to allow the reader to compare this study's context with their situation. I described the participants' demographics to add to this study's transferability. In addition, I included samples of participants' responses into the various themes that formed through the data analysis.

Dependability

Dependability adds to the overall trustworthiness of the research by being consistent and repeatable with the data. Throughout the data collection process, I maintained an audit trail by keeping track of the methods, procedures, and decisions when collecting and analyzing data. I used an interview questionnaire to ask structured questions, and I used a checklist to assist my notetaking. When analyzing data, I provided

sound reasoning behind my choices on the treatment applied to the codes when categorizing.

Confirmability

The criterion of confirmability deals with the degree that others can confirm the results. Confirmability occurs when the results are consistent with the collected data (Merriam & Tisdell, 2016). I asked the participants to verify their respective interview transcript to ensure I captured their responses as they intended. In addition, I used an audit trail by detailing the process of data collection, data analysis, and interpretation of the data.

Results

I sought to answer three research questions to explore how high school teachers on Guam decide to use Facebook activities. I interviewed each participant using a structured list of interview questions that aligned with the research questions (Appendix A). I used a checklist to keep track of activities mentioned during the interview. Furthermore, I used two voice recorders during the interview. Immediately after the interview, I reviewed the documented Facebook activities with the participants who logged into their Facebook account to corroborate what I noted with a checklist during the interview time. I transcribed the audio of the interview and allowed the participants to review their respective transcription as a process of member checking. I used NVivo 11 to code the data using attribute, evaluation, in vivo, and values coding as primary coding and categorize them into themes by using a code mapping process.

Emergent Themes

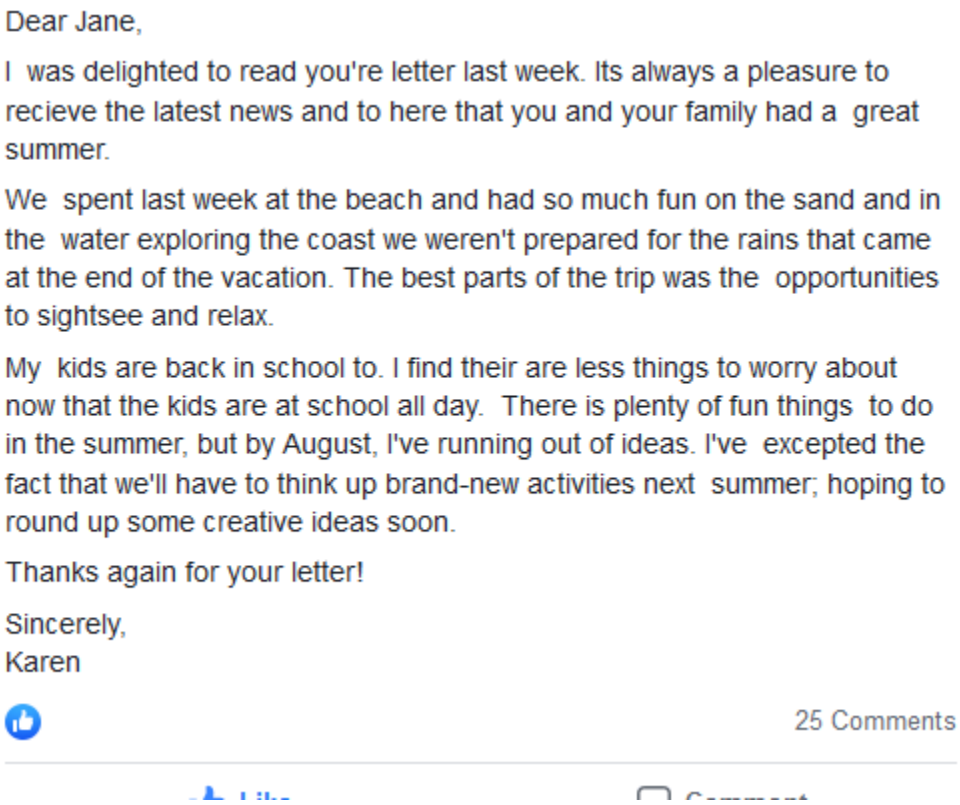
Research Question 1. How do high school teachers use Facebook in the context of online learning? Even though Facebook has many features, the participants did not use all of its features for online learning with their class. The participants in the different subject areas of English, social studies, and science integrated Facebook into their lessons that were specific to their respective subject area.

Theme 1: Teachers integrated Facebook to promote learner-learner interactions for grammar, literature, student-led discussions, and documenting service-learning. I coded the Facebook activities based on the types of interactions created by the assignments as learner-instructor, learner-learner, and learner-content. All participants chose Facebook activities to promote learner-learner interactions. I coded learner-instructor interactions for Mr. Smith, Mr. Davis, and Mrs. Garcia when they directly messaged students regarding their progress. None of the participants developed assignments that focused on learner-content. Furthermore, I coded the Facebook activities based on subject area, types of activities, features of Facebook, and instructions provided by the participant. I noticed that the participants teaching English integrated Facebook activities to work on grammar and literature with learner-learner interactions. Participants teaching science and social studies integrated various Facebook activities regarding service-learning events, student-created content, current events, and cultural exchange that promoted learner-learner interactions. Therefore, I condensed the subject

areas into a common theme to state that the participants integrated Facebook activities to promote learner-learner interactions.

The three participants who teach English used Facebook to share an example of a grammatically incorrect sentence with their students. Then, the students had to provide corrections. Mr. Smith and Mr. Williams shared examples of using a paragraph with grammatical errors and had students identify one mistake and provide a correction. These participants provided specific instructions for the students. This allowed students opportunity to take turns in answering. I did not notice learner-learner interactions until a few errors remained, and this was to point out that someone already identified that error.

Figure 2 provides an example that Mr. Williams used with students to check for grammatical errors. Mr. Williams provided a prompt for students to identify the errors. Students had to identify no more than one error. The students identified different errors because the instructions said not to repeat an error that another student already stated. Students would chime in if another student repeated an error. Likewise, the teacher would clarify how many errors remained and who did not identify an error yet.


Dear Jane,

I was delighted to read you're letter last week. Its always a pleasure to recieve the latest news and to here that you and your family had a great summer.

We spent last week at the beach and had so much fun on the sand and in the water exploring the coast we weren't prepared for the rains that came at the end of the vacation. The best parts of the trip was the opportunities to sightsee and relax.

My kids are back in school to. I find their are less things to worry about now that the kids are at school all day. There is plenty of fun things to do in the summer, but by August, I've running out of ideas. I've excepted the fact that we'll have to think up brand-new activities next summer; hoping to round up some creative ideas soon.

Thanks again for your letter!

Sincerely,
Karen

25 Comments

Figure 2. A grammar check activity used by Mr. Williams.

