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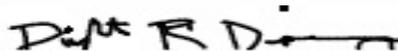
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TEACHERS' PERCEPTIONS OF THE EFFECTS OF CONSTRUCTIVISM AND
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A PHENOMENOLOGICAL STUDY

by

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ABSTRACT

This is a qualitative phenomenological study of an urban high school. This study explores the teachers' perceptions of relevance of Constructivism, Professional Learning Community Training involving technology, and the impact those two have on student engagement. The study further considers various approaches to professional development and Professional Learning Community structure. Findings from the study indicate that the teachers perceive the role of Constructivism is vital in their classrooms but is not well understood by administrators and other teachers; Professional Learning Community participants lack a firm grasp of the cultural change needed for successful Professional Learning Community adoption, and that Professional Learning Community training doesn't necessarily impact student engagement. Further findings reveal that teachers are not receiving the level of technology training necessary to provide students with options for submitting assignments and also suggest that student engagement increases when teachers use technology. Study results also suggest that Professional Learning Community training should operate using Constructivist principles, and teachers should be involved in designing and implementing the training. Future research should be conducted relating to technology's impact on student's cognitive, affective, and behavioral realms of engagement and ways of creating classrooms that appeal to the students and bring about their optimal levels of engagement. Other further research could examine the impact of Professional Learning Community technology training on collective teacher efficacy.

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CHAPTER 1: INTRODUCTION

For more than a century, researchers and theorists have proposed numerous ways to improve student education. Today's students are tomorrow's leaders, and preparing young people for their future roles is the vital task of the entire educational community. As an acknowledged expert in teacher efficacy and methods of maximizing student learning, Hattie cautioned teachers to be flexible as they learn and teach, to use a variety of proven and creative teaching methods, and to be "the best error detectors in the business" (Hattie, 2012, p. 185). And the 2017 National Educational Technology Plan Update made it clear that teacher preparation programs must include instruction on technology as an aid to student learning (South & Stephens, 2017, p. 35). More recently, the education community has broadened the view to emphasize the vital role of student engagement in both the learning process in high school and preparation for post-high school education (Bond & Bedenlier, 2019). Therefore, the researcher examined three related issues to determine if educational Constructivism is still relevant; if Professional learning community (PLC) training helps teachers learn how to produce and use self- and student-produced videos; and if videos and other teaching technologies can enhance student engagement in the Constructivist classroom.

Background of Study

Although students increasingly have become leading users of technology in the past two decades, many teachers have not kept pace or are catching up far more slowly. Secondary teachers who do know how to use technology effectively in the classroom and for online courses can help their colleagues teach in ways that keep students engaged. Yet, a national study and plan published in 2017 found that the effort is neither widespread nor on a national level (U. S. Dept. of Education, 2017, p. 1). Introducing the U.S. Department of Education's National

Education Technology Plan (NETP) Update, the director's opening letter stated that while some secondary faculty are helping their peers to use technologies more effectively, some schools are reducing or eliminating library positions at the same time they are failing to help teachers lead the drive toward digital change (U. S. Dept. of Education, 2017, p. 1).

Providing a framework for discussing video production and YouTube in the classroom, the NETP set a national vision and plan for learning enabled by technology (U. S. Dept. of Education, 2017, p. 3). The plan was compiled by leading education researchers; district, school, and higher education leaders; classroom teachers; developers; entrepreneurs; and nonprofit organizations. The belief of the NETP is that classroom technologies can enhance and expand how teaching practices influence student engagement and learning. However, the authors noted that teachers need training to "take full advantage of technology rich learning environments" (U. S. Dept. of Education, 2017, p. 5).

Four years earlier, Morrell, Dueñas, Garcia, and López, (2013) linked production and uses of media with academic achievement and employment. They found that high school students routinely produce high-quality videos which they post on their personal websites and a variety of social media sites such as Facebook, Twitter, and YouTube. If teachers can harness this enthusiasm for technology by allowing students to submit assignments using technology, students would approach the subjects with a heightened level of enthusiasm (Guo, 2014, p. 11; Pereira et al., 2012, p. 50). Berk (2009) stated that viewing a video can result in an emotional, sometimes subconscious response, such as excitement, anger, laughter, relaxation, love, whimsy, or even boredom" (Berk, 2009, p. 2). Abrahamson et al. (2005) had evaluated mixed-media instruction and found that such learning environments can result in greater student participation (p. 1). Csikszentmihalyi (1990) wrote,

Enjoyment results when a person has not only met some prior expectation but also gone beyond what he or she has been programmed to do and achieved something unexpected. Enjoyment, in other words, is characterized by a sense of novelty or accomplishment (p. 3).

Further, Morrell et al. (2013) noted that visual media are an integral part of students' lives, concluding that: "Media education [should] be more effectively implemented into the K-12 curriculum in the United States" (Morrell et al., 2013, p. 3). In a process they coined critical media pedagogy, Morrell et al. said that students need to be able to bring their critical reasoning skills to the decoding and analysis of texts produced across many genres including, but not limited to, television, film, music, the Internet, print media, magazines, murals, posters, t-shirts, billboards, social networking sites, and mobile media apps (Morrell et al., 2013, pp. 6–12). Morrell et al. (2013) examined the levels of curriculum and pedagogy in practice at several southern California high schools, with a focus on high-performing students who were using technology (Morrell et al., 2013, p. 10). Berk (2009) listed 20 ways in which using video in teaching is positive; number 17 was "Make learning fun," noting, "Teachers in all subject areas use video clips as an instructional tool so that their students can experience the powerful cognitive and emotional impact" (Berk, 2009, p. 2). Today more than ever, many teachers are embedding critical media education into traditional academic content areas; however, some teachers have not included technologies in their lesson plans (Berk, 2009, pp. 5–6). Not including technology may lower student engagement because they already use digital tools such as watching videos and listening to music, playing games, messaging, and using social platforms (Berk, 2009, pp. 3, 6). Teachers should be able to match the level of technical demands that the

students ask for when it comes to providing an engaging classroom environment (Buzzetto-More, 2014, p. 30; Maziriri et al., 2020, p. 119; Speed et al., 2018, p. 100).

In this study the researcher evaluated whether using Professional Learning Communities to increase teacher awareness of these transparent tools for learning would be a valuable use of time. Teachers using Professional Learning Community time to learn how technology can be implemented in the classroom to increase student engagement has been reported as key by several researchers (Carmichael et al.; DuFour & Fullan, 2013; Mind Tools, 2018).

In essence, these researchers and the NETP encouraged teachers to transition from time-honored analog teaching methods to state-of-the-art digital methods. It is no longer sufficient for teachers to rely on an overhead projector, flip charts, printed handouts, or similar techniques of the previous century. While these technologies were useful in the past, they are neither adequate nor efficient as students in general are increasingly more technologically competent than many of their teachers (U. S. Dept. of Education, 2017, pp. 1, 9–10, & 18–20).

The revised NETP noted that education leaders will need to collaborate to determine what technologies will most effectively and efficiently teach, how those technologies could work, and how to implement the vision of those “systemic changes in learning and teaching” (U. S. Dept. of Education, 2017, p. 5). The NETP’s goal in this regard was to enhance learning by meeting the needs of all learners:

Learning, teaching, and assessment enabled by technology require a robust infrastructure. Key elements of this infrastructure include high-speed connectivity and devices that are available to teachers and students when they need them. Aside from wires and devices, a comprehensive learning infrastructure includes digital learning content and other

resources as well as professional development for educators and education leaders (U. S. Dept. of Education, 2017, p. 5).

Responding to the findings and recommendations of the NETP, the researcher evaluated the perceptions of teachers regarding the value of including technology such as YouTube as an integral part of the Constructivist classroom, all with the goal of studying if and how secondary teachers are developing and using enhanced learning methodologies to keep students actively engaged in each class.

Problem Statement

Today's students live in a fast-paced, visual world of music videos, elaborate online gaming, Snapchat, TikTok, and similar platforms at home. "Schooling as we know it is outdated" (Fullan & Quin, 2016, p. 77). While technology continues to improve, schooling has not changed in 50 years (Fullan & Quin, 2016, p. 77). This creates boredom and less engagement by the students. As a result, students experience a disconnect from meaningful and applicable learning in their classrooms, many of which still feature out-of-date pedagogies. Fullan & Quinn (2016) encouraged educators to do more than acquire technology and instead to adopt state-of-the-art digital tools (Fullan & Quinn, 2016, p. 81). Teachers need to "zero in on precise pedagogy—what works in promoting engaging learning for students and teachers alike" (Fullan & Quinn, 2013, p. 5). Over the past 20 years, many teachers have avoided using newer technologies such as videos including YouTube, relying instead on the pretest-teach-posttest and "Sage on the Stage" (didactic) models with only limited student participation (Brooks & Brooks, 1999, p. 120). This indicated a gradual move away from Constructivist teaching methods (Ashman, 2020, p. 2) and negatively impacted student engagement. According to DuFour and Fullan (2013), "Students are increasingly bored as they move up the grade levels" (p. 4). Teachers need to have state-of-the-

art technology training within a Professional Learning Community structure to remain current with the medium that students prefer: video (DuFour & Fullan, 2013, pp. 2–4).

Despite wide availability of online videos including YouTube, cell phone video capabilities, and inexpensive editing software, many teachers are not prepared to use technology effectively. Leach (2017) found: “Few teacher preparation programs support future teachers in learning to teach such a curriculum. A systematic program of professional development to build capacity for teachers already in schools does not exist” (Leach, 2017, p. 37).

As teachers become more aware of the ease of using classroom technologies such as YouTube as described by Green (2018) and the collaborative benefits of video production, students will accrue a variety of the enhanced educational benefits these tools provide. Even in the simplest form of video production, students can record assignments with their phone and upload them to YouTube, and the teacher can play those assignments back for the entire class to see, review, and critique.

Purpose of Study

A purpose of this study was to explore the importance of Professional Learning Community training to help teachers use technology more effectively in the Constructivist classroom. This study discovered common elements that teachers and students experience in working with YouTube, and distilled these elements into a set of recommendations to district leaders for creating curricula after Professional Learning Community training about classroom technologies including YouTube. The broader goal was to help develop practices that might improve ways faculty use technologies to enhance teaching and engagement in the Constructivist classroom and to enhance student collaboration and engagement. Finally, data collected for the

study provided evidence to answer the question: Do Professional Learning Community technology training and the use of Constructivist techniques benefit student engagement?

Significance of Study

This study is paramount as it contributes valuable insight into the successful implementation of classroom technology as a transparent tool for learning. This research used a Constructivist conceptual framework approach to discover how technologies interrelate with the environment for students to learn from and to submit multimedia assignments. “How do they address this shift to the digital and global worlds? The solution lies in becoming both learners and reflective doers who are working on continuous improvement and innovation simultaneously” (Fullan & Quinn, 2016, p. 80). Another system allows the teacher to use digital technologies as a key part of the learning experience. Digital technologies have the potential to shift the teacher/student paradigm from lecture and passive learning to active, more involved learning with enhanced student engagement. Especially in light of the lack of converging technologies of media use, YouTube is a valuable and potentially limitless reservoir of untapped education videos, teacher videos, and student-created video assignments. Furthermore, students’ incorporation of YouTube into lesson studies, homework, and small-group classroom work has become a medium for creating, sending, receiving, critiquing, and collaborating in many 21st century blended classrooms. It has the potential to be the tool students use serving stakeholders, digging deeper with digital media and content (Fullan & Quinn, 2016) to create a more efficient, collaborative culture in the classroom. According to the New Pedagogies for Deep Learning initiative, “In this new model, pedagogy is the driver and digital is the accelerator to go faster and deep into learning for all” (Fullan & Quinn, 2016, p. 81).

In this digital age, more teachers have access to facilities and equipment to create their own subject and topic videos. However, most schools do not have budgets, facilities, equipment, and trained staff that will permit students to become directly involved in producing their own videos. Thus, YouTube is a highly effective tool in the instructor's arsenal. Burke et al. (2009) noted that innovative teaching strategies are imperative in higher education courses to engage and motivate the newer tech-savvy generation (p. 6).

Using digital technologies as a multifaceted educational tool could move to the forefront of classroom practice. Students may upload assignments, critique their own projects and those of others, and work collaboratively with fellow students. Students who watch video with an ear for vocabulary could become better writers and speakers and have fun doing it (Berk, 2009, p. 2). Abrahamson et al. (2005) observed one shy student who seemed to lose interest after 10 minutes or less. Her level of interest grew significantly when she was given a video camera, which she liked, using it to document the work of her classmates (Abrahamson et al., 2005, p. 2). Berk (2009) reported that students in the early 2000s preferred video as a major resource because it appeals to multiple intelligences and learning styles which increase student success (Berk, 2009 p. 14). Five years later, Davidson et al. (2014) "Young children's engagement with digital technology provides many opportunities for learning" (Davidson et al., 2014, p. 82). Hobbs (2010) clearly stated: "There is growing momentum to support the integration of digital and media literacy into education" (Hobbs, 2010, p. 2), as subsequent research by Watkins and Wilkins (2011) pointed out: students can independently view an unlimited range of online videos, giving them a chance to thrive (p. 115).

The results of this study may help to develop an expanded systemic paradigm that enables teachers to implement effective uses of YouTube and video production, and enhance

engagement across the curriculum, as described in Chapter 5. Finally, as students move through and out of formal education and enter the global marketplace, society can welcome academically strong and intellectually inquisitive adults who will be prepared to perform in and ultimately create jobs and whole industries not yet dreamed of in 2021.

Research Questions

Three research questions were addressed to determine whether the use of student-produced YouTube segments improves student learning by producing higher levels of engagement in a Constructivist classroom. Specifically, this research addressed these interconnected relationships:

RQ1: What are teachers' perceptions of the relevance of Constructivism in the Age of Technology?

RQ2: How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube?

RQ3: What are teachers' perceptions of the indicators of student engagement?

Conceptual Framework

This study was structured to examine teachers' perceptions through the lens and conceptual framework of Constructivism, the effectiveness of district and school technology training during Professional Learning Community time, and the combination of those factors as an aid to enhancing student engagement. Furthermore, this study operates through the conceptual framework lens of Constructivism as developed by Dewey (1900, 1902/2013, 1938), Piaget (1952; Clabaugh, 2018), and Vygotsky (Liu & Matthews, 2005). This research also examined teachers' observations and perceptions to determine if Constructivism remains relevant in the

third decade of the technology-rich 21st century. Explaining this concept 120 years ago, Dewey (1902/2013) contended that

Setting up conditions which stimulate certain visible and tangible ways of acting is the first step. Making the individual a sharer or partner in the associated activity so that he feels its success as his success, its failure as his failure, is the completing step (p. 14).

Limitations

The study examined how selected teachers worked with digital technologies and self- and student-produced content; results may not be generalizable to all humanities and arts classes or projects. The success of using YouTube depends on multiple variables, such as quality of the Professional Learning Community instructional program, student interest and involvement, teacher involvement, availability of production equipment, and quality of editing.

Delimitations

The delimitations utilized by the researcher in this study were determined by a desire to gain a better understanding of the complete relationship that exists among the process of producing student YouTube videos, the teacher's ability to teach using digital technologies, the faculty and school buy-in, and how each of those alone and in combination may affect the quality of the final product. The researcher sought only selected southern California public high school teachers as participants. Therefore, because of coursework during credentialing and regionally agreed upon pedagogies, this study's findings and conclusions may be regionally agreed upon and, therefore, not generalizable to other California school districts nor to other states. The qualitative information gathered could vary because of teacher delivery methods, the number of hours a student meets with the teacher and actively works with digital technologies and video production, and other factors related to the students in their classes.

Assumptions

This study included the following assumptions:

- The teachers who responded to the surveys and participated in the Zoom interviews spoke accurately, honestly, and thoroughly indicated their perceptions regarding the use of video technologies.
- The selected participants understood the vocabulary, concepts, and standard operating procedures associated with student-produced video segments,
- The data collected accurately measured the knowledge, skills, and perceptions of the teachers' involvement in the model,
- The interpretation of the data accurately reflected the perceptions of the respondents,

Based upon the work of DuFour and Fullan (2013), the researcher believed that a school system could thrive and be successful by adopting production and uses of video through extensive technology training during Professional Learning Community time.

The Researcher

The researcher has worked as a certificated, single subject English teacher and a Vocational Education multimedia teacher for 23 years. He holds a Bachelor of Arts in communication from Metropolitan State University in St. Paul, Minnesota; a secondary teaching credential from Concordia University, St. Paul, Minnesota; a vocational education multimedia credential in multi-media and a vocational supervision and coordination credential from the University of San Diego, California; and a Master of Arts in Educational Administration from Concordia University, Irvine, California. No participant has a direct relationship with the

researcher that might represent a conflict of interest or which may have imparted bias on the research study.

The researcher has been trained in the skills necessary to carry out the designed study. The researcher has used video production and YouTube numerous times in designing lessons plans for students. The researcher's skills include training in video production as a part of his undergraduate training and courses in qualitative, quantitative, and statistical analysis at Concordia University, Irvine, California. Since 1997 he has been responsible for training teams of video production students and supporting administrative goals at the school site and the district level.

Organization of Study

This research study is presented in five chapters:

Chapter 1 includes the background of the study, statement of the problem, purpose of the study, significance of the study, definition of terms, theoretical framework, research questions, limitations, delimitations, and the assumptions of the study.

Chapter 2 presents a rich review of the literature as it pertains to the three research questions.

Chapter 3 explores the methodology.

Chapter 4 displays the study's findings, including the participants' demographic information, testing the research questions, confirmation relationship analysis, and the results of the data analysis for the three questions.

Chapter 5 provides a summary of the entire study, discussion of the findings, implications of the findings for theory and practice, recommendations for further research, and conclusions.

Definition of Terms

Affective Engagement: The component of student engagement that encompasses enthusiasm, satisfaction, curiosity, pride, and excitement (Bond & Bedenlier, 2019).

B-Roll: Video that essentially is alternative footage to a production's main footage. Main footage is referred to as A-roll, making the cutaway footage B-roll. For example, while shooting an interview with a welder, the A-roll will be the footage of the welder talking. The B-footage would be the cutaway shots showing the welder at work.

Behavioral Engagement: The component of student engagement that includes effort, attention and focus, attendance, confidence, assuming responsibility, and asking peers or the teacher for help (Bond & Bedenlier, 2019).

Cognitive Engagement: The component of student engagement that includes such concepts as critical thinking, setting learning goals, self-regulation, understanding, and doing more than the minimum on a task to bolster learning (Bond & Bedenlier, 2019).

Constructivist Theory: Relates to social and situational learning theories; views learning as an active process in which learners build information based in part on prior knowledge (Mind Tools, 2018). Based on teaching video production courses, Hubbard (2012) evaluated the effectiveness of teaching while following a Constructivist model:

I am convinced that Constructivist-based teaching methods such as those I employed unintentionally in my special topics video production course have enormous educational power, even in courses that are not overtly skill-based. I am also convinced that Constructivist literature from the field of education provides useful insights into how best to implement these approaches to media literacy through video production (Hubbard, 2012, p. 165).

Mixed Media Learning Environment (MMLE): Affords students multiple entry points into participation. Students, who come to these flexible environments with different skills, inclinations, and literacies, have increased opportunities for expression and for development of expertise and, thus, for finding their niches (Abrahamson et al., 2005, p. 2).

Professional learning communities (PLC): Under the guidance and leadership of district and school administrators, teachers meet regularly, often once per week, for collaborative time and training. These sessions often are held during a late-start day.

Student engagement: “The energy and effort that students employ within their learning community, observable via any number of behavioural, cognitive or affective indicators across a curriculum” (Bond et al., Manuscript in preparation, 2020, pp. 2–3).

Transduction: Occurs as knowledge is synthesized and then reconfigured across different modes of expression to express the same understanding, such as information from text to film (Leach, 2017, pp. 32, 39).

Transmediation: Information and its meaning move from one form of expression to another. For example, a student could listen to a poem, essay, dramatic work, or video and then draw a sketch or picture in the medium of their choice that depicts what the words had said or meant to them. Conversely, students could view a painting, sculpture, or photograph and write random thoughts to perhaps a complete essay to state what the art meant to them. “Many teachers find that transmediation enlivens their reading program, while it also supports students’ comprehension” (Harste, 2014, p. 91).

Universal Design for Learning (UDL): Focuses on teaching and learning that enables students to succeed, offers students multiple ways to access material, how to engage with new

material or knowledge, and demonstrate their knowledge or mastery of new material (Leach, pp. 30–31).

Chapter Summary

The Constructivist educational model has developed for nearly 120 years with varying degrees of acceptance and disdain. Educational experts and researchers have found that Constructivism is an educational system that focuses on the student and his or her prior knowledge. Such a classroom features free-flowing discussion of the day's topic, builds important relationships with one another and their teachers, and establishes a base of knowledge for future classwork. As this chapter has noted, numerous researchers have reported the need for increasing uses of digital technologies in the education setting primarily because today's students already are more technologically advanced than many of their teachers. Furthermore, this chapter has established the need for current research on the relevance of Constructivism in the 2020 classroom, the importance of Professional Learning Community technology training in the Constructivist classroom environment, and the potential value of digital technologies to enhance student engagement.

CHAPTER 2: REVIEW OF LITERATURE

This chapter focuses on the rationale for the use of classroom technologies such as teacher and student video production and YouTube as a teaching and learning process implemented through Professional Learning Communities to improve student engagement in the Constructivist setting. This review of literature attempted to understand the breadth and depth of past research and to understand what theories have been used in that research. The researcher has studied a variety of references in the areas of Constructivism, educational research on the subject of technologies such as YouTube usage by students and teachers, and how teachers' relationships with students and uses of technology combine to enhance student engagement.

In the century since constructivism emerged, students have experienced a wide range of classroom styles from the more traditional lecture to fully hands-on learning. Student media has grown exponentially from a small piece of slate and chalk to handheld devices that are smaller than a paperback book, such as digital cameras and cell phones. This emerging technology has given students new tools for learning with enhanced engagement, as Pereira et al. (2012) reported: "Involving students in a video production project can work as a motivating aspect to make them active and reflective in their learning, intellectually engaged in a recursive process" (p.44). The most recent two decades have seen an explosion of technologies that appear in smaller and more efficient packages. Now in the hands of very young children, these newer, audio and video technologies have become indispensable accessories. It seems only natural that education and modern technology should combine for the greater benefit of students: "Students work with both 'high' – and 'low' – tech media and materials to create artifacts" (Abrahamson et al., 2005, p.1). Berk (2008) noted technologies have advanced so rapidly that users have difficulty keeping current with all of the new products (Berk, 2008, p. 5). Hobbs (2010) stated,

“Digital and media literacy as a constellation of life skills are necessary for full participation in our media-saturated, information-rich society” (Hobbs, 2010, p. vii). Thus, this literature review examined the relationships in four major categories: Constructivism, video and related teacher education during Professional Learning Communities technology training time, influences on student engagement, and how a blend of those three elements affects students’ education.

Role and Relevance of Constructivism

This research was conducted through the conceptual framework of Constructivism. Teachers who use a Constructivist classroom model encourage and enable students to take a direct interest in their education, thus becoming more fully engaged in the classroom; the theoretical concept has been described, discussed, and debated for more than a century. This research sought teachers’ perceptions about the relevance of Constructivism in the technology-rich 21st century to address the issue of how involved students can or should become in their own education (Brooks & Brooks, 1999, p. ix).

Challenges to Constructivism

A basic tenet of constructivism focuses on students being actively involved in their education as evidenced by their ability to integrate prior learning and then grasp, understand, and apply facts and principles of a lesson to the current material and in future lessons. Brooks and Brooks (1999) state that Constructivist teachers structure assignments around opportunities for students to refine their understandings about concepts under discussion (Brooks & Brooks, 1999, p. ix). This comment summarizes educational philosophies which described and developed Constructivism through much of the 20th century based on the research and writings of educational theorists Dewey, 1900, 1902/2013, 1938; Piaget, 1952; Pereira et al., 2012; and Vygotsky (Liu & Matthews, 2005). However, the end of the 20th century witnessed a shift in

educational philosophy as the American educational community began to move away from Constructivism. In the years between 1980 and 2020, much of American education shifted toward formats and programs such as the structured teaching methodologies of Whole Language and its associated Invented Spelling (Maddox & Feng, 2013; Weaver, 1998), the rigorous requirements and deadlines of the No Child Left Behind Act of 2001 (Whitney & Candelaria, 2017), and more recently the Common Core State Standards (Polikoff, 2017).

Even as early as 1999, researchers began to report that students across the United States preferred facts over critical thinking, were uncomfortable when asked to provide in-depth analysis of a topic, and wanted instruction to be rapidly paced rather than presented step-by-step (Brooks & Brooks, 1999, p. 119). In many of those same classrooms, more traditional, lecturing teachers were less inclined to consider or value student perspectives and might view student discussion or counterviews as interfering with the desired or required pace of a lesson. Not satisfied with that development, numerous researchers noted that Constructivist classrooms encourage students' perspectives which in turn become teachers' cues for further exploration of a topic and subsequent lessons (Ashman, 2020, pp. 1–3; Campbell & Wahl, 2015, pp. 28–30). Teachers could enhance students' learning by remaining committed to the principles of Constructivism, reading students' reactions, and valuing students' points of view (Dennick, 2016, p. 204).

Student Experiences Influence Learning

Students base much of their learning on past experiences and what they have learned already: “New knowledge is therefore interpreted by existing knowledge and then connected to existing knowledge” (Dennick, 2016, p. 200). The careful teacher can build on what students know most effectively by asking questions (Dennick, 2016, p. 202), a concept first proposed by

Dewey (1900, 1902/2013, 1938). Brooks and Brooks (1999) linked the close relationships that exist among Constructivism, learners, teachers, learning, and assessment (p. ix). Constructivist teachers design lessons around their understanding of what students already know and build their classrooms and lessons so students feel a direct relationship with the information. Encouraging students to focus first on major ideas and principles, the teachers comment secondarily about issues or topics that need further information or investigation (Brooks & Brooks, 1999, p. ix). Yilmaz (2008) noted that the process of learning must be viewed as active as students critically think about new information and give more than terse responses to their teachers: “By asking thoughtful and open-ended questions, constructivist teachers also encourage students to elaborate on their initial responses through such interactive methods as discussion, debate, and Socratic dialogue” (p. 170). More recently, Ashman (2020) noted that students do not merely accumulate knowledge, but evaluate new information by directly relating it to knowledge already stored in their memories (p. 1).

Collaborative Learning

Gjergo and Samarxhiu (2014) stated that one of the key features of Constructivism is collaborative learning, “a situation in which two or more people learn or attempt to learn something together” (p. 23), adding that a collaborative classroom features more student-to-student learning than teacher-led or teacher-focused instruction (pp. 24–25). The researchers noted that this student-centered approach, a key element of the Constructivist classroom, emphasizes student-student cooperation rather than competition (p. 24).

The findings of Pereira et al. (2012) echo Dewey’s explanations of Constructivism, his recommendations of a century before, and the theoretical questions of Kant and Piaget (Dennick, 2006, p. 200). Dewey says that it is the responsibility of the school environment to balance the

various elements in the social environment, and to see to it that each individual gets an opportunity to escape from the limitations of the social group in which he was born and to come into living contact with a broader environment (Dewey, 1902/2013, p. 18). In *Democracy and Education* Dewey (1902/2013) wrote that it is the teacher's responsibility to create environmental conditions for learning, adding: "Experience has shown that when children have a chance at physical activities which bring their natural impulses into play, going to school is a joy, management is less of a burden, and learning is easier" (Dewey, 1902/2013, p. 139). So, the environment needs to excite students and motivate them to learn; the teacher should also model how to learn (Dewey, 1902/2013, pp. 12–13).

Brooks and Brooks (1999) found that "more and more teachers continue to gravitate toward Constructivist principles because ... they make sense" (p. x). While talking with people who recalled the teachers they remember most, Brooks and Brooks found that the teachers that were remembered by their students were the ones that helped students connect their current ideas with new ones, and these students were considered remarkable (p. xi).

Fullan (2010) focused on reforming the whole educational system which would include many Constructivist features such as routinely evaluating student progress and participation, encouraging students to think both creatively and critically, and critiquing their own teaching techniques and success, all of which impact student learning (Fullan, 2010, p. 6). Furthermore, Fullan cautioned: "There is no way of achieving whole-system reform if the vast majority of people are not working on it together" (Fullan, 2010, p. 21).

Marzano and Marzano (2003) wrote that the key to effective classroom management is a strong bond between the teacher and students: "Teachers who had high-quality relationships with their students had 31 percent fewer discipline problems, rule violations, and related problems

over a year's time than did [other] teachers" (pp.1-2). Campbell and Wahl (2015) further emphasized the concept by reporting a caring and trusting teacher-student relationship creates a much more effective classroom with more student engagement (p. 26). Solid, two-way relationships are vital in a smooth-operating classroom, as Campbell and Wahl noted, emphasizing that students will not give their best efforts if the student-teacher relationship is viewed as "don't like" in either direction (pp. 27-28). Students who perceive their teachers as caring engage more with academic content, take intellectual risks, adapt their behavior more appropriately, and keep trying even when they think they are not fully grasping the lesson. As a result at middle school and high school levels, students tend to be more fully engaged with their learning. More important, high school students are less likely to drop out (Campbell & Wahl, 2015, p. 30). One way to establish a positive classroom environment and strengthen teacher-student relationships is to offer students alternative ways to submit assignments such as video. Campbell and Wahl (2015) offered indicators of a positive teacher-student environment: Teachers focus on students as individuals; they listen critically and carefully to student comments and responses; and they speak respectfully to students while simultaneously honoring student privacy and treating all students with respect (Campbell & Wahl, 2015, pp. 32-33).

The Influence of Learning Modalities

One student factor stretching across all three major areas of this research is learning styles, which interweave Constructivism, student engagement, and teaching techniques including the use of modern technologies. Teachers need to consider learning modalities as an important factor in any classroom and especially in a Constructivist classroom both as an instructional focus and as a potential factor influencing student engagement. Scholarly studies and peer-reviewed articles have shown that students learn best given a variety of teaching methods which

educators traditionally grouped into four categories: visual, tactile, auditory, and kinesthetic (Carmichael et al., 2017; Hubbard, 2012; Rogowsky et al., 2015; personal communication, 2012). Though dozens and perhaps hundreds of educators have discussed the concept in the past several decades, Concordia University Portland explained the concept concisely in 2012: “Not all students learn in the same way. All students have varying talents, and these talents determine each student’s learning styles (personal communication, 2012

Not fully satisfied with the traditional grouping of learning modalities, Concordia University Portland expanded the list of types to include eight styles with a detailed explanation of each, which Table 1. 1 summarizes (personal communication, 2012)

Table 1. 1

Concordia University Portland—Expanded Learning Modalities

Learning Modality	Student Characteristics and Preferences
Naturalist	Enjoys exploring animals, plants, and weather. Likes to ask questions, experiment, and investigate what they don’t understand; hands-on.
Intrapersonal	Intrinsically motivated; enjoys independent projects, prefers being alone; likes peace and quiet. Investigates the “new” alone.
Interpersonal	Prefers to interact with fellow learners. Cares about others’ ideas, typically very social, and learns best from cooperative experiences.
Bodily Kinesthetic	Prefers to learn using the sense of touch, which may also include bodily movement. Learns best by holding and manipulating objects.
Spatial/Visual	Most comfortable visualizing concepts; likes to draw, do jigsaw puzzles, and complete mazes; enjoys designing and building models. Works well with charts, maps, diagrams, slides, and videos.
Musical	Understands and processes sound, rhythm, patterns in sound, and relationships between sounds; able to process rhymes and other auditory information.
Logical	Likes to think conceptually using logic and mathematics with clear reasoning using relationships and patterns. Learns best by testing and conducting experiments.
Linguistic	Able to express thoughts in writing and verbally. Loves reading and playing on the meaning or sound of words. Regularly makes an effort to find the meaning of new words.

YouTube Training During Professional Learning Community Time

Many school districts have moved to mandatory weekly training during Professional Learning Community time. The use of such training time could offer opportunities to collaborate inter/intra departmentally to introduce how to use YouTube and technology such as video production across the curriculum. Brooks and Brooks go on to say that “unless teachers are given ample opportunities to learn in Constructivist settings and question for themselves educational vision through which they can reflect on educational practices, the instructional programs they learn will be trivialized into ‘cook-book’ procedures” (Brooks & Brooks, 1999, pp. 121-122).

Given that Constructivism features an emphasis on “student-centered” education and improving student learning across the curriculum, several districts have been making efforts to focus on student learning through technology. As a result, schools are beginning to develop and implement educational systems that are effective and efficient; educational leaders and classroom teachers must devise effective methods of classroom instructional delivery and receive training on how to use those technologies. DuFour and Fullan (2013) found that Professional Learning Communities can play a central role in dramatically improving the overall performance of schools, the engagement of students, and the sense of efficacy and job satisfaction of educators (p. 4). YouTube assists in these broad Constructivist concepts by actively questioning meaning.