Mr. Rodriguez, the other English teacher participant, did not have students look at a passage to find errors. Instead, he said, "The idea was that each student was assigned a peer editor to review their work. I would have higher performing students edit a few more book reports than those who struggle [with English]." Mr. Rodriguez assigned his students to share a draft of their monthly book report to the class Facebook group. He directed the students to peer edit the grammar of other students in their group; higher achieving students made more edits. This was Mr. Rodriguez's process with his class to minimize mistakes on their final book reports. He would have to remind students to

follow up on their edits, and some of these reminders occurred by using Facebook Messenger or through a face-to-face contact.

The English teacher participants integrated Facebook activities into their topic of literature. Mr. Smith, Mr. Williams, and Mr. Rodriguez used Facebook as a platform for students to reflect on some reading material and post a substantive comment on a classmate's post. Mr. Smith shared examples of integrating Facebook activities with the topic Macbeth. In a similar manner, Mr. Williams integrated Facebook activities on the topic of modern American literature when discussing Avengers End Game, and Mr. Rodriguez demonstrated his integration activities when covering topics of poetry.

Mr. Smith directed students to respond to a prompt that dealt with *Macbeth*. He said, "One question what was the overall atmosphere of scenes one and four in act one of Macbeth. Then I'd say, please post a response. And as always, don't forget to comment on one of your other classmates responses." The prompt was to describe the overall atmosphere of one of the scenes in *Macbeth*. Then, students had to respond to at least one other classmate as a part of their assignment. This was a format he learned while taking his online Master's program years ago. The feedback that students gave one another had to include citations. In review of the documented Facebook activities, some students provided comments and responded to more than one of their peers.

Likewise, Mr. Williams, who teaches American literature, provided a similar experience. He integrated Facebook into his lessons by using it as a platform to share contemporary content with his students. Mr. Williams stated, "I made a case for the

Avengers End Game as a movie to be a form of literature… so we covered characterization, we've covered plots to witness, you know, floating of events and we covered a metaphors and symbology." Mr. Williams shared an example of using Avengers End Game to keep the students interested in the content. He presented the literary elements of American literature, such as characterization, plots, floating of events, metaphors, and symbology by using Avengers End Game as his contemporary content. Mr. Williams further elaborated, "Students had to reflect on the content that was shared by posting a comment with substance. Then, students had to respond to one another. Likes and reactions were encouraged if they agreed with a classmate's post." Students interacted with each other using literary terms.

Mr. Rodriguez integrated Facebook into his lessons by having students post their personal poems and reflections of well-known poets onto the group's newsfeed. Mr. Rodriguez mentioned, "I used Facebook newsfeeds. You know, with them [students] posting their poetry work. Then, they had to respond to each other with their comments. This was great because they responded to each other more online than they do face-to-face." Mr. Rodriguez facilitated discussions on a well-known poet by posting a literary work from that author. Then, he would ask the students to reflect on various literary concepts and leave a comment on the post. Mr. Rodriguez tasked his students to respond to at least one other classmate.

Mr. Rodriguez noticed that students responded to each other more in an online format more than they did during their face-to-face meeting. He said, "It was a like a

ping-pong match with the comments going back and forth. Easy. It easily got them discussing the necessary content. Every one of them had to participate and they did. Even the shy ones." The students referenced additional articles to support their comments on thematic elements. Mr. Rodriguez noticed that all his students participated with the Facebook discussions, even the shy ones.

The English teacher participants demonstrated common integrations of Facebook. They integrated Facebook into their classrooms by having students engage with the content and one another over topics dealing with grammar and literature. In reference to grammar, students had to either correct each other's grammar or identify incorrect grammar in a passage. As an example, Mr. Smith and Mr. Williams posted a paragraph that contained grammatical errors. Their students had to identify an error in the passage. Mr. Rodriguez assigned the students to correct the work of their peers. According to Vygotsky's (1978) social constructivism, students can learn from a more knowledgeable other. Students can take on the role of a more knowledgeable other when teaching their peers (Andersen & Ponti, 2014; Fernández et al., 2015), which was evident when students correct each other's grammatical errors.

The English teacher participants integrated Facebook into their classrooms when discussing literature. Mr. Smith allowed students to reflect and discuss British literature using a newsfeed posting and having students comment to one another. Likewise, Mr. Williams did the same but for American literature. Mr. Rodriguez had his students use literary terms and share additional references when reflecting on poems of other students

and well-renowned poets. The English teacher participants created an environment where students could respond to their peers when discussing literature.

The science and social studies high school teacher participants showed overlap on the types of activities used to integrate Facebook into their classrooms. They incorporated Facebook to promote learner-learner interactions instead of having a teacher-centered structure. Integrating Facebook allowed students to take the lead in discussing their assigned segment of history for social studies and science projects for science. Furthermore, science and social studies teacher allowed their students to share their service-learning experiences with their peers.

Mr. Johnson, a social studies teacher, assigned his students a group project with individual roles within the project. He asked his students to present a topic, gather pictures, and form assessments. Mr. Johnson said, "[The students] researched their time period and gathered visuals. The visuals were articles and pictures and anything that basically showed their time period. The students dynamically presented with their questions, quizzes, polls, you name it." Mr. Johnson assigned each group of students a different period of history. The students had to gather their visuals to share with the other students. The visuals include articles, pictures, and anything else that highlighted their assigned time period. These students made the assessments and led the discussions. As the teacher, Mr. Johnson monitored the student language so they could maintain professionalism.

Mr. Jones, a social studies teacher, applied the concept of learner-learner discussions to his class as well. He said, "[The students] shared their perspectives and learned from other students in the mainland. Not many of our students know there is a difference in culture." Mr. Jones met another teacher during his military training and they exchanged information to allow their students to participate in a cultural exchange setting. The teachers paired students with the other class to engage in a cultural exchange. The students led the discussions, and they shared information without prompting from the teachers. The students shared their perspectives and learned from their counterparts in the mainland.

Mr. Jones integrated Facebook into his lessons by using it as a cultural exchange tool. He allowed his students to interact with other students in the mainland. According to Sadykova (2014), the learner-learner interactions of students from different cultural backgrounds could help scaffold each other in an online setting to learn each other's culture. In Mr. Jones integration of Facebook activities, his students learned about the culture of the mainland counterparts.

Mr. Wilson, a social studies teacher, assigned students to find current event articles online that pertain to a geographic area they are covering. He stated, "What changed when using Facebook is that I no longer have the students give me cutouts of newspapers and attach that to a sheet of paper." Mr. Wilson regularly assigned current events to his students. Prior to using Facebook, he instructed his students to turn in newspaper cutouts and to present articles to the class. He further stated, "I had them look

for news articles that related to the place we were studying." The students had to share their article with their Facebook class group and provide a brief summary consisting of who, what, where, when, why, and how questions. The students needed to find articles that covered a geographic area that the class discussed like India. During class time, Mr. Willson asked the students to scroll to their Facebook post and present their article in front of the class.

Mr. Davis, a science teacher, also allowed students to take part in a student-led lesson using Facebook. Mr. Davis assigned students to make a group video presentation. Then, the students had to share their product with the Facebook group. The students found their resources and determined how to best present their topic of states of matter. In addition, students formed their assessments and had their peers answer the assessment using the Facebook poll feature. Mr. Davis did have a group that took the creative route of using video chat to present to their class.

Mr. Brown, Mrs. Garcia, and Mr. Wilson took the same approach of allowing students to share their service-learning events to the Facebook group page. To graduate from high school, students have to accrue 75 hours of service-learning. Teachers offer some form of service-learning to their students, and students have to write a brief summary of how the event relates to their subject area. To document that service-learning had taken place, the teachers asked their students to post a picture with a brief explanation of what they had done and how it relates to their subject area. Mr. Brown said,

> Facebook also helps with service-learning…, They can do an activity and then they can tag me having the photo of evidence…, as well as the reflection, which they'll be turning in… tagging me on Facebook to show that they've actually attended the activity will let me know that they've done the service-learning hours that's required of them.

Mr. Brown asked her students to upload a picture in order to verify that the student participated in a service-learning activity. The students had to tag their teacher in order to send a notification to the teacher. Underneath their picture in the comments section, the students wrote a reflection regarding their service-learning hours. Although Mr. Brown did not require his students to leave a comment on the pictures of their peers, students left encouraging remarks and stated their future plan to participate in the next service-learning activity.

Research Question 2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?

The two themes that developed in response to research question two is the ease of sharing information and having students participate in discussions. The ease of sharing information consists of having teachers and students being able to share pictures, videos, links, articles, and other media by an intuitive social media site. Information sharing is a simple as a drag and drop feature.

Despite Mrs. Miller using Facebook solely for sharing classroom content such as PowerPoint files, videos, and notes with students, all the other participants required their students to interact with one another. The participants chose activities on Facebook to involve students in discussions. Some participants found that students interacted on Facebook more than face-to-face.

Theme 1: Ease of sharing information. I coded interview responses into Facebook features used, positive sentiments of integrating Facebook, and negative sentiments of integrating Facebook. I further coded the positive sentiments into the following codes: easiness, ability to cover more content, learner engagement, access to resources, and immediacy of responses. As a result, I noted that most participants received a coding of easiness. This formed a common theme of participants integrating Facebook because of its ease of sharing information.

Six participants chose to use Facebook over other social network sites and learning management systems because Facebook was easy to use. Mr. Smith, Mr. Johnson, Mr. Williams, Mr. Brown, Mrs. Miller, and Mrs. Garcia shared polls, articles, assignments, links, or videos with students. Mr. Smith noted, "During that quarter I primarily use Facebook to upload writing prompts, writing tips, helpful links for example, like a grammarly.com without knowing how to make a website." Mr. Smith shared articles about writing, posted writing assignments, and suggested writing tip to students with ease. Mr. Williams declared, "We conducted a quick survey. So I inserted a survey into the Facebook to ask certain questions for evaluation, which I think was

really, really a good and easy resource for me as a teacher." Mr. Williams noted that incorporating a survey was relatively easy to implement on his Facebook group. Likewise, Mr. Brown and Mrs. Garcia used polls with their students. These six participants integrated different features of Facebook because they found the features easy to use.

Mr. Johnson stated, "A discussion was easy. Everybody always has something to say or the comments were always there. All you had to do was ask the group. Instantly there." Asking students to take part in a discussion was as simple as placing a question in the Facebook group.

Mr. Brown used Facebook to incorporate videos. He integrated Facebook into his lessons by using the social network site to link to YouTube videos. Students could click on the video link found on the Facebook group to view the video. To show that they completed the activity, the student would return to the link to leave a comment on what they learned.

Unlike Mr. Brown, Mrs. Miller did not ask her students to leave comments in the discussion section of the shared video webpage. Instead, Mrs. Miller integrated videos in her classroom through Facebook because she had Internet problems in her classroom. She said, "I was not able to pull that video out during my lesson," in response to her Internet connection dropping often and its slow speed. Mrs. Miller continued, "So I decided to just post it up [on Facebook] for student to see. They were able to watch it on their phones almost immediately." Mrs. Miller shared a link to a YouTube video using

Facebook because Facebook was an easy tool for her to use in regards to sharing a webpage.

Theme 2: student engagement. I coded interview responses into features of Facebook that participants used, positive sentiments of integrating Facebook, and negative sentiments of integrating Facebook. I further coded the positive sentiments into the following codes: easiness, ability to cover more content, student engagement, access to resources, and immediacy of responses. As a result, I noted that all participants except one received a coding of learner engagement. As a result, a theme formed that the participants selected their activities to promote learner engagement.

A factor that influenced the participants to integrate Facebook activities is its ability to get students collaborating with each other. Nine participants, everyone except Mrs. Miller, integrated Facebook to encourage students to collaborate with the teacher and with their peers. Students collaborated in English classes to correct grammatical errors. Students shared their current events and left substantive comments for their peers. Furthermore, participants teaching science and social studies encouraged their students to upload pictures and a reflection of their service-learning, which encouraged other students to participate in the next round of service-learning opportunities.

Mr. Smith, Mr. Williams, and Mr. Rodriguez integrated Facebook to encourage learner-learner interactions by having their students peer edit their writing drafts. For example, Mr. Rodriguez assigned students to peer edit each other's book report and provided the following direction, "Paste your book report draft as a comment to this

prompt. You are all assigned to edit the work of two of your peers." The instructions Mr. Rodriguez gave his students was to first upload their draft book report. Then, the students had to correct the grammar of their peers and post the revised book report as a comment.

Mr. Smith commented "There are some lively debate on Facebook." He further elaborated, "If there was any discussion about it in class, it just seemed like it was just lacking that fire like I saw on Facebook… there could have been 200 comments." Mr. Smith perceived that students showed greater passion for debate on Facebook than in face-to-face discussions. He longed for some lively debate in class to match what occurred on Facebook. Students left over 200 comments.

Mr. Johnson commented on student engagement, "I think the activities are, are basically good because we can cover a lot over short, shorter amount of time and the access to the collaboration is constant." He covered more content with his students when using Facebook because collaboration was constant. Mr. Johnson further discussed student engagement in his social studies class, "There was so much to cover that they were able to tackle a large amounts or large chunks of different eras and then also have their captions and create questions to share with the other groups in the class." The students handled large chunks of topics in their social studies class. In addition, the students created discussion questions to facilitate their learning by sharing with other groups.

Mr. Williams was able to engage students by getting to know the interests of students. Mr. Williams found common interests with students, and he used that to engage students in class. He shared an example of dealing with a student who was problematic at the beginning of the school year. Mr. Williams saw that the student was an angler, and they shared fishing stories with one another. The attitude of the student changed over time, and the student became more respectful as a result of their fishing stories. Furthermore, the student was more attentive to his classwork. Mr. Williams noted that using social media helps to network with students. Even though the original dialogue was not specific to instruction, he availed the opportunity to build on student engagement. He looks for common interests with students to make students like his class. In addition to this learner-instructor interaction, students formed learner-learner interactions by sharing their common interests with each other.

Mr. Brown commented on how he engaged students directly, “it's a direct messaging without anybody knowing that you're struggling here and it's a one to one interaction with that particular student without having everybody, you know, without singling the student that, oh, he doesn't understand this topic.” He used Facebook Messenger to send personal messages to students who struggled in his class. This became his one on one time with the students without announcing the student’s lack of understanding of the topic to all the other students in the Facebook group.