Research for this portion of the project included keyword, online searches for “YouTube Classroom Students” and “YouTube Classroom Students Peer-Reviewed Articles” using Google.com. Both yielded a plethora of results; the Google.com search for the first string produced 575,000,000 hits in 0.58 seconds. When the search focused on “YouTube Classroom

Students Peer-Reviewed Articles,” Google.com produced 10,500,000 articles and videos in 0.46 seconds. A similar search using scholar.google.com found 22,400 hits in 0.11 seconds. The researcher initially selected approximately 30 articles with titles that seemed closest to the focus of this research. Then, the researcher read the articles, examined the articles’ reference lists, and consulted several additional sources to ascertain existing research on the same or similar topic as planned for this project. Follow-up searches used a variety of 20 additional scholarly, online companies and educational organizations. The combined resources yielded the journal articles and published book resources cited in this dissertation as included in the accompanying list of references.

Teachers can access a wide variety of online technical resources and tools to strengthen lesson presentations and enhance student education. Yet, teachers with only limited training on classroom technologies such as YouTube may find the idea intimidating. Such technology training during Professional Learning Communities time at the district and school levels could give teachers of all experience levels an additional tool in their instructional arsenal: “When the PLC process drives an entire system, participants come to have a sense of identity that goes beyond just their own piece of the system” (DuFour & Fullan, 2013, p. 3).

This research centers on the interrelationship among roles of teachers, students, and teacher training available in the entire educational community and specifically how that partnership functions on a single school site in southern California. YouTube is mentioned frequently as a widely -used, predominant representative of two-way classroom resources where teachers can find and use prerecorded videos and also post online their own and students’ video lessons and projects. For example, Burke et al. (2009) reported on college health-education research in the early years of YouTube which demonstrated that online videos could prove to be

an important classroom resource: “Faculty who used YouTube in their courses were satisfied with this new technology and found it to be an effective teaching and learning tool” (p. 6). Furthermore, they suggested that online videos could both help teachers to supplement their teaching with related, well-produced materials while simultaneously sustaining student engagement (p. 7).

Based upon that framework, the present study examines technologies and related training at the secondary level to determine if classroom technologies such as video production and YouTube enhance students’ education in both in-class and remote education toward future college, university, and trade school courses, and during on-the-job training. An extensive review of relevant literature reveals only minimal research conducted specifically on teacher experiences using YouTube for uploading student assignments, although there is some evidence of classroom uses of video technologies, educational videos, student-authored videos, and commercials and films which can enhance student learning in the traditional classroom, and in special circumstances such as home and hospital, and the Novel COVID-19 pandemic homebound isolation (Dorn et al., 2020; Burgess & Sievertsen, 2020).

Literature review and the researcher’s experience in secondary education yield common elements that both directly and indirectly influence and inform students’ intellectual and academic development, and their potential as tomorrow’s leaders and professional workforce. The educational community has long discussed the need for all stakeholders to be part of each student’s learning process. This research focuses the concept on the use of video as a focused means of enhancing the acquisition of knowledge by each student with the integration of all components of the stakeholder community. Technology can enable personalized learning or experiences that are more engaging and relevant. U. S. Dept. of Education (2017) listed four

guiding principles in NETP’s Early Learning and Educational Technology Brief: Teachers can use technology as a tool for learning—if they use it appropriately. Moreover, technology can increase access to learning opportunities for all children, while simultaneously strengthening relationships among parents, families, early educators, and young children. Finally, technology as an aid for learning works best “when adults and peers interact or co-view with young children” (U. S. Dept. of Education, 2017, p. 13).

Professional Learning Communities and Whole System Reform

Professional learning communities are key to whole system reform (DuFour & Fullan, 2013; Fullan, 2010). Nonetheless, many teachers have not been given training on how to use video resources including YouTube in the classroom. The 2017 NETP recommended technology training and full access to online resources as aids to teaching and more effective learning (U. S. Dept. of Education, 2017, p. 40). However, Berk (2009) stated 12 years ago that classroom videos are not a new technology. Professional learning communities are a great way to introduce what teachers do not know about the relationship of videos and YouTube to learning. Setting aside time during a Professional Learning Community session to introduce teachers to these new concepts would be beneficial. DuFour and Fullan (2013) have devoted their careers to demonstrating how important the Professional Learning Community movement is and the impact that it can have. The 2017 NETP also recommended that teacher-preparation programs include technology training and that learning environments become more focused on technology (U. S. Dept. of Education, 2017, p. 40). “In 2011, three of the four finalists for national superintendent of the year in the United States attribute their district’s success in raising student achievement to the PLC at Work process” (DuFour, & Fullan, 2013, p. 1). However, leaders need to integrate Professional Learning Community technology training as a key element of the district’s and

school's educational structure. This will require a dynamic change to the traditional understanding of such training as being another program pushed from above. To become more efficient and effective, Professional Learning Community technology training must transform the traditional educational culture in a lasting way (DuFour & Fullan, 2013, p. 2). This cultural shift from time-honored, comfortable views is the toughest part because it requires teachers to put their egos on the shelf and changes how teachers interrelate (DuFour & Fullan, 2010, p. 2).

Using Fullan's (2010) whole system reform approach, Professional Learning Community time and training to encourage increased YouTube use would have an impact on just about everyone on a high school campus if given the opportunity and adequate resources. When the Professional Learning Community process drives the entire system and everyone has been trained and buys in to the system, "They identify in palpable ways with the overall organization, unleashing the energy of mutual allegiance and competition for the common good" (Fullan, 2010, p. 3). So, the impact that classroom technologies can have on the entire school mirrors big ideas in Professional Learning Communities proposed by DuFour and Fullan (2013).

DuFour and Fullan (2013) said that Professional Learning Communities needed to be an integral part of both cultural and structural change (p. 2). "If the PLC process is going to impact education beyond the individual school or isolated district, the process must be the driving force of the entire system. It is time for PLCs to go big!" (p. 3). Furthermore, they warned that "PLCs are a process, not a program. Educators do not 'do PLC' one year and then move on to something else the following year" (p. 3). The most enduring value of the Professional Learning Community endeavor will only occur if the educational community and related stakeholders "learn to implement the process deeply and widely as a fundamental change in the culture of schools and school systems" (pp. 4–5). The researchers noted that trainers, teachers, and

administrators are individually and mutually responsible for making the necessary cultural changes (DuFour & Fullan, 2013, p. 4).

Studies show as American students move up through the grade levels they become increasingly bored. Jenkins (2012) found that 95% of kindergarteners like school, but this percentage decreased steadily to a 37% satisfaction level in grade 9, followed by slight annual increases until their senior year when 48% loved school (p. 16). One remedy may be Professional Learning Community technology training. Organizational leaders, including school administrators and teachers, need to understand and value the importance of Professional Learning Community training to enhance the educational process: “Well-intentioned people will be unable to implement the PLC process unless they have a deep, shared understanding of the conditions they are attempting to create” (DuFour & Fullan, 2013, p. 13). Until teachers can empower students to become comfortable with the daily use of creating and uploading videos, it will be impossible to implement unless the lead learners are clear in their intentions (Berk, 2009; Davidson, 2014; DuFour & Fullan, 2013; Guo et al., 2014; U. S. Dept. of Education, 2017).

In identifying the characteristics of Professional Learning Communities, DuFour and Fullan (2013) aimed the outcome of such training squarely on student learning. With a definite purpose, which DuFour and Fullan (2013) termed a “shared mission” (p. 14), a culture of collaboration for vision, values, and goals included a collective inquiry that sought the best solutions with the most positive results (DuFour & Fullan, 2013, p. 14). And finally, DuFour and Fullan (2013) described four guides for Professional Learning Community education so teachers can be trained properly to focus on student learning:

- What is it we want our students to learn? Answer: we want students who are media savvy, digitally literate, and spokespersons for the use of positive social media.
- How will we know if each student is learning each of the skills, concepts, and dispositions we have deemed most essential?
- How will we respond when some of our students do not learn? What process will we put in place to ensure students receive additional time and support for learning in a way that is timely, precise, diagnostic, directive, and systematic?
- How will we enrich and extend the learning for students who are already proficient? (DuFour & Fullan, 2013, p. 15)

YouTube and Teacher Preparation

Started in February 2005, YouTube hosts videos that in 2011 were cumulatively viewed more than 2 billion times each day (Watkins & Wilkins, 2011, p. 113). By late 2019 the number had increased to an estimate of more than 5 billion daily views with an average of 40 minutes viewing time per session (Ali & Aslam, 2020). The present study intended in part to evaluate the effects of a teacher using YouTube to allow students to submit assignments and in using YouTube while presenting assignments in the hope of improving student learning across the curriculum. Leach (2017) stated that when digital media production is incorporated within the school day, learning opportunities can expand (p. 44).

Shortly after the introduction of YouTube, Burke et al. (2009) conducted pilot research to determine college faculty uses of the online video resource. The results were mixed as one might expect with a new and at the time largely unexplored teaching resource. Even at that early stage of the Internet, many students could find more than a million videos on a wide variety of topics

even without help from a teacher or another student (Watkins & Wilkins, 2011, p. 115). Slightly less than half of 24 faculty participants in a study said they used YouTube, but only at a rate of between once and five times in a semester. Noting they used YouTube for student discussions and debates, and for supplemental instructional material, only a few of the participants thought YouTube was any more valuable than any of the other teaching tools they could use (Burke et al., 2009, p.6).

Even at this early stage of YouTube, the Burke et al. (2009) survey respondents were curious; in their open-ended comments, many of the participants shared positive perceptions about using YouTube in their courses, noting they found a variety of teaching materials which gave them another tool by which to present information to students. One key reaction related to the length of video segments available at the time; “YouTube’s concise videos can be valuable teaching resources to begin a lecture because they get students thinking critically and discussing with their classmates” (Burke et al., 2009, p. 6). Because of the sample size and limited number of respondents, Burke et al. (2009) could not generalize their findings beyond their sample population (p. 6) nor beyond that institution. However, YouTube has grown remarkably in the intervening years; benefits and recommendations that accrued during the Burke et al. study and countless others since then all appear to point to YouTube as a valuable teaching resource if used prudently.

Watt (2019) suggested teacher education programs as being a foundation of education reform. In those settings new teachers learn about current research, theories, and classroom technologies even if only at a basic level (Watt, 2019, p. 85). Watt surveyed more than 500 teachers over a period of three years and learned about a wide range of challenges and benefits of having students make videos in their elementary school classrooms. Challenges included access

to technology, privacy and safety issues, need for parental consent, possible equipment damage, and the potential for overstimulating the students. Benefits revealed by the respondents included engaging students with a full range of learning preferences, encouraging student creativity, and giving students exposure to and experience with new technologies (Watt, 2019, p. 88).

The present study is important because teachers need resources to keep students engaged, excited, and working collaboratively by appealing to different learning preferences. Classes that offer this level of collaboration are a unique experience and have the significant potential to heighten each student's motivation. This model would improve student learning across the curriculum because the focus is student-centered enabling students to participate actively in hands-on education (Campbell & Cox, 2018; Carmichael et al., 2018; Green, 2018).

Benefits and Availability of YouTube and Technology

The 2017 NETP update challenged education stakeholders to use technologies effectively in the classroom to make learning authentic (U. S. Dept. of Education, 2017, p. 3). Considering the impact of YouTube in the classroom, how do the teacher's knowledge of television production and the teacher's ability to incorporate YouTube with instruction impact learning across the curriculum? Extensive research has been conducted: Hakkarainen (2011) researched promoting meaningful learning through video production; supported by problem-based learning; Buzzetto-More (2014) researched an examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process; and Norton and Hathaway (2010) studied video production as an instructional strategy: content learning and teacher practice. While these studies have described and developed the use of these technologies, there is little empirical research on students' use of YouTube as a means to store student work and access student work in conjunction with video production assignments. However, Berk

(2009), Burke et al. (2009), and Watkins and Wilkins (2011) do describe uses of YouTube and video production for secondary-level special needs students and at the university level for foreign language acquisition. In addition, Davidson et al. (2014) describe the use of video for early learners in *Talk About a YouTube Video in Preschool: The Mutual Production of Shared Understanding for Learning with Digital Technology*. Their study focused on how the viewing of a YouTube video was used by a teacher and children to produce shared understanding. Green (2018) mentions several ways YouTube empowers student to create. Students “can record a quality video in a few minutes, they might spend much more time writing and then editing the same reflection on paper” (p. 59).

Among several ways to use the resource in education, the most basic function of YouTube is to provide videos for users to view (Green, 2018, p. 3). However, to date, very little research has studied the use of YouTube as a tool for students to create their own videos, upload them to YouTube, critique their own and videos created by other students, or to assemble a background video (B-roll) to use later during classroom presentations. Green (2018) states that before educators can move beyond consumption and start using YouTube for creation, it is important to have a basic familiarity with video use in classrooms and how YouTube works in terms of basic navigation and organization. Past uses of YouTube have included: Hook your Students. Video is an especially effective way to draw students into a lesson by getting them to wonder about or question a particular topic. Some teachers show only a portion of a video at the start of class, asking students to predict what will happen next. Second, bring a concept to life. Seeing a concept conveys a deeper understanding than if the concept was simply explained to them verbally or read from a textbook, and when a lack of funds or resources gets in the way, video can make the inaccessible accessible. Thirdly, teachers can show an experiment.

Sometimes the nature of what we are teaching is too dangerous to allow students to have a first-hand experience. YouTube videos can allow students an up-close look at things we want them to understand but not get too close to. Fourth, to explain a concept. Sometimes direct instruction is the best strategy. Through videos, the teacher can let someone else lecture and keep the concept fresh. Just based on novelty alone, there is a good chance that students will be more engaged in the video than a teacher lecture. A fifth reason is to start a discussion. This is a way to get small groups to start discussing a topic. Other techniques students can use to bring YouTube into the classroom is to filter and find good videos and channels that the students can subscribe to keep things they are studying to be directed to them (Green, 2018, p. 5). After locating videos on YouTube that students can watch on their own, teachers could use them in professional development.

YouTube also acts as a site that will allow students and teachers to create content playlists (Green, 2018, p. 11). Once such lists are created, teachers can edit and organize the information with annotations specific to the class. These videos can be personalized to extend the learning, remediate learning, and provide the teacher a time-saving option that will allow students to access the video off campus to minimize the need for repetition in class. The videos could also be used to review for an exam.

There are a variety of ways to teach using YouTube. A few examples include embedded videos in a Google slide presentation. Using Google slides, the videos can be trimmed and edited to focus students by removing potentially inappropriate, irrelevant, and/or repetitive content. Another option is a flipped teaching where the teacher assigns a video for homework. (Green, 2018, p. 17) Next, teachers can loop a video when hosting parents in the classroom (p. 26). The teacher can use privacy settings to give access only to the right student and students can also be

restricted with a special mode. Setting up a channel is an easy way to organize content and channels can be personalized. Once the channel is created, teachers can produce a channel trailer to educate students and parents about why YouTube is appropriate, promote a timely video, and attract more students with student clicks and custom thumbnails (pp. 17–33).

A goal of this study was to see how YouTube empowers students to learn from and critique online videos and to create their own videos. YouTube allows students to reflect on their learning via video. Students are taught to evaluate their own or a classmate's live performance. YouTube users can recapture and repurpose class time with recorded presentations. Students create an authentic portfolio, record themselves reading, and record rough drafts of their presentations so students can receive actionable feedback via YouTube comments (Green, 2018, p. 65). Students may submit video evidence meeting criteria of a performance task, or students may make a movie and teacher may manage comments.

Overall analysis of relevant sources consulted for this study indicates that many teachers currently use and are comfortable with YouTube and/or other video production methodologies. However, many other teachers did not use or were not at ease with including video in their lesson planning, at least until Novel COVID-19 pandemic isolations with campus closures went into effect and forced the issue. Teachers across the nation were thrust into a rapid revision mode and had to develop online classes, activities, and homework so students could continue to learn at home while school campuses were closed. Although scientific research has not been conducted to evaluate those online courses and their long-term effectiveness for students in California, several resources are readily available for teachers to use as they consider adopting or increasing their uses of YouTube and video production for themselves and for student-generated projects as well.

Google.com searches conducted on June 21, 2020, sought to determine what online sources might be available to help teachers with video production to enhance student engagement and acquisition of knowledge. The results of four searches revealed a plethora of individuals and companies offering advice, assistance, equipment suggestions, and software programs:

- “Video education”—4,130,000,000 hits in 0.64 seconds
- “Video production planning” —502,000,000 hits in 0.71 seconds
- “How can teachers make a classroom video?” —346,000,000 hits in 0.80 seconds
- “How to make a classroom video” —827,000,000 hits in 0.64 seconds

So the question is not “How can teachers make a video for their classrooms?” but “How can a teacher possibly wade through even the first 20 pages of Google suggestions for any of the four or countless other search options?” The researcher selected seven sources as possible resources for novice and experienced teachers in a full range of quite simple to near-Hollywood production quality.

Classroom Video Tools

Several technical aids for teachers are worthy of mention: Animoto, KNILT, The Deakin Process, and the International Society for Technology in Education:

Peck (2012) asked teachers to ponder, “In what way can I spice up this unit and make it student-centered?” (p. 1). He and two of his colleagues suggested Animoto at a conference of the National Council for the Social Studies. Animoto is “an easy-to-use website where your students can create 30 second videos for free” (p. 1). The program offers free video production for students and has two other, new plans with costs up to \$588 per year (Animoto.com, 2020). Animoto includes three steps: registering for a free account or a subscription plan, testing it with

students as evaluators, and using the program with classes. “The great thing about Animoto is that all you have to do is follow the easy steps they provide. Load photos and/or text, select your music and theme—and then produce” (Peck, 2012, p. 1). The program needs only a computer and the student’s active imagination (p. 1). Students can use Animoto to create simple, animated videos with paper characters and simple dialogue that viewers can understand easily (p.2). This technique includes careful planning: storyboarding, creating props, shooting the video, adding narration, and designating presentation specialists to manipulate the cutouts (pp. 2–5). Teachers can help students to create a second type of video called “Choose Your Own Adventure,” which encourages students to be creative while they are learning (p. 5). Peck (2012) advised teachers to plan carefully while making videos or having students do so. He noted that today’s students are naturals who make and post videos at home: “So why aren’t we bringing video production into the classroom?” (pp. 5–6).

The Knowledge Network for Innovations in Learning and Teaching (KNILT) is “an open online knowledge space where educators can find, share, and develop new ideas to reform and improve education in the 21st century” (Zhang, 2020, p. 1). This online resource offers a wealth of training sessions related to video production for the classroom, focusing in the first unit on proper, step-by-step planning as a key to successful pre-production (p. 1) and an eventually successful video project.

In a program entitled “Using audio and video for educational purposes,” the Deakin Learning Futures Teaching Development Team offers detailed training in four parts:

Module 1 includes using audio and video in teaching, focusing on ensuring proper audio and video copyright approvals, understanding how audio and video help students to learn, and how to take advantage of cloud storage and access opportunities (Deakin, 2013, pp. 3–8).

Module 2 features producing audio and video. Teachers are cautioned to know why they are producing a video; think thoroughly about what the project needs to say; and gather and/or prepare the filming locations, equipment, crew, copyright releases, and storyboard (Deakin, 2013, pp. 10–11).

Module 3 offers detailed instruction and steps for creating and creatively using cloud concepts in support of and to enhance the learning process.

Module 4 explains how to use audio and video to give feedback to students on the completeness or quality of their tasks (Deakin, 2013, p. 43).

Manolopoulou (2012) noted that “Video Technology has been proven to be a very powerful tool in motivating, engaging and instructing within the educational concept” (p. 2). She did, however, caution that teachers need to articulate how and where a video will be shown, if the video will be posted online, and if the video is to stand alone or be part of a series (Manolopoulou, 2012, p. 5). Video should be used as an accelerant to engage the student, and an instructor should be there for guidance. Manolopoulou (2012) cautioned that preparation of a script and story boards help a teacher as video producer to put ideas into a visual form that can help themselves, their production team, and the viewing audience or students to become more fully engaged (p. 6). These steps help teachers prepare to use video; these videos actually help student emotional engagement, either as a discussion starter, or, as a platform to submit assignments by students (Guo et al., 2014, p. 1; Carmichael et al., 2018, p. 9; Bond & Bedenlier, 2019, p. 2). Manolopoulou calls filming “the most exciting part” (p. 6). The process of video capture, reshooting, editing, addition of music and graphics helps true creativity to emerge if one is careful to “Keep it simple!” (pp. 6–7).

Despite this literature review's focus on video training during Professional Learning Community technology training time, one hour occasionally or even each week may not be enough. Teachers need to train adequately so they in turn can train their students on when, why, and how to use videos to bolster their education and prepare them for their future roles and jobs in the global marketplace. The International Society for Technology in Education (ISTE) offers such training, admittedly with a basis in the Novel COVID-19 shutdown of educational venues, but with a broader view of education's future in America beyond 2020:

As the COVID-19 crisis continues, many educators are looking for opportunities to sharpen their online teaching skills. The good news is that there are some new sources to pay for it—even with rapidly diminishing district budgets (Bass, 2020, p. 1).

The ISTE informs potential students about grants, scholarships, National Education Association funding, CARES Act, and other U.S. Department of Education funding sources (pp. 1-2). Through the International Society for Technology in Education, educators have access to “quality professional learning opportunities” (Bass, 2020, p. 2) where they can participate in such training as a Summer Learning Academy: “This flexible, comprehensive learning series combines courses and webinars led by online learning experts to get you on solid footing” (Bass, 2020, p. 2). In addition, ISTE offers technology certification. “This intensive, fully online training based on the ISTE Standards helps PK-12 educators redesign learning activities with technology to engage students in real-world, authentic, active learning” (Bass, 2020, p. 2). Other online and membership opportunities also are available through ISTE. Scheduled for late 2020 in Anaheim, California, the ISTE20 Live Conference and Expo event included sessions focused on “online learning, equity, social-emotional learning and more” (Bass, 2020, p. 2). The ISTE U offers “flexible online courses cover a variety of topics, including online learning. They range

from 1-2 hour self-paced mini-courses to intensive 30-hour instructor-led courses” (Bass, 2020, pp. 2–3). Teachers who want to extend their ISTE relationship can join at a reduced price of \$75: “ISTE membership keeps PD going all year through free webinars and endless opportunities to connect with thousands of educators” (Bass, 2020, p. 3). Of particular interest to many educators is the relatively low cost of most courses offered through The International Society for Technology in Education: Self-paced micro-courses cost from \$19–\$25 and are one or two hours long. In a category called “Short Courses,” ISTE offers self-paced, three- to five-hour training sessions ranging from \$49 to \$65. ISTE U courses are led by instructors at a cost of \$99 to \$299 and last from 15–30 hours each (Bass, 2020).

Green (2018) mentions several ways in which students’ use of YouTube will improve instruction in the classroom and “Empower students to create” (p. 59). Today’s students function as a “YouTube generation. Our students are much more comfortable recording videos of themselves than we are” (Green, 2018, p. 59). Bond and Bedenlier (2019) provide a table that shows several ways in which video production engages students cognitively, affectively and behaviorally (p. 3). While the Common Core emphasized writing to improve student communication skills, “Many students are more comfortable with spoken language than written language, and a video offers a medium where they are better able to ‘show’ what they mean” (pp. 59–60). Assessment is usually one-sided: from teacher to student—teachers commonly evaluate student performances and sometimes involve other students in peer critiques. Bond & Bedenlier (2019) mention several factors that affect students’ engagement, including “Motivation, interest, self-efficacy, personality, self-regulation” (p. 5). They also mention factors that affect the learning environment: “Assessment, usability, design, sense of community, technology choice” (p. 54). Teachers who know these factors and are willing to incorporate

technology in their classroom may better engage their students. Green (2018) notes that “A common missing component, however, is self-assessment because students cannot simultaneously be a performer and a member of the audience” (p. 60), such as by shooting a video of the performance. Involving students in the process of assessing their own work allows them to “compare their own observations to the teacher’s evaluation and peer feedback” (p. 60). This concept is mirrored by Akdeniz (2017) who compared language acquisition with and without video; students who participated in the video training reported they were better able to evaluate their language skills by watching film of themselves than by other techniques (Akdeniz, 2017, pp. 51-52). Language acquisition is improved with technology. Speed et al. (2018), however, noted that while participants generally enjoyed the video experience, they were concerned about the time required to produce the videos, and some doubted their ability to think creatively enough to make the video successfully. Despite their concerns, none of the students in the video cohort received less than 80% on the project whereas nearly a third of the written project cohort received a grade lower than 80% and 4% of those students failed (Speed et al., 2018, pp. 103–105).

Traditional class time is limited to about an hour per day per course. Especially in the case of classroom presentation or reports, video can extend that time virtually when classes divide into smaller groups; students then “perform” their presentations which are recorded, uploaded to YouTube, and made available for viewing, assessment, and critique by both teachers and students outside of class time (Green, 2018, pp. 61-63). Students also can use video to create a portfolio not only of their own work, but their thought processes while working through problems or critiquing others’ presentations: This technique lets students see their progress over time. Students record segments for their online YouTube portfolios virtually eliminating

portability and equipment issues, and the possibility of software incompatibility. Teachers also could view incoming students' projects before a class year begins to determine student capabilities, strengths, and potential limitations (Green, 2018, pp. 65–66). Student reading is especially useful for young learners (Green, 2018, p. 64), but “Students using webcams to record themselves reading is also valuable for older students, even those in high school” (p. 64). The technique can help students self-assess their presentations and public speaking capabilities while also evaluating their writing style as they listen to what they have written (Green, 2018, pp. 64–65). Moreover, peers can assess other students' rough drafts of a video presentation and leave feedback comments on YouTube (Green, 2018, p. 65).

For homework or other out-of-class activities, students can submit video evidence that meets the standards or criteria of a performance task. This technique works best when each student uses a laptop computer or cell phone to record video of their own participation in a group activity as they respond to tasks or specific assignments. When the activity is completed, students review their footage, which only includes themselves, cutting out examples of their participation and splicing it together with titles describing the criteria so [the teacher knows] exactly what each example is supposed to show. A final product would be a three-minute highlight reel of a student's participation that is uploaded to YouTube for the teacher to view and assess (Green, 2018, pp. 65–67).

Student Engagement

Student understanding and ultimately their success in school may depend heavily on their level of engagement in the classroom or during online sessions, as described by researchers Bond et al., who reported that fully-engaged students tend to put more effort into their learning which in turn tends to lead to additional engagement in later class work (Bond et al., 2020; pp. 2–3).

Learning is an active process, and an important teacher task is maintaining student interest, focus, involvement and participation—all elements of student engagement. Despite its importance, student engagement is difficult to measure (Sinatra et al., 2015). Bond and Bedenlier (2019) presented a bioecological framework, and the microsystemic facts of technology, teacher, and curriculum are explored in their relation to fostering student engagement (p. 1). They documented the concept that scholars recognize the importance of digital literacy and information and communications technology. They believe more research needs to be done to better understand the ways and extent that educational technologies influence student engagement (p. 1).

Contemporary researchers such as Dorn et al. (2020, June), Hattie (2009, 2012), Polirstok (2017), and Steinmayr et al. (2019) describe factors that influence student engagement, a primary focus of the present research which examines the issue of student engagement from teachers' perspectives. Fullan and Quinn (2016) explain, "Imagine a school where all of the students are so excited that they can't wait to get there and want to carry on their learning at the end of the school day" (Fullan & Quinn, 2016, p. 78). Constructivist classrooms allow students more freedom and opportunities to share their understanding and to use technology for research (Fullan & Quinn, 2016, p. 78).

Students, student small groups, teachers, administrators, district and associated school boards, parents, the local community, and the global economy working together can produce factors that influence a student's success in current and potentially in subsequent education, among which are direct involvement, collaboration, a diverse technical arsenal, academic improvement, and more focused parental involvement. These factors influence the three components of student engagement: cognitive, affective, and behavioral (Bond & Bedenlier,

2019, pp. 1-3). The researchers explain that cognitive engagement relates to critical and creative thought processes, self-control, and commitment to learning. Affective engagement relates to the students' perceptions of their learning environment, their relationships with fellow students and teachers, and how much they are interested in the class. Behavioral engagement relates to how much and how often students participate, how active the students remain, and if the students' conduct is favorable (Bond & Bedenlier, 2019, p. 2).

Students have a greater stake in learning when activities such as YouTube video downloads and self-produced video projects give the student more direct involvement in his or her own education (Green, 2018, p. 2). Collaboration, such as is common when students have more hands-on involvement in the learning process chiefly through YouTube and video production, can enhance education in small groups with interactions that have been rare in the traditional classroom. Such teamwork is a key feature found in many Constructivist classrooms (Aulia et al., 2018).

The individual student sits at the center of the microsystem, which encompasses their immediate setting, e.g., classroom, or home (Bond, 2019, p. 4). Teachers who use classroom technologies such as self- and student-produced videos and YouTube content have a diverse technical arsenal of tools which help students to learn: Previously prepared lesson materials on YouTube, self-produced YouTube lessons, and encouragement to students to document their education through video production and sharing on YouTube (Campbell & Cox, 2018)

More focused student engagement can lead to better assessment scores and potentially to better state and national testing results. Thus, administrators, district staff, and school boards have an increasing potential for higher academic levels and higher standards testing scores, while seeing an increased level of academic rigor, involvement, and excitement (Guo, 2014). An

important side benefit of increased student engagement is parental involvement. As students become more directly involved in their own education, far beyond the traditional sit back, memorize, and test methodology, parents increasingly can become part of the excitement of their children's education and help to improve the students' potential for successful entry into the future workplace (Hymel et al., 2006, p. 2; U. S. Dept. of Education, 2016, pp. 13, 16, 47, 55; Zins et al., 2007, pp. 11-13).

Marzano and Marzano (2003) summarized the conclusions and recommendations of a score of educators, education analysts, and their own research: Students succeed most favorably academically in a positive, safe, and caring environment. Such ambience can yield favorable results such as higher grades, increased student engagement, higher expectations of and for the students, better attendance, and fewer discipline problems (Goodenow, 1993; Hymel et al., 2006; Luiselli et al., 2005; McCombs, 2004; Patrick, Hicks, & Ryan, 1997; Zins et al., 2004).

Bioecological Student Engagement Framework

A range of structural and psychosocial influences affect the learning environment, learning processes, student engagement, and subsequent outcomes at all levels of the bioecological model. Macro system- The rapid onset of digitalization is having, and will continue to have, a profound effect on government policy and educational institutions (EDUCAUSE, 2018). The indicators of student engagement are three: cognitive, affective and behavioral (CAB). Cognitive engagement consists of concepts such as purposeful, integrating ideas, critical thinking, setting learning goals, and self-regulation. Affective engagement includes things such as enthusiasm, sense of belonging, satisfaction, curiosity, and interest. The last is behavioral engagement and lists things such as effort, attention/focus, attendance, attempting, submitting completed homework, and positive conduct.

Institutional leadership and attitudes have a direct bearing on student learning, as well as on teacher attitudes toward using education technology (Cheng & Weng, 2017). Education must have the primary goal of gaining and maintaining student interest in the topic and enhancing long-term retention of the principles taught (Dewey, 1900; Dewey, 1902/2013; Hobbs, 2010; Leach, 2017; Morrell et al., 2013). Everything a teacher can do to keep students focused will help achieve that goal. Engagement is more likely to develop when student-teacher relationships are strong (Martin & Bolliger, 2018). Ongoing professional development is crucial to ensure that teachers have the requisite technology knowledge and skills, and can actually foster student engagement. Since 1990 teachers have been able to appeal more effectively to multiple learning styles simultaneously with such technologies as PowerPoint, Astound, Prezi, and others. In the past 15 or 20 years, YouTube and other online tools have enhanced the educator's arsenal of teaching technologies which blend a knowledge of learning styles with existing and future technologies, the subject of the next section of this literature review.

Constructivism and YouTube's Influence on Student Engagement

Student engagement within a technology-enhanced learning (TEL) microsystem enhances engagement; this framework shows the interplay between the TEL microsystem, student engagement, and ensuing outcomes. Influenced by a range of internal and external factors even in a Constructivist classroom with a technology-savvy and enthusiastic teacher and students who remain fully engaged for a full class period, much remains to be done. In prescient guidelines written a decade ago, Fullan (2010) called for a wide-ranging change.

A cornerstone of Fullan's whole system reform is the concept of "collective capacity" (Fullan, 2010, p. xiii), which generates the emotional commitment and the technical expertise that no amount of individual capacity working alone can come close to matching. What does the

whole system reform look like and why is it central to this research? Whole system reform deals not with just the classroom, the department, the school, but possibly the entire school district. How does that tie into this research? Fullan's seven "Big ideas for whole-system reform" may provide an answer (Fullan, 2010, pp. 4–5), and all have direct links to enhanced levels of student engagement.

Fullan's (2010) first concept is not a throwback to the No Child Left Behind Act of 2002, but it has a basis in the current "Every Student Succeeds Act" movement—All children can learn, "All children (95%), except for the severely disabled, can learn to a high level of critical reasoning and problem solving" (Fullan, 2010, p. 4). Muhammad and Cruz (2019) state these past approaches to systemic change have lacked balance. These programs got people's attention by enacting punishments (p. 15) but did not generate widespread commitments which could have led to lasting changes across the country (p.15). Fullan (2010) suggested that education follow a specialist's path and choose to follow a few priorities but carry through carefully, an effort where even minutiae become important: "Every successful organization pursues a small number of core priorities ... and does them exceedingly well" Fullan noted (2010, p. 4), suggesting that education's priorities should include literacy in the core subjects and in the visual and performing arts as well which could lead to success in post-high school education and in the students' future careers (Fullan, 2010, p. 4). Muhammed and Cruz (2019) suggest a lack of balance is the biggest factor in leadership. They proposed that, "transformational leaders must strike a balance between the important elements of focusing on the task and focusing on relationships and between providing support and requiring accountability" (Muhammed & Cruz, 2019, p. 16). As a result, they developed task-focused leadership which produces benefits such as

a clear focus, an orientation on outcomes, predictability, clear expectations, and well-established protocol and procedures (p. 16).

Successfully reforming a single organization or a conglomerate takes focused leadership especially during challenging periods, strong, focused leadership as change begins, and resolute leadership to sustain the change (Fullan, 2010, p. 4). Yet, even a focused leadership or management team needs to be open to efforts of the collective, essentially collaboration, and needs to have discipline, Fullan (2010) contended, with a clear understanding of separating effective from ineffective collaboration, which be more harmful than no collaboration at all (pp. 4–5). “The most vital assets in any organization are the human resources, and the leader is responsible for managing these resources” (Muhammad & Cruz., 2019, p. 1). Great leadership, even with full acceptance and collaboration with team members, needs to understand that a partial change will not be fully effective, a concept Fullan (2010) called “All Means All,” as he warned that piecemeal efforts won’t solve problems, “You can’t solve the problem of whole-system reform through piecemeal efforts to try to get parts of the system improving in order to show the way” (p. 5). Hattie (2012) noted that districts and schools also need to understand that teachers must be involved in the planning process and work together to develop a general understanding of what to teach and how, and then work collaboratively to evaluate the impact they are having on the students (p. 41).

Whole-district successful reform is possible and has been demonstrated in places such as Tower Hamlets, London, England; Long Beach Unified School District, California; York Region District School Board, Toronto, Ontario, Canada; and Ottawa Catholic District, Ontario, Canada. Featuring such words as precision, specificity, depth, collaborative competition, collective capacity, collective efficacy, and shared responsibility in the context of accountability (Fullan,

2010, p. 37), whole-district reform features eight characteristics of an effective school district (Fullan, 2010, Exhibit 3.1, p. 36).

Focusing on student engagement through instructional improvement needs to have a clear direction and be relentless, not just a once-in-a-while experiment (Fullan, 2010, p. 36). Grade-point averages, even individual course grades, are not sufficient to measure nor track student success. The conscientious faculty and administrators will gather, mine, and evaluate a variety of data to gauge student learning as a strategy for classroom and school improvement and to monitor progress. Linking to one of his primary concepts about having a focused leadership team, Fullan (2010) noted that a school's entire educational team needs to develop a working collaboration of teachers, the school's administrative staff, and district leadership who jointly develop and put into practice effective teaching practices. "Leadership roles are defined so that leaders participate as learners in working with teachers to address instructional needs" (Fullan, 2010, p. 36). With an eye and ear that must have visited a number of teachers' lounges, Fullan (2010) warned that leadership throughout a district needs to make "a concerted effort to reduce the distractors that undermine teachers' and principals' capacity to carry out this central strategy" (p. 36).

Fullan (2010) did not leave the responsibility for educational reform only on the school campus during the school day, as he advocated for community links as well. Through such means as School Site Councils, stakeholders beyond the local campus can have a functional link with plans, programs, and activities on the campus. Parents, the local community, and related agencies need to be aware of programs and needs, encouraged to provide support for students and educators, and to intervene early in case of difficulties experienced by students and by schools (Fullan, 2010, p. 36). He also focused on the need for up, down, and lateral

communication throughout the structure of an organization and beyond to the community using a variety of means of communication. Constant, reliable communication means that “Everyone needs to know the central focus of teaching and learning priorities and how to achieve them. Research findings and effective practices need to be shared. Staying on message is critical” (Fullan, 2010, p. 36).

Links Between Constructivism and Video Production

Shewbridge and Berge (2004) analyzed video production as a part of the curriculum, far beyond its then-dominant role in mass communication courses of study (p. 31), concluding that a Constructivist approach should be considered when designing instruction for production itself (p. 36). Those researchers noted that Constructivism is “a natural fit with student production. As students work through the production process, they question meaning through a variety of methods” (p. 36). Further, the researchers commented that “Constructivists stress the need for learners to reflect on their experiences in order to build meaning from them. This is the core of the Constructivist process. When discrepancies arise, the puzzlement functions as a ‘catalyst for meaning making’” (p. 36). The bond between video production and Constructivism has lasting significance for active learning in both the video production process and in the associated classroom beyond the video project (p. 36). Leach (2017) elaborated on the discussion, “The promise of digital media production to support literacy for secondary students with diverse learning abilities and challenges is not only appealing, it is possible” (Leach, 2017, p. 38). She stated that digital media benefits student engagement (p. 38).

Digital Media and Education

In a 2010 white paper, Hobbs described the principles of Universal Design for Learning (UDL) that provide options for teachers to assess and students to learn how to produce digital

media. Elements of UDL have strong links to Constructivism, especially in the arts as Glass et al. (2013) noted: “Arts can enhance our ability to respond to variability. A core advantage of the arts in education is the way they expand and enrich our cultural perceptions, ideas, and values” (Glass et al., 2013, p. 107).

The two cognitive processes of transduction and transmediation contribute to the embodied learning of students as Leach described in an expanded discussion of the Create section of Hobbs (2010) entitled “Essential Competencies of Digital and Media Literacy”. “Transforming information from one form to another, or transduction, allows for individuation of meaning making; one of the UDL recommended ways of providing multiple means of representation” (Leach, 2017, p. 39). Transmediation is the art of “Producing media [which] allows students to bring their identity and self-expression to academic pursuits, engaging their diverse learning capacities as they develop critical reading, writing, and thinking skills” (Leach, 2017, p. 39).

As Morrell et al. (2013) studied students in humanities classrooms, the researchers asked a series of questions derived in part from the writings of Constructivist education theorist Dewey in 1900. Morrell stated that teachers should build curricula around our students’ perceptions and challenge becomes understanding how youth are currently using media in and out-of-school (p. 16). “There are still myriad ways that youth are involved in the activities of consuming and producing media” (Morrell et al., 2013, p.16).

Drawing on theories related to how students learn, Morrell et al. developed a four-part model:

- Learning must be active—learners need to be out in the real world doing real things that matter to them and to others.

- Learning must be authentic—whenever possible the tasks must have meaning and purpose.
- Learning must be participatory—learning happens within a community that is multi-level and multi-aged if possible.
- Learning must be empowering—learning must give students power to act differently upon the world, and they must be aware of how their learning in formal environments translates into power in academics, in the professional world, and in civic life (Morrell et al., 2013, p. 16).

Focusing on several interrelated principles that support his four concepts about how children learn, Morrell et al. (2013) wrote that teachers who teach using media in turn encourage their students to produce their own videos. One result, according to Morrell et al. (2013), could be that blogs and other video would encourage discussions about educational and societal inequities (p. 18).

Principles of Universal Design for Learning

The National Association of Media Literacy Education (NAMLE) developed six principles of Universal Design Learning (UDL) to guide educators to become prepared to teach using technology such as YouTube in the classroom. “When Universal Design for Learning (UDL) principles are incorporated within digital media production experiences as a means to teach literacy, it may expand opportunities and reduce barriers for students with diverse learning abilities and challenges” (Leach, 2017, p. 30). Media Literacy Education requires active inquiry and critical thinking about the messages we receive and create. Therefore, media literacy education needs to feature strong sense critical thinking, i.e., asking questions about all media messages, not just those with which we may disagree. Thus, NAMLE (2007) published a set of

core principles which encourage students to ask questions and participate in discussions aimed at giving them deeper understanding of media messages (NAMLE, 2007, p. 3). As students examine all forms of written and visual literacy, they develop and refine their critical thinking skills (p. 3). Furthermore, students learn to apply increasingly sophisticated analyses to all types of media messages. Specifically, students understand that videos they view sometimes have been produced with the potential for bias or propaganda, sometimes visible, sometimes hidden subtly (NAMLE, 2007, p. 3). Leach (2017) said students learn to determine the types of questions to ask to gain a deeper or more sophisticated understanding of media messages (pp. 40–44).

Hobbs (2010) introduced the model consisting of five words: *access, analyze, create, reflect, and act* (AACRA), explaining that in the digital age, everyone should be able to access and analyze information, create messages, reflect on media influences, and be able to act using all these literacies in a socially responsible manner (p. 19). The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school. This direct involvement of students in the learning process mirrors one of Dewey's (1902/2013) claims, that it is the job of the school to provide a balance of the various elements in the social environment, and to “see to it that each individual gets an opportunity to escape from the limitations of the social group in which he was born and to come into living contact with a broader environment” (Dewey, 1902/2013, p. 18).

The Hobbs Model (2010, p. 19) included five interconnected elements which Leach (2017, pp. 38–39) expanded and explained more fully:

Access: Media Production can support literacy across content areas by offering Universal Design for Learning (UDL) alternatives to how information is displayed and presented, with alternatives available for assessing auditory and visual information. Access to options for

language learning such as vocabulary can be embedded as hypertext links or presented in graphic forms, symbols, or illustrations. Access to academic concepts can be illustrated through alternatives to text such as dance, video, graphic novels, photographs, storyboards, animation, and physical enactment through acting or hands-on creating (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Analyze: When UDL guidelines for utilizing multiple means of representation, action, and expression are incorporated in the teaching of critical thinking, developing arguments, and the capacity to order thoughts logically, the analytical process can come alive for students. Teaching students to analyze information and ideas critically with embodied, hands-on and minds-on learning by creating mixed-media enriches student’s critiquing, analyzing, and speaking, and listening skills. Furthermore, as students gain academic competency in analysis skills across a variety of means of representation and expression, they learn to self-regulate their ability to concentrate and persist in their endeavors, one of the UDL objectives (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Create: Transforming information from one form to another, or transduction, allows for individualization of meaning making; one of the UDL-recommended ways of providing multiple means of representation. Producing media, also explained herein as a form of transmediation, allows students to bring their identity and self-expression to academic pursuits, engaging their diverse learning capacities as they develop critical reading, writing, and thinking skills (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Reflect: Incorporating this competency through discourse and making meaning through alternative demonstrations of knowledge foster collaboration and communication according to the UDL principle of providing multiple means of engagement. The process of reflection

encourages students to be metacognitive about their thinking, and to respond to and offer feedback with their peers as they reflect upon concepts and ideas across media. Additionally, thinking through academic concepts by creating a media presentation shifts the response to informational text and academic concepts from the efferent (factual) to aesthetic (artistic) mode, making learning personal (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Act: By providing options for recruiting interest, UDL guidelines support the self-determination of students by providing opportunities for them to engage in authentic relevant learning activities. Empowering students with diverse learning abilities with the confidence and tools to communicate through media production, prepares them for active participation in their lives and as citizens of a democracy (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Transition from Tradition to Innovation

Pereira et al. (2012) studied the uses of video production among physics students in Brazil. They noted that education in the early 21st Century is beginning to change: “Currently school education can be seen in transition from traditional to innovative methodologies and mostly the students still remain as the receivers of information” (p. 45). After studying students as they produced video projects, Pereira et al. (2012) noted, “The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school” (p. 46). Pereira said video production allows the teachers to focus on intellectual, procedural, and cognitive-affective realms of student engagement (p. 46).

Pereira et al. characterized the value of video production as changing the environment of a physics classroom from merely one-way communication to introducing activities that are “planned, organized and performed by the students. When using a video camera they can externalize creative thoughts as well as warrant the pedagogical potential” (p. 46).

Summary

A plethora of past research has documented the benefits of using video production in the classroom for teacher and student alike. However, gaps in the research exist on how schools can use the Professional Learning Community process to encourage teachers to use classroom video technologies including YouTube. As teachers become more engaged in the uses of online and classroom-generated video content, students are increasingly likely to be more fully involved in their education. This teacher-student and student-to-student partnership will transform the educational culture into a collaboration of students serving students and students serving stakeholders as described at the end of Chapter 1.

The researcher investigated whether the integration of the use of YouTube in a video production-blended environment will find solutions to those challenges and encourage administrators, department heads, and collaborative teachers to incorporate these techniques into a whole system reform (Fullan, 2010) movement changing how schools operate in a media-literate environment. Dewey (1902/2013) said it best, “we never educate directly, but indirectly by means of the environment” (p. 17). Although Dewey could not have envisioned specifics of twenty-first century technology, he was perceptive in proposing that students should have a prominent role in their education, such as would be possible with wider uses of online and student-produced YouTube videos.

Most students in America today were practically born with a computer in hand. Morrell et al. states, “youth are acquiring sophisticated media production and distribution skills that could be useful to transition to academic achievement” (Morrell et al., 2013, p. 3). He added, “The power of new media in the lives of young people cannot be denied, and therefore, we advocate that media education be more effectively implemented into the K-12 curriculum”

(Morrell et al., 2013, p. 3). Educators must learn to throw off what have become comfortable educational methods and develop new ways of teaching that enthrall and excite students, involving them much more fully in their education journey today as they prepare for their roles on the world scene of tomorrow. Broader application of video and other classroom technologies including YouTube may be one such tool.

CHAPTER 3: METHODOLOGY

This chapter introduces the research methodology for this phenomenological qualitative study regarding teachers' perceptions of the effects of classroom technologies such as YouTube on Constructivism, Professional Learning Community time as an aid to more effective teaching, and levels of student engagement. This approach allowed for a deeper understanding and appreciation of teachers' experiences while attending Professional Learning Community training to learn about working with YouTube and other classroom technologies. Furthermore, the approach provided a way to code interviews and find themes to understand what motivates teachers to work with video production and online resources such as YouTube as fully functioning tools in the educator's teaching arsenal. The applicability of the qualitative method and Constructivist theory are discussed in depth in this chapter, the purposes of which include components of the research plan: research questions, methodology, study participants, procedures, analytical method, and ethical concerns.

Research Design and Rationale

In qualitative research, the logic and specifics of research problems and questions differ from those used in quantitative studies (McMillan & Schumacher, 2014, p. 63). For example, "Good qualitative central questions contain three elements—the central phenomenon, and indication of participation, and an indication of the site or location of the study" (McMillan & Schumacher, 2014, p. 66). The research used a data matrix at the suggestion of White (2017) to determine the proper steps to take and the right questions to ask before venturing out on data collection (White, 2017, p. 203). White noted that the researcher must choose the steps carefully, leading to additional questions that could shape the interviews and ultimately the collected data (p. 203). Therefore, several issues were resolved while planning this research: the best type of

data, the types of survey and interview instruments, which participants to select, and the types of data analysis to use. Following a careful consideration of these and numerous related issues, the researcher chose a two-pronged approach: an initial survey and Zoom audio or telephone interviews with selected faculty participants.

The researcher understands that qualitative data derived from any step in the process may force the questions to change and that themes may take time to develop. The research questions sought to determine if Constructivism is relevant in the 2020 classroom and whether incorporating YouTube training into Professional Learning Communities would give teachers knowledge on how self- and student-produced YouTube segments improve student learning by enhancing a student's motivation to remain engaged.

The Professional Learning Community questions related to a key component of the 2017 revised NETP, which suggested adding multimedia communication into the teaching of traditional academic subjects (U. S. Dept. of Education, 2017). This study sought evidence to support that doing so, perhaps through the medium of Professional Learning Community technology training, may have the benefit of enhancing student participation and engagement. Specifically, the U. S. Dept. of Education (2017) linked students' future roles in the global marketplace with how thoroughly schools integrated 21st century existing and emerging technologies into the educational experience (p. 10). The 2017 revised NETP noted that the path to that integration would strongly advise teachers to integrate multimedia resources as they taught, resulting in students' enhanced abilities to think critically, solve complex problems, form relationships, work collaboratively with one another, and develop strong personal and interpersonal caring attitudes and behaviors (U. S. Dept. of Education, 2017, p. 10).

Additionally, this research evaluated teachers' perceptions of the Professional Learning Community's role in building the technological skills recommended in the 2017 revised NETP to achieve several related results. In the plan, the U. S. Dept. of Education noted that effective integration of technologies into classroom instruction enables learners to think about concepts from multiple perspectives and to link concepts from several contexts, while simultaneously appealing to what interests and excites the students. These benefits "can help us align how we learn with what we learn" (U. S. Dept. of Education, 2017, p. 12).

This research sought solutions to those challenges and encourages administrators, department heads, and collaborative teachers to incorporate YouTube into Professional Learning Community time. Implementing such a wide-ranging paradigm shift will require what Fullan termed a whole system reform movement; such a shift could change how schools incorporate technology (such as YouTube) into the school's media-literate environment (Fullan, 2010; Fullan & Quinn, 2016). The 2017 NETP cautions, "technology use should never displace the role of unstructured, unplugged, interactive, and creative play and these principles may evolve for families and educators in regards to the active use of technology with early learners over time" (U. S. Dept. of Education, 2017, p. 13).

Qualitative Research Methodology

The researcher chose a qualitative research method within the structure of a phenomenological analysis. The outcomes are revealed in rich narrative themes which developed after transcribing and coding in-depth the responses to survey questions of the nonrandomized, purposeful, convenience/judgment sample. A qualitative-only study is appropriate when the goal of research is to rely on perceptions of the participants' experiences in a given situation (Fram,

2013, pp. 3 & 15; Lunenburg, 2008, pp. 88–89), which fits the common definition of an emic study.

In part explaining this emic perspective, Creswell and Poth (2013) stated that qualitative research reveals hidden meaning through interpretation of the attitudes, beliefs, and experiences of the people being studied. The researchers commended qualitative studies partially because they can be less intimidating than other forms of research; a result is that people being interviewed, commonly termed the participants, are less intimidated as they share details about revealing their own experiences and perceptions (Creswell & Poth, 2013, p. 44).

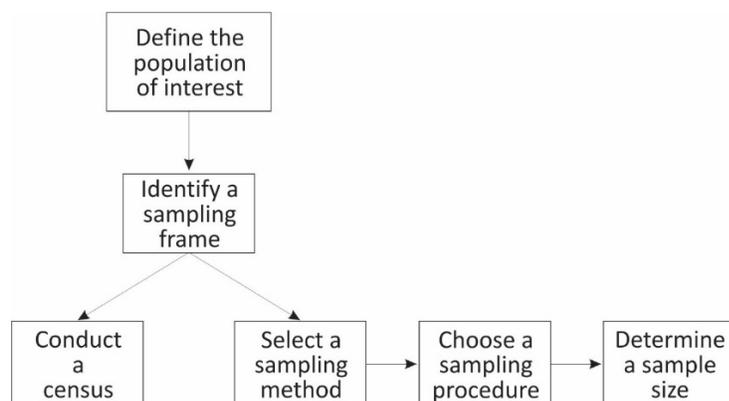
The researcher of the present study operated within a social Constructivist theoretical framework using a qualitative research and data analysis method. Creswell and Poth (2013) divided this research methodology into four common elements (pp. 34–35):

- Researchers define a problem and develop research questions to obtain a clear view of the matter being studied.
- Interpretation, the primary method of analysis, derives logically from data collection, analysis, and evaluation, all functioning within strict standards and ethics.
- The ethical requirements of qualitative research also note that the researcher must acknowledge his or her own potential biases and fully understand that true ownership of the information rests with the participants, not the researcher.
- Findings and recommendations of a qualitative study can be in traditional forms such as an article in a peer-reviewed journal or in more creative formats such as dramatic presentations or poetry; those findings may be reporting of the perceptions or specific recommendations for action or a paradigm shift.

This study used a qualitative approach to explain teachers' perceptions of the relationships among Constructivism, Professional Learning Community technology training, and student engagement. A key intent of this study was to seek impressions of educational practitioners with relation to the research questions, which when combined yield an omnibus guide to the implementation of this chapter and ultimately to the study's conclusions and recommendations of Chapter 5, including the primary issue: How would a Constructivist teacher, after Professional Learning Community technology instruction, implement YouTube to increase student engagement? Previous research has explored similar issues. Pereira et al. (2012) demonstrated that having students plan and create their own videos can motivate them to become more fully involved in their learning while developing critical thinking skills (p. 44). Buzzetto-More (2014) sought to understand how lessons and curricula utilized YouTube to enhance student learning and engagement. The researcher found a gap in the literature regarding how educators are trained to use technologies to teach and to allow students to submit assignments using technology.

Setting and Participants

McCormack and Hill (1997) emphasized the critical nature of participant selection because they are the source of information and the primary influencers of data quality (p. 49). The researcher chose what he felt was the most important stakeholders in the education process: teachers. The sample selection process is shown graphically in Figure 1. 1, each element of which is described in more detail following the figure (McCormack & Hill, 1997, Figure 3.1, p. 50).

Figure 1. 1*The Process of Sampling*

Since this research sought secondary teachers' perceptions about Constructivism, Professional Learning Community technology training, and student engagement, careful selection of study participants was critical. McCormack and Hill (1997) noted that the first step in sample selection is identifying the population of interest, essentially everyone who could provide information to answer the research questions (p. 49). The research questions for the present study relied on the perceptions of secondary school teachers, a broad category that includes educators of core subjects, electives, special education, and physical education, and who taught students in grade levels nine through 12. In a single district the number of teachers could be between 500 and 1,000 depending upon the number of high schools and student populations. Even at a single, medium to large size high school in southern California, the number of faculty could exceed 100, far larger than would be necessary or practicable for a qualitative study. Therefore, the researcher chose to limit the population of interest to a select group of teachers at a single school site, thus permitting the researcher to gather data on one campus with a well-known mission, philosophy, and clearly stated expected school-wide learning results.

McCormack and Hill (1997) describe the next phase of the research, selecting the sampling frame, as identifying people within the targeted population of interest (p. 51). Careful planning of the methodology's steps was a key feature of this step in the research process. Following a detailed review of pertinent literature and after gaining a clear understanding of issues related to the three research questions, the researcher selected a southern California district which comprises four high schools and three alternative education sites for secondary-level students. Data in the following discussion relate only to the district's traditional high schools and have been rounded to avoid identifying a specific district or school. Based on state-level data for the 2019–2020 school year, the district has a total of 9,100 secondary students and 400 teachers on the four traditional high school campuses. Based on a review of the School Accountability Report Cards and School Profiles for 2016–2019, the last years for which published data were available, the high school with the largest student population was selected as the target campus. Open for approximately 20 years, the school had a student population of approximately 2,800 students in 2017–2018, the most recent school year included in School Accountability Report Card data, with nearly 120 teachers that school year. The school ranks 9 out of 10 on the California School Ratings listings. Absenteeism, suspensions, and expulsions are less than 10% for the most recently reported year.

The selected high school has adopted a weekly late start day for Professional Learning Community training and Professional Development. The school's graduation rate has been at or above 95% consistently placing in the top 10% of all California high schools. Slightly more than 60% of graduates met all California A-G requirements for admission to the University of California or a California State University campus upon graduation following the school year 2016–2017, the latest reported year. The School's Accountability Report Card for the 2017–2018

School Year noted that the district “is committed to high-quality Professional Learning to support the instructional capacity of teachers and leaders.” One topic of focus within the district is “Integration of Technology and Use of Digital Tools.” During the COVID-19 distance learning period that ended the 2019–2020 School Year and began the 2020–2021 School Year, the school used a wide variety of local and online technical tools to enhance teaching and encourage student engagement. Among the tools used were Khan Academy AP Practice, Art History, Art Tutorials, High School Math, and SAT Math Test Preparation; Project Gutenberg, Google Arts and Culture; ClassLink Secondary; Webinar Video Storage; Kami (Annotation); Live Engagement Strategies; Microsoft Teams and Team Meetings; and Schoolwires.

Teachers invited to participate in the research included those who taught A-G courses and were employed full-time with no age or time on site limitation. Faculty participants were certificated teachers with either a single subject or vocational credential; all held at least a four-year, college-level degree. Career examples included, but were not limited to, teachers credentialed to teach one or more of the target disciplines described in the next paragraph. For the purposes of this study, the sampling frame included all teachers in the selected departments.

Surveying the faculty of an entire campus faculty (census) was beyond the scope of this study; the researcher chose to focus on one teacher from each of four core subjects, world languages, special education, and electives. To do so, the researcher acquired from the school’s principal an email list of all teachers at that school. An initial faculty survey (Appendix C) was conducted using an email sent to all teachers. This phase sought to identify the desired survey population so that a range of experience and discipline would be represented.

Sampling Procedure

Based on the principal's list, the researcher emailed an invitation to participate in an electronic Survey Monkey instrument to all teachers on the campus. The instrument, included at Appendix C, asked basic demographic questions and sought information about the teachers' understanding of Constructivism. This phase enabled the researcher to invite representative teachers from the departments to form the pool of faculty participants for the one-on-one Zoom interviews (interview questions are included at Appendix D). Upon receipt of replies to the initial faculty survey (Appendix C), an analysis of the responses to demographic and attitudinal questions intended to reveal teachers as candidates to participate in the second research phase for teachers. However, only one teacher from each of the target departments agreed to participate in the interviews; one additional teacher volunteered and was selected due to extensive knowledge of research science, technology in the classroom, and technical equipment that enhances teacher effectiveness while encouraging sustained student engagement.

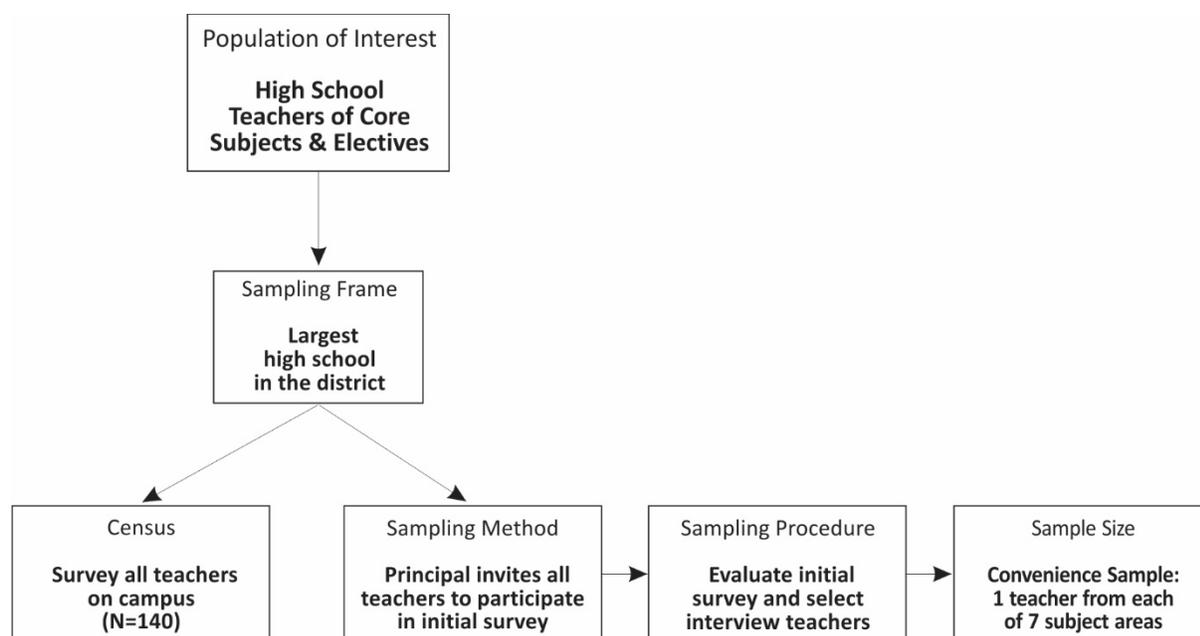
To explore those teachers' perceptions, the participants were asked to participate in a 30-minute Zoom audio or telephone interview. The questions investigated whether the participants considered Constructivism to be still relevant in the 2020 classroom, if they felt Professional Learning Community time was being used productively to help them understand advances in technology such as YouTube, and to gather their impressions of student engagement. This area of questioning derived in part from the revised NETP (U. S. Dept. of Education, 2017), which stated that "The focus on providing Internet access and devices for learners should not overshadow the importance of preparing teachers to teach effectively with technology and to select engaging and relevant digital learning content" (p. 8). The participants completed an Informed Consent Form (Appendix A), as required under federal guidelines, and an Audio

Recording Informed Consent Form (Appendix B), before participating in the interviews. No interview was conducted without confirming the written and verbal informed consent of the participants.

Overall, the selection of the faculty research participants followed the McCormack and Hill (1997) model with the specific steps illustrated in Figure 2. 1:

Figure 2. 1

Selection of the Survey Population for Teachers' Perceptions Research



Instrumentation

This study used a brief initial survey to access a random sample of the teaching faculty. The open-ended questions were used as a primary method of data collection. The initial faculty Survey Monkey instrument (Appendix C) gathered basic information about potential participants; the teacher-participants were asked a series of questions during one-on-one interviews (Appendix D) to collect data more specifically related to the three research questions.

This study sought teachers' perceptions, a process known in scientific research as a phenomenology study, which "describes the common meaning for several individuals of their lived experiences of a concept or phenomenon. Phenomenologists focus on describing what all participants have in common as they experience a phenomenon" (Creswell & Poth, 2013, p. 76). The researcher "collects data from persons who have experienced the phenomenon, and develops a composite description of the essence of the experience for all of the individuals" (Creswell & Poth, 2013, p. 76). Following selection of the participants from each of the disciplines, the participants were asked about their impressions of Constructivism, Professional Learning Community technology training, and student engagement. The interviews began with open-ended questions about the participant's initial interest in Constructivism and their ideas on student engagement. More detailed questions followed, with the intent to gather specific data on Professional Learning Communities and their effectiveness. The interviews concluded with more open-ended questions, which elicited more depth of knowledge, understanding, and evaluations regarding technology training during Professional Learning Community time.

Interviews were conducted over the internet using Zoom. This technique permitted the research to proceed without the need for travel time and expenses, and with full cognizance of the need to observe safe distancing which complied with the Novel COVID-19 pandemic shelter-in-place guidelines. Audio only of the interviews was recorded using a built-in record function on the Zoom application with the participants' verbal and written approval. Each of the one-on-one interviews took place in a single session. To ensure accuracy, completeness, and validity of the transcriptions, three of the transcripts were reviewed by a second individual who simultaneously followed the initial transcripts while viewing and listening to the recordings.

Validity and Reliability

The trustworthiness and validity of the qualitative research depends on what the researcher sees, hears, and collects, and how accurately the researcher interprets those variables. The researcher conducted a pilot study with educators in his cohort. The expert groups found the survey and interview questions to be reliable. Lincoln and Guba (1985) noted that credibility, transferability, dependability, and confirmability are important in establishing trustworthiness. Following development of the Zoom interview questions, the researcher conducted a pilot study with other members of Cohort 8 in the educational doctoral program at Concordia University Irvine. The five educators confirmed the interview questions' validity and reliability. One of the ways to ensure credibility and transferability is to ensure that those interviewed have the experience to discuss the phenomenon the researcher seeks to explore (Lincoln & Guba, 1985). Vignettes from the interviews will be used in figures to emphasized themes developed. When necessary, quotes will be included in the narrative to work towards a recommendation by the researcher (Leedy & Ormrod, 2013).

Data Analysis

This researcher used a series of surveys and interviews to collect data and information from the participating teachers. The study's structure grouped these surveys and interviews into two phases, each with a focus on the research questions. Following the survey and interview phases, the researcher coded participants' comments and evaluated relationships among each participant's responses and among the comments of other participants.

Transcript Coding

Coding of participants' comments was completed in the order of the interviews allowing the researcher to reflect and edit the interview responses as theories began to emerge from the

data. Coding was used to assist the researcher in understanding the perspectives of the participants and in analyzing their combined experiences. Codes were created during the research process. Based on the data, for the purposes of analysis, coding was conducted both manually and using computer-assisted, qualitative data analysis software.

Coding the transcription using qualitative analytic software broke the participants' comments down into meaningful and manageable chunks of data, a critical part of the data analysis. Coding used in phenomenology was instrumental in focusing the interview analysis on the experience of the participants in comparing their experiences. Coding helped to prevent the interviewer from overemphasizing the importance of any one aspect early in the study and helped ensure a thorough analysis of the entire interview (Bryant & Charmaz, 2010; Charmaz, 2006; Stak, 2010), ensuring ethical and unbiased depiction of the data and subsequent analysis and correlation.

Open Coding

Open coding is the phase when each line of transcribed interview text is coded individually (Urquhart, 2013), resulting in many codes. Line-by-line coding is a critical part of phenomenology methods (Birks & Mills, 2015; Bryant & Charmaz, 2010; Charmaz, 2006; Urquhart, 2013). This methods of coding helped the researcher focus in-depth on every interview and to obtain the maximum amount of usable data from comments made by each participant. The method also helped instill the discipline of phenomenology theory where the themes emerge from the data itself.

Selective Coding

A combination of inductive and deductive thematic development led the researcher to arrive at "Selective Coding." Selective coding begins to occur when there are no new open

codes, or when codes relate only to the core categories that begin to emerge (Urquhart, 2013, p. 23). Urquhart (2013) suggested revising the selective code categories if too many selective codes emerged from the original coding. Reinforcing that coding is an iterative process; Urquhart suggested that the researcher review selective codes to see which best represent the open codes identified. With this background, upon receiving the initial development of several hundred codes from an expert at GradCoach, the task of analyzing the codes and participants' comments began; the researcher was able reduce the codes to a manageable number of 14 codes. The researcher originally designed the data analysis to use MAXQDA and suggestions from other outsourcing coding experts. Despite that fact that the program contains tools for enriched data analysis (VERBI, pp. 1-15), the software was more complicated to use than this research required, and, therefore, was never used.