In regards to class discussions, Mr. Brown used Facebook timeline showed how many student interacted with the group over a period. Student participation started slow,

but more students jumped into the discussions as time passed. Students started talking with each other and interacting with one another. Mr. Brown used Facebook to supplement his instruction rather than being required for his students. Near the end of the school year, he noted that nearly 80% of his students became active in the Facebook group, which he noted with Facebook's timeline feature.

Mr. Jones shared his experience of student engagement when he discussed his cultural exchange assignment. Mr. Jones met another teacher during his military training. They coordinated with one another to allow their students engage in a cultural exchange by using Facebook. Their students would share information that they learned in class. Upon review of the documented Facebook activity by Mr. Jones, I noted that the students discussed figure of speech unique to their geography, price of goods, dating, family upbringing, music, and hobbies.

Mr. Davis discussed how he engaged students in his science class over Facebook. He said, "I put it on the newsfeed or the timeline so the students can have access to view the lesson and assignment… the classmates had to respond once most of the independent posts went on." He posted assignments onto the newsfeed and timeline for students to view. The prompts allowed students to post independent work. Then, the students had to respond to each other's post. Upon review of the documented Facebook activity, I noticed that Mr. Davis used this type of incorporation for several topics in his science class. A question or link was shared with the class on Facebook, and then students had to

respond to the prompt. The learner-learner interaction occurred when students had to respond to one another.

Mrs. Garcia, a science teacher, encouraged student engagement when they had to pick a science fair topic without doubling up on a topic. This was evident when she said, "I had over a thousand comments when students had to jockey for their science fair topic. The rule was to dialogue to prevent repeater topics, but they ended up helping each other with materials and other resources." Similarly, Mr. Rodriguez noted his experience with student engagement when he stated, "It was a like a ping-pong match with the comments going back and forth." He compared the volley of responses to a ping-pong match because student dialogue went back and forth.

Lastly, Mr. Wilson discussed student engagement when he said, "Students provide immediate responses to each other by using comments on each other's posts… the pictures shared by students for their service-learning are filled with positive comments that make others join in the next time around." In all, the participants created an environment that promoted student engagement by using Facebook as a platform where students had the ability to share their information with one another.

Research Question 3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?

An accomplishment of using Facebook is getting students engaged with its content. This reoccurring theme throughout the research questions is Facebook allows

students to become more engaged in discussions when proper scaffolding is present. I coded some failures of integrating Facebook that formed into the following themes: high school teachers want training, general lack of resources, and other learning management systems make grading easier.

Theme 1: Need for teacher training. I coded interview responses from the participants into positive and negative sentiments when using Facebook. I further coded the negative sentiment into difficulties the participants faced with Facebook. From there, I categorized them into struggles with the interface, unfamiliarity with a feature of Facebook, and amount of formal training received. I further consolidated the categories into a theme of a need for teacher training.

Five of the participants, who are Mr. Smith, Mr. Williams, Mrs. Miller, Mr. Davis, and Mrs. Garcia, stated that they did not receive any training on Facebook and only used features that they were familiar with due to personal experience with Facebook. These participants expressed some sentiment that they would like to receive proper training on how to integrate features of Facebook into lessons. Mr. Davis integrate features of Facebook into his lessons, but he only used features that he knew. He wanted to use another feature of Facebook but stated his reluctance, "I thought about trying the livestreaming, I need more practice and maybe I need more training with Facebook because I don't use it on my off time. I'm not really on social media." Mr. Davis made use of video chat, groups, Messenger, timeline, and the newsfeed, but he still wanted training on features of Facebook that was unfamiliar with him.

Mr. Williams share similar sentiments when he said, “The actual Facebook account was a little difficult for me because I'm not well versed in Facebook.” Mr. Smith stated, “I use Facebook a lot just personally, but professionally, no. I don’t know how.”

Mrs. Garcia also weighed in on her concerns of wanting additional training when she said, “Using an online class with students is a challenge already for me at my age. The district has not offered any training at all.” Mrs. Garcia, as well as the other participants, did not receive any formal training on how to integrate Facebook into their teaching practice, especially since social networking sites remained blocked during the interview times. Mrs. Garcia lacked confidence in her ability to use Facebook despite making use of some Facebook features. She claimed that her students teach her how to use Facebook, and that she is unfamiliar with some features of Facebook.

Mrs. Miller was the only participant to setup her class as a page instead of a group. Although she did not ask for any training, she was unfamiliar on the difference between a group and a page. A group allows for learner-learner interactions while a page is a static environment where the participants post information. Mrs. Miller mentioned, “I just realized that I wouldn't know if [the students] see it or not… if they don't like my post unless they liked the page.” Using Facebook as a page did not allow Mrs. Miller to see who liked some of her content. A group setting would provide more control. Mrs. Miller alluded to seeing the pros and cons of her setup; though, training would have mitigated this problem.

Theme 2: Experiencing a lack of resources. I coded interview responses from the participants into positive and negative sentiments when using Facebook. I further coded the negative sentiment into difficulties the participants faced with Facebook. From there, I categorized them into categories of limited Internet access, access restrictions based on the worksite, and a limitation arising from inadequate hardware support. I merged these categories to a common theme of experiencing a lack of resources. The theme of lacking resources consists of not having Internet access and students not having access to an electronic device.

Seven participants raised concern that the school district does not allow access to some social network sites for student safety reasons, nor was Internet access readily accessible. Mr. Smith, Mr. Brown, Mr. Jones, Mrs. Miller, Mrs. Garcia, Mr. Rodriguez, and Mr. Wilson commented on how Facebook was either restricted or they did not have adequate access to the site. To accommodate the use of Facebook within their classrooms, the participants had to use their mobile phones as a hotspot.

Mr. Jones, like the rest of the participants, was unable to access Facebook through the school Internet. In order to integrate Facebook during his classroom, he had to resort to using his phone. Mr. Jones stated, "I had to go through my personal device to tether off from, so again, very limited access." Access to social networking sites was only available through the sharing of Internet through a mobile device. One downside that Mr. Jones mentioned was that this data from his phone was slow. In addition, he stated that

his students did not all have a data plan to access Facebook, nor did they have Internet access at home.

Likewise, Mr. Smith raised a concern with students not having adequate access to the Internet at home. He did not post crucial information on Facebook regarding test dates because of the students' limitations on accessing the Internet, even at home. Students could use the Internet in the library, but Facebook was still inaccessible because some social networking sites remain blocked at his school site.

Mr. Brown shared a similar experience of students not having access to the Internet. He said, "This was more than an extension to the classroom so I didn't make it priority. The reason for that is because not all the students have access to the Internet." Mr. Brown reiterated that not all students had access to the Internet at home or through a mobile device. Furthermore, Mr. Brown noted that using the Internet was not available in his classroom. He had to send his students to the library to access Facebook. This is one of the reasons he integrated Facebook in his classroom setting as a flipped classroom. Mr. Brown provided students with additional materials to extend their learning.