Ethical Issues

The researcher ensured that an ethical approach was of the utmost concern; care was taken and followed during each phase of the research and data analysis to ensure accuracy and an unbiased approach. Following the methods as outlined in this chapter was paramount in ensuring the validity and reliability of the study. The Informed Consent Form (Appendix A) was signed and returned by each participant. The Informed Consent Form follows U.S. federal guidelines, as outlined by Frankfort-Nachmias and Nachmias (2008) including, "a fair explanation of procedures, description of risks reasonably to be expected, a description of benefits reasonably to be expected, an offer of inquiry regarding the procedures, and an instruction that the person is free to withdraw" (p. 75). The risks to the study's participants were minimal. None of the participants demonstrated any impaired mental capacity, as determined by their ability to perform the positions that they hold in the school campus. Meeting these criteria qualified them

as participants in this study. The recorded material and the initial survey are stored in a mini safe at the researcher's home. Additionally, all recorded materials will be stored on a secure external hard-drive locked in a safe, and erased one year following final approval of this dissertation by the research committee, minimizing any future risks related to confidentiality. Transcribed interviews and coded documentation without a direct reference to the participants' names will be retained by the researcher.

During every phase of this project, from concept through data collection, analysis, and preparation of conclusion and recommendations, the researcher was cognizant of the possibility of situational and thematic bias. The researcher took every feasible effort to avoid this bias and sought a reader/editor's assistance to detect and eliminate any hint of bias in examining data, selecting the participants, ways of asking research question, and methods of recording and analyzing responses.

Summary

The goal of this chapter was to outline the methodologies used to answer the research questions. A discussion of the procedure, study participants, data collection, and interview questions outlined specifics on how the study was conducted and who participated in the study. A qualitative, Constructivist method was used to develop themes on teachers' beliefs about Constructivism, how Professional Learning Communities are being used to teach technology, and what motivates students. All study participants contributed to this by sharing their perceptions of the relevance of Constructivism, their experiences with the Professional Learning Community process; their perspectives of what technologies, including YouTube, worked best in their classrooms; and their impressions and perceptions of what motivates students. The next

chapter will present and analyze the qualitative data obtained from participants' responses during the open-ended Zoom interviews.

CHAPTER 4: PRESENTATION AND ANALYSIS OF DATA

Introduction

This study investigated the relevance of Constructivism and Professional Learning Community technology training and how these variables may influence and/or affect student engagement. The purpose of this study was achieved by examining teachers' perceptions of the three general study categories and several specific components of each. This chapter presents the results of the qualitative data analysis for the three interrelated research questions.

Descriptive Analysis

Based on teacher responses to the initial survey, the researcher found that only one teacher from each of the seven departments agreed to participate in interviews: electives, English, mathematics, science, social science, special education, and World language. An additional credentialed teacher was selected to participate in the interviews due to extensive knowledge of classroom technologies and related equipment; to enhance confidentiality and avoid potential identification of that specific teacher, the individual's department is listed as "Other" in Table 1. 1 This group of eight teachers enabled the researcher to build a panel of participants who could provide comments about their individual, common, and shared experiences (Creswell & Poth, 2013, p. 81). The researcher was intent on protecting each participant's privacy and confidentiality through this anonymity and data storage as suggested by McMillan and Schumacher (2010, p. 121).

Each of those teachers agreed verbally and in writing to be interviewed. Subsequently, an audio-recorded Zoom interview was conducted with each of the eight participants. First, each interview was sent to REV.com to be transcribed. Once transcribed the researcher compared each REV.com transcript with the original audio recording and made corrections as needed.

Based on the interview transcripts, the participants' responses were coded first by the researcher, looking for memorable quotes. The researcher highlighted significant quotes and developed a spreadsheet using Microsoft Excel to organize teacher's perceptions into thematic categories. The transcripts were sent to GradCoach. The researcher sent a list of inductive themes based solely on researcher assumptions. GradCoach was mindful of researcher bias so created their own list deductively based on the findings in the transcripts. These three different methods; REV.com's line-by-line coding, inductive coding by the researcher and deductive coding by GradCoach, providing for the triangulation of the data. Among the methods, themes began to emerge and Teachers' perceptions are listed as themes displayed in Table 2. 1.

Participants' identities were protected and confidentiality assured by alphabetizing the associated departments and then assigning each teacher a P## code from 01 through 08. The participants are identified in this chapter's data presentation and analysis as either P##, as shown in Table 2. 1, or by the P## code and department affiliation. The following discussion describes the basic demographics of the participants and includes a detailed presentation and examination of the participants' perceptions of the three research questions.

Table 2. 1 displays descriptive data collected during the initial survey to include gender, ethnicity, years of teaching experience, and subject matter taught.

Table 2. 1*Participants' Demographic Statistics: Gender, Ethnicity, and Experience*

Participants	Gender	Ethnicity	Years Teaching	Department
P01	F	White	11+	Electives
P02	F	White	11+	English
P03	M	Hispanic	2+	Math
P04	F	White	6+	Other
P05	M	Asian American	2+	Science
P06	M	White	11+	Social Science
P07	F	Asian American	6+	Special Education
P08	M	Asian American	11+	World Language

Note. The group of participants includes four male and four female teachers; four White, three Asian, and one Hispanic teacher. No teacher self-identified as Black or African American or any related ethnic minority agreed to participate in the interviews. Years of teaching represented a wide range of experience from more than 20 years to beginner. Where possible, coding was used to develop themes related to the participants' four demographic categories.

The eight participants' transcripts produced by REV.com were analyzed and codes extracted. Initial coding by REV.com produced nearly 1,400 quotes which included some duplicates and redundancies, coded into nearly 700 categories, some of which the researcher had suggested prior to the coding. Such a large number of codes made data analysis cumbersome and impractical. So the researcher chose to synthesize the information from REV.com into 14 themes as displayed in Table 3, which contains the codes created after the eight transcripts were analyzed. These codes derive from one of the three questions or a combination: Relevance of Constructivism, Professional Learning Community Technology Training, and Student Engagement. Comments by the eight participants were coded into the 14 codes which Table 3. 1 groups into the three major research categories.

Table 3. 1*Themes Used to Organize Participants' Perceptions*

 Description of theme and Relation to Research Questions

Relevance of Constructivism

- Advantages of Constructivism
- Disadvantages of Constructivism
- Relationship of Constructivism to Student Engagement
- Elements of Constructivism to which Students Respond Negatively

Professional Learning Community (PLC) Technology Training and Application

- Advantages of PLC Technology Training
- Disadvantages of PLC Training on Classroom Technologies
- Planning Steps for Creating Subject-Related Videos
- Planning Steps for Students Preparing a Video
- Available Video Equipment & Software
- Video Production Equipment Needs
- Video Production Training and Student Access

Student Engagement

- Keeping Students Engaged During Instruction
 - Most Effective Engagement Techniques
 - Determining if a Student is Engaged
-

The three categories emerged from the researcher's analysis of the Zoom interview transcripts, the line-by-line coding and the inductive/deductive coding developed by GradCoach. The following presentation of the findings is arranged by the three research areas, which were resolved by responses to Zoom interview questions in each area:

1. What are teachers' perceptions of the relevance of Constructivism in the age of technology? Four themes emerged from the participants' perceptions to address this area of the research.
2. How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as

YouTube? Discussion related to seven themes centered on participants' Professional Learning Community training and Professional Development training to provide findings for this research area.

3. What are teachers' perceptions of student engagement? Three themes related to student engagement addressed this area.

Research Question #1—Relevance of Constructivism

What are teachers' perceptions of the relevance of Constructivism in the Age of Technology? To answer research question one, a qualitative approach was employed to review and organize the participants' comments which responded to four related questions. Major themes were identified in regard to the relevance of Constructivism in today's technology-rich society. The eight participants offered nearly 200 comments related to Constructivism in their classrooms. Most of the participants' perceptions described the positive aspects of Constructivism. Table 4. 1 shares some of the participants views on the relevance of Constructivism. Other perceptions noted that some students were uncomfortable in that setting because few of their other teachers used similar teaching techniques. Table 4. 1 summarizes the range of participant comments:

Table 4. 1*Question #1 – Relevance of Constructivism*

Participant	Response
P01	[Constructivism] can be a very powerful philosophy or pedagogy for students or for teachers to use, to really connect, engage with students, and give them an understanding of why they're doing something.
P02	Constructivism is going to ask them to engage more deeply with whatever the learning is and that really stretches the brain.
P06	It's extremely important to use Constructivism in the classroom because the kids get talked to a lot, versus having them included.
P07	[Constructivism gives] students the opportunity to actually interact and engage with material, to share their experiences and their perspective on a particular prompt, task, or question.

Campbell and Wahl (2015) noted that Constructivist classrooms encourage students to participate actively in their education; teachers as a result use student perspectives to refine the instruction in later lessons (pp. 28–30). The eight participants spoke enthusiastically and in depth about their perceptions of why Constructivism is still relevant in the 2020 classroom, whether on campus or remotely during the COVID-19 pandemic period of learning at home. The following discussion presents the participants' comments in detail, arranged by themes which emerged during data analysis of the participants' perceptions. Some verbal pauses and unnecessary repetition of words have been omitted while maintaining the tone, content, and accuracy of the interview transcripts.

Theme 1: Advantages of Constructivism

The participants identified several advantages of using Constructivism in a classroom setting in the present technological era as shown in Table 5. 1. Overall, the participants were unanimous in asserting that Constructivism assists in facilitating student-centered learning and project-based learning while also enhancing student engagement. Ashman (2020) stated the one

thing that all Constructivists believe is the idea that learners are not blank slates – that new knowledge is added to old knowledge (p. 1).

Table 5. 1

Advantages of Constructivism

Participant	Response
P02	The focus is on learning. It takes more to use Constructivism when teaching, because you're going at the pace of the students, the pace of what you think it should be.
P03	It's more relatable to students when they connect experiences in their past with essential standards in your class.
P06	[Constructivism] gives students the opportunity to help facilitate their learning [and] I like students to have the opportunity to dive into topics that interest them.
P08	I encourage chatting, I encourage questions. We have to have a give and take; there is collaboration and independent work as well.

Constructivism also helps students develop an ability to self-assess while simultaneously enabling teachers to find whether the students understood a concept or might need additional help including a tutor (Brooks & Brooks, 1999, p. 60; Hattie, 2009, pp. 24–26; Hattie, 2012, p. 88). This is underscored by teacher P08, a world languages teacher, who explained that he uses student self-assessments to determine if additional pre-teaching is necessary before more fully developing a topic. The aspects of self-assessment and checking for understanding also are key components of an active Constructivist classroom, as explained by other participants and summarized by an electives teacher (P01), who noted that checking for understanding is especially important in a classroom where some students either think they know little or nothing about the topic, or may be scared of it. Under the Constructivist classroom model, drawing on prior experiences in similar or related subject areas helps students realize they know much more than they thought at first.

Moreover, several of the participants noted that while Constructivism is not content-driven, it acknowledges the vital presence of the human element, constantly seeking feedback which enhances the motivation of learning among the students. Constructivism acts as a facilitator of knowledge acquisition. The World Languages teacher (P08) stated that both collaboration and independent work become more effective when students are encouraged to collaborate and to ask questions; such feedback helps guide and focus instruction in the Constructivist classroom. P06, Social Science, supported that concept while relating Constructivism to building student excitement and involvement in a lesson unit. Furthermore, P06 stated that Constructivism allows students to take ownership of how they learn.

The participants also perceived that effective education in a Constructivist classroom features active learning and student-directed instruction which encourages students to ask questions while making the subject being studied more relatable. This finding affirms previous research by Dennick (2016, p. 202). P08 (World Languages) stated that listening critically to student discussions leads to directed interaction among the teacher and students which has a direct influence on the strength of the teacher-student relationship and bond.

In summary, participants revealed that Constructivism helps to instill a sense of a more personal relationship with the lesson material being taught, rather than simply teaching random facts and figures. P05 (Science) stated as students develop a sense of subject and classroom ownership, and as the teacher and students develop a mutual, positive bond, student engagement improves. Analysis of participants' comments within this theme noted a general, overall positive impression of the value of Constructivism, with potential challenges from nonadopters or non-supportive administrators on campus. Participants acknowledged the extra time required by

Constructivist techniques, the effort paid great dividends to student engagement and learning, group interaction, and a more positive teacher-student relationship.

Theme 2: Disadvantages of Constructivism

While the eight participants noted that Constructivism offers a variety of advantages for both teachers and students, several comments identified negative factors and disadvantages, all centered on the common concept that, if not used carefully and judiciously, Constructivism could hinder students' education. Table 6. 1 lists participant's views on disadvantages of Constructivism.

Table 6. 1

Disadvantages of Constructivism

Participant	Response
P02	Constructivism is often at odds with the pacing guide. If I'm the first Constructivist teacher they've experienced, they are thrown way off guard.
P04	A disadvantage is when you have an open forum of questioning, typically you have the usual suspects [participating and responding to questions].
P07	[Constructivism] is a challenge for students who are not accustomed to it, because they're waiting for the teacher to [do all of the work].
P08	The major disadvantage is simply the diversity in the varying amounts of prior knowledge.

P06 (Social Science) noted that if the user doesn't keep an end goal in mind, the students can perceive the methods of Constructivist teaching as "arbitrary and random." P06 explained that the Constructivist teachers have to connect the technique with the material being taught. Additionally, P06 has reacted to student complaints about Constructivist techniques by turning the instructional strategy back to the students by asking them to critique the teaching technique and offer remedial suggestions.

Other disadvantages of Constructivism involve the diversity and varying amounts of prior knowledge, the time consumed while applying the principles of Constructivism, and the

challenges for students who are not accustomed to the principles of Constructivism. P03 (Mathematics) noted that some students lack confidence, are unable to ask questions, and often feel alienated. Echoing this perception, P08 (World Languages) observed that students who are more introverted or less confident may be increasingly intimidated in a Constructivist classroom where some more advanced students tend to dominate discussions.

P03 (Mathematics) stated that some students react negatively to Constructivism because they would rather have the teacher teach with only minimal direct student participation. Moreover, the participants noted that teachers' motivation is required to properly implement Constructivism, the implementation of which varies from subject to subject across the high school campus. P02 (English/Language Arts) perceives that Constructivism is more time consuming than direct instruction or lecture. Several of the participants also cautioned that Constructivist teachers can face a form of professional bullying from some administrators and other teachers on campus. This subtle form of isolation becomes a major disadvantage for teachers who prefer a Constructivist structure in their classrooms, and potentially can deter or discourage teachers from using the technique in their classrooms. P02 explained that if an administrator is not a Constructivist, teachers' jobs can be in jeopardy.

In summary, analysis of participants' comments related to this theme revealed that Constructivism helps to instill a sense of a more personal relationship with the lesson material being taught. P05 (Science) related this concept to home building. "It gives ownership of the education to the student, because I'm not just teaching random facts and figures." P05 said as students develop that ownership, they often find it easier to build on prior knowledge rather than trying to learn from concepts or facts just randomly put together, much like having someone build a house on your land or giving students a blueprint and asking them to build it. Potential

challenges arise from nonadopters or non-supportive administrators on campus. Although the participants acknowledged that the extra time required for Constructivism is often at odds with the pacing guides, the effort paid great dividends to student engagement and learning, group interaction, and a more positive teacher-student relationship.

Theme 3: Relationship of Constructivism to Student Engagement

This theme includes several positive elements pertaining to Constructivism from the students' perspective, as perceived by the participants: a sense of responsibility, student feedback, planning, length of the activity undertaken, the distinct teaching styles adopted, and the aspect of accountability. Table 7. 1 demonstrates the participant's belief that Constructivist principles improve student engagement.

Table 7. 1

Relationship of Constructivism to Student Engagement

Participant	Response
P02	Students like the idea that it's centered on them. I think making patterns and learning come innately and naturally for students, [so] they feel successful at it because it's an innate feature. They feel that it's usually more meaningful.
P03	It's more relatable to students when they connect experiences in their past with essential standards in your class.
P06	If it's properly planned out and it's clear, defined in terms of expectations, I feel like all of it can be positive.
P08	I encourage chatting, I encourage questions. We have to have a give and take; there is collaboration and independent work as well.

The Social Science teacher, P06, commented, "If it's properly planned out and it's clear, defined in terms of expectations, I feel like all of it can be positive." But P06 also stated that sometimes the length of the activity may have an effect on student engagement. P06 said, "Continuous feedback from the students develops a sense of responsibility and belongingness among the students." P06 noted that group activities tend to instill a sense of responsibility

among the students and also makes students liable and accountable for their actions. P06 said, “I’m a very big advocate of group work. Where they’re paired off into groups and they’re doing jigsaw activities and they’re really taking the onus and the responsibility of their own learning” (P06). This statement also indicates the differences in the teaching styles adopted by the teachers make the sessions more interactive which also affects the students positively. P02 perceived that “Students like the idea that it's centered on them. I think making patterns and learning comes innately and naturally for students, [so] they feel successful at it because it's an innate feature.

When used properly, P08, a World Languages teacher said, when we're going through a question response, we're going through inquiry, when talking about any real subject it's really cross-curricular. Special Education P07 said that the thing students react most positively to is that it takes away the anxiety. P07 has seen students who are more willing to buy in and contribute because the anxiety of being wrong is kind of taken away from them. In a field where problems commonly have only one answer, the mathematics teacher (P03) said a lot of students like the openness of certain problems [so they can] make some broad observations or generalizations.

Lastly, Constructivism involves use of positive words rather than negative words, helping to instill a feeling of positivity among the students while reducing their anxiety and stress levels. Special Education teacher (P07) stated that she does simple interactions with them and they need to learn or remember their multiplication chart. In the world of special education, P07 said materials like this are very important.

Most of the participants’ comments focused on favorable student reactions to the Constructivist structure of their classrooms and emphasized the need for careful planning. The participants noted their application of a variety of teaching styles appealed to students’ learning

style preferences. However, some students found the Constructivist methodologies were uncomfortable at first because few of their teachers followed that student-focused philosophy.

Theme 4: Elements of Constructivism Students Responded Negatively To

Apart from the benefits as discussed in the previous theme, using Constructivism in the technology-rich classroom also has its own potential or perceived negatives, largely because it involves active student participation and engagement; however, certain students are completely dependent on dictated information and on teachers who lecture, rather than taking on personal responsibility for their own education. Table 8. 1 gives examples of participant's negative aspects of Constructivism.

Table 8. 1*Elements of Constructivism Students Respond Negatively To*

Participant	Response
P02	My other classes aren't doing this and you want us to.... Why are you asking so many questions? You don't know the answer? What do you mean you don't know the answer? You can just hear the dialogue going on with kids.
P05	[Students can experience] anxiety that comes with being wrong. I've had students who didn't like that I don't give them any information, I'm just asking for their opinions. A lot of them are not willing to contribute because they don't want to be wrong.
P06	Some students are very apathetic and want to be hand-fed the information. Some students may look at it as a negative, because they actually have to put the work in and are being held accountable.
P08	When it comes down to remote learning right facial expressions are not always their strong suit for some. Others wear their emotions on their sleeve.

Students have to manage their time and their work in order to become accountable. This became increasingly more pertinent as the COVID-19 home-bond isolation lengthened through the end of 2020. Such students often perceive Constructivism negatively. P06 (Social Science) stated some students are very apathetic and want to be hand-fed the information. P06 said he does not believe in lectures. He said, "I'm a believer in, 'Okay, this is what we need to do, and let's get there together.'" Some students may look at it as a negative, because they actually have to put the work in and are being held accountable. And they know that if they don't do their portion of it, then their group suffers as a result. And they are implicitly called out. Fortunately, according to P06, that's really the exception rather than being typical of an entire class.

Other elements that students react negatively to are disadvantages of distance learning, different interpersonal relationships, changes in teaching methods, the influence of multiple intelligences, multiple explanations, political and nonpolitical attitudes among student peers and at home, and differences between teachers. The English/Language Arts (P02) teacher said if I'm their first Constructivist teacher, they absolutely feel at odds with it and they absolutely push

back. It's a matter of trust as well. Because especially at the beginning with distance learning and virtual learning, it is more difficult to establish relationships and trust, especially because I'm not seeing them every day. And even though I have other avenues to reach out and interact with them on an asynchronous day, and I have ways for them to ask questions and to get feedback fairly immediately on asynchronous days, there's the trust factor. They don't know who I am. Similarly, the World Languages teacher (P08) commented: "Whatever I do might be so fast that it may not give some students time to react, ask questions, or ask for clarification."

Another element of Constructivism that can foster student negativity is perceived or actual differences among grading systems and philosophies from classroom to classroom. P01, an art teacher, commented that she doesn't receive consistent support from all teachers, a perception that may be common to students as well. For example, some students have told her that they felt unfairly graded in other classes. P01 said, "Because of the way that they were treated and the way that they were graded was very unfair, they actually thought that they were bad artists." P01 saw their work and graded it differently. Moreover, the fear of being wrong is often associated with Constructivism. P05 (Science) stated, "[Students can experience] 'anxiety that comes with being wrong. I've had students who didn't like that I don't give them any information, I'm just asking for their opinions.'" P05 said with students there is anxiety with being wrong, "I don't want to be wrong. I don't want to be laughed at.' Even though pretty much everyone in the class is in the same boat as they are, they are not willing to contribute because there's still that anxiety." Teachers perceived an inconsistency in grading practice between their Constructivist classroom and others on campus. Some students reported feeling unfairly graded in some classrooms and complained to their current teachers.

Although this section described some negativity associated with Constructivism among the participants, the eight teachers in this research expressed the unanimous view that indicated a general agreement with modeling their classroom using a Constructivist structure and techniques. The participants offered several dozen comments which P07 (Special Education) summarized: “Constructivism is such a good concept. Anything that will help students remember important information or an important skill for the math concept I'll be presenting, I think that's always positive.”

Research Question #2 – Professional Learning Community Technology Training

How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube? The second major question sought participants’ perceptions about school and district training on the uses of educational technologies. The participants responded to a series of eight questions related to their impressions about the value and effectiveness of Professional Learning Communities technology training in a Constructivist classroom as it may relate to enhancing student engagement. A growing concern amongst the majority of the participants is that Professional Learning Community training and Professional Development need to be relevant and useful.

Theme 5: Advantages of Professional Learning Community Technology Training

The first question in this section sought participants’ responses to the general subject of professional development, usually accomplished during a late-start morning: “What do you think of when you hear you’re going to be attending a professional development session of the Professional Learning Community on technology?” Table 9. 1 lists some advantages of PLC tech training.

Table 9. 1*Advantages of Professional Learning Community Technology Training*

Participant	Response
P06	I consider myself a sponge. I like to learn different things, as long as professional development is relevant and there are things that I can realistically use.
P05	I treat it like a gamble to be very frank. I have attended PLCs on technology and how to incorporate into our classroom. And to me, it's always a huge gamble.
P06	I want those types of things that can help me do my job better. How can I keep students engaged? But when it's something where it's like, "Okay, is this just like a blanket PD?" If there's not any type of relevancy with what I'm doing, then for me, it's a waste of time.
P07	What I like about our PLC lately, I would say this has been happening for two to three years now. They have implemented what we call common assessment and they have implemented a rule, when a student transfers to another teacher, the student should have a smooth transition. The idea is everybody should be doing the same thing or at least at the same pace.

From the participants' perspectives, such professional training must be useful and relevant and should result in useful outcomes. P06, who teaches Social Science, revealed that he prefers technology training that he can use in his classroom. He said, "I consider myself a sponge. I like to learn different things, as long as professional development is relevant and there are things that I can realistically use" (P06). P06 was frank in stating, "I want things that can help me do my job better. How can I keep students engaged? But when it's something where it's just like a blanket PD without relevancy with what I'm doing, then for me, it's a waste of time" (P06). This sentiment was echoed by several of the participants who said they want Professional Learning Community technology training to teach something that will benefit them in the classroom, "as opposed to maybe learning about something that I'm just not going to use" (P06).

Similarly, other participants are also in favor of Professional Learning Community technology training and love the associated groups which they attend regularly. P07 (Special Education) stated that, "It's interesting how PLC has been defined in different ways. I have

attended some PLCs at the district level, which they call professional development, and yes, there was a guest speaker who helped us learn new things.” P07 liked the addition of common assessment that made teachers align their lesson plans and unit plans so, when a student transfers to another teacher, the student should have a smooth transition. P07 said that common assessment is the idea everybody should be doing the same thing or at least at the same pace.”

P05 (Science) stated, “I treat it like a gamble to be very frank. I have attended PLCs on technology and how to incorporate into our classroom. And to me, it's always a huge gamble” (P05). P05 said, “Some of the older teachers struggle a lot with Google classroom, but to me this is my bread and butter.” P08 stated, “If the PLC happens to be something that's so basic that it's just like an intro to something, I do an eye roll; I lose interest right away because I know where it's going.” The English/Language Arts Teacher (P02) wants to have a clear understanding of “What's the focus of it? What can I learn from it? How can I use it? What is it about? And then logistical things like how long it is.” PLC training garnered a mixed response from the participants. Some believe that it is crucial for existence, while the others believe that it is a waste of time.

Theme 6: Disadvantages of Professional Learning Community Technology Training

This theme includes the professional training which may be required on classroom technologies such as the production and uses of YouTube or other videos. Several participants voiced negative concerns surrounding disadvantages of PLC tech training and Table 10. 1 highlights those concerns.

Table 10. 1*Disadvantages of Professional Learning Community Training on Classroom Technologies*

Participant	Response
P01	How can we continue to integrate technology into project-based learning? There are so many different technology applications it boils down to which ones should we use.
P02	They have to have layers of PD. The first one is nuts and bolts. The second one is going to be pedagogical. And I think the third one is going to be “Where are you now with this?” This is really a Constructivist approach to PD.
P04	I feel like I’m devolving when I go to a PD because a lot of times somebody reads the PowerPoint, and they think that we got trained. We go to a PD, there's no interaction between my colleagues.

It was found that the training must focus on technology and how to integrate it into lesson preparation and presentation both in the classroom and online. P01 (Electives) stated, “How can we continue to integrate technology into project-based learning?”. She said that there are so many different technology applications it boils down to which ones teachers should use. Similarly, P04 backed this statement by revealing that she had helped a fellow teacher learn to use new computer software as an enhancement in her educational arsenal. She provided training for an English teacher who wasn’t comfortable with teaching the technology to the students.

Because some teachers lack necessary technological knowledge, Professional Learning Community training needs to be structured and tailored; it also requires more dialogue and needs more time. P02 (English/Language Arts) stated, “They have to have layers of PD. The first one is nuts and bolts. The second one is going to be pedagogical. And I think the third one is going to be ‘Where are you now with this?’ This is really a Constructivist approach to PD.” Moreover, the PLC training must address the distance learning problem. Special Education teacher P07 stated, “Whenever I present lessons, luckily my laptop is touch screen and we have this pen right here. I have been literally just using white board, the app on this computer, it's called white board. I

share my screen and make notes” (P07). This participant said that some teachers use iPads and write notes on them. P07 stated, “I would love to learn what materials I can use on my basic materials on top of my laptop and lovely pen that I can use when teaching live” (P07). Further, P04 feels Professional Learning Community training has been largely a waste of time since most of the instruction has been simply reading a PowerPoint presentation; the training typically is not hands-on (P04). They're the complete opposite of what development should be, as P04 explained: “I feel like I'm devolving when I go to a PD because a lot of times somebody reads the PowerPoint, and they think that we got trained.” P04’s experience with professional development indicates no interaction among colleagues, no hands-on training or role-playing; “there's none of that stuff, and so we just sit there” (P04). Trainers tend to teach using handout materials, saying such things as, “Look at the packet, fill in the packet. Great, you're now trained.” P04 evaluated such a comment: “No, we're not.”

Theme 7: Planning Steps for Creating Subject-Related Videos

Each of the participants uses distinct and unique steps for creating a subject-related video. Table 11. 1 displays participants’ views on their planning steps for creating a subject-related video.

Table 11. 1*Planning Steps for Creating Subject-Related Videos*

Participant	Response
P02	I would have some metacognitive questions mixed in there. And asking them questions about things like “Okay, what makes the most sense to you?” And I always add, “And why” on every question. “What doesn't make sense to you?”
P06	I kind of take that backward learning model where I identify what I need to do, the objective, [and] my end result? And then I kind of work my way back from there.
P07	You have to start off with your objectives. What are you trying to assess? What do you want the students to be able to know by the end of the video? After identifying the rationale and beginning to develop an assessment strategy.

P06 reveals that he uses backward learning or a backward design model, which begins by focusing on the learning outcomes and then makes plans. He adopts multiple approaches and consequently adapts to the needs of the students. “I kind of take that backward learning model where I identify what I need to do, the objective, [and] my end result? And then I kind of work my way back from there.” Specifically, P06 focuses on what he wants the students to learn, evaluates available instructional strategies, and then identifies technologies he can use to achieve his goals. Similarly, P02 revealed that time constraints and desired content of videos are taken into consideration while planning and making a video. P02 stated, “I would have some metacognitive questions mixed in there. And asking them questions about things like ‘Okay, what makes the most sense to you?’ And I always add, ‘And why’ on every question. Then, ‘What doesn't make sense to you?’” (P02).

Moreover, the English/Language Arts teacher (P02) noted that student feedback informs not only current instruction, but helps to plan for the future, depending upon the number of different classes a teacher might have daily. P02 said, “I ask metacognitive questions about when was the last time you used certain items or methods. And if they say, ‘Well, I have never used it

before,' that's great feedback to me because they don't understand the real-world implications” (P02). P02 also said she would use more video if she had more prep periods but with three or four classes to prepare, she does not have enough time. P03 (mathematics) supported the strategy, noting that, videos allow students to replay the information as often as necessary until they grasp the concepts. P03 cautioned that planning for teacher- and student-produced videos needs to factor in the intended audience and length of the video. The professional literature suggests a solution so teachers can combine their resources in subject-specific work groups and not duplicate one another’s efforts (DuFour & Fullan, 2013, p. 68).

Also, P07 (Special Education) noted that script-writing is a crucial step in the video production process. “I like to be really scripted, detailing everything I'm going to be saying, the activities I'm going to be using, have them all worked out.” Not comfortable with speaking impromptu or even extemporaneous comments, P07 prefers to have everything written out: “My videos tend to be a lot more coherent that way and, and it usually [takes only a] few tries until I'm able to complete the video.”

Teachers who commented on this topic were unanimous in recommending careful preproduction planning including storyboards and planning backward from the lesson objective. This reversed model was lauded as a strategy that helps teachers prepare videos that will educate students in a thorough and entertaining manner while remaining true to the desired outcome.

Theme 8: Planning Steps for Students Preparing a Video

Before making a group project video or individual project, the participants suggested several steps such as scaffolding, planning the project, breaking things down, incorporating planning steps for video, identifying a goal or a driving question, and adopting different learning

styles, approaches, and intelligences. Table 12. 1 has some of the participants ideas for steps students should take for preparing a video assignment.

Table 12. 1

Planning Steps for Students Preparing a Video

Participant	Response
P01	So, I really break it down. At times I maybe scaffold a little too much for them, but what I often do is I cater to the different learning styles and the multiple intelligences.
P02	Students do the initial planning, talk about strengths they bring to the group, and comment that they want to play to the strengths of other group members.
P04	They need to make sure the focal point of what the message is in terms of the video is clear. What is it that we're trying to achieve? What is the end goal?
P05	You have to start with a draft, you got to show me first what your plan is, stage one, start with a draft, what problem are you going to use and then show it to me.

P01 stated, “So, I really break it down. At times I maybe scaffold a little too much for them.” P02 (English/Language Arts) agreed and commented that students do the initial planning, talk about strengths they bring to the group, and comment that they want to play to the strengths of other group members. P04 also had a similar perception regarding the planning and first, “What is it that we're trying to achieve? What is the end goal?” P05, a Mathematics teacher, identified a crucial step, “You have to start with a draft, you got to show me first what your plan is, stage one, start with a draft, what problem are you going to use and then show it to me.” P07 agreed and stated that a script is needed, “I would expect them to create a script, to write down the key points that they want to address. And then I would ask them to do a mock run of their video before they record it.”

Teacher-modeling of production planning was important, according to the participants, some of whom observed many students who tended to just turn on a camera and begin recording without any measurable prefilming planning. To correct this procedural mistake, the participants

demonstrate the planning process and then explain carefully and fully the value of planning including script-writing and thinking about shooting B-roll materials before shooting and editing a student-produced video. Two of the eight participants do not ask their students to produce subject-related videos.

To summarize, six of the eight participants emphasized the value for students of careful preproduction planning with a specific goal in mind for each video. The participants encourage students to critically think through the project, write and edit drafts of the production script, rehearse, and film both primary video and B-roll as part of the project. The participants noted that the process helped to build small-group effectiveness as the students shared their strengths and skills while learning from one another.

Theme 9: Available Video Equipment and Software

The close of 2020 presented teachers with unprecedented situations; distance learning has become not only a trend but a reality throughout this school and district. State- and district-mandated schooling at home presumes availability of suitable devices for students. Students should have phones, cameras, and internet access, as the minimum, to participate in online classes and for creating their own videos. Table 13. 1 lists some other video equipment and software available to students

Table 13. 1*Available Video Equipment and Software*

Participant	Response
P01	Since we're in distance learning, everybody has a device, internet access; their phones can act as a camera. They have an infinite amount of obvious resources online. And so they have what they need.
P02	Students use the free Screencastify. There's a lot of free versions like Loom. I prefer Loom over Screencastify when I use the video.
P05	I've heard of teachers using Edpuzzle; however, I did not attempt [this] because I was hoping we'd go back to in-person instruction; that has been the hope. Our students need a lot of support and having them watch a video is just really not enough for most of them.
P08	I recorded some of her lectures last year, and Siri on my iPad allows me to record my drawings on a presentation. And I can use that to interact with my computer, which already has PowerPoint.

While the perceptions were not unanimous, most of the participants commonly stated that their students do have access to at least a minimal amount and quality of equipment to participate in COVID-19 online instruction. In this context, P01 (Electives) commented that most students at least have simple technology such as a cellular phone: “Since we're in distance learning, everybody has a device, Internet access; their phones can act as a camera. They have an infinite amount of obvious resources online. And so they have what they need.” P02 (English/Language Arts) identified a variety of new concepts: “Students use the free Screencastify. There's a lot of free versions like Loom. I prefer Loom over Screencastify when I use the video.” P05 (Science) uses his cell phone and written material. “I've heard of teachers using Edpuzzle,” he said; however, he did not begin using Edpuzzle, hoping the school would soon return to in-person instruction. “Our students need a lot of support and having them watch a video is just really not enough for most of them” (P05).

Aside from basic technologies like cell phones, Flipgrid and Google Chrome can be effective. This was the focus of a comment by P06 (Social Science), who noted that some of his

students do not have a cellular phone or the equipment they may have does not function adequately to produce videos. Finally, P08 (World Languages) revealed the use of iPad, Siri, and Chromebooks for creating student videos, and he recommends their use while creating or planning and creating videos. Concerning this, P08 stated some of her lectures were recorded last year, and Siri, “on my iPad allows me to record my drawings on a presentation. And I can use that to interact with my computer, which already has PowerPoint.”

The participants reported only minimal equipment availability. Cellular phones showed wide but not universal availability among the teachers and students, with ownership of some Chromebooks, iPads and similar handheld devices, and smaller computers such as notebooks.

Theme 10: Video Production Equipment Needs

Several teachers suggested unique techniques and tools that could prove useful for video creation. Good quality cameras, cell phones with high-end cameras, and green screens are some of those tools cited as potentially useful. Table 14. 1 shares the participants video equipment needs.

Table 14. 1*Video Equipment Needs*

Participant	Response
P01	I need a nice camera in addition to cell phones, which have high quality camera lenses, and maybe a green screen.
P02	Kids in some families will not request [equipment] from the school because of pride, shame, fear, all of that type of stuff. If they say, every kid is going to get a Chromebook, across the board, it takes the sting out of it, and it creates an equitable playing field.
P03	A minimum essential hardware list must include a good quality camera and related equipment that is compatible; suitable portable lighting equipment and reflector; and one or more quality microphones, whether wireless, lapel, or handheld. (His advice became quite specific on the subject of lighting.)
P04	When we're making content, something has to be that's intuitive in terms of hardware. If it's a camera, it has to be intuitive to use. It has to also be quality. It has to be durable, something that is going to stand the test of time, so to speak.

P01 (Electives) suggested a “nice camera” in addition to cell phones which have high quality camera lenses. P03 (Mathematics) also believes that it is essential to have a good camera and a good microphone. The participant revealed that video equipment and related software needs to be user-friendly and easy to use with a short learning curve; desired features and characteristics include equipment with high quality, durability, and compatibility with other equipment in the teachers’ inventory. P03 said equipment such as cameras needs to be intuitive, high quality, and durable, adding that new equipment has to be compatible with items already in use. Similarly, P08 (World Languages) noted that students can produce quality videos with their phones.

P02 (English/Language Arts) stated some families will not request equipment from the school because of pride, shame, and fear.

If they say, every kid is going to get a Chromebook, across the board, it takes the sting out of it, and it creates an equitable playing field. But I've got kids, I even tell them, I can

get you tech. 'My mom says we can't check it out.' There's nothing I can do with that.

That is the number one thing I would want, right there.

P04 stated that portable lighting is a plus, "but you don't always have to have that because you can get a one of those foldout reflector things that photographers use." I do photography as well. They can take that out and they can set that up somewhere where the sun is not in their eyes, they reflect the sun off of that reflector and then point it to their face, and now that subject is now well-lit, and now you have a pretty good video going on right there.

Participants unanimously commented on the need for quality equipment and easy-to-use editing and production software. Although most of the participants did not specify items by brand or model number, all did mention the need for quality cameras, tripods, audio and lighting equipment, and computers.

Theme 11: Video Production Training and Student Access

The participants commented that their school's Professional Learning Community technology training has not prepared them to teach students how to create video projects. Table 15. 1 lists some of the participants comments about video production training.

Table 15. 1*Video Production Training*

Participant	Response
P01	Stating that she has been able to help students with the video planning and production process even without school- or district-sponsored training: “Oh, truth be told, I feel like that actually comes from me more than within my PLC.
P05	I'm sorry to say, we just don't have time, to be honest. That's the reality of it. Every time we meet, there's just no time to do everything, to do what's on the agenda. So it has just been whatever is important. Here's, what's important right now. When you could discuss our pacing, we need to discuss testing, we need to discuss this special ED stuff, the concerns, and nothing about technology.
P06	We don't have any technology. We just don't have enough. So, if we're doing a PLC on technology in this particular district, it cracks me up because we don't really have access.
P07	I know that a lot of students are really familiar with media. They use media all the time, and I've never had any experience with it. I think that's something that would be a great tool.

However, P01 (Electives) was not deterred, stating that she has been able to help students with the video planning and production process even without school- or district-sponsored training: “Oh, truth be told, I feel like that actually comes from me more than within my PLC. I do introduce a lot of the things that I work on in class [during] our PLC; one of the teachers in our PLC group was asking what they can do.” P05 (Science) stated “I'm sorry to say, we just don't have time, to be honest. That's the reality of it. Every time we meet, there's just no time to do everything, to do what's on the agenda.” P06 (Social Science) described an unfortunate situation, “We don't have any technology. We just don't have enough. So, if we're doing a PLC on technology in this particular district, it cracks me up because we don't really have access.” P07 (Special Education) stated that she has been to training where they have been shown how to create videos and P07 thought it would be a great tool to use. P07 said, “a lot of students are really familiar with media. They use media all the time, and I've never had any experience with it. I think that's something that would be a great tool.” These views were supported by P05

(Science) who spoke about the limited technical knowledge base. P05 said he finds himself teaching other teachers. He said the school needs an experienced technologies teacher to help all teachers on campus.

P01 (Electives) noted that students should have full access to YouTube with the exception of restricting views of irrelevant and inappropriate content. P02 (English/Language Arts) believes there is a lack of connection between Professional Learning Community technology training and professional development training: “I think the PD and the PLC need to talk to each other right now. They're asynchronous; they're not connected.” P04 noted that “YouTube is a vast platform; if you don't have strong security measures in there, you have content that can take you to another content that leads you to inappropriate content. YouTube is one vast wasteland for some areas and really great content for others.” P05 (Science) revealed that time constraints limit full development of topics: “Time is a concern; we don't we really have time to do more technology-wise in a 7:30–8:15 late start day. I think we need to dedicate a separate day.” This participant also suggested training on technology- and YouTube-related topics so teachers can become more accustomed to using computer and cellular apps which enhance distance learning, helping students become more interactive, and keeping students more engaged during Zoom sessions. P06 (Social Science) agreed with the importance of improving PLC training and stated that the training regarding video production must be improved. P07 (Special Education) believed. “It’s important for the training to be relevant to the specific school sites. I think whoever does training for the PLCs should have an understanding of our school culture and dynamics.” P06 felt that trainers must know what technology is available at the school site. P06 confessed that at this particular school site they really don't have a lot of technology: “We don't have a lot of devices for the students, so we tend to shy away from it. And

especially now, being online, it's definitely a challenge for our school site to deliver our instruction using technology.”

Research Question #3 – Student Engagement

The final research area focused on how student engagement in a Constructivist classroom is or might be affected by a teacher’s Professional Learning Community technology training.

Theme 12: Keeping Students Engaged

The participants described multiple techniques they use to keep students engaged during class time including emotional and physical connection, regular two-way feedback, avoiding mere lecture, and intense collaboration among students. Table 16. 1 displays participants responses to keeping students engaged.

Table 16. 1

Keeping Students Engaged

Participant	Response
P01	[I encourage students to] feel like it’s their classroom. I’m the engine; they’re the GPS [and] they tell me where they want to navigate, and I’m going to take them to that spot. I don’t use the textbook as much; it has a lot of material they don’t care about.
P02	The trick is to make sure [instruction] is centered truly on learning. I respond to their texts because I’m building that social-emotional learning and I’m listening to them.
P03	If students don’t want to share, then I have them create a reflection journal, like a diary, to talk about the topics so they don’t have to share aloud.
P04	I keep my activities pretty short, within a 10–15-minute timeframe. You have kids that are not going to be locked on, and it’s a normal, normal thing.

The participants suggested other factors and techniques they use to build and maintain student engagement: encouraging group projects, and blended learning, building social-emotional learning, listening to students, enhancing human focus, encouraging unresponsive students to participate, listening to their emotional needs, emotionally engaging the students,

encouraging regular Google classrooms and Zoom meetings, ensuring timely responses, imparting smaller chunks of content, being flexible on the format, adapting to the needs of the students, and checking for understanding. This can be observed from a P01 (Electives) comment noting her success with building an emotional bond with the students. One student, excited about getting a book, texted the teacher, who responded “Yay for you” in the next day’s class and says about the students: “I need to respond to them as people first.”

By October 2020, P01 (Electives) noted widespread symptoms of student fatigue due to the online instruction mandated by COVID-19 concerns. During an art class one day, P01 observed a student who was visibly upset, but uncommunicative despite several attempts to get the student to respond. After some time, the student finally began writing to the teacher in a private chat not visible to others in the class. P01 asked the reason for the student’s frustration. P01’s concern calmed the student, who eventually noted confusion regarding an assignment. P01 observed that the art student remained engaged because of the teacher’s personal connection; P01 also noted that maintaining close contact with students takes more time, one of the common elements of the Constructivist classroom. Additionally, P01 encourages student engagement by breaking instructional materials into manageable, bite sized materials that are meaningful, stripping away all the busy work.

Some of the participants enhance student engagement by breaking class periods into smaller sections, beginning with a brief introduction of what would be covered and the time allotted for each concept. When first used, this technique can be confusing for some students who are not used to block scheduling. When the students know the day’s expectations, they remain engaged. P03 (Mathematics) revealed that collaboration and asking questions help to build and maintain student engagement. The participant added that regular assessment and

collaboration also maintain student engagement. Some students remain engaged largely because they have entered a phase of criticizing the topic, P03 noted, by making comments such as, “Why do I have to learn this?” But this particular mathematics teacher responds to such questions by explaining the potential future value of a topic and relating it to issues that can interest students, such as measuring a package’s internal volume to determine how many products will fit into a container, or how to maximize profits—each of these responses encourages student engagement not only of the questioner but of the rest of the class as well.

The participants use a variety of techniques to help students remain engaged even during, ranging from carefully observing body language, eye contact, and levels of comment and feedback. Some techniques work better during in-class instruction than when online.

Theme 13: Most Effective Engagement Techniques

This theme emerged as participants described their most effective techniques for keeping their students engaged. The participants did not offer a single set of effective engagement techniques, however, suggesting that a technique showing effectiveness in one department might not work in another classroom. Table 17. 1 shares some of the participants comments.

Table 17. 1*Most Effective Engagement Techniques*

Participant	Response
P01	[While studying the French Revolution], I had students draw a beautiful French Revolution poster and then narrate that picture to us.
P02	Constructivism is going to ask them to engage more deeply with whatever the learning is and that really stretches the brain. I do entrance and exit tickets. The second thing for engagement is I need to make sure that I have a chunk-able, bite sized materials curriculum that is meaningful, stripping away all this busy work.
P03	I allowed them to use different creative ways that they came up with to express what they knew about the topic we were doing and to share with me. And then I also use technology in a way to get that across because I'm sitting miles and miles away from them.
P08	Students are more willing to buy in and contribute because the anxiety of being wrong is kind of taken away from them.

P01 (Electives) believed that student engagement can be enhanced by demonstrating learning, such as by drawing, a technique used by several of the participants. P01 (Electives) said this technique makes projects more of an opportunity to learn and less of a learning chore. P08 (World Languages) uses Quizlet and timed dialogue to keep students engaged. P05 (Science) said in a normal year, lab time kept students engaged, a factor missing this year during distance learning. He noted that evaluating engagement is more difficult this year because of not being able to see the whole student, sometimes only part of a face.

Theme 14: Determining If a Student Is Engaged

This theme reveals the distinct indicators that the participants said they use to determine if a student is engaged, such as body language, spoken reflections, student feedback, and regular checks of understanding. Table 18. 1 quotes some of the participants responses to how they determine if a student is engaged.

Table 18. 1*Determining If a Student Is Engaged*

Participant	Response
P01	Sometimes students give feedback, sometimes they like to complain. Students are taking the onus and the responsibility for their own learning, and it really holds them liable and accountable. If there's a lack of conversation, then I know they're probably not as engaged because it's not interesting to them.
P02	I use cameras as feedback [and an indicator of student engagement]. If the cameras are going off, I know the students aren't interested and I'm missing the mark.
P04	[The students] understand it's not always about winning, but it's about the process and the progress. As long as I'm encouraging that and reiterating it all the time, you can tell these kids are engaged.
P05	I know they're engaged if they can answer a question. I also ask them to take a picture of their notes at the end of a class, just to make sure they're with me.

Typical of the participants' perspectives, P01 (Electives) commented that evidence of student engagement includes both body language and a willingness to be part of class discussions. P01 (Electives) described a physical manifestation of lagging engagement as a student's drooping head. Students who sit upright, perhaps leaning forward, tend to be more engaged than students who slouch or lean back, P01 noted, adding that a lack of conversation in a small group indicates that the topic or discussion is not interesting or important to them.

P03 (Mathematics) described the difficulty of evaluating student engagement during online instruction. Using gestures while teaching, P03 also encourages student to be physically active because he has learned that students who are still likely are not engaged. However, P03 has learned from student journals that they often report having been engaged and actually learned more than he had expected. Other indicators for predicting student engagement were tone of voice, asking questions, and facial expressions. P04 observed that facial expressions cannot be the only indicator; even some students with bland expressions will often ask probing questions indicating a higher level of engagement than the teacher observed initially.

Summary

This chapter introduced and analyzed eight Zoom interviews to evaluate the participants' perceptions. Overall, Question #1, relevance of Constructivism, was supported by the eight participants, who modeled their classrooms and online instruction on a Constructivist philosophy, giving strong support to the first research question which studied the current relevance of Constructivism. For these teachers, Constructivism is still a valid concept even after 120 years. "Teachers more readily understand and practice constructivist methodologies when (1) they are exposed to specific programs and approaches with constructivist frameworks; (2) they have classroom support for altering their practices, such as peer-coaching, script-taping of lessons, and team teaching" (Brooks & Brooks 1999, p. 121). However, the participants noted that they felt somewhat isolated on their campus due to only minimal knowledge and use of the methodology by campus administrators and other teachers. As Yilmaz (2008) noted, active learning in the Constructivist classroom features students who think critically about new information and respond to teacher questions with fully formed thoughts (p. 170).

Results from Question #2 regarding Professional Learning Community technology training revealed mixed, though largely negative reactions. For these eight participants, the training was barely adequate and did not fully prepare them to use technological tools to prepare class-related videos or teach students to create project-related videos. A general lack of equipment and suitable software was also cited.

Finally, Question #3 regarding the link between Professional Learning Community training and student engagement, the participants did not perceive a positive relationship. They cited Constructivist teaching techniques as a stronger factor that encouraged sustained student

engagement. However, the participants did not link professional development community technology training to Constructivism nor to student engagement.

The present study involved interviews with eight participants, each from one of the major departments: Electives, English/Language Arts, Mathematics, Science, Social Science, Special Education, and World Languages, plus a classroom technology expert. The current study analyzed the major advantages and disadvantages of using Constructivism in the classroom in the technological era. Further, the study analyzed the elements of Constructivism that students react to positively and to what elements of Constructivism the students react negatively.

Further, the study analyzed the perceptions of the teachers regarding professional development or professional learning communities training on technology. The researcher assessed the PLC training required regarding classroom technologies. Moreover, the participants acknowledged the planning steps taken before making a subject related video and the planning steps that encourage students to use before they make an individual or group project video. The study also highlighted the equipment and software that are available for teachers to create their videos and the way professional learning community time or other PD trained the teachers to teach students to create their own videos. Finally, the study focused on student engagement and analyzed the techniques that teachers use to engage the students.

CHAPTER 5: CONCLUSION

Introduction

In the preceding chapter, the presentation and analysis of data have been reported. Chapter 5 consists of key findings from Chapter 4, a comparison of the study's findings with the literature review, answers to the research questions, implications for the school's teaching practices, implications for educational theory, limitations and delimitations related to applying this study's findings to southern California high schools which use Professional Learning Community technology training, recommendations for future research, and conclusions.

Discussion of Key Findings

This phenomenological qualitative study examined teachers' perceptions of the relevance of Constructivism, Professional Learning Community technology training time as an aid to more effective teaching, and an evaluation of student engagement in the classroom and online with distance learning. Each of this study's eight participants reported patterning their classrooms on a Constructivist model with no variation based on gender or teaching longevity; they uniformly did not give Professional Learning Community technology training high marks; and they evaluated student engagement as generally high in their classrooms.

Finding One: The participants' perceptions were unanimous in commending the value of using Constructivism in the classroom as a structure that focuses on student learning in a caring and supportive environment and which features active student participation and interaction. This research supported the findings of Campbell and Wahl (2015), who noted that teachers often refine their future instruction based on perspectives offered by their students. Finding Two: However, the participants also revealed that they do not receive widespread support for using Constructivism and often feel criticism rather than support from other teachers and

administrators. This may be occurring at this school site due to a general decline in the acceptance of Constructivism as noted by Ashman (2020). He reported that Constructivism began a decline around 2009: “From then on, constructivism was living on borrowed time as the gradual shift away from it in the research community worked its way out into the wider educational ecosystem where constructivism probably still survives in some dark corners.”

The findings of this study also have far-reaching implications for many persons interested in the Professional Learning Community process. Finding Three: The participants said they have no direct role in planning such training and get little new information from most Professional Learning Community training sessions. Administrators must understand that Professional Learning Community technology training will be effective only if teachers have a voice in designing it, and only if the Professional Learning Community process emerges from a schoolwide cultural change as noted by DuFour and Fullan (2013). Finding Four: Several of the participants stated they seldom know the purpose of training sessions until they arrive. Teachers must be informed as to the specific purpose of each Professional Learning Community technology training session as reported by Williams and Hierck (2015) who support this finding: “When you take responsibility for the state of your culture, it gives you an opportunity to learn from it, and you are then empowered to build a new culture” (p. 5). Finding Five: Several of the study participants noted that Professional Learning Community technology training was not effective. Hattie (2012) emphasized the importance of teacher involvement in planning (p. 41). The current study’s participants may be the school’s best resource for improving technology training, and they may in fact be responsible for changing the current paradigm rather than following the lead of other teachers who passively evaluate the current training.

Student engagement was reported as a key, positive element in the participants' classrooms. Finding Six: The study participants gave student engagement generally high marks in their Constructivist classrooms because of a strong teacher-student relationship as suggested by Bond and Bedenlier (2019, p. 2). However, some students react negatively in that environment because few other campus teachers follow the model. Finding Seven: The participants linked student engagement to group interaction and the teacher's ability to break down instructional materials into meaningful, smaller components. This finding follows recommendations in research by Bond and Bedenlier (2019).

Findings Compared to and Contrasted with Literature Review

This study's findings related to Constructivism mirrored the related literature wherein the classroom model was described as critical to student engagement (Ashman, 2020, pp. 1-3; Brooks & Brooks, 1999, p. ix; Hubbard, 2012, p. 160). With regard to professional development community technology training, this study's findings compared favorably with numerous sources in the relevant literature. Professional Learning Communities will become more effective with active participation by the teachers being trained and when those teachers respond to their "obligation to be an instrument for cultural change—rather than waiting for others to make the necessary changes" (DuFour & Fullan, 2013, p. 4). Furthermore, this study found links between classroom technologies, video, and student engagement, the importance of which was described by Carmichael et al. (2018, p. 7). Bond and Bedenlier (2019) also linked student engagement to classroom technologies and active teacher involvement throughout the educational process (p. 8), a concept widely described by this study's participants.

Answers to Research Questions

Research Question One sought participants' perceptions of the relevance of Constructivism in the Age of Technology. Each of the eight participants noted that Constructivism was still relevant and an important factor in their success as teachers. They did, however, comment that they were limited in how widely they applied Constructivist methodologies and practices because the school's administrators and many other campus teachers were not aware of Constructivism's benefits to student engagement and acquisition of knowledge. They also found Constructivism caused longer teaching times on some instructional units because many of the students were either unfamiliar or uncomfortable with the Constructivist environment, or critiqued the student-centered nature of the classroom as causing them to do too much of the learning on their own.

Research Question Two addressed the participants' perceptions regarding the effectiveness of Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube. The participants offered mostly negative perceptions of their school's professional leadership community and professional development technology training.

Research Question Three evaluated teachers' perceptions of the indicators of student engagement. The eight participants noted a variety of student behaviors that indicated when engagement was strong and when it lagged. Several factors emerged as most important especially during online instruction due to COVID-19 remote learning: body and head position, camera on or off, student comments, and quality and quantity of collaborative discussions.

Implications for Secondary School Teaching Practices

The entire student body on secondary campuses would benefit from several major systemic improvements to faculty and instructional strategies. First, teachers should become aware of the value to students of a Constructivist classroom. Brooks and Brooks (1999) noted that students in a Constructivist classroom “take responsibility for their own learning and become problem solvers and, perhaps more important, problem finders” (p. 103). Second, teachers should allow students to submit assignments using the latest video technologies such as YouTube. Pereira et al. (2012) found, “The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school” (p. 46). Campbell and Cox (2018) also reported that “A digital video assignment moves students from being consumers to be producers of their own content. Student created video is limited only by the students’ ideas, creativity, and technical abilities” (p. 13). Third, school and district Professional Learning Community and professional development technology training should focus on state-of-the-art techniques and equipment. Adequate budgeting will be needed to purchase the equipment and install adequate bandwidth; other technological considerations will need to be examined, designed, and installed by district engineers. As noted by Hobbs (2010), teachers will need technical knowledge and skills to develop digital and media literacy education (p. 40). Fourth, as they become more active participants in their education, students will need to adopt a thorough understanding that the success of their education rests solidly on their own engagement throughout the educational process (Fredricks et al., 2011). Fifth, teachers and students will need to work more closely and collaboratively. Together, they will learn that the Constructivist classroom model with its emphasis on interaction and collaboration is a key to their current and future educational success (Brooks & Brooks, 1999). Sixth, training planners

need to involve teachers while training sessions are planned and designed. Then the planning team will need to inform all teachers of the content and desired outcomes for each Professional Learning Community and professional development training session. Such teamwork will help to convince teachers they have a share in both the content and desired outcomes of training (DuFour & Fullan, 2013). Seventh, school librarians should be the center of the technological exchange (U. S. Dept. of Education, 2017, p. 1). Eighth, teachers should follow the advice of Buzzetto-More (2014), who suggested that teachers use video-sharing services, such as YouTube, especially if they teach primarily online: “YouTube has tremendous potential to augment a wide-range of aspects of instruction, much of which has yet to be exploited” (p. 30).

Implications for Educational Theory – Remote Learning and Beyond

Education in the early 2020s faced unique challenges due to online learning that was necessitated by state and county restrictions during the Novel COVID-19 pandemic. Nonetheless, the year-long absence from many classrooms offers three major opportunities when in-person education resumes. First, teachers who adopt a Constructivist philosophy will help students become more actively involved in their education even if some of those students initially aren’t comfortable in the Constructivist setting (Yilmaz, 2008). Second, Teachers will need thorough training so they can use classroom technologies efficiently and effectively even with limited equipment (U. S. Dept. of Education, 2017). Teachers and students working together can encourage active student participation in classes to maintain the highest levels of engagement (Bond & Bedenlier, 2019; Bond et al. 2020). When fully understood by teachers and students, and when fully adopted in classroom, these three factors will help students learn principles and skills they need for success in that class, in future high school and college classes, and in the global workplace of the future.

Further Research Recommendations

Future research in three specific, related areas would benefit schools and teachers across the United States:

- Examine links among Professional Learning Community technology training and the behavioral, cognitive, and affective aspects of student engagement, especially in the Constructivist classroom.
- Evaluate the content, teacher involvement, and success of Professional Learning Community technology training at other secondary schools across the nation.
- Focus research on students' perceptions of how the Constructivist classroom, technologies, and student engagement affect learning.

Conclusions

The findings of this study expanded the work of previous research in the areas of Constructivism, Professional Learning Community training, and student engagement. This investigation revealed that the participants believe in the positive value of Constructivism as well as the need to encourage and maintain student engagement. A further assessment of training activities found that administrators and organizers should take time to thoroughly plan Professional Learning Community and professional development time with thoughtful input from teachers. Moreover, the participants strongly indicated that schools need a cultural shift in both teaching approaches and in the availability and use of classroom technologies. Intentional, strong adoption of a Constructivist philosophy will enable teachers to develop closer intellectual bonds with their students, leading to enhanced student engagement. The Professional Learning Community literature indicates that Professional Learning Community teamwork leads to a dramatic change in collective teaching efficacy. The literature also suggests a need for

Professional Learning Community leaders who can visualize and execute in ways that focus on student engagement, routinely examine current student data, and suggest adjustments that help teachers and students who need it. The key concept for teachers to understand is that the former ways of teaching may not be effective in many of today's classrooms. Once understood, more educators will believe that all students can learn from teachers who care.

This concept was described wisely at the national level 160 years ago. In the concluding remarks of his Annual Message to Congress on December 1, 1862, President Abraham Lincoln said:

The dogmas of the quiet past, are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise -- with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our country (Kent, 2017).

REFERENCES

- Abrahamson, D. (2017). Embodiment and mathematics learning. In K. Peppler (Ed.), *The SAGE encyclopedia of out-of-school learning* (Vol. 1, pp. 248-252). SAGE Publications, Inc.
<https://www.doi.org/10.4135/9781483385198.n98>
- Abrahamson, D., Lamberty, K. K., Blikstein, P., & Wilensky, U. (2005, June 8-10). *Mixed-media learning environments*. Proceedings of the 2005 Conference on Interaction Design and Children, E. Eisenberg & A. Eisenberg (Eds.) of Instructional Design and Children. Boulder, CO. Association for Computing Machinery.
https://www.academia.edu/2743029/Mixed_media_learning_environments
- Akdeniz, N. O. (2017, July). Use of student-produced videos to develop oral skills in EFL classrooms. *International Journal on Language Literature and Culture in Education*, 4(1), 43–53. <https://doi.org/10.1515/llce-2017-0003>
- Ali, H. M., & Aslam, S. (2020). *YouTube by the numbers: Stats, demographics & fun facts*.
<https://www.omnicoreagency.com/youtube-statistics/>
- Animoto.com. (2020). *Do it yourself video making, made easy*.
<https://www.animoto.com/education/classroom>
- Ashman, G. (2020, May 23). Whatever happened to constructivism (Web blog post)? *Filling the Pail*. WordPress. <https://gregashman.wordpress.com/2020/05/23/whatever-happened-to-constructivism/>

- Aulia, M., Suwatno, S., & Santoso, B. (2018, September 19). Improving learners' oral communication skills through storytelling learning method and learning facilities. *Advances in Economics, Business, Entrepreneurship, and Finance*, 65. *Proceedings of the 1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018)*, Bandung, Indonesia. Atlantis Press.
<https://www.doi.org/10.2991/icebef-18.2019.50>
- Bass, B. (2020). *Build relevant skills for education today*. International Society for Technology in Education. <https://iste.org/learn/iste-u>
- Beatty, J. (2016). Perceptions of online styles of news video production. *Journal of Visual Literacy*, 35(2), 126–146. <https://dx.doi.org/10.1080/1051144X.2016.1270629>
- Berk, R. A. (2008). *Integrating video clips into the “Legacy Content” of the K–12 curriculum: TV, movies, and YouTube in the classroom*.
<https://www.researchgate.net/publication/267854486>
- Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5(1), 1-21. <https://www.researchgate.net/publication/228349436>
- Birks, M., & Mills, J. (2015). *Grounded theory: A practical guide* (2nd ed.). Sage Publications Ltd.
- Bond, M., & Bedenlier, S. (2019). Facilitating student engagement through educational technology: Towards a conceptual framework. *Journal of Interactive Media in Education*, 2019(1), 1-14. <https://doi.org/10.5334/jime.528>

- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020, January 22). Mapping research in student engagement and educational technology in higher education. *International Journal of Educational Technology in Higher Education*, 17(2).
<https://doi.org/10.1186/s41239-019-0176-8>
- Brooks, J. G., & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms*. Association for Supervision and Curriculum Development.
- Bryant, A., & Charmaz, K. (2007). Introduction: Grounded theory research: Methods and practices. In *The SAGE Handbook of Grounded Theory: Paperback Edition* (pp. 1–28). SAGE Publications, Ltd.
- Burgess, S., & Sievertsen, H. H. (2020, April 1). Schools, skills, and learning: The impact of COVID-19 on education. <https://voxeu.org/article/impact-covid-19-education>
- Burke, S. C., Snyder, S., & Rager, R. C. (2009, January). An assessment of faculty usage of YouTube as a teaching resource. *The Internet Journal of Allied Health Sciences and Practice*, 7(1). <https://nsuworks.nova.edu/ijahsp/vol7/iss1/8/>
- Buzzetto-More, N. A. (2014). An examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process. *Interdisciplinary Journal of E-Learning and Learning Objects*, 10, 17–32.
<http://www.ijello.org/Volume10/IJELLOv10p017-032Buzzetto0437.pdf>
- Campbell, L. O., & Cox, T. (2018, January). Digital video as a personalized learning assignment: A qualitative study of student authored video using the ICSDR model. *Journal of the Scholarship of Teaching and Learning*, 18(1), 11–24.
<https://doi.org/10.14434/josotl.v18i1.21027>

- Campbell, K., & Wahl, K. H. (2015). *If you can't manage them, you can't teach them: Advice for running a chaos-free classroom where middle and high school students can really learn*. Incentive Publications.
- Carmichael, M., Reid, A. K., & Karpicke, J. D. (2018). *Assessing the impact of educational video on student engagement, critical thinking and learning: The current state of play*. A Sage White Paper. SAGE Publications, Inc.
https://education.report/Resources/Whitepapers/aa1c324d-7d2e-4dd5-916a-e146ef5e2884_hevideolearning.pdf
- Charmaz, K. (2006). *Constructing grounded theory* (1st ed.). SAGE Publications Ltd.
- Clabaugh, G. (2018). *An educational theorist profile of Jean Piaget: A multidimensional analysis*. New Foundations. <http://www.newfoundations.net/GALLERY/Piaget2.html>
- Creswell, J. W., & Poth, C. N. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). SAGE Publications, Inc.
- Davidson, C., Given, L. M., Danby, S., & Thorpe, K. (2014, September). Talk about a YouTube video in preschool: The mutual production of shared understanding for learning with digital technology. *Australasian Journal of Early Childhood*, 39(3), 76–83.
<https://doi.org/10.1177/183693911403900310>
- Deakin Learning Futures Teaching Development Team. (2013). *Using audio and video for educational purposes*. Deakin University. <https://www.deakin.edu.au>
- Dennick, R. (2012, April). Twelve tips for incorporating educational theory into teaching practices. *Medical Teacher*, 34(8), 618–624.
<http://doi.org/10.3109/0142159X.2012.668244>

- Dewey, J. (1900). *The school and society: The child and the curriculum*. The University of Chicago Press.
- Dewey, J. (2013). *Democracy and education: An introduction to the philosophy of education*. MacMillan. (Original work published 1902).
- Dewey, J. (1938). *Experience & education*. Free Press.
- Dixson, M. D. (2015). Measuring student engagement in the online course: The online student engagement scale (OSE). *Online Learning, 19*(4), 1–15.
<http://dx.doi.org/10.24059/olj.v19i4.561>
- Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020, June 1). *COVID-19 and student learning in the United States: The hurt could last a lifetime*. McKinsey and Company.
<https://www.mckinsey.com/>
- DuFour, R., & Fullan, M. (2013). *Cultures built to last: Systemic PLCs at work*. Solution Tree Press.
- Frankfort-Nachmias, C., & Nachmias, D. (2000). *Research methods in the social sciences* (6th ed.). Worth.
- Freire, P. (1970). *Pedagogy of the oppressed*. Continuum.
- Fullan, M. (2010). *All systems go: The change imperative for whole system reform*. SAGE Publications, Inc.
- Fullan, M., & Donnelly, K. (2013). *Alive in the swamp: Assessing digital innovations in education*. Nesta/New Schools. https://media.nesta.org.uk/documents/alive_in_the_swamp.pdf
- Fullan, M., & Quinn, J. (2016). *Coherence: The right drivers in action for schools, districts, and systems*. Corwin.