Mrs. Miller also struggled with Internet access in her classroom. She shared her frustrations when she stated, "I think because I usually show videos during class, but my internet and my room is like on and off. It's actually not working my Wi-Fi, so I was not able to pull that video out during my lesson." Mrs. Miller had a spotty Internet connection within her classroom. Because of this, she could not share a video that demonstrated a science concept. As a result of this spotty Internet connection, Mrs.

Miller posted a link to the video file onto her Facebook page. She noted, "So I decided to just post it up [on Facebook] for students to see." In this case, some students had a mobile data connection that allowed them to access the shared link and video file. However, the classroom Internet reception was intermittently accessible according to Mrs. Miller.

Mrs. Garcia echoed the problem with accessing Facebook at her worksite when she mentioned, "I could not use my planning time at work to upload content on Facebook because it's blocked, so this more work for me at home." She had to spend her personal time at home to prepare Facebook activities for the students. In addition, Mrs. Garcia said, "Even grading. I had to do that at home because I could not access Facebook at work. Seems like every time you want to do extra for work, you do it at your own time." She noted her struggles with not being able to grade assignments posted on Facebook during her working hours. Because of Internet access restrictions, Mrs. Garcia had to access student work on Facebook at home.

Mr. Rodriguez was unable to access Facebook at his worksite as well. He stated, "Of course I can't access Facebook at work. It's social media. The people at central think it's a distraction. Talking to people. Talking to students. It's a distraction." Mr. Rodriguez speculated that using social media at work was prohibited because it was a distraction. He further added, "So I want to be a dynamic teacher that uses technology to reach the kids where they're at but I can't because communicating is only allowed through email. Might as well do away with email and go back to fax." He expressed his

frustration with the restriction of using social media to reach students. Mr. Rodriguez compared the progression of using email over fax as the next progressive use of technology to using social media over email. The use of social media, as Mr. Rodriguez suggested, is the next step of communicating with students. However, he speculated that access to Facebook is restricted because it is a social media site.

In addition to lacking adequate access to the Internet and to Facebook in the classroom, the participants raised concern that students do not have access to the Internet at home, nor do they have an electronic device to use. Mr. Brown noted that not all students have access to the Internet at home, nor do they have cell phones. A challenge that he faced was having all his students participate with the Facebook activities due to their experience of lacking resources. Sharing sentiments similar to Mr. Brown's, Mrs. Miller suggested that students struggled with access to an electronic device. She concluded this sentiment when she noticed that students made use of their smartphones to take pictures of schoolwork; however, not all students took pictures. Therefore, she concluded that some students lack smartphones. Mrs. Miller speculated that some students may not have Internet access at school because they lacked a smartphone.

Mr. Wilson reflected on the socioeconomic status of his students and their lack of access to the Internet. He noted that students lacked mobile devices that they could use in school and they possibly did not have access to the Internet at home due to their lack of adequate school supplies.

Theme 3: A challenge to grade with Facebook. I coded interview responses from the participants into positive and negative sentiments when using Facebook. I further coded the negative sentiment into difficulties the participants faced with Facebook. From there, I categorized them into the time constraints of grading student responses and managing the frequency of student responses. I consolidated the categories into a theme of a challenge to grade with Facebook.

Facebook is not a learning management system like Edmodo, Blackboard, or Moodle. Despite Facebook's easy to use interface, four participants noted that it is not friendly to use as a grading system. Mr. Smith, Mr. Johnson, Mrs. Miller and Mr. Wilson expressed their challenges with grading with Facebook. Mr. Johnson stated, "And if it was a platform that was really focused solely on the instruction, then I think it would've been more conducive to learning." The Facebook platform was built to be an interactive platform, not a grading platform.

Mr. Smith had a frustrating time in keeping track of the frequency of student postings for grading purposes. He had to scroll through all the posts with an open spreadsheet to keep track of how many times students responded to one another. Mr. Smith stated that Facebook had no feature to sort the posts by students. With the amount of students he had, this resulted in a lot of scrolling from top to bottom to look for any comments left by students.

Mr. Wilson compared his experiences with Blackboard and Facebook. He noted that Blackboard is intuitive for grading because it keeps track of frequency of posts and

has nested comments. Blackboard does not allow students to delete their comments like Facebook, and grading is simplified on Blackboard when compared to Facebook. Mr. Wilson shared his frustration on scrolling through the comments on Facebook to determine the frequency of posts by students. Furthermore, he mentioned that unpopular comments get hidden automatically by Facebook.

Mrs. Miller used another learning management system called Edmodo with her class. She compared her experience with Edmodo and Facebook. She mentioned that Edmodo is convenient for her because she can see student submissions in one location. In addition, students can easily see the progress of content and can see what work they need to make up. When she posts on Edmodo, the students receive an immediate email alert.

The features of Facebook are not the same as the features found on learning management sites such as Edmodo and Blackboard. Grading responses from students proved difficult for Mr. Smith, Mr. Johnson, and Mr. Wilson. They had to scroll through the different posts to keep track of how many students posted a response. Mrs. Miller and Mr. Wilson compared their experiences of other learning management systems to Facebook and mentioned that the learning management systems they used centered on grading, and Facebook was not built that way.

Table 6 summarizes the themes to the research questions.

Table 6

Summary of Themes

Research Question	Themes	Representative Quotes
1. How do high school teachers use Facebook in the context of online learning?	1. Teachers integrated Facebook to promote learner-learner interactions for grammar, literature, student-led discussions, and documenting service-learning	Mr. Rodriguez, "[T]he idea was that each student was assigned a peer editor to review their work. I would have higher performing students edit a few more book reports than those who struggle [with English].
2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?	1. Ease of sharing information	Mrs. Miller, "So I decided to just post it up [on Facebook] for student to see. They were able to watch it on their phones almost immediately."
	2. Student engagement	Mr. Rodriguez, "It was a like a ping-pong match with the comments going back and forth."
3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?	1. Need for teacher training	Mr. Davis, "Other features I considered was since they did the video chat, I thought about trying the livestreaming, I need more practice and maybe I need more training with Facebook because I don't use it on my off time. I'm not really on social media."

(table continues)

Research Question	Themes	Representative Quotes
	2. Experiencing a lack of resources	Mrs. Garcia, I could not use my planning time at work to upload content on Facebook because it's blocked, so this [was] more work for me at home…, even grading. I had to do that at home because I could not access Facebook at work. Seems like every time you want to do extra for work, you do it at your own time." Mr. Wilson, "They can't afford basic school supplies and I don't expect them to afford Internet and phones."
	3. A challenge to grade with Facebook	Mr. Wilson, "It's just not for grading. Even the comments on Facebook. They get hidden if they aren't popular. And then there's the problem of having the original poster deleting their post. So, all the comments that the other students made would disappear."