- Gjergo, E., & Samarxhiu, S. (2014, December). Basic principles of “collaborative learning.” *European Scientific Journal*, 17, 22–36. <https://doi.org/10.19044/esj.2011.v17n0p%25p>
- Glass, D., Meyer, A., & Rose, D. H. (2013, Spring). Universal design for learning and the arts. *Harvard Educational Review*, 83(1).
<https://doi.org/10.17763/HAER.83.1.33102P26478P54PW>
- Goodenow, C. (1993, February). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence*, 13(1), 21–43. <https://doi.org/10.1177/0272431693013001002>
- Green, P. (2018). *50 Ways to use YouTube in the classroom*. Raising a Maker.
- Guo, P. J., Kim, J., & Rubin, R. (2014, March). How video production affects student engagement: An empirical study of MOOC videos. In *Proceedings of the 1st ACM Conference on Learning @ Scale Conference* (pp. 41-50). Atlanta, GA. Association of Computing Machinery. <http://dx.doi.org/10.1145/2556325.2566239>
- Hakkarainen, P. (2011). Promoting meaningful learning through video production-supported PBL. *Interdisciplinary Journal of Problem-Based Learning*, 5(1).
<https://doi.org/10.7771/1541-5015.1217>
- Harste, J. C. (2014). The art of learning to be critically literate. *Language Arts*, 92(2), 90–102.
<https://library.ncte.org>
- Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). Routledge.
- Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.

- Hobbs, R. (2010). *Digital and media literacy: A plan of action. A white paper on the digital and media literacy recommendations of the Knight Commission on the information needs of communities in a democracy* [Report]. Aspen Institute.
<https://eric.ed.gov/?id=ED523244>
- Hubbard, G. T. (2012). Discovering constructivism: How a project-oriented activity-based media production course effectively employed constructivist teaching principles. *Journal of Media Literacy Education* 4(2), 159–166. <https://digitalcommons.uri.edu/jmle/vol4/iss2/6>
- Hymel, S., Schonert-Reichl, K. A., & Miller, L. D. (2006). Reading, 'riting, 'rithmetic and relationships: Considering the social side of education. *Exceptionality Education Canada*, 16(2–3), 149–192. <https://eric.ed.gov/?id=EJ771426>
- Jenkins, L. (2012, May). Reversing the downslide of student enthusiasm. *School Administrator* 69(5), 16–17. <https://www.aasa.org/content.aspx?id=23242>
- Kent, D. J. (2017, August). Abraham Lincoln—The dogmas of the quiet past are inadequate for the stormy present. <http://www.davidkent-writer.com/2017/08/17/abraham-lincoln-the-dogmas-of-the-quiet-past-are-inadequate-for-the-stormy-present/>
- Lee, C. D. (2007). *Culture, literacy, and learning: Taking bloom in the midst of a whirlwind*. Teachers College Press.
- Leach, A. M. (2017, October). Digital media production to support literacy for secondary students with diverse learning abilities. *Journal of Media Literacy Education*, 9(2), 30–44. <https://doi.org/10.23860/JMLE-2019-09-02-03>
- Leedy, P., & Ormrod, J. (2013). *Practical research: Planning and design* (10th ed.). Pearson.

- Lincoln, A. (1862). *President Abraham Lincoln's Second Annual Message to Congress, December 1, 1862*. National Archives. <https://www.archives.gov/legislative/features/sotu/lincoln.html>
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry* (1st ed.). Sage Publications.
- Liu, C. H., & Matthews, R. (2005). Vygotsky's philosophy: Constructivism and its criticisms examined. *International Education Journal*, 6(3), 386–399.
<https://eric.ed.gov/?id=EJ854992>
- Luiselli, J. K., Putnam, R. F., Handler, M. W., & Feinberg, A. B. (2005, April). Whole-school positive behaviour support: Effects on student discipline problems and academic performance. *Educational Psychology*, 25(2–3), 183–198.
<https://doi.org/10.1080/0144341042000301265>
- Lunenburg, F. C., & Irby, B. J. (2014). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences*. SAGE Publications.
- McCombs, B. L. (2004). The learner-centered psychological principles: A framework for balancing academic achievement and social-emotional learning outcomes. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 23–39). Teachers College Press.
- McCormack, B., & Hill, E. (1997). *Conducting a survey: The SPSS workbook*. International Thomson Business Press.
- McMillan, J. H., & Schumacher, S. (2014). *Research in education: Evidence-based inquiry* (7th ed.). Pearson.

- Maddox, K., & Feng, J. (2013, October 17-18). *Whole language instruction vs. phonics instruction: Effect on reading fluency and spelling accuracy of first grade students* [Online submission]. Georgia Educational Research Association Annual Conference, Savannah, GA, United States. <https://eric.ed.gov/?id=ED545621>
- Manolopoulou, M. (2012, November 12). *Educational video production: When educators become producers*. <https://elearningindustry.com/educational-video-production-when-educators-become-producers>
- Martin, F., & Bolliger, D. U. (2018, March). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, 22(1), 205–222. <http://dx.doi.org/10.24059/olj.v22i1.1092>
- Marzano, R. J. (2003). *What works in schools: Translating research into action*. Association for Supervision & Curriculum Development.
- Marzano, R. J., & Marzano, J. S. (2003, September). The key to classroom management. *Educational Leadership*, 61(1), 6–13. <http://www.ascd.org>
- Maziriri, E. T., Gapa, P., & Chuchu, T. (2020, April). Student perceptions towards the use of YouTube as an educational tool for learning and tutorials. *International Journal of Instruction*, 13(2), 119–138. <https://doi.org/10.29333/iji.2020.1329a>
- Mind Tools. (2018, June 21). *The top ten learning theories*. Emerald Works. <https://emeraldworks.com/resources/blog/tips-and-expertise/the-top-ten-learning-theories>
- Morrell, E., Dueñas, R., Garcia, V., & López, J. (2013). *Critical media pedagogy: Teaching for achievement in city schools*. Teachers College Press. <https://eric.ed.gov/?id=ED540008>

- Muhammad, A., & Cruz, L. F. (2019). *Time for change: 4 essential skills for transformational school & district leaders*. Solution Tree Press.
- National Association for Media Literacy Education (NAMLE), (2007, November). *Core principles of media literacy education in the United States*. <https://www.NAMLE.net>
- Norton, P., & Hathaway, D. (2010). Video production as an instructional strategy: Content learning and teacher practice. *Contemporary Issues in Technology and Teacher Education*, 10(1), 145–166. <https://www.learntechlib.org/primary/p/31472/>
- Oakes, J. (1985). *Keeping track: How schools structure inequality*. Yale University Press.
- Patrick, H., Hicks, L., & Ryan, M. (1997). Relations of perceived social efficacy and social goal pursuit to self-efficacy for academic work. *Journal of Early Adolescence*, 17(2), 109–128. <https://doi.org/10.1177/0272431697017002001>
- Peck, R. (2012, February 21). *Lights, camera . . . engagement! Three great tools for classroom video*. <https://www.edutopia.org/blog/using-video-in-classroom-ron-peck>
- Pereira, M. V., Barros, S. d S., de Rezende Filho, L. A. C., & de A. Fauth, L. H. (2012, January). Audiovisual physics reports: Students' video production as a strategy for the didactic laboratory. *Physics Education*, 47(1), 44–51. <https://eric.ed.gov/?id=EJ977815>
- Polikoff, M. S. (2017, January-March). Is Common Core “working”? And where does Common Core research go from here? *American Educational Research Association Open*, 3(1), 1–6. <https://doi.org/10.1177/2332858417691749>
- Polirstok, S. (2017, October-December). Strategies to improve academic achievement in secondary school students: Perspectives on grit and mindset. *SAGE Open*, 7(4), 1–9. <https://doi.org/10.1177/2158244017745111>

- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford.
- Rogowsky, B. A., Calhoun, B. M., & Tallal, P. (2015). Matching learning style to instructional method: Effects on comprehension. *Journal of Educational Psychology, 107*(1), 64–78.
<http://dx.doi.org/10.1037/a0037478>
- Shewbridge, W., & Berge, Z. L. (2004, January-March). The role of theory and technology in learning video production: The challenge of change. *International Journal on E-Learning, 3*(1), 31–39. <https://www.learntechlib.org/primary/p/12781/>
- Sinatra, G. M., Heddy, B. C., & Lombardi, D. (2015). The challenges of defining and measuring student engagement in science. *Educational Psychologist, 50*(1), 1–13.
<https://doi.org/10.1080/00461520.2014.1002924>
- Sorden, S. D. (2005). A cognitive approach to instructional design for multimedia learning. *Informing Science Journal, 8*, 263–279. <https://www.scribd.com/document/123562887/A-Cognitive-Approach-to-Instructional-Design>
- Speed, C. J., Lucarelli, G. A., & Macaulay, J. O. (2018, August). Student produced videos – An innovative and creative approach to assessment. *International Journal of Higher Education, 7*(4), 99–109. <https://doi.org/10.5430/ijhe.v7n4p99>
- Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019, July). The importance of students' motivation for their academic achievement—Replicating and extending previous findings. *Frontiers in Psychology, 10*(1730), 1–11.
<https://doi.org/10.3389/fpsyg.2019.01730>
- Urquhart, C. (2013). *Grounded theory for qualitative research: A practical guide* (1st ed.). Sage.
<https://dx.doi.org/10.4135/9781526402196>

- U.S. Department of Education, Office of Educational Technology. (2017, January). *Reimagining the role of technology in education: 2017 National Education Technology Plan Update* [Report]. <https://tech.ed.gov/files/2017/01/NETP17.pdf>
- VERBI. (2020). *MAXQDA: The art of data analysis*. <https://maxqda.com/what-is-maxqda> [and] <https://www.maxqda.com/qualitative-analysis-software>
- Watkins, J., & Wilkins, M. (2011). Using YouTube in the EFL classroom. *Language Education in Asia*, 2(1), 113–119. https://doi.org/10.5746/LEiA/11/V2/I1/A09/Watkins_Wilkins
- Watt, D. (2019, June). Video production in elementary teacher education as a critical digital literary practice. *Media and Communication*, 7(2), 82–89. <https://doi.org/10.17645/mac.v7i2.1967>
- White, G. E. (2017). *The dissertation warrior: The ultimate guide to being the kind of person who finishes a doctoral dissertation or thesis*. Triumphant Heart International.
- Whitney, C. R., & Candelaria, C. A. (2017, July-September). The effects of No Child Left Behind on children's socioemotional outcomes. *American Educational Research Association*, 3(3), 1–21. <https://doi.org/10.1177/2332858417726324>
- Williams, K. C., & Hierck, T. (2015). *Starting a movement: Building culture from the inside out in professional learning communities*. Solution Tree Press.
- Yilmaz, K. (2008). Constructivism: Its theoretical underpinnings, variations, and implications for classroom instruction. *Educational Horizons*, 86(3), 161–172. <https://www.jstor.org/stable/42923724>
- Zhang, J. (2020, August 22). The knowledge network for innovations in learning and teaching (KNILT). [https://knilt.arcc.albany.edu/The_Knowledge_Network_for_Innovations_in_Learning_and_Teaching_\(KNILT\)](https://knilt.arcc.albany.edu/The_Knowledge_Network_for_Innovations_in_Learning_and_Teaching_(KNILT)).

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation, 17*(2–3), 191-210.

<https://psycnet.apa.org/doi/10.1080/10474410701413145>

APPENDICES

Appendix A: Informed Consent Form

TITLE OF STUDY

TEACHERS' PERCEPTIONS OF THE EFFECTS OF Constructivism and PROFESSIONAL LEARNING COMMUNITY training ON STUDENT Engagement: A PHENOMENOLOGICAL STUDY

PURPOSE OF STUDY: You are being asked to take part in a research study that is designed to learn about the views of high school teachers on the general subjects of Constructivism, Professional Learning Community and late start day training about using video including YouTube in the classroom, and student engagement.

DESCRIPTION: The research will be conducted in the fall of 2020, beginning in early October and concluding in late November or early December 2020. The research begins with an initial survey of questions which you will be able to answer by checking a box or boxes that match your response. The initial survey will take about 10 or 15 minutes to complete. During the second phase, the researcher will invite seven teachers to participate in a one-on-one Zoom interview that will feature questions seeking your ideas and opinions about certain teaching practices and how video might contribute to enhancing student engagement. For planning purposes, this phase will be scheduled for 30 minutes, but you might be asked to participate in a longer interview session to help the researcher get more information.

To ensure accuracy of the researcher's notes and transcripts, Zoom interviews will be audio-recorded. The interviews will not be recorded on video. Only the researcher and the dissertation editor will have access to the audio recordings and the transcripts; both of those individuals will

sign an agreement not to disclose any of the information contained in your comments beyond that which may appear in the dissertation's text. The resulting transcripts will be used by the researcher to discern and evaluate data to aid in answering the research questions.

PARTICIPATION: Your participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may decline to answer any or all questions and you may terminate your involvement at any time if you choose. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign an acknowledgment of consent which appears below the horizontal line following this paragraph. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed, whichever you may prefer, upon telephonic or email notice to the researcher. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

RISKS: To the best of the researcher's knowledge and belief, there is and shall be no risk to you or any of the other participants in this study.

VIDEO/AUDIO/PHOTOGRAPHY: The audio of your possible Zoom or telephone interview will be recorded to ensure accuracy of the researcher's transcript and data analysis. No video will be recorded and no photographs will be taken of you during any phase of this research. If you participate in a Zoom or telephone one-on-one interview, the researcher will ask you to cover or turn off the camera function on your laptop, computer, or phone. Please also initial and sign the accompanying form entitled "Audio Recording Informed Consent Form."

Participant's Initials _____

CONFIDENTIALITY: Your responses to the survey questions and Zoom interview will be anonymous unless you grant permission to associate your name with those parts of the research. Please do not write any identifying information on your surveys. Every effort will be made by the researcher to preserve your confidentiality including the following:

- Assigning code names/numbers for participants that will be used on all research notes and documents.
- Keeping notes, interview transcriptions, and any other identifying participant information in a locked file cabinet in the personal possession of the researcher.
- Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

COMPENSATION: There is no compensation for participating in this study.

CONTACT INFORMATION: The principal researcher is Mr. Jonathan J. Wright, a Doctoral Candidate at Concordia University Irvine. If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Concordia University Irvine Institutional Review Board at (865) 354-3000, ext. 4822. You may contact Mr. Wright by using his university email address: jonathan.wright@eagles.cui.edu or by calling his cell phone number: 909.437.5402.

RESULTS: The results of this study will be published in the researcher's doctoral dissertation which will be part of the library archives at Concordia University Irvine.

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this completed and signed consent form. I voluntarily agree to take part in this study.

CONFIRMATION STATEMENT:

I have read and understand the consent document and agree to participate in your study.

SIGNATURE: Please initial the bottom left of pages 1 and 2 of the Informed Consent Form, sign on the Participant's signature line below, and print the date you signed.

Participant's Signature: _____ Date: _____

Printed Name: _____

Researcher's Signature: _____ Date: _____

Printed Name: _____

The extra copy of this consent form is for your records.

Participant's Initials _____

Appendix B: Audio Recording Informed Consent Form

As part of this research project, we will be recording the audio of your participation in the Zoom or telephone interviews. Please indicate what uses of this audiotape you are willing to consent to by initialing below. You are free to initial from one to all of the spaces. We will only use the audiotape in the way or ways you agree to. In any use of this audiotape, your name will not be identified. You will be identified only by the type of class or classes you teach and/or the grade level of that class or those classes. If you do not initial any of the spaces below, the audiotape will be destroyed. If you do not grant permission for the researcher to record your interview, please clearly state your preference before the interview begins.

Please indicate the type of informed consent:

The audiotape can be studied by the research team for use
in the research project.

Please initial _____

A transcript or summary of my audiotape can be used
for scientific publications.

Please initial _____

The audiotape can be played in public presentations
to nonscientific groups.

Please initial _____

Signature: _____ Date: _____

Printed Name: _____

The extra copy of this consent form is for your records.

Appendix C: Initial Faculty Survey

The Initial Faculty Survey consists of nine multiple-choice questions, using the basic technique described in Figure 3. 1:

Figure 3. 1

Guidelines for Using the Response Scale

Please read each statement. Pick the column that best indicates how much you agree or disagree with that statement. Then check or darken the appropriate box.

	Strongly Agree	Agree	Neutral/No Opinion	Disagree	Strongly disagree
11 PLCs are always productive	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 PLC technology training helped me to improve student engagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note. This sample reflects Likert scale items as they might appear on a paper-and-pen survey.

The present research used an electronic survey using Survey Monkey. Participants selected their response by placing the pointer/cursor at the appropriate box and clicking. Changing an answer was as simple as selecting a different response on the same line and clicking inside that box.

The following survey will be converted to a Survey Monkey format and then emailed to all teachers at the selected high school in these departments: Electives, English/Language Arts, Mathematics, Science, Social Science, Special Education, and World Languages (listed alphabetically in the survey questions). The goal is to identify teachers who could articulate their perceptions of and familiarity with Constructivism, their level of Professional Learning Community technology training and video usage, and their general perceptions of student engagement.

1. How long have you been teaching?

- 0–2 years
- 3–5 years
- 6–10 years
- 11 or more years

2. In what subject area(s) do you teach for three or more periods per day? (Check all that apply)

- Electives
- English/Language Arts
- Mathematics
- Science
- Social Science
- Special Education
- World Language (or Foreign Language)
- Other
- None

3. Do you teach video production?

- Yes
- No

4. How relevant is Constructivism to how you teach in your classroom.

- Very relevant
- Somewhat relevant
- No opinion
- Somewhat irrelevant

5. How do you use Constructivism in your classroom? (Select all that apply)

- I introduce a topic and invite the students to ask questions about it.
- I encourage many ideas about a topic and ask the students to discuss them.
- Students meet in small groups to work through new material.
- I suggest solutions to a problem and encourage students to ask questions and experiment.
- Students relate new materials to something they already know.
- Students collaborate and solve problems together.
- Students inquire, investigate, draw conclusions, and ask more questions.
- Students work together to find out “why” if they come up with a “wrong” answer.
- I have a few other ideas of my own about Constructivism in my classroom:

If you would be interested in being part of the next phase of this research, please print your email address or cell phone number here so the researcher can contact you. [Thank you for helping!]

Appendix D: Faculty Zoom Interview Questions (One-On-One)

This set of questions will be conducted during one-on-one Zoom interviews with the faculty participants. The goal is to elicit more detailed information from the teachers regarding their familiarity with and uses of Constructivism; their perceptions of Professional Learning Community training and knowledge of video usage including YouTube; and their perceptions of student engagement as it may be influenced or shaped by video usage during classroom discussions and homework, and/or as student-produced video projects. In the first section on Constructivism, participants answered specific questions depending upon their responses to the fifth question on the initial survey. The basic questions and instructions at “A” are for the researcher/interviewer’s use. The lines with each question were for the researcher to use for limited notetaking during the Zoom interviews.

A. You mentioned in your responses to the initial survey that Constructivism is (check one based on the participant’s response to question 4 of the initial survey):

- Very relevant in your classroom (Ask only Questions 1–2)
- Somewhat relevant (Ask only Questions 1–2)
- Such that you didn’t offer an opinion (Ask only Questions 3–4)
- Somewhat irrelevant (Ask only Questions 5–6)
- Not relevant (Ask only Questions 5–6)

1. What is the major advantage of using Constructivism in your classroom?

2. What disadvantage if any have you noticed using Constructivism in your classroom?

3. To what elements of Constructivism do your students react most positively?

4. To what elements of Constructivism do your students react most negatively?

Skip to Question 9.

5. Have you tried Constructivist techniques in your classroom? Please explain.

6. How did your students react to that approach?

Skip to Question 9.

7. Have you tried Constructivist techniques in your classroom? Please explain.

8. What about Constructivism doesn't work for you in your classroom?

I'd like to switch our discussion to professional development about classroom technologies.

9. What do you think of when you hear you're going to be attending a professional development session or Professional Learning Community on technology?

-
-
10. What Professional Learning Community or late start day training would you like to have regarding classroom technologies including uses of YouTube and other videos?

-
-
11. What planning steps do you use before making a subject-related video?

-
-
12. What planning steps do encourage your students to use before they make an individual or group project video?

-
-
13. What equipment and/or software is available for you to create your own videos or for students to use while creating videos?

-
-
14. What equipment and/or software would you like to have available to create your own videos or for students to use while making videos?

-
-
15. How has Professional Learning Community time or other professional development trained you to teach students to create their own videos?
-

-
16. [If enough time remains in this section of the interview, ask:] What else might you have to add about professional development training on classroom technologies, videos, and using YouTube?
-
-

For the final section of our interview, I'd like to talk about student engagement in your classroom.

17. What techniques do you use to keep your students engaged during a class period?
-
-

18. What techniques do you think keeps students most engaged during a class period?
-
-

19. What classroom techniques or activities seem to cause students to lose focus?
-
-

20. What indicators do you use to determine if students are engaged?
-
-

Appendix E: Concordia University Irvine Institutional Review Board Approval



INSTITUTIONAL REVIEW BOARD (IRB) DECISION FORM

Review Date September 30, 2020
Reviewer ID# 151036
Category Expedited Review [45 CFR 46.110](#)
 Full Board Review [45 CFR 46](#)

IRB Application #	5765
Title of Project	Teacher perceptions of the effects of constructivism and PLC training on student engagement: a phenomenological study
Principal Investigator Name (PI)	Jonathan Wright
PI Email (use CUI email, if applicable)	Jonathan.wright1@eagles.cui.edu

DECISION

Approved

Effective duration of the IRB Approval: October 1, 2020 - September 30, 2021

For Expedited and Full Board Approved, Please Note:

- a. *The IRB's approval is only for the project protocol named above. Any changes are subject to review and approval by the IRB.*
- b. *Any adverse events must be reported to the IRB.*
- c. *An annual report or report upon completion is required for each project. If the project is to continue beyond the twelve month period, a request for continuation of approval should be made in writing. Any deviations from the approved protocol should be noted.*

Needs revision and resubmission

Not approved

COMMENTS

COPYRIGHT PERMISSION AGREEMENT

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EDUCATION

EdD	2021	Concordia University Irvine Educational Leadership
MA	2017	Concordia University Irvine Educational Administration
BA	1995	Metropolitan State University, St. Paul, Minnesota Communication

PROFESSIONAL EXPERIENCE

2021-Present	Teacher –English Senior Class Advisor and GATE Coordinator Sherman Indian High School Riverside, California
2015–2020	Tenured Teacher – Electives Alternative Education Center Chino Valley Unified School District, California
2012–2015	English and Video Production Teacher Ruben S. Ayala High School Chino Valley Unified School District, California
2003–2012	Video Production and Vocational Education Teacher Boys Republic High School Treatment Facility for Boys at Risk Chino Valley Unified School District, California
1999–2003	English Instructor and Video Production Coordinator Don Antonio Lugh High School Chino Valley Unified School District, California
1997–1999	Video Production Teacher Rancho Cucamonga High School Chaffey Joint Unified High School District, California

TEACHERS' PERCEPTIONS OF THE EFFECTS OF CONSTRUCTIVISM AND
PROFESSIONAL LEARNING COMMUNITY TRAINING ON STUDENT ENGAGEMENT:
A PHENOMENOLOGICAL STUDY

by

Jonathan J. Wright

A Dissertation

Presented in Partial Fulfillment of
Requirements for the
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ABSTRACT

This is a qualitative phenomenological study of an urban high school. This study explores the teachers' perceptions of relevance of Constructivism, Professional Learning Community Training involving technology, and the impact those two have on student engagement. The study further considers various approaches to professional development and Professional Learning Community structure. Findings from the study indicate that the teachers perceive the role of Constructivism is vital in their classrooms but is not well understood by administrators and other teachers; Professional Learning Community participants lack a firm grasp of the cultural change needed for successful Professional Learning Community adoption, and that Professional Learning Community training doesn't necessarily impact student engagement. Further findings reveal that teachers are not receiving the level of technology training necessary to provide students with options for submitting assignments and also suggest that student engagement increases when teachers use technology. Study results also suggest that Professional Learning Community training should operate using Constructivist principles, and teachers should be involved in designing and implementing the training. Future research should be conducted relating to technology's impact on student's cognitive, affective, and behavioral realms of engagement and ways of creating classrooms that appeal to the students and bring about their optimal levels of engagement. Other further research could examine the impact of Professional Learning Community technology training on collective teacher efficacy.

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CHAPTER 1: INTRODUCTION

For more than a century, researchers and theorists have proposed numerous ways to improve student education. Today's students are tomorrow's leaders, and preparing young people for their future roles is the vital task of the entire educational community. As an acknowledged expert in teacher efficacy and methods of maximizing student learning, Hattie cautioned teachers to be flexible as they learn and teach, to use a variety of proven and creative teaching methods, and to be "the best error detectors in the business" (Hattie, 2012, p. 185). And the 2017 National Educational Technology Plan Update made it clear that teacher preparation programs must include instruction on technology as an aid to student learning (South & Stephens, 2017, p. 35). More recently, the education community has broadened the view to emphasize the vital role of student engagement in both the learning process in high school and preparation for post-high school education (Bond & Bedenlier, 2019). Therefore, the researcher examined three related issues to determine if educational Constructivism is still relevant; if Professional learning community (PLC) training helps teachers learn how to produce and use self- and student-produced videos; and if videos and other teaching technologies can enhance student engagement in the Constructivist classroom.

Background of Study

Although students increasingly have become leading users of technology in the past two decades, many teachers have not kept pace or are catching up far more slowly. Secondary teachers who do know how to use technology effectively in the classroom and for online courses can help their colleagues teach in ways that keep students engaged. Yet, a national study and plan published in 2017 found that the effort is neither widespread nor on a national level (U. S. Dept. of Education, 2017, p. 1). Introducing the U.S. Department of Education's National

Education Technology Plan (NETP) Update, the director's opening letter stated that while some secondary faculty are helping their peers to use technologies more effectively, some schools are reducing or eliminating library positions at the same time they are failing to help teachers lead the drive toward digital change (U. S. Dept. of Education, 2017, p. 1).

Providing a framework for discussing video production and YouTube in the classroom, the NETP set a national vision and plan for learning enabled by technology (U. S. Dept. of Education, 2017, p. 3). The plan was compiled by leading education researchers; district, school, and higher education leaders; classroom teachers; developers; entrepreneurs; and nonprofit organizations. The belief of the NETP is that classroom technologies can enhance and expand how teaching practices influence student engagement and learning. However, the authors noted that teachers need training to "take full advantage of technology rich learning environments" (U. S. Dept. of Education, 2017, p. 5).

Four years earlier, Morrell, Dueñas, Garcia, and López, (2013) linked production and uses of media with academic achievement and employment. They found that high school students routinely produce high-quality videos which they post on their personal websites and a variety of social media sites such as Facebook, Twitter, and YouTube. If teachers can harness this enthusiasm for technology by allowing students to submit assignments using technology, students would approach the subjects with a heightened level of enthusiasm (Guo, 2014, p. 11; Pereira et al., 2012, p. 50). Berk (2009) stated that viewing a video can result in an emotional, sometimes subconscious response, such as excitement, anger, laughter, relaxation, love, whimsy, or even boredom" (Berk, 2009, p. 2). Abrahamson et al. (2005) had evaluated mixed-media instruction and found that such learning environments can result in greater student participation (p. 1). Csikszentmihalyi (1990) wrote,

Enjoyment results when a person has not only met some prior expectation but also gone beyond what he or she has been programmed to do and achieved something unexpected. Enjoyment, in other words, is characterized by a sense of novelty or accomplishment (p. 3).

Further, Morrell et al. (2013) noted that visual media are an integral part of students' lives, concluding that: "Media education [should] be more effectively implemented into the K-12 curriculum in the United States" (Morrell et al., 2013, p. 3). In a process they coined critical media pedagogy, Morrell et al. said that students need to be able to bring their critical reasoning skills to the decoding and analysis of texts produced across many genres including, but not limited to, television, film, music, the Internet, print media, magazines, murals, posters, t-shirts, billboards, social networking sites, and mobile media apps (Morrell et al., 2013, pp. 6–12). Morrell et al. (2013) examined the levels of curriculum and pedagogy in practice at several southern California high schools, with a focus on high-performing students who were using technology (Morrell et al., 2013, p. 10). Berk (2009) listed 20 ways in which using video in teaching is positive; number 17 was "Make learning fun," noting, "Teachers in all subject areas use video clips as an instructional tool so that their students can experience the powerful cognitive and emotional impact" (Berk, 2009, p. 2). Today more than ever, many teachers are embedding critical media education into traditional academic content areas; however, some teachers have not included technologies in their lesson plans (Berk, 2009, pp. 5–6). Not including technology may lower student engagement because they already use digital tools such as watching videos and listening to music, playing games, messaging, and using social platforms (Berk, 2009, pp. 3, 6). Teachers should be able to match the level of technical demands that the

students ask for when it comes to providing an engaging classroom environment (Buzzetto-More, 2014, p. 30; Maziriri et al., 2020, p. 119; Speed et al., 2018, p. 100).

In this study the researcher evaluated whether using Professional Learning Communities to increase teacher awareness of these transparent tools for learning would be a valuable use of time. Teachers using Professional Learning Community time to learn how technology can be implemented in the classroom to increase student engagement has been reported as key by several researchers (Carmichael et al.; DuFour & Fullan, 2013; Mind Tools, 2018).

In essence, these researchers and the NETP encouraged teachers to transition from time-honored analog teaching methods to state-of-the-art digital methods. It is no longer sufficient for teachers to rely on an overhead projector, flip charts, printed handouts, or similar techniques of the previous century. While these technologies were useful in the past, they are neither adequate nor efficient as students in general are increasingly more technologically competent than many of their teachers (U. S. Dept. of Education, 2017, pp. 1, 9–10, & 18–20).

The revised NETP noted that education leaders will need to collaborate to determine what technologies will most effectively and efficiently teach, how those technologies could work, and how to implement the vision of those “systemic changes in learning and teaching” (U. S. Dept. of Education, 2017, p. 5). The NETP’s goal in this regard was to enhance learning by meeting the needs of all learners:

Learning, teaching, and assessment enabled by technology require a robust infrastructure. Key elements of this infrastructure include high-speed connectivity and devices that are available to teachers and students when they need them. Aside from wires and devices, a comprehensive learning infrastructure includes digital learning content and other

resources as well as professional development for educators and education leaders (U. S. Dept. of Education, 2017, p. 5).

Responding to the findings and recommendations of the NETP, the researcher evaluated the perceptions of teachers regarding the value of including technology such as YouTube as an integral part of the Constructivist classroom, all with the goal of studying if and how secondary teachers are developing and using enhanced learning methodologies to keep students actively engaged in each class.

Problem Statement

Today's students live in a fast-paced, visual world of music videos, elaborate online gaming, Snapchat, TikTok, and similar platforms at home. "Schooling as we know it is outdated" (Fullan & Quin, 2016, p. 77). While technology continues to improve, schooling has not changed in 50 years (Fullan & Quin, 2016, p. 77). This creates boredom and less engagement by the students. As a result, students experience a disconnect from meaningful and applicable learning in their classrooms, many of which still feature out-of-date pedagogies. Fullan & Quinn (2016) encouraged educators to do more than acquire technology and instead to adopt state-of-the-art digital tools (Fullan & Quinn, 2016, p. 81). Teachers need to "zero in on precise pedagogy—what works in promoting engaging learning for students and teachers alike" (Fullan & Quinn, 2013, p. 5). Over the past 20 years, many teachers have avoided using newer technologies such as videos including YouTube, relying instead on the pretest-teach-posttest and "Sage on the Stage" (didactic) models with only limited student participation (Brooks & Brooks, 1999, p. 120). This indicated a gradual move away from Constructivist teaching methods (Ashman, 2020, p. 2) and negatively impacted student engagement. According to DuFour and Fullan (2013), "Students are increasingly bored as they move up the grade levels" (p. 4). Teachers need to have state-of-the-

art technology training within a Professional Learning Community structure to remain current with the medium that students prefer: video (DuFour & Fullan, 2013, pp. 2–4).

Despite wide availability of online videos including YouTube, cell phone video capabilities, and inexpensive editing software, many teachers are not prepared to use technology effectively. Leach (2017) found: “Few teacher preparation programs support future teachers in learning to teach such a curriculum. A systematic program of professional development to build capacity for teachers already in schools does not exist” (Leach, 2017, p. 37).

As teachers become more aware of the ease of using classroom technologies such as YouTube as described by Green (2018) and the collaborative benefits of video production, students will accrue a variety of the enhanced educational benefits these tools provide. Even in the simplest form of video production, students can record assignments with their phone and upload them to YouTube, and the teacher can play those assignments back for the entire class to see, review, and critique.

Purpose of Study

A purpose of this study was to explore the importance of Professional Learning Community training to help teachers use technology more effectively in the Constructivist classroom. This study discovered common elements that teachers and students experience in working with YouTube, and distilled these elements into a set of recommendations to district leaders for creating curricula after Professional Learning Community training about classroom technologies including YouTube. The broader goal was to help develop practices that might improve ways faculty use technologies to enhance teaching and engagement in the Constructivist classroom and to enhance student collaboration and engagement. Finally, data collected for the

study provided evidence to answer the question: Do Professional Learning Community technology training and the use of Constructivist techniques benefit student engagement?

Significance of Study

This study is paramount as it contributes valuable insight into the successful implementation of classroom technology as a transparent tool for learning. This research used a Constructivist conceptual framework approach to discover how technologies interrelate with the environment for students to learn from and to submit multimedia assignments. “How do they address this shift to the digital and global worlds? The solution lies in becoming both learners and reflective doers who are working on continuous improvement and innovation simultaneously” (Fullan & Quinn, 2016, p. 80). Another system allows the teacher to use digital technologies as a key part of the learning experience. Digital technologies have the potential to shift the teacher/student paradigm from lecture and passive learning to active, more involved learning with enhanced student engagement. Especially in light of the lack of converging technologies of media use, YouTube is a valuable and potentially limitless reservoir of untapped education videos, teacher videos, and student-created video assignments. Furthermore, students’ incorporation of YouTube into lesson studies, homework, and small-group classroom work has become a medium for creating, sending, receiving, critiquing, and collaborating in many 21st century blended classrooms. It has the potential to be the tool students use serving stakeholders, digging deeper with digital media and content (Fullan & Quinn, 2016) to create a more efficient, collaborative culture in the classroom. According to the New Pedagogies for Deep Learning initiative, “In this new model, pedagogy is the driver and digital is the accelerator to go faster and deep into learning for all” (Fullan & Quinn, 2016, p. 81).

In this digital age, more teachers have access to facilities and equipment to create their own subject and topic videos. However, most schools do not have budgets, facilities, equipment, and trained staff that will permit students to become directly involved in producing their own videos. Thus, YouTube is a highly effective tool in the instructor's arsenal. Burke et al. (2009) noted that innovative teaching strategies are imperative in higher education courses to engage and motivate the newer tech-savvy generation (p. 6).

Using digital technologies as a multifaceted educational tool could move to the forefront of classroom practice. Students may upload assignments, critique their own projects and those of others, and work collaboratively with fellow students. Students who watch video with an ear for vocabulary could become better writers and speakers and have fun doing it (Berk, 2009, p. 2). Abrahamson et al. (2005) observed one shy student who seemed to lose interest after 10 minutes or less. Her level of interest grew significantly when she was given a video camera, which she liked, using it to document the work of her classmates (Abrahamson et al., 2005, p. 2). Berk (2009) reported that students in the early 2000s preferred video as a major resource because it appeals to multiple intelligences and learning styles which increase student success (Berk, 2009 p. 14). Five years later, Davidson et al. (2014) "Young children's engagement with digital technology provides many opportunities for learning" (Davidson et al., 2014, p. 82). Hobbs (2010) clearly stated: "There is growing momentum to support the integration of digital and media literacy into education" (Hobbs, 2010, p. 2), as subsequent research by Watkins and Wilkins (2011) pointed out: students can independently view an unlimited range of online videos, giving them a chance to thrive (p. 115).

The results of this study may help to develop an expanded systemic paradigm that enables teachers to implement effective uses of YouTube and video production, and enhance

engagement across the curriculum, as described in Chapter 5. Finally, as students move through and out of formal education and enter the global marketplace, society can welcome academically strong and intellectually inquisitive adults who will be prepared to perform in and ultimately create jobs and whole industries not yet dreamed of in 2021.

Research Questions

Three research questions were addressed to determine whether the use of student-produced YouTube segments improves student learning by producing higher levels of engagement in a Constructivist classroom. Specifically, this research addressed these interconnected relationships:

RQ1: What are teachers' perceptions of the relevance of Constructivism in the Age of Technology?

RQ2: How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube?

RQ3: What are teachers' perceptions of the indicators of student engagement?

Conceptual Framework

This study was structured to examine teachers' perceptions through the lens and conceptual framework of Constructivism, the effectiveness of district and school technology training during Professional Learning Community time, and the combination of those factors as an aid to enhancing student engagement. Furthermore, this study operates through the conceptual framework lens of Constructivism as developed by Dewey (1900, 1902/2013, 1938), Piaget (1952; Clabaugh, 2018), and Vygotsky (Liu & Matthews, 2005). This research also examined teachers' observations and perceptions to determine if Constructivism remains relevant in the

third decade of the technology-rich 21st century. Explaining this concept 120 years ago, Dewey (1902/2013) contended that

Setting up conditions which stimulate certain visible and tangible ways of acting is the first step. Making the individual a sharer or partner in the associated activity so that he feels its success as his success, its failure as his failure, is the completing step (p. 14).

Limitations

The study examined how selected teachers worked with digital technologies and self- and student-produced content; results may not be generalizable to all humanities and arts classes or projects. The success of using YouTube depends on multiple variables, such as quality of the Professional Learning Community instructional program, student interest and involvement, teacher involvement, availability of production equipment, and quality of editing.

Delimitations

The delimitations utilized by the researcher in this study were determined by a desire to gain a better understanding of the complete relationship that exists among the process of producing student YouTube videos, the teacher's ability to teach using digital technologies, the faculty and school buy-in, and how each of those alone and in combination may affect the quality of the final product. The researcher sought only selected southern California public high school teachers as participants. Therefore, because of coursework during credentialing and regionally agreed upon pedagogies, this study's findings and conclusions may be regionally agreed upon and, therefore, not generalizable to other California school districts nor to other states. The qualitative information gathered could vary because of teacher delivery methods, the number of hours a student meets with the teacher and actively works with digital technologies and video production, and other factors related to the students in their classes.

Assumptions

This study included the following assumptions:

- The teachers who responded to the surveys and participated in the Zoom interviews spoke accurately, honestly, and thoroughly indicated their perceptions regarding the use of video technologies.
- The selected participants understood the vocabulary, concepts, and standard operating procedures associated with student-produced video segments,
- The data collected accurately measured the knowledge, skills, and perceptions of the teachers' involvement in the model,
- The interpretation of the data accurately reflected the perceptions of the respondents,

Based upon the work of DuFour and Fullan (2013), the researcher believed that a school system could thrive and be successful by adopting production and uses of video through extensive technology training during Professional Learning Community time.

The Researcher

The researcher has worked as a certificated, single subject English teacher and a Vocational Education multimedia teacher for 23 years. He holds a Bachelor of Arts in communication from Metropolitan State University in St. Paul, Minnesota; a secondary teaching credential from Concordia University, St. Paul, Minnesota; a vocational education multimedia credential in multi-media and a vocational supervision and coordination credential from the University of San Diego, California; and a Master of Arts in Educational Administration from Concordia University, Irvine, California. No participant has a direct relationship with the

researcher that might represent a conflict of interest or which may have imparted bias on the research study.

The researcher has been trained in the skills necessary to carry out the designed study. The researcher has used video production and YouTube numerous times in designing lessons plans for students. The researcher's skills include training in video production as a part of his undergraduate training and courses in qualitative, quantitative, and statistical analysis at Concordia University, Irvine, California. Since 1997 he has been responsible for training teams of video production students and supporting administrative goals at the school site and the district level.

Organization of Study

This research study is presented in five chapters:

Chapter 1 includes the background of the study, statement of the problem, purpose of the study, significance of the study, definition of terms, theoretical framework, research questions, limitations, delimitations, and the assumptions of the study.

Chapter 2 presents a rich review of the literature as it pertains to the three research questions.

Chapter 3 explores the methodology.

Chapter 4 displays the study's findings, including the participants' demographic information, testing the research questions, confirmation relationship analysis, and the results of the data analysis for the three questions.

Chapter 5 provides a summary of the entire study, discussion of the findings, implications of the findings for theory and practice, recommendations for further research, and conclusions.

Definition of Terms

Affective Engagement: The component of student engagement that encompasses enthusiasm, satisfaction, curiosity, pride, and excitement (Bond & Bedenlier, 2019).

B-Roll: Video that essentially is alternative footage to a production's main footage. Main footage is referred to as A-roll, making the cutaway footage B-roll. For example, while shooting an interview with a welder, the A-roll will be the footage of the welder talking. The B-footage would be the cutaway shots showing the welder at work.

Behavioral Engagement: The component of student engagement that includes effort, attention and focus, attendance, confidence, assuming responsibility, and asking peers or the teacher for help (Bond & Bedenlier, 2019).

Cognitive Engagement: The component of student engagement that includes such concepts as critical thinking, setting learning goals, self-regulation, understanding, and doing more than the minimum on a task to bolster learning (Bond & Bedenlier, 2019).

Constructivist Theory: Relates to social and situational learning theories; views learning as an active process in which learners build information based in part on prior knowledge (Mind Tools, 2018). Based on teaching video production courses, Hubbard (2012) evaluated the effectiveness of teaching while following a Constructivist model:

I am convinced that Constructivist-based teaching methods such as those I employed unintentionally in my special topics video production course have enormous educational power, even in courses that are not overtly skill-based. I am also convinced that Constructivist literature from the field of education provides useful insights into how best to implement these approaches to media literacy through video production (Hubbard, 2012, p. 165).

Mixed Media Learning Environment (MMLE): Affords students multiple entry points into participation. Students, who come to these flexible environments with different skills, inclinations, and literacies, have increased opportunities for expression and for development of expertise and, thus, for finding their niches (Abrahamson et al., 2005, p. 2).

Professional learning communities (PLC): Under the guidance and leadership of district and school administrators, teachers meet regularly, often once per week, for collaborative time and training. These sessions often are held during a late-start day.

Student engagement: “The energy and effort that students employ within their learning community, observable via any number of behavioural, cognitive or affective indicators across a curriculum” (Bond et al., Manuscript in preparation, 2020, pp. 2–3).

Transduction: Occurs as knowledge is synthesized and then reconfigured across different modes of expression to express the same understanding, such as information from text to film (Leach, 2017, pp. 32, 39).

Transmediation: Information and its meaning move from one form of expression to another. For example, a student could listen to a poem, essay, dramatic work, or video and then draw a sketch or picture in the medium of their choice that depicts what the words had said or meant to them. Conversely, students could view a painting, sculpture, or photograph and write random thoughts to perhaps a complete essay to state what the art meant to them. “Many teachers find that transmediation enlivens their reading program, while it also supports students’ comprehension” (Harste, 2014, p. 91).

Universal Design for Learning (UDL): Focuses on teaching and learning that enables students to succeed, offers students multiple ways to access material, how to engage with new

material or knowledge, and demonstrate their knowledge or mastery of new material (Leach, pp. 30–31).

Chapter Summary

The Constructivist educational model has developed for nearly 120 years with varying degrees of acceptance and disdain. Educational experts and researchers have found that Constructivism is an educational system that focuses on the student and his or her prior knowledge. Such a classroom features free-flowing discussion of the day's topic, builds important relationships with one another and their teachers, and establishes a base of knowledge for future classwork. As this chapter has noted, numerous researchers have reported the need for increasing uses of digital technologies in the education setting primarily because today's students already are more technologically advanced than many of their teachers. Furthermore, this chapter has established the need for current research on the relevance of Constructivism in the 2020 classroom, the importance of Professional Learning Community technology training in the Constructivist classroom environment, and the potential value of digital technologies to enhance student engagement.

CHAPTER 2: REVIEW OF LITERATURE

This chapter focuses on the rationale for the use of classroom technologies such as teacher and student video production and YouTube as a teaching and learning process implemented through Professional Learning Communities to improve student engagement in the Constructivist setting. This review of literature attempted to understand the breadth and depth of past research and to understand what theories have been used in that research. The researcher has studied a variety of references in the areas of Constructivism, educational research on the subject of technologies such as YouTube usage by students and teachers, and how teachers' relationships with students and uses of technology combine to enhance student engagement.

In the century since constructivism emerged, students have experienced a wide range of classroom styles from the more traditional lecture to fully hands-on learning. Student media has grown exponentially from a small piece of slate and chalk to handheld devices that are smaller than a paperback book, such as digital cameras and cell phones. This emerging technology has given students new tools for learning with enhanced engagement, as Pereira et al. (2012) reported: "Involving students in a video production project can work as a motivating aspect to make them active and reflective in their learning, intellectually engaged in a recursive process" (p.44). The most recent two decades have seen an explosion of technologies that appear in smaller and more efficient packages. Now in the hands of very young children, these newer, audio and video technologies have become indispensable accessories. It seems only natural that education and modern technology should combine for the greater benefit of students: "Students work with both 'high' – and 'low' – tech media and materials to create artifacts" (Abrahamson et al., 2005, p.1). Berk (2008) noted technologies have advanced so rapidly that users have difficulty keeping current with all of the new products (Berk, 2008, p. 5). Hobbs (2010) stated,

“Digital and media literacy as a constellation of life skills are necessary for full participation in our media-saturated, information-rich society” (Hobbs, 2010, p. vii). Thus, this literature review examined the relationships in four major categories: Constructivism, video and related teacher education during Professional Learning Communities technology training time, influences on student engagement, and how a blend of those three elements affects students’ education.

Role and Relevance of Constructivism

This research was conducted through the conceptual framework of Constructivism. Teachers who use a Constructivist classroom model encourage and enable students to take a direct interest in their education, thus becoming more fully engaged in the classroom; the theoretical concept has been described, discussed, and debated for more than a century. This research sought teachers’ perceptions about the relevance of Constructivism in the technology-rich 21st century to address the issue of how involved students can or should become in their own education (Brooks & Brooks, 1999, p. ix).

Challenges to Constructivism

A basic tenet of constructivism focuses on students being actively involved in their education as evidenced by their ability to integrate prior learning and then grasp, understand, and apply facts and principles of a lesson to the current material and in future lessons. Brooks and Brooks (1999) state that Constructivist teachers structure assignments around opportunities for students to refine their understandings about concepts under discussion (Brooks & Brooks, 1999, p. ix). This comment summarizes educational philosophies which described and developed Constructivism through much of the 20th century based on the research and writings of educational theorists Dewey, 1900, 1902/2013, 1938; Piaget, 1952; Pereira et al., 2012; and Vygotsky (Liu & Matthews, 2005). However, the end of the 20th century witnessed a shift in

educational philosophy as the American educational community began to move away from Constructivism. In the years between 1980 and 2020, much of American education shifted toward formats and programs such as the structured teaching methodologies of Whole Language and its associated Invented Spelling (Maddox & Feng, 2013; Weaver, 1998), the rigorous requirements and deadlines of the No Child Left Behind Act of 2001 (Whitney & Candelaria, 2017), and more recently the Common Core State Standards (Polikoff, 2017).

Even as early as 1999, researchers began to report that students across the United States preferred facts over critical thinking, were uncomfortable when asked to provide in-depth analysis of a topic, and wanted instruction to be rapidly paced rather than presented step-by-step (Brooks & Brooks, 1999, p. 119). In many of those same classrooms, more traditional, lecturing teachers were less inclined to consider or value student perspectives and might view student discussion or counterviews as interfering with the desired or required pace of a lesson. Not satisfied with that development, numerous researchers noted that Constructivist classrooms encourage students' perspectives which in turn become teachers' cues for further exploration of a topic and subsequent lessons (Ashman, 2020, pp. 1–3; Campbell & Wahl, 2015, pp. 28–30). Teachers could enhance students' learning by remaining committed to the principles of Constructivism, reading students' reactions, and valuing students' points of view (Dennick, 2016, p. 204).

Student Experiences Influence Learning

Students base much of their learning on past experiences and what they have learned already: “New knowledge is therefore interpreted by existing knowledge and then connected to existing knowledge” (Dennick, 2016, p. 200). The careful teacher can build on what students know most effectively by asking questions (Dennick, 2016, p. 202), a concept first proposed by

Dewey (1900, 1902/2013, 1938). Brooks and Brooks (1999) linked the close relationships that exist among Constructivism, learners, teachers, learning, and assessment (p. ix). Constructivist teachers design lessons around their understanding of what students already know and build their classrooms and lessons so students feel a direct relationship with the information. Encouraging students to focus first on major ideas and principles, the teachers comment secondarily about issues or topics that need further information or investigation (Brooks & Brooks, 1999, p. ix). Yilmaz (2008) noted that the process of learning must be viewed as active as students critically think about new information and give more than terse responses to their teachers: “By asking thoughtful and open-ended questions, constructivist teachers also encourage students to elaborate on their initial responses through such interactive methods as discussion, debate, and Socratic dialogue” (p. 170). More recently, Ashman (2020) noted that students do not merely accumulate knowledge, but evaluate new information by directly relating it to knowledge already stored in their memories (p. 1).

Collaborative Learning

Gjergo and Samarxhiu (2014) stated that one of the key features of Constructivism is collaborative learning, “a situation in which two or more people learn or attempt to learn something together” (p. 23), adding that a collaborative classroom features more student-to-student learning than teacher-led or teacher-focused instruction (pp. 24–25). The researchers noted that this student-centered approach, a key element of the Constructivist classroom, emphasizes student-student cooperation rather than competition (p. 24).

The findings of Pereira et al. (2012) echo Dewey’s explanations of Constructivism, his recommendations of a century before, and the theoretical questions of Kant and Piaget (Dennick, 2006, p. 200). Dewey says that it is the responsibility of the school environment to balance the

various elements in the social environment, and to see to it that each individual gets an opportunity to escape from the limitations of the social group in which he was born and to come into living contact with a broader environment (Dewey, 1902/2013, p. 18). In *Democracy and Education* Dewey (1902/2013) wrote that it is the teacher's responsibility to create environmental conditions for learning, adding: "Experience has shown that when children have a chance at physical activities which bring their natural impulses into play, going to school is a joy, management is less of a burden, and learning is easier" (Dewey, 1902/2013, p. 139). So, the environment needs to excite students and motivate them to learn; the teacher should also model how to learn (Dewey, 1902/2013, pp. 12–13).

Brooks and Brooks (1999) found that "more and more teachers continue to gravitate toward Constructivist principles because ... they make sense" (p. x). While talking with people who recalled the teachers they remember most, Brooks and Brooks found that the teachers that were remembered by their students were the ones that helped students connect their current ideas with new ones, and these students were considered remarkable (p. xi).

Fullan (2010) focused on reforming the whole educational system which would include many Constructivist features such as routinely evaluating student progress and participation, encouraging students to think both creatively and critically, and critiquing their own teaching techniques and success, all of which impact student learning (Fullan, 2010, p. 6). Furthermore, Fullan cautioned: "There is no way of achieving whole-system reform if the vast majority of people are not working on it together" (Fullan, 2010, p. 21).

Marzano and Marzano (2003) wrote that the key to effective classroom management is a strong bond between the teacher and students: "Teachers who had high-quality relationships with their students had 31 percent fewer discipline problems, rule violations, and related problems

over a year's time than did [other] teachers" (pp.1-2). Campbell and Wahl (2015) further emphasized the concept by reporting a caring and trusting teacher-student relationship creates a much more effective classroom with more student engagement (p. 26). Solid, two-way relationships are vital in a smooth-operating classroom, as Campbell and Wahl noted, emphasizing that students will not give their best efforts if the student-teacher relationship is viewed as "don't like" in either direction (pp. 27-28). Students who perceive their teachers as caring engage more with academic content, take intellectual risks, adapt their behavior more appropriately, and keep trying even when they think they are not fully grasping the lesson. As a result at middle school and high school levels, students tend to be more fully engaged with their learning. More important, high school students are less likely to drop out (Campbell & Wahl, 2015, p. 30). One way to establish a positive classroom environment and strengthen teacher-student relationships is to offer students alternative ways to submit assignments such as video. Campbell and Wahl (2015) offered indicators of a positive teacher-student environment: Teachers focus on students as individuals; they listen critically and carefully to student comments and responses; and they speak respectfully to students while simultaneously honoring student privacy and treating all students with respect (Campbell & Wahl, 2015, pp. 32-33).

The Influence of Learning Modalities

One student factor stretching across all three major areas of this research is learning styles, which interweave Constructivism, student engagement, and teaching techniques including the use of modern technologies. Teachers need to consider learning modalities as an important factor in any classroom and especially in a Constructivist classroom both as an instructional focus and as a potential factor influencing student engagement. Scholarly studies and peer-reviewed articles have shown that students learn best given a variety of teaching methods which

educators traditionally grouped into four categories: visual, tactile, auditory, and kinesthetic (Carmichael et al., 2017; Hubbard, 2012; Rogowsky et al., 2015; personal communication, 2012). Though dozens and perhaps hundreds of educators have discussed the concept in the past several decades, Concordia University Portland explained the concept concisely in 2012: “Not all students learn in the same way. All students have varying talents, and these talents determine each student’s learning styles (personal communication, 2012

Not fully satisfied with the traditional grouping of learning modalities, Concordia University Portland expanded the list of types to include eight styles with a detailed explanation of each, which Table 1. 1 summarizes (personal communication, 2012)

Table 1. 1

Concordia University Portland—Expanded Learning Modalities

Learning Modality	Student Characteristics and Preferences
Naturalist	Enjoys exploring animals, plants, and weather. Likes to ask questions, experiment, and investigate what they don’t understand; hands-on.
Intrapersonal	Intrinsically motivated; enjoys independent projects, prefers being alone; likes peace and quiet. Investigates the “new” alone.
Interpersonal	Prefers to interact with fellow learners. Cares about others’ ideas, typically very social, and learns best from cooperative experiences.
Bodily Kinesthetic	Prefers to learn using the sense of touch, which may also include bodily movement. Learns best by holding and manipulating objects.
Spatial/Visual	Most comfortable visualizing concepts; likes to draw, do jigsaw puzzles, and complete mazes; enjoys designing and building models. Works well with charts, maps, diagrams, slides, and videos.
Musical	Understands and processes sound, rhythm, patterns in sound, and relationships between sounds; able to process rhymes and other auditory information.
Logical	Likes to think conceptually using logic and mathematics with clear reasoning using relationships and patterns. Learns best by testing and conducting experiments.
Linguistic	Able to express thoughts in writing and verbally. Loves reading and playing on the meaning or sound of words. Regularly makes an effort to find the meaning of new words.

YouTube Training During Professional Learning Community Time

Many school districts have moved to mandatory weekly training during Professional Learning Community time. The use of such training time could offer opportunities to collaborate inter/intra departmentally to introduce how to use YouTube and technology such as video production across the curriculum. Brooks and Brooks go on to say that “unless teachers are given ample opportunities to learn in Constructivist settings and question for themselves educational vision through which they can reflect on educational practices, the instructional programs they learn will be trivialized into ‘cook-book’ procedures” (Brooks & Brooks, 1999, pp. 121-122).

Given that Constructivism features an emphasis on “student-centered” education and improving student learning across the curriculum, several districts have been making efforts to focus on student learning through technology. As a result, schools are beginning to develop and implement educational systems that are effective and efficient; educational leaders and classroom teachers must devise effective methods of classroom instructional delivery and receive training on how to use those technologies. DuFour and Fullan (2013) found that Professional Learning Communities can play a central role in dramatically improving the overall performance of schools, the engagement of students, and the sense of efficacy and job satisfaction of educators (p. 4). YouTube assists in these broad Constructivist concepts by actively questioning meaning.

Research for this portion of the project included keyword, online searches for “YouTube Classroom Students” and “YouTube Classroom Students Peer-Reviewed Articles” using Google.com. Both yielded a plethora of results; the Google.com search for the first string produced 575,000,000 hits in 0.58 seconds. When the search focused on “YouTube Classroom

Students Peer-Reviewed Articles,” Google.com produced 10,500,000 articles and videos in 0.46 seconds. A similar search using scholar.google.com found 22,400 hits in 0.11 seconds. The researcher initially selected approximately 30 articles with titles that seemed closest to the focus of this research. Then, the researcher read the articles, examined the articles’ reference lists, and consulted several additional sources to ascertain existing research on the same or similar topic as planned for this project. Follow-up searches used a variety of 20 additional scholarly, online companies and educational organizations. The combined resources yielded the journal articles and published book resources cited in this dissertation as included in the accompanying list of references.

Teachers can access a wide variety of online technical resources and tools to strengthen lesson presentations and enhance student education. Yet, teachers with only limited training on classroom technologies such as YouTube may find the idea intimidating. Such technology training during Professional Learning Communities time at the district and school levels could give teachers of all experience levels an additional tool in their instructional arsenal: “When the PLC process drives an entire system, participants come to have a sense of identity that goes beyond just their own piece of the system” (DuFour & Fullan, 2013, p. 3).

This research centers on the interrelationship among roles of teachers, students, and teacher training available in the entire educational community and specifically how that partnership functions on a single school site in southern California. YouTube is mentioned frequently as a widely -used, predominant representative of two-way classroom resources where teachers can find and use prerecorded videos and also post online their own and students’ video lessons and projects. For example, Burke et al. (2009) reported on college health-education research in the early years of YouTube which demonstrated that online videos could prove to be

an important classroom resource: “Faculty who used YouTube in their courses were satisfied with this new technology and found it to be an effective teaching and learning tool” (p. 6). Furthermore, they suggested that online videos could both help teachers to supplement their teaching with related, well-produced materials while simultaneously sustaining student engagement (p. 7).

Based upon that framework, the present study examines technologies and related training at the secondary level to determine if classroom technologies such as video production and YouTube enhance students’ education in both in-class and remote education toward future college, university, and trade school courses, and during on-the-job training. An extensive review of relevant literature reveals only minimal research conducted specifically on teacher experiences using YouTube for uploading student assignments, although there is some evidence of classroom uses of video technologies, educational videos, student-authored videos, and commercials and films which can enhance student learning in the traditional classroom, and in special circumstances such as home and hospital, and the Novel COVID-19 pandemic homebound isolation (Dorn et al., 2020; Burgess & Sievertsen, 2020).

Literature review and the researcher’s experience in secondary education yield common elements that both directly and indirectly influence and inform students’ intellectual and academic development, and their potential as tomorrow’s leaders and professional workforce. The educational community has long discussed the need for all stakeholders to be part of each student’s learning process. This research focuses the concept on the use of video as a focused means of enhancing the acquisition of knowledge by each student with the integration of all components of the stakeholder community. Technology can enable personalized learning or experiences that are more engaging and relevant. U. S. Dept. of Education (2017) listed four

guiding principles in NETP’s Early Learning and Educational Technology Brief: Teachers can use technology as a tool for learning—if they use it appropriately. Moreover, technology can increase access to learning opportunities for all children, while simultaneously strengthening relationships among parents, families, early educators, and young children. Finally, technology as an aid for learning works best “when adults and peers interact or co-view with young children” (U. S. Dept. of Education, 2017, p. 13).

Professional Learning Communities and Whole System Reform

Professional learning communities are key to whole system reform (DuFour & Fullan, 2013; Fullan, 2010). Nonetheless, many teachers have not been given training on how to use video resources including YouTube in the classroom. The 2017 NETP recommended technology training and full access to online resources as aids to teaching and more effective learning (U. S. Dept. of Education, 2017, p. 40). However, Berk (2009) stated 12 years ago that classroom videos are not a new technology. Professional learning communities are a great way to introduce what teachers do not know about the relationship of videos and YouTube to learning. Setting aside time during a Professional Learning Community session to introduce teachers to these new concepts would be beneficial. DuFour and Fullan (2013) have devoted their careers to demonstrating how important the Professional Learning Community movement is and the impact that it can have. The 2017 NETP also recommended that teacher-preparation programs include technology training and that learning environments become more focused on technology (U. S. Dept. of Education, 2017, p. 40). “In 2011, three of the four finalists for national superintendent of the year in the United States attribute their district’s success in raising student achievement to the PLC at Work process” (DuFour, & Fullan, 2013, p. 1). However, leaders need to integrate Professional Learning Community technology training as a key element of the district’s and

school's educational structure. This will require a dynamic change to the traditional understanding of such training as being another program pushed from above. To become more efficient and effective, Professional Learning Community technology training must transform the traditional educational culture in a lasting way (DuFour & Fullan, 2013, p. 2). This cultural shift from time-honored, comfortable views is the toughest part because it requires teachers to put their egos on the shelf and changes how teachers interrelate (DuFour & Fullan, 2010, p. 2).

Using Fullan's (2010) whole system reform approach, Professional Learning Community time and training to encourage increased YouTube use would have an impact on just about everyone on a high school campus if given the opportunity and adequate resources. When the Professional Learning Community process drives the entire system and everyone has been trained and buys in to the system, "They identify in palpable ways with the overall organization, unleashing the energy of mutual allegiance and competition for the common good" (Fullan, 2010, p. 3). So, the impact that classroom technologies can have on the entire school mirrors big ideas in Professional Learning Communities proposed by DuFour and Fullan (2013).

DuFour and Fullan (2013) said that Professional Learning Communities needed to be an integral part of both cultural and structural change (p. 2). "If the PLC process is going to impact education beyond the individual school or isolated district, the process must be the driving force of the entire system. It is time for PLCs to go big!" (p. 3). Furthermore, they warned that "PLCs are a process, not a program. Educators do not 'do PLC' one year and then move on to something else the following year" (p. 3). The most enduring value of the Professional Learning Community endeavor will only occur if the educational community and related stakeholders "learn to implement the process deeply and widely as a fundamental change in the culture of schools and school systems" (pp. 4-5). The researchers noted that trainers, teachers, and

administrators are individually and mutually responsible for making the necessary cultural changes (DuFour & Fullan, 2013, p. 4).

Studies show as American students move up through the grade levels they become increasingly bored. Jenkins (2012) found that 95% of kindergarteners like school, but this percentage decreased steadily to a 37% satisfaction level in grade 9, followed by slight annual increases until their senior year when 48% loved school (p. 16). One remedy may be Professional Learning Community technology training. Organizational leaders, including school administrators and teachers, need to understand and value the importance of Professional Learning Community training to enhance the educational process: “Well-intentioned people will be unable to implement the PLC process unless they have a deep, shared understanding of the conditions they are attempting to create” (DuFour & Fullan, 2013, p. 13). Until teachers can empower students to become comfortable with the daily use of creating and uploading videos, it will be impossible to implement unless the lead learners are clear in their intentions (Berk, 2009; Davidson, 2014; DuFour & Fullan, 2013; Guo et al., 2014; U. S. Dept. of Education, 2017).

In identifying the characteristics of Professional Learning Communities, DuFour and Fullan (2013) aimed the outcome of such training squarely on student learning. With a definite purpose, which DuFour and Fullan (2013) termed a “shared mission” (p. 14), a culture of collaboration for vision, values, and goals included a collective inquiry that sought the best solutions with the most positive results (DuFour & Fullan, 2013, p. 14). And finally, DuFour and Fullan (2013) described four guides for Professional Learning Community education so teachers can be trained properly to focus on student learning:

- What is it we want our students to learn? Answer: we want students who are media savvy, digitally literate, and spokespersons for the use of positive social media.
- How will we know if each student is learning each of the skills, concepts, and dispositions we have deemed most essential?
- How will we respond when some of our students do not learn? What process will we put in place to ensure students receive additional time and support for learning in a way that is timely, precise, diagnostic, directive, and systematic?
- How will we enrich and extend the learning for students who are already proficient? (DuFour & Fullan, 2013, p. 15)

YouTube and Teacher Preparation

Started in February 2005, YouTube hosts videos that in 2011 were cumulatively viewed more than 2 billion times each day (Watkins & Wilkins, 2011, p. 113). By late 2019 the number had increased to an estimate of more than 5 billion daily views with an average of 40 minutes viewing time per session (Ali & Aslam, 2020). The present study intended in part to evaluate the effects of a teacher using YouTube to allow students to submit assignments and in using YouTube while presenting assignments in the hope of improving student learning across the curriculum. Leach (2017) stated that when digital media production is incorporated within the school day, learning opportunities can expand (p. 44).

Shortly after the introduction of YouTube, Burke et al. (2009) conducted pilot research to determine college faculty uses of the online video resource. The results were mixed as one might expect with a new and at the time largely unexplored teaching resource. Even at that early stage of the Internet, many students could find more than a million videos on a wide variety of topics

even without help from a teacher or another student (Watkins & Wilkins, 2011, p. 115). Slightly less than half of 24 faculty participants in a study said they used YouTube, but only at a rate of between once and five times in a semester. Noting they used YouTube for student discussions and debates, and for supplemental instructional material, only a few of the participants thought YouTube was any more valuable than any of the other teaching tools they could use (Burke et al., 2009, p.6).

Even at this early stage of YouTube, the Burke et al. (2009) survey respondents were curious; in their open-ended comments, many of the participants shared positive perceptions about using YouTube in their courses, noting they found a variety of teaching materials which gave them another tool by which to present information to students. One key reaction related to the length of video segments available at the time; “YouTube’s concise videos can be valuable teaching resources to begin a lecture because they get students thinking critically and discussing with their classmates” (Burke et al., 2009, p. 6). Because of the sample size and limited number of respondents, Burke et al. (2009) could not generalize their findings beyond their sample population (p. 6) nor beyond that institution. However, YouTube has grown remarkably in the intervening years; benefits and recommendations that accrued during the Burke et al. study and countless others since then all appear to point to YouTube as a valuable teaching resource if used prudently.