Summary

In summary, this study revealed that high school English teachers integrate Facebook as a part of their classroom to engage students in improving their grammar and review of literature. Science and social studies high school teachers integrate Facebook to promote student-led discussions and to document the service-learning process. In addition, this study revealed that high school teachers select Facebook to promote

interactions because of its intuitive interface that allows teachers and students to share resources and to have students involved in discussions. Lastly, this study revealed that high school teachers are concerned that they do not have sufficient training to integrate Facebook as a part of their classroom, there is an overall lack of resources to integrate Facebook properly, and Facebook is difficult to use for grading.

Chapter 5 is entitled *Discussion, Conclusion, and Recommendations*. It includes an interpretation of the findings in relation to the literature review and the conceptual framework of the study. In addition, I will discussion limitations of the study and recommendations for future study. Lastly, I will discussion implications for social change.

Chapter 5: Discussion, Conclusion, and Recommendations

The previous chapter dealt with the analysis and interpretation of data obtained through interviews and documented Facebook activities. This chapter provides a summary of the research project. I discuss the findings for this study in the subsequent interpretations of the findings section. In addition, I report the limitations of the study, recommendations for further research, implications for social change, and a conclusion to the study.

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. Despite the popularity of Facebook as a social networking site, there is a lack of understanding of how high school teachers use Facebook for instructional purposes. Vygotsky's (1978) social constructivism and Bandura's (1997) self-efficacy formed the theoretical lenses used to analyze participants' interview responses and documented Facebook activities. The participants consisted of 10 public high school teachers in Guam who integrated Facebook activities into their teaching for at least three lessons. A qualitative single case study allowed me to incorporate face-to-face interviews and triangulated these interviews with supporting data from the participants' documented Facebook activities.

The findings for the first related research question was that participants integrated Facebook activities to engage students in learner-learner interactions. The participants who taught English focused on assignments that improved students' grammar skills and

knowledge of literature. The participants who taught science and social studies allowed students to take the lead in discussions and presentations.

The findings for the second related research question were that the participants decided to use Facebook because of its ease of sharing information and its ability to promote learner engagement. The participants shared polls, articles, assignments, links, and videos with students. In addition, the participants stated that the use of Facebook activities led to more student engagement.

The findings for the third related research question were that the participants wanted formal training on how to implement Facebook for instruction. The participants used features of Facebook that they were familiar with due to personal use. The participants wanted to explore more features of Facebook to enhance learner-learner interactions. Moreover, experiencing the lack of resources and support hindered their implementation of Facebook. The participants stated that Facebook was inaccessible at the school site. As a final theme to the third research question, the participants found that grading assignments and discussions on Facebook were difficult. The participants stated that Facebook lacks a grading feature, as a Learning Management System would have, so grading responses was cumbersome.

Overall, six themes developed as a response to the research questions. In response to research question one, the participants integrated Facebook activities to promote learner-learner interactions respective to their subject area. In response to research question two, the ease of sharing information and ability to create student

engagement activities influenced the decisions of the participants in selecting Facebook activities. In response to research question three, the need for teacher training, experiencing a lack of resources, and difficulty to grade responses pose as challenges to integrating Facebook activities.

Interpretation of the Findings

The framework for this study, as presented in chapter 2, stems from Vygotsky's (1978) social constructivism theory and Bandura's (1997) self-efficacy. Therefore, I present the interpretation of the findings for the related research questions and from the lens established in the framework. The conclusion of the findings served to answer the following research questions:

RQ 1: How do high school teachers use Facebook in the context of online learning?

RQ 2: What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?

RQ 3: What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?

Interpretation of Findings Related to Research Question 1

The findings related to Research Question 1 generated one theme through the collected data: Teachers integrate Facebook activities to promote learner-learner

interactions. The English teacher participants focused on providing learner-learner interactions to improve their students' grammar skills and knowledge of literature. Science and social studies teacher participants focused on providing learner-learner interactions by having students teach subject content to their peers and share service-learning activity ideas. The interpretation of the findings are related to the literature review below.

English teacher participants chose Facebook activities that allowed their students to find errors in sample texts, and they allowed their students to peer edit. The documented discourse between students on Facebook showed students instructing and correcting their peers to meet a goal. According to Vygotsky's (1978) theory, a more knowledgeable peer is able to provide scaffolding to their peers in order to create a learning experience. Soleimani, Modirkhamene, and Sadeghi (2017) recognized that peer mediation through collaborative groups outperformed students who worked individually in terms of fluency and accuracy. In concurrence, Hanjani (2019) found that peer scaffolding activities such as draft revisions helped improve learners' self-revision skills, and the participants favored the experience. I believe that the participants selected Facebook activities to promote learner-learner interactions, and the use of Facebook was not a didactic teacher-centered forum.

Allowing peer-editing activities helps English as Secondary Language (ESL) students in their comprehension of English. Hsieh (2017) reported that ESL learners who underwent collaborative learning in an online environment reduced their English

proficiency gap. Insai and Poonlarp (2017) explained that peer editing enhanced the quality of students' translations, enabled the students to detect errors, and kept the students engaged in collaboration to complete their work. Likewise, Amritavalli (2017) stated that learner-learner interactions between native speakers and ESL students helped the learner notice lexical or syntactic aspects of the language. I believe that the continued use of peer editing on Facebook will help the ESL students in their mastery of the English language.

Science and social studies teacher participants integrated Facebook activities where students shared their experiences when assisting the community as a part of their service-learning requirements. Mr. Brown said that Facebook helped with service-learning requirements by allowing students to post a photo evidence, provide a reflection, and tag their friends to encourage others to join in future events. Artiningsih, Riyanto, and Hermanto (2019) found that sharing images improved motivation and learner outcomes. The participants who allowed students to share pictures of their service-learning activities colloquially stated that more students appeared at the next service-learning activity. In a review of the documented Facebook activities, I did notice that more students attended the community service-learning outreaches as the school year progressed. Sherman, Payton, Hernandez, Greenfield, and Dapretto (2016) stated that adolescents influence behavior and interests through the images they post to support this notion of peer influence. Likewise, Dhir, Kaur, and Rajala (2018) determined that sharing and tagging people in pictures is a result of entertainment, and it is influenced by

the previous experience of the user with similar behaviors. The participants create an environment where their students shared pictures of community service-learning activities, it allowed other students to become more involved in the community. This is evident of Vygotsky's (1978) social constructivism theory where learning occurs in a social context, and learner-learner influences such as sharing experiences through pictures can shape an individual's response.

Interpretations of Findings Related to Research Question 2

The findings related to Research Question 2 generated two themes through the collected data: (a) ease of sharing information, and (b) learner engagement. The participants used Facebook for personal use, and the transition to share information with their students was familiar. The features that the participants used when integrating Facebook activities as a part of their class was limited to the features they used on their personal account. For example, Mr. Smith stated that he used Facebook to uploading writing prompts, writing tips, and links because he did not know how make a website, but he knew how to do these on Facebook. Moreover, the participants thought that the Facebook activities would establish learner engagement. The interpretation of the findings are related to the literature review below.

According to Venkatesh et al. (2012), being familiar with a technology might indicate a positive correlation with accepting and using that technology. The participants made personal use of Facebook, so using this social networking site in an educational setting was met was ease. Furthermore, Venkatesh et al. explained that performance

expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, habit, and privacy concerns influence the intention to use a technology. In concurrence, Herrero and San Martín (2017) found that performance expectancy, hedonic motivation and habit influenced the use of social networking sites like Facebook while "effort expectancy, social influence, facilitating conditions, and privacy concerns have no significant direct influence on the intention to use social networking sites to share user-generated content" (p. 215). Specific to students, Moghavvemi, Paramanathan, Rahin, and Sharabati (2017) stated that hedonic motivation, perceived playfulness, performance expectancy, habit, and facilitating conditions all positively affected their use of Facebook as an online learning tool.

The second key finding for related Research Question 2 was that the participants selected Facebook because of its learner engagement. With the exception of Mrs. Miller, the nine participants used Facebook because its ability to get students collaborating with one another. The English teachers integrated Facebook activities to allow learner-learner interactions when students peer-edited their grammar and in the discussion of literature. With the exception of Mrs. Miller, all the participants required their students to leave quality feedback as a part of their discussion requirements. These participants provided rubrics and modeled expectations for quality feedback.

In relation to peer feedback in a learner-learner interaction, Vygotsky (1978) stated that students can learn from a peer who is a More Knowledgeable Other (MKO). Vygotsky defined an MKO as an individual who is able to instruct or guide another

individual to learn and understand beyond what they might be able to learn if left to their own devices. Demirbilek (2015) and Greenhow and Lewin (2016) determined students benefited from engaging in peer feedback on Facebook, and it improved critical thinking skills and materials produced. In concurrence, Headington (2018) reported that peer feedback over a social network site ranged from proof-reading and development of conceptual understanding that spanned beyond the cohort of students. However, Van Popta, Kral, Camp, Martens, and Simons (2017) found that the benefit of feedback is due to it being written rather than being done in a web-enhanced process. I believe the written feedback in an asynchronous system like Facebook benefits the students when they learn from their peers.

Interpretations of Findings Related to Research Question 3

The findings related to Research Question 3 generated three themes through the collected data: (a) high school teachers want training on how to integrate Facebook, (b) experienced a lack of resources, and (c) a challenge to grade with Facebook. The interpretation of the findings are related to the literature review below.

The first key finding for the third Research Question was that the high school teachers want training on how to integrate Facebook into their teaching practice. None of the participants received specific training for implementing Facebook activities with their class. Five of the participants, who are Mr. Smith, Mr. Williams, Mrs. Miller, Mr. Davis, and Mrs. Garcia, stated in clear terms that they would like to receive proper training on implementing Facebook. Mrs. Miller did not know the difference between a Facebook

group and a Facebook page, making her the only participant to use a Facebook page with her students; all the other participants used Facebook group. Moreover, Mrs. Garcia demonstrated her lack of self-efficacy when she referred to her age as being a deterrent to learning new features on Facebook, and she stated that her students helped her with some of the features of Facebook.

Duggan (2015) and Wessels and Diale (2017) noted that Facebook is the most popular social media platform amongst adults. However, Wessels and Diale stated that its popularity does not transfer into its adoption in the learning environment unless teachers know how to integrate Facebook into their teaching practices. Vie (2017) mentioned that teachers want to make use social media tools in their classroom but lack the knowledge of how to implement it. Furthermore, Vie recommended that institutions might want to allow multiple opportunities to share online pedagogical practices and incentivize the shift to incorporate social media in recognition of increased time commitments. The recommendation to allow multiple opportunities to share online pedagogical practices relates to Bandura's (1997) self-efficacy where teachers can learn from other teachers through vicarious experiences. However, Phan and Ngu (2016) and Pajares and Urdan (2006) found that mastery experiences have the greatest effect on self-efficacy. Therefore, school districts may want to allow time for mastery experiences on integrating Facebook for instructional purposes when teachers receive training.

The second key finding for the third research question was that teachers experienced a lack of adequate resources to maximize their integration of Facebook

activities. All participants stated that their respective worksite blocked access to social networking sites. In order to circumvent the access restriction, the participants had to either use data services from their mobile phone or make use of a virtual privacy network. Sung, Chang, and Liu (2016) stated that appropriate support such as hardware, software, and instructional designs needs to be in place to have meaningful lessons. Despite 81% of adults (Anderson, 2019) and 95% of teens (Anderson & Jiang, 2018) having access to a smart phone in America, Mr. Brown, Mrs. Miller, and Mr. Watson stated that a majority of their students did not have access to a smart phone. I believe students cannot rely on using social media at home to take part in Facebook activities. Therefore, school sites should consider allowing access to social networking sites to promote a nontraditional avenue of learning.

The third key finding for the third research question was that grading was a challenge when using Facebook. Mr. Smith, Mr. Johnson, Mrs. Miller, and Mr. Wilson detailed their grading experience where they would count the number of student responses, evaluate the learner-learner interactions, and check for timeliness of discussion. In concurrence, Ingalls (2017) stated that students in her study had to maintain active engagement in response to others to earn full points. Furthermore, Ingalls mentioned that each response was time and date stamped. Unfortunately, Mr. Smith did not account for the duration of time he would need to grade students' responses to one another. Mr. Wilson further expressed his frustrations with grading on Facebook when he noted that old messages from students are automatically hidden on Facebook.

Holmes and Prieto-Rodriguez (2018) noted that modern learning management systems include learning analytics and automatic student response systems to track the level of student engagement with resources and reduce the burden on staff time. The participants may want to consider using a learning management system that handles the grading but has an interface similar to Facebook.

Limitations of the Study

Yin (2014) stated that the limitations of a study are inherent to the study design, and the researcher must reduce limitations to gain transferability. There were various limitations to the study due to demographics, low sample size, and the nature of the investigation. The first limitation of demographics is due to the geographic remoteness of conducting this study in a remote location in a territory of the United States. The usage of Facebook may vary in other parts of the world due to different restrictions on the site and adoption rate of Facebook. Furthermore, the socioeconomic status of the students and teachers may vary from one school district to another, which affects the adoption rate of Facebook and access to the Internet.

The second limitation is the small sample size of the participants. The 10 participants are not a reflection of all the teachers within the school district. The subject areas of the high school teacher participants consisted of three English teachers, three social studies teachers, and four science teachers. Therefore, the findings of this study may not represent all high school teachers in the Guam Department of Education school district. The breadth of information obtained from the small number of participants limits

the ability to generalize the results for other population groups. Multiple interviews over an extended period with additional participants could have provided supplemental data to answer the research questions.

The third limitation is the nature of the investigation. The data collection timeframe for this study spanned from April 2019 to August 2019. I conducted one interview per participant and viewed their integration of Facebook activities. This may not provide an adequate understanding of how high school teachers integrated Facebook activities in their classroom and a longitudinal study could have provided supplementary data to answer the research questions.

Recommendations

The basis for recommending future studies come from the literature review, limitations of this study, and findings for this study. The recommendations consist of conducting a longitudinal study, using a different social networking platform, diversifying participants from different subject areas and grade levels, sampling a different socioeconomic status school district, and gathering perspectives from high school students. Addressing the recommendations could provide a better understanding of integrating social media into the classroom.

The first recommendation of replicating this study as a longitudinal study could enhance the collection of data. The interviews and documenting of Facebook activities occurred at the end of the school year for seven participants and at the beginning of the school year for three participants. The focus could have been on their respective end of

the school year grades and the start of the school year routines. In addition, a follow up with the participants could yield more Facebook activities that the participants integrated with their classes. A longitudinal study may encapsulate changes in practice by the participants and their students.

The second recommendation is to study different social networking platforms. Although Facebook is the most popular social media platform amongst teens (Lenhart, 2015) and adults (Duggan, 2015; Wessels & Diale, 2017), other social media platforms could have different adoption rates and functionality for integration in the classroom. Pinterest, Twitter, WhatsApp, Kik, iMessage, Snapchat, Wechat, and other social media platforms have different features than Facebook, and their integration into the classroom environment could be different.

The third recommendation is to include participants who teach different subject areas and grade levels. The participants for this study consisted of three high school English teachers, three high school social studies teachers, and four high school science teachers. The integration of Facebook activities could be different in other subject areas and grade levels.

The fourth recommendation is to conduct similar research on a different socioeconomic status school district. The school district I chose for this study consisted of mostly low socioeconomic status students. Lenhart (2015) noted that students from high-income households make more frequent uses of Snapchat than students from middle- to low-income house households. In addition, students use social media more

often on their smart devices instead of a desktop or laptop (Lenhart, 2015), so access to smart mobile devices may influence the use of social media such as Facebook. In concurrence, Purcell, Heaps, and Friedrich (2013) stated that teachers experience the impact of digital tools in the learning environment differently based on the socioecomic status of their students.

The fifth recommendation for future research is to determine how teachers integrated social networking sites into their lessons during the COVID-19 pandemic. The COVID-19 pandemic caused some school districts to resort to online classes for some or all class sessions for school year 2020-2021. Teachers in these school districts that taught face-to-face sessions had to make a transition to online classes. Some teachers had a creative license to incorporate various online tools. A further study could determine how teachers incorporated social networking sites into their lessons.

Implications

Duggan (2015) and Lenhart (2015) determined that Facebook use is the most popular for personal use amongst teenagers and adults. Integrating the most popular social networking site may cause students to become more motivated in their learning. The experiences shared in this study by the high school teachers could encourage other high school teachers to begin integrating Facebook activities or other social networking sites as a part of their instructional practices. Face-to-face sessions with students could result in a rise in the use of mobile devices and computers that have access to social networking sites.

The online education community can further integrate Facebook for instructional purposes to build on learner-learner and learner-instructor interactions. The traditional teaching practices could incorporate more Facebook activities or some other social networking site. Using a social networking site could ease the transition to using distance learning as the teachers and students become familiar with online tools.

This study has potential implications for positive social change. The International Society for Technology in Education (ISTE, 2020) developed standards for students, teachers, and administrators that focus on digital citizenship. This standard entails that students recognize their rights and responsibilities in a digital world where they act and model in ways that are safe and ethical. Integrating Facebook activities provide the teachers and administrators an opportunity to teach these standards. Likewise, integrating Facebook activities will allow students to practice the measures adopted by ISTE. Policymakers and other high school teachers will have an occasion to realign their online practices to influence how learner-learner and learner-instructor interactions take place.

Conclusion

The purpose of this case study was to explore the mastery experiences of how and why high school teachers decide to use Facebook activities for instruction. The results from this study add to the literature of educational technology about how high school teachers integrate Facebook into their teaching practices. This study revealed that high school teachers selected Facebook activities to promote learner-learner interactions.

These activities allowed students to provide meaningful feedback to one another and to encourage one another in participating in community service-learning outreaches. The high school teachers selected Facebook due to its familiarity and the ability to create learner engagement activities. Furthermore, the high school teachers want training on how to integrate Facebook. Challenges with implementing Facebook included experiencing a lack of resources such as blocked Internet access to social networking sites and grading assignments on Facebook is not a part of Facebook's design.

The results of this study were limited to the small sample of participants from one low socioeconomic status school district. Hence, the results of this study may not reflect other geographic areas with varying levels of socioeconomic status. Recommendations for future study are using a longitudinal study, use different social networking platforms, and select participants from varying backgrounds.

This study expands on the uses of Facebook activities for instructional purposes. I believe the use of social networking sites could see an increased prevalence for a learning tool as users gain mastery experiences in its implementation. Decision makers will have to realign their stance on incorporating social networking sites to stimulate meaningful instruction while allowing students the opportunity to practice the standard of digital citizenship.

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Appendix A: Alignment of Research Questions and Interview Questions for Teachers

Research Questions	Interview Questions
1. How do high school teachers use Facebook in the context of online learning?	1. What are some topics or lessons you covered with your students using Facebook that established learner-learner and learner-instructor interactions?
2. What factors influence the decision of high school teachers when selecting Facebook activities to promote learner-instructor and learner-learner interactions within their educational environment?	Each indentation serves as a prompt to the main question. The [lesson/topic] and [feature] will replace the participant's response to the previous question. 2. What features of Facebook immediately came to mind for use with [lesson/topic]? A. Why did you use [feature] for the [lesson/topic]? B. Were there other features that you considered for the [lesson/topic] for this lesson? C. What features did you not use? Why or why not? D. What challenges did you encounter when using Facebook with your lessons? 3. What features of Facebook have you used to communicate with students to build on learner-instructor interaction? a. What were some examples of scaffolding (modeling,

	demonstration, assisting) activities taking place between you and the students? b. How was [feature] used? c. Did [feature] work as you had planned? Explain. 4. What feature(s) of Facebook have you used to communicate with students to build on a learner-learner interaction? a. What were some examples of scaffolding (modeling, demonstration, assisting) activities taking place between students? b. How was [feature] used? c. Did [feature] work as you had planned? Explain.
3. What are some accomplishments and failures of integrating different Facebook activities that promote learner-instructor and learner-learner interactions?	5. What challenges did you face when designing Facebook activities that promote learner-instructor and learner-learner interactions? 6. What types of activities did you find easy to develop when designing Facebook activities that promote learner-instructor and learner-learner interactions? 7. Why do you suppose your Facebook activities are good or bad quality activities that promote learner-instructor and learner-learner interactions?

Appendix B: Facebook Activities and Noted Assignments

Facebook Feature	Checkmark If used	Assignment Type and Applicability to Developing Interactions
News Feed		
Friends		
Wall and status updates		
Timeline		
Pages		
Groups		
Comments		
Messages and inbox (Messenger)		
Notifications		
Likes and Reactions		
Events		
Marketplace		
Notes		
Places		
Platform		
Facebook Questions/Polls		
Photos		
Videos		
Live Streaming		

Sound Collection music archive		
Facebook mentions		
Credits		
Graph Search		
Poke and Greetings		
Subscribe		
Tagging people		
URL Shortener		
Hash-tagging		
Call-to-Action		
Other:		