Watt (2019) suggested teacher education programs as being a foundation of education reform. In those settings new teachers learn about current research, theories, and classroom technologies even if only at a basic level (Watt, 2019, p. 85). Watt surveyed more than 500 teachers over a period of three years and learned about a wide range of challenges and benefits of having students make videos in their elementary school classrooms. Challenges included access

to technology, privacy and safety issues, need for parental consent, possible equipment damage, and the potential for overstimulating the students. Benefits revealed by the respondents included engaging students with a full range of learning preferences, encouraging student creativity, and giving students exposure to and experience with new technologies (Watt, 2019, p. 88).

The present study is important because teachers need resources to keep students engaged, excited, and working collaboratively by appealing to different learning preferences. Classes that offer this level of collaboration are a unique experience and have the significant potential to heighten each student's motivation. This model would improve student learning across the curriculum because the focus is student-centered enabling students to participate actively in hands-on education (Campbell & Cox, 2018; Carmichael et al., 2018; Green, 2018).

Benefits and Availability of YouTube and Technology

The 2017 NETP update challenged education stakeholders to use technologies effectively in the classroom to make learning authentic (U. S. Dept. of Education, 2017, p. 3). Considering the impact of YouTube in the classroom, how do the teacher's knowledge of television production and the teacher's ability to incorporate YouTube with instruction impact learning across the curriculum? Extensive research has been conducted: Hakkarainen (2011) researched promoting meaningful learning through video production; supported by problem-based learning; Buzzetto-More (2014) researched an examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process; and Norton and Hathaway (2010) studied video production as an instructional strategy: content learning and teacher practice. While these studies have described and developed the use of these technologies, there is little empirical research on students' use of YouTube as a means to store student work and access student work in conjunction with video production assignments. However, Berk

(2009), Burke et al. (2009), and Watkins and Wilkins (2011) do describe uses of YouTube and video production for secondary-level special needs students and at the university level for foreign language acquisition. In addition, Davidson et al. (2014) describe the use of video for early learners in *Talk About a YouTube Video in Preschool: The Mutual Production of Shared Understanding for Learning with Digital Technology*. Their study focused on how the viewing of a YouTube video was used by a teacher and children to produce shared understanding. Green (2018) mentions several ways YouTube empowers student to create. Students “can record a quality video in a few minutes, they might spend much more time writing and then editing the same reflection on paper” (p. 59).

Among several ways to use the resource in education, the most basic function of YouTube is to provide videos for users to view (Green, 2018, p. 3). However, to date, very little research has studied the use of YouTube as a tool for students to create their own videos, upload them to YouTube, critique their own and videos created by other students, or to assemble a background video (B-roll) to use later during classroom presentations. Green (2018) states that before educators can move beyond consumption and start using YouTube for creation, it is important to have a basic familiarity with video use in classrooms and how YouTube works in terms of basic navigation and organization. Past uses of YouTube have included: Hook your Students. Video is an especially effective way to draw students into a lesson by getting them to wonder about or question a particular topic. Some teachers show only a portion of a video at the start of class, asking students to predict what will happen next. Second, bring a concept to life. Seeing a concept conveys a deeper understanding than if the concept was simply explained to them verbally or read from a textbook, and when a lack of funds or resources gets in the way, video can make the inaccessible accessible. Thirdly, teachers can show an experiment.

Sometimes the nature of what we are teaching is too dangerous to allow students to have a first-hand experience. YouTube videos can allow students an up-close look at things we want them to understand but not get too close to. Fourth, to explain a concept. Sometimes direct instruction is the best strategy. Through videos, the teacher can let someone else lecture and keep the concept fresh. Just based on novelty alone, there is a good chance that students will be more engaged in the video than a teacher lecture. A fifth reason is to start a discussion. This is a way to get small groups to start discussing a topic. Other techniques students can use to bring YouTube into the classroom is to filter and find good videos and channels that the students can subscribe to keep things they are studying to be directed to them (Green, 2018, p. 5). After locating videos on YouTube that students can watch on their own, teachers could use them in professional development.

YouTube also acts as a site that will allow students and teachers to create content playlists (Green, 2018, p. 11). Once such lists are created, teachers can edit and organize the information with annotations specific to the class. These videos can be personalized to extend the learning, remediate learning, and provide the teacher a time-saving option that will allow students to access the video off campus to minimize the need for repetition in class. The videos could also be used to review for an exam.

There are a variety of ways to teach using YouTube. A few examples include embedded videos in a Google slide presentation. Using Google slides, the videos can be trimmed and edited to focus students by removing potentially inappropriate, irrelevant, and/or repetitive content. Another option is a flipped teaching where the teacher assigns a video for homework. (Green, 2018, p. 17) Next, teachers can loop a video when hosting parents in the classroom (p. 26). The teacher can use privacy settings to give access only to the right student and students can also be

restricted with a special mode. Setting up a channel is an easy way to organize content and channels can be personalized. Once the channel is created, teachers can produce a channel trailer to educate students and parents about why YouTube is appropriate, promote a timely video, and attract more students with student clicks and custom thumbnails (pp. 17–33).

A goal of this study was to see how YouTube empowers students to learn from and critique online videos and to create their own videos. YouTube allows students to reflect on their learning via video. Students are taught to evaluate their own or a classmate's live performance. YouTube users can recapture and repurpose class time with recorded presentations. Students create an authentic portfolio, record themselves reading, and record rough drafts of their presentations so students can receive actionable feedback via YouTube comments (Green, 2018, p. 65). Students may submit video evidence meeting criteria of a performance task, or students may make a movie and teacher may manage comments.

Overall analysis of relevant sources consulted for this study indicates that many teachers currently use and are comfortable with YouTube and/or other video production methodologies. However, many other teachers did not use or were not at ease with including video in their lesson planning, at least until Novel COVID-19 pandemic isolations with campus closures went into effect and forced the issue. Teachers across the nation were thrust into a rapid revision mode and had to develop online classes, activities, and homework so students could continue to learn at home while school campuses were closed. Although scientific research has not been conducted to evaluate those online courses and their long-term effectiveness for students in California, several resources are readily available for teachers to use as they consider adopting or increasing their uses of YouTube and video production for themselves and for student-generated projects as well.

Google.com searches conducted on June 21, 2020, sought to determine what online sources might be available to help teachers with video production to enhance student engagement and acquisition of knowledge. The results of four searches revealed a plethora of individuals and companies offering advice, assistance, equipment suggestions, and software programs:

- “Video education”—4,130,000,000 hits in 0.64 seconds
- “Video production planning” —502,000,000 hits in 0.71 seconds
- “How can teachers make a classroom video?” —346,000,000 hits in 0.80 seconds
- “How to make a classroom video” —827,000,000 hits in 0.64 seconds

So the question is not “How can teachers make a video for their classrooms?” but “How can a teacher possibly wade through even the first 20 pages of Google suggestions for any of the four or countless other search options?” The researcher selected seven sources as possible resources for novice and experienced teachers in a full range of quite simple to near-Hollywood production quality.

Classroom Video Tools

Several technical aids for teachers are worthy of mention: Animoto, KNILT, The Deakin Process, and the International Society for Technology in Education:

Peck (2012) asked teachers to ponder, “In what way can I spice up this unit and make it student-centered?” (p. 1). He and two of his colleagues suggested Animoto at a conference of the National Council for the Social Studies. Animoto is “an easy-to-use website where your students can create 30 second videos for free” (p. 1). The program offers free video production for students and has two other, new plans with costs up to \$588 per year (Animoto.com, 2020). Animoto includes three steps: registering for a free account or a subscription plan, testing it with

students as evaluators, and using the program with classes. “The great thing about Animoto is that all you have to do is follow the easy steps they provide. Load photos and/or text, select your music and theme—and then produce” (Peck, 2012, p. 1). The program needs only a computer and the student’s active imagination (p. 1). Students can use Animoto to create simple, animated videos with paper characters and simple dialogue that viewers can understand easily (p.2). This technique includes careful planning: storyboarding, creating props, shooting the video, adding narration, and designating presentation specialists to manipulate the cutouts (pp. 2–5). Teachers can help students to create a second type of video called “Choose Your Own Adventure,” which encourages students to be creative while they are learning (p. 5). Peck (2012) advised teachers to plan carefully while making videos or having students do so. He noted that today’s students are naturals who make and post videos at home: “So why aren’t we bringing video production into the classroom?” (pp. 5–6).

The Knowledge Network for Innovations in Learning and Teaching (KNILT) is “an open online knowledge space where educators can find, share, and develop new ideas to reform and improve education in the 21st century” (Zhang, 2020, p. 1). This online resource offers a wealth of training sessions related to video production for the classroom, focusing in the first unit on proper, step-by-step planning as a key to successful pre-production (p. 1) and an eventually successful video project.

In a program entitled “Using audio and video for educational purposes,” the Deakin Learning Futures Teaching Development Team offers detailed training in four parts:

Module 1 includes using audio and video in teaching, focusing on ensuring proper audio and video copyright approvals, understanding how audio and video help students to learn, and how to take advantage of cloud storage and access opportunities (Deakin, 2013, pp. 3–8).

Module 2 features producing audio and video. Teachers are cautioned to know why they are producing a video; think thoroughly about what the project needs to say; and gather and/or prepare the filming locations, equipment, crew, copyright releases, and storyboard (Deakin, 2013, pp. 10–11).

Module 3 offers detailed instruction and steps for creating and creatively using cloud concepts in support of and to enhance the learning process.

Module 4 explains how to use audio and video to give feedback to students on the completeness or quality of their tasks (Deakin, 2013, p. 43).

Manolopoulou (2012) noted that “Video Technology has been proven to be a very powerful tool in motivating, engaging and instructing within the educational concept” (p. 2). She did, however, caution that teachers need to articulate how and where a video will be shown, if the video will be posted online, and if the video is to stand alone or be part of a series (Manolopoulou, 2012, p. 5). Video should be used as an accelerant to engage the student, and an instructor should be there for guidance. Manolopoulou (2012) cautioned that preparation of a script and story boards help a teacher as video producer to put ideas into a visual form that can help themselves, their production team, and the viewing audience or students to become more fully engaged (p. 6). These steps help teachers prepare to use video; these videos actually help student emotional engagement, either as a discussion starter, or, as a platform to submit assignments by students (Guo et al., 2014, p. 1; Carmichael et al., 2018, p. 9; Bond & Bedenlier, 2019, p. 2). Manolopoulou calls filming “the most exciting part” (p. 6). The process of video capture, reshooting, editing, addition of music and graphics helps true creativity to emerge if one is careful to “Keep it simple!” (pp. 6–7).

Despite this literature review's focus on video training during Professional Learning Community technology training time, one hour occasionally or even each week may not be enough. Teachers need to train adequately so they in turn can train their students on when, why, and how to use videos to bolster their education and prepare them for their future roles and jobs in the global marketplace. The International Society for Technology in Education (ISTE) offers such training, admittedly with a basis in the Novel COVID-19 shutdown of educational venues, but with a broader view of education's future in America beyond 2020:

As the COVID-19 crisis continues, many educators are looking for opportunities to sharpen their online teaching skills. The good news is that there are some new sources to pay for it—even with rapidly diminishing district budgets (Bass, 2020, p. 1).

The ISTE informs potential students about grants, scholarships, National Education Association funding, CARES Act, and other U.S. Department of Education funding sources (pp. 1-2). Through the International Society for Technology in Education, educators have access to “quality professional learning opportunities” (Bass, 2020, p. 2) where they can participate in such training as a Summer Learning Academy: “This flexible, comprehensive learning series combines courses and webinars led by online learning experts to get you on solid footing” (Bass, 2020, p. 2). In addition, ISTE offers technology certification. “This intensive, fully online training based on the ISTE Standards helps PK-12 educators redesign learning activities with technology to engage students in real-world, authentic, active learning” (Bass, 2020, p. 2). Other online and membership opportunities also are available through ISTE. Scheduled for late 2020 in Anaheim, California, the ISTE20 Live Conference and Expo event included sessions focused on “online learning, equity, social-emotional learning and more” (Bass, 2020, p. 2). The ISTE U offers “flexible online courses cover a variety of topics, including online learning. They range

from 1-2 hour self-paced mini-courses to intensive 30-hour instructor-led courses” (Bass, 2020, pp. 2–3). Teachers who want to extend their ISTE relationship can join at a reduced price of \$75: “ISTE membership keeps PD going all year through free webinars and endless opportunities to connect with thousands of educators” (Bass, 2020, p. 3). Of particular interest to many educators is the relatively low cost of most courses offered through The International Society for Technology in Education: Self-paced micro-courses cost from \$19–\$25 and are one or two hours long. In a category called “Short Courses,” ISTE offers self-paced, three- to five-hour training sessions ranging from \$49 to \$65. ISTE U courses are led by instructors at a cost of \$99 to \$299 and last from 15–30 hours each (Bass, 2020).

Green (2018) mentions several ways in which students’ use of YouTube will improve instruction in the classroom and “Empower students to create” (p. 59). Today’s students function as a “YouTube generation. Our students are much more comfortable recording videos of themselves than we are” (Green, 2018, p. 59). Bond and Bedenlier (2019) provide a table that shows several ways in which video production engages students cognitively, affectively and behaviorally (p. 3). While the Common Core emphasized writing to improve student communication skills, “Many students are more comfortable with spoken language than written language, and a video offers a medium where they are better able to ‘show’ what they mean” (pp. 59–60). Assessment is usually one-sided: from teacher to student—teachers commonly evaluate student performances and sometimes involve other students in peer critiques. Bond & Bedenlier (2019) mention several factors that affect students’ engagement, including “Motivation, interest, self-efficacy, personality, self-regulation” (p. 5). They also mention factors that affect the learning environment: “Assessment, usability, design, sense of community, technology choice” (p. 54). Teachers who know these factors and are willing to incorporate

technology in their classroom may better engage their students. Green (2018) notes that “A common missing component, however, is self-assessment because students cannot simultaneously be a performer and a member of the audience” (p. 60), such as by shooting a video of the performance. Involving students in the process of assessing their own work allows them to “compare their own observations to the teacher’s evaluation and peer feedback” (p. 60). This concept is mirrored by Akdeniz (2017) who compared language acquisition with and without video; students who participated in the video training reported they were better able to evaluate their language skills by watching film of themselves than by other techniques (Akdeniz, 2017, pp. 51-52). Language acquisition is improved with technology. Speed et al. (2018), however, noted that while participants generally enjoyed the video experience, they were concerned about the time required to produce the videos, and some doubted their ability to think creatively enough to make the video successfully. Despite their concerns, none of the students in the video cohort received less than 80% on the project whereas nearly a third of the written project cohort received a grade lower than 80% and 4% of those students failed (Speed et al., 2018, pp. 103–105).

Traditional class time is limited to about an hour per day per course. Especially in the case of classroom presentation or reports, video can extend that time virtually when classes divide into smaller groups; students then “perform” their presentations which are recorded, uploaded to YouTube, and made available for viewing, assessment, and critique by both teachers and students outside of class time (Green, 2018, pp. 61-63). Students also can use video to create a portfolio not only of their own work, but their thought processes while working through problems or critiquing others’ presentations: This technique lets students see their progress over time. Students record segments for their online YouTube portfolios virtually eliminating

portability and equipment issues, and the possibility of software incompatibility. Teachers also could view incoming students' projects before a class year begins to determine student capabilities, strengths, and potential limitations (Green, 2018, pp. 65–66). Student reading is especially useful for young learners (Green, 2018, p. 64), but “Students using webcams to record themselves reading is also valuable for older students, even those in high school” (p. 64). The technique can help students self-assess their presentations and public speaking capabilities while also evaluating their writing style as they listen to what they have written (Green, 2018, pp. 64–65). Moreover, peers can assess other students' rough drafts of a video presentation and leave feedback comments on YouTube (Green, 2018, p. 65).

For homework or other out-of-class activities, students can submit video evidence that meets the standards or criteria of a performance task. This technique works best when each student uses a laptop computer or cell phone to record video of their own participation in a group activity as they respond to tasks or specific assignments. When the activity is completed, students review their footage, which only includes themselves, cutting out examples of their participation and splicing it together with titles describing the criteria so [the teacher knows] exactly what each example is supposed to show. A final product would be a three-minute highlight reel of a student's participation that is uploaded to YouTube for the teacher to view and assess (Green, 2018, pp. 65–67).

Student Engagement

Student understanding and ultimately their success in school may depend heavily on their level of engagement in the classroom or during online sessions, as described by researchers Bond et al., who reported that fully-engaged students tend to put more effort into their learning which in turn tends to lead to additional engagement in later class work (Bond et al., 2020; pp. 2–3).

Learning is an active process, and an important teacher task is maintaining student interest, focus, involvement and participation—all elements of student engagement. Despite its importance, student engagement is difficult to measure (Sinatra et al., 2015). Bond and Bedenlier (2019) presented a bioecological framework, and the microsystemic facts of technology, teacher, and curriculum are explored in their relation to fostering student engagement (p. 1). They documented the concept that scholars recognize the importance of digital literacy and information and communications technology. They believe more research needs to be done to better understand the ways and extent that educational technologies influence student engagement (p. 1).

Contemporary researchers such as Dorn et al. (2020, June), Hattie (2009, 2012), Polirstok (2017), and Steinmayr et al. (2019) describe factors that influence student engagement, a primary focus of the present research which examines the issue of student engagement from teachers' perspectives. Fullan and Quinn (2016) explain, "Imagine a school where all of the students are so excited that they can't wait to get there and want to carry on their learning at the end of the school day" (Fullan & Quinn, 2016, p. 78). Constructivist classrooms allow students more freedom and opportunities to share their understanding and to use technology for research (Fullan & Quinn, 2016, p. 78).

Students, student small groups, teachers, administrators, district and associated school boards, parents, the local community, and the global economy working together can produce factors that influence a student's success in current and potentially in subsequent education, among which are direct involvement, collaboration, a diverse technical arsenal, academic improvement, and more focused parental involvement. These factors influence the three components of student engagement: cognitive, affective, and behavioral (Bond & Bedenlier,

2019, pp. 1-3). The researchers explain that cognitive engagement relates to critical and creative thought processes, self-control, and commitment to learning. Affective engagement relates to the students' perceptions of their learning environment, their relationships with fellow students and teachers, and how much they are interested in the class. Behavioral engagement relates to how much and how often students participate, how active the students remain, and if the students' conduct is favorable (Bond & Bedenlier, 2019, p. 2).

Students have a greater stake in learning when activities such as YouTube video downloads and self-produced video projects give the student more direct involvement in his or her own education (Green, 2018, p. 2). Collaboration, such as is common when students have more hands-on involvement in the learning process chiefly through YouTube and video production, can enhance education in small groups with interactions that have been rare in the traditional classroom. Such teamwork is a key feature found in many Constructivist classrooms (Aulia et al., 2018).

The individual student sits at the center of the microsystem, which encompasses their immediate setting, e.g., classroom, or home (Bond, 2019, p. 4). Teachers who use classroom technologies such as self- and student-produced videos and YouTube content have a diverse technical arsenal of tools which help students to learn: Previously prepared lesson materials on YouTube, self-produced YouTube lessons, and encouragement to students to document their education through video production and sharing on YouTube (Campbell & Cox, 2018)

More focused student engagement can lead to better assessment scores and potentially to better state and national testing results. Thus, administrators, district staff, and school boards have an increasing potential for higher academic levels and higher standards testing scores, while seeing an increased level of academic rigor, involvement, and excitement (Guo, 2014). An

important side benefit of increased student engagement is parental involvement. As students become more directly involved in their own education, far beyond the traditional sit back, memorize, and test methodology, parents increasingly can become part of the excitement of their children's education and help to improve the students' potential for successful entry into the future workplace (Hymel et al., 2006, p. 2; U. S. Dept. of Education, 2016, pp. 13, 16, 47, 55; Zins et al., 2007, pp. 11-13).

Marzano and Marzano (2003) summarized the conclusions and recommendations of a score of educators, education analysts, and their own research: Students succeed most favorably academically in a positive, safe, and caring environment. Such ambience can yield favorable results such as higher grades, increased student engagement, higher expectations of and for the students, better attendance, and fewer discipline problems (Goodenow, 1993; Hymel et al., 2006; Luiselli et al., 2005; McCombs, 2004; Patrick, Hicks, & Ryan, 1997; Zins et al., 2004).

Bioecological Student Engagement Framework

A range of structural and psychosocial influences affect the learning environment, learning processes, student engagement, and subsequent outcomes at all levels of the bioecological model. Macro system- The rapid onset of digitalization is having, and will continue to have, a profound effect on government policy and educational institutions (EDUCAUSE, 2018). The indicators of student engagement are three: cognitive, affective and behavioral (CAB). Cognitive engagement consists of concepts such as purposeful, integrating ideas, critical thinking, setting learning goals, and self-regulation. Affective engagement includes things such as enthusiasm, sense of belonging, satisfaction, curiosity, and interest. The last is behavioral engagement and lists things such as effort, attention/focus, attendance, attempting, submitting completed homework, and positive conduct.

Institutional leadership and attitudes have a direct bearing on student learning, as well as on teacher attitudes toward using education technology (Cheng & Weng, 2017). Education must have the primary goal of gaining and maintaining student interest in the topic and enhancing long-term retention of the principles taught (Dewey, 1900; Dewey, 1902/2013; Hobbs, 2010; Leach, 2017; Morrell et al., 2013). Everything a teacher can do to keep students focused will help achieve that goal. Engagement is more likely to develop when student-teacher relationships are strong (Martin & Bolliger, 2018). Ongoing professional development is crucial to ensure that teachers have the requisite technology knowledge and skills, and can actually foster student engagement. Since 1990 teachers have been able to appeal more effectively to multiple learning styles simultaneously with such technologies as PowerPoint, Astound, Prezi, and others. In the past 15 or 20 years, YouTube and other online tools have enhanced the educator's arsenal of teaching technologies which blend a knowledge of learning styles with existing and future technologies, the subject of the next section of this literature review.

Constructivism and YouTube's Influence on Student Engagement

Student engagement within a technology-enhanced learning (TEL) microsystem enhances engagement; this framework shows the interplay between the TEL microsystem, student engagement, and ensuing outcomes. Influenced by a range of internal and external factors even in a Constructivist classroom with a technology-savvy and enthusiastic teacher and students who remain fully engaged for a full class period, much remains to be done. In prescient guidelines written a decade ago, Fullan (2010) called for a wide-ranging change.

A cornerstone of Fullan's whole system reform is the concept of "collective capacity" (Fullan, 2010, p. xiii), which generates the emotional commitment and the technical expertise that no amount of individual capacity working alone can come close to matching. What does the

whole system reform look like and why is it central to this research? Whole system reform deals not with just the classroom, the department, the school, but possibly the entire school district. How does that tie into this research? Fullan's seven "Big ideas for whole-system reform" may provide an answer (Fullan, 2010, pp. 4–5), and all have direct links to enhanced levels of student engagement.

Fullan's (2010) first concept is not a throwback to the No Child Left Behind Act of 2002, but it has a basis in the current "Every Student Succeeds Act" movement—All children can learn, "All children (95%), except for the severely disabled, can learn to a high level of critical reasoning and problem solving" (Fullan, 2010, p. 4). Muhammad and Cruz (2019) state these past approaches to systemic change have lacked balance. These programs got people's attention by enacting punishments (p. 15) but did not generate widespread commitments which could have led to lasting changes across the country (p.15). Fullan (2010) suggested that education follow a specialist's path and choose to follow a few priorities but carry through carefully, an effort where even minutiae become important: "Every successful organization pursues a small number of core priorities ... and does them exceedingly well" Fullan noted (2010, p. 4), suggesting that education's priorities should include literacy in the core subjects and in the visual and performing arts as well which could lead to success in post-high school education and in the students' future careers (Fullan, 2010, p. 4). Muhammed and Cruz (2019) suggest a lack of balance is the biggest factor in leadership. They proposed that, "transformational leaders must strike a balance between the important elements of focusing on the task and focusing on relationships and between providing support and requiring accountability" (Muhammed & Cruz, 2019, p. 16). As a result, they developed task-focused leadership which produces benefits such as

a clear focus, an orientation on outcomes, predictability, clear expectations, and well-established protocol and procedures (p. 16).

Successfully reforming a single organization or a conglomerate takes focused leadership especially during challenging periods, strong, focused leadership as change begins, and resolute leadership to sustain the change (Fullan, 2010, p. 4). Yet, even a focused leadership or management team needs to be open to efforts of the collective, essentially collaboration, and needs to have discipline, Fullan (2010) contended, with a clear understanding of separating effective from ineffective collaboration, which be more harmful than no collaboration at all (pp. 4–5). “The most vital assets in any organization are the human resources, and the leader is responsible for managing these resources” (Muhammad & Cruz., 2019, p. 1). Great leadership, even with full acceptance and collaboration with team members, needs to understand that a partial change will not be fully effective, a concept Fullan (2010) called “All Means All,” as he warned that piecemeal efforts won’t solve problems, “You can’t solve the problem of whole-system reform through piecemeal efforts to try to get parts of the system improving in order to show the way” (p. 5). Hattie (2012) noted that districts and schools also need to understand that teachers must be involved in the planning process and work together to develop a general understanding of what to teach and how, and then work collaboratively to evaluate the impact they are having on the students (p. 41).

Whole-district successful reform is possible and has been demonstrated in places such as Tower Hamlets, London, England; Long Beach Unified School District, California; York Region District School Board, Toronto, Ontario, Canada; and Ottawa Catholic District, Ontario, Canada. Featuring such words as precision, specificity, depth, collaborative competition, collective capacity, collective efficacy, and shared responsibility in the context of accountability (Fullan,

2010, p. 37), whole-district reform features eight characteristics of an effective school district (Fullan, 2010, Exhibit 3.1, p. 36).

Focusing on student engagement through instructional improvement needs to have a clear direction and be relentless, not just a once-in-a-while experiment (Fullan, 2010, p. 36). Grade-point averages, even individual course grades, are not sufficient to measure nor track student success. The conscientious faculty and administrators will gather, mine, and evaluate a variety of data to gauge student learning as a strategy for classroom and school improvement and to monitor progress. Linking to one of his primary concepts about having a focused leadership team, Fullan (2010) noted that a school's entire educational team needs to develop a working collaboration of teachers, the school's administrative staff, and district leadership who jointly develop and put into practice effective teaching practices. "Leadership roles are defined so that leaders participate as learners in working with teachers to address instructional needs" (Fullan, 2010, p. 36). With an eye and ear that must have visited a number of teachers' lounges, Fullan (2010) warned that leadership throughout a district needs to make "a concerted effort to reduce the distractors that undermine teachers' and principals' capacity to carry out this central strategy" (p. 36).

Fullan (2010) did not leave the responsibility for educational reform only on the school campus during the school day, as he advocated for community links as well. Through such means as School Site Councils, stakeholders beyond the local campus can have a functional link with plans, programs, and activities on the campus. Parents, the local community, and related agencies need to be aware of programs and needs, encouraged to provide support for students and educators, and to intervene early in case of difficulties experienced by students and by schools (Fullan, 2010, p. 36). He also focused on the need for up, down, and lateral

communication throughout the structure of an organization and beyond to the community using a variety of means of communication. Constant, reliable communication means that “Everyone needs to know the central focus of teaching and learning priorities and how to achieve them. Research findings and effective practices need to be shared. Staying on message is critical” (Fullan, 2010, p. 36).

Links Between Constructivism and Video Production

Shewbridge and Berge (2004) analyzed video production as a part of the curriculum, far beyond its then-dominant role in mass communication courses of study (p. 31), concluding that a Constructivist approach should be considered when designing instruction for production itself (p. 36). Those researchers noted that Constructivism is “a natural fit with student production. As students work through the production process, they question meaning through a variety of methods” (p. 36). Further, the researchers commented that “Constructivists stress the need for learners to reflect on their experiences in order to build meaning from them. This is the core of the Constructivist process. When discrepancies arise, the puzzlement functions as a ‘catalyst for meaning making’” (p. 36). The bond between video production and Constructivism has lasting significance for active learning in both the video production process and in the associated classroom beyond the video project (p. 36). Leach (2017) elaborated on the discussion, “The promise of digital media production to support literacy for secondary students with diverse learning abilities and challenges is not only appealing, it is possible” (Leach, 2017, p. 38). She stated that digital media benefits student engagement (p. 38).

Digital Media and Education

In a 2010 white paper, Hobbs described the principles of Universal Design for Learning (UDL) that provide options for teachers to assess and students to learn how to produce digital

media. Elements of UDL have strong links to Constructivism, especially in the arts as Glass et al. (2013) noted: “Arts can enhance our ability to respond to variability. A core advantage of the arts in education is the way they expand and enrich our cultural perceptions, ideas, and values” (Glass et al., 2013, p. 107).

The two cognitive processes of transduction and transmediation contribute to the embodied learning of students as Leach described in an expanded discussion of the Create section of Hobbs (2010) entitled “Essential Competencies of Digital and Media Literacy”. “Transforming information from one form to another, or transduction, allows for individuation of meaning making; one of the UDL recommended ways of providing multiple means of representation” (Leach, 2017, p. 39). Transmediation is the art of “Producing media [which] allows students to bring their identity and self-expression to academic pursuits, engaging their diverse learning capacities as they develop critical reading, writing, and thinking skills” (Leach, 2017, p. 39).

As Morrell et al. (2013) studied students in humanities classrooms, the researchers asked a series of questions derived in part from the writings of Constructivist education theorist Dewey in 1900. Morrell stated that teachers should build curricula around our students’ perceptions and challenge becomes understanding how youth are currently using media in and out-of-school (p. 16). “There are still myriad ways that youth are involved in the activities of consuming and producing media” (Morrell et al., 2013, p.16).

Drawing on theories related to how students learn, Morrell et al. developed a four-part model:

- Learning must be active—learners need to be out in the real world doing real things that matter to them and to others.

- Learning must be authentic—whenever possible the tasks must have meaning and purpose.
- Learning must be participatory—learning happens within a community that is multi-level and multi-aged if possible.
- Learning must be empowering—learning must give students power to act differently upon the world, and they must be aware of how their learning in formal environments translates into power in academics, in the professional world, and in civic life (Morrell et al., 2013, p. 16).

Focusing on several interrelated principles that support his four concepts about how children learn, Morrell et al. (2013) wrote that teachers who teach using media in turn encourage their students to produce their own videos. One result, according to Morrell et al. (2013), could be that blogs and other video would encourage discussions about educational and societal inequities (p. 18).

Principles of Universal Design for Learning

The National Association of Media Literacy Education (NAMLE) developed six principles of Universal Design Learning (UDL) to guide educators to become prepared to teach using technology such as YouTube in the classroom. “When Universal Design for Learning (UDL) principles are incorporated within digital media production experiences as a means to teach literacy, it may expand opportunities and reduce barriers for students with diverse learning abilities and challenges” (Leach, 2017, p. 30). Media Literacy Education requires active inquiry and critical thinking about the messages we receive and create. Therefore, media literacy education needs to feature strong sense critical thinking, i.e., asking questions about all media messages, not just those with which we may disagree. Thus, NAMLE (2007) published a set of

core principles which encourage students to ask questions and participate in discussions aimed at giving them deeper understanding of media messages (NAMLE, 2007, p. 3). As students examine all forms of written and visual literacy, they develop and refine their critical thinking skills (p. 3). Furthermore, students learn to apply increasingly sophisticated analyses to all types of media messages. Specifically, students understand that videos they view sometimes have been produced with the potential for bias or propaganda, sometimes visible, sometimes hidden subtly (NAMLE, 2007, p. 3). Leach (2017) said students learn to determine the types of questions to ask to gain a deeper or more sophisticated understanding of media messages (pp. 40–44).

Hobbs (2010) introduced the model consisting of five words: *access, analyze, create, reflect, and act* (AACRA), explaining that in the digital age, everyone should be able to access and analyze information, create messages, reflect on media influences, and be able to act using all these literacies in a socially responsible manner (p. 19). The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school. This direct involvement of students in the learning process mirrors one of Dewey's (1902/2013) claims, that it is the job of the school to provide a balance of the various elements in the social environment, and to “see to it that each individual gets an opportunity to escape from the limitations of the social group in which he was born and to come into living contact with a broader environment” (Dewey, 1902/2013, p. 18).

The Hobbs Model (2010, p. 19) included five interconnected elements which Leach (2017, pp. 38–39) expanded and explained more fully:

Access: Media Production can support literacy across content areas by offering Universal Design for Learning (UDL) alternatives to how information is displayed and presented, with alternatives available for assessing auditory and visual information. Access to options for

language learning such as vocabulary can be embedded as hypertext links or presented in graphic forms, symbols, or illustrations. Access to academic concepts can be illustrated through alternatives to text such as dance, video, graphic novels, photographs, storyboards, animation, and physical enactment through acting or hands-on creating (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Analyze: When UDL guidelines for utilizing multiple means of representation, action, and expression are incorporated in the teaching of critical thinking, developing arguments, and the capacity to order thoughts logically, the analytical process can come alive for students. Teaching students to analyze information and ideas critically with embodied, hands-on and minds-on learning by creating mixed-media enriches student’s critiquing, analyzing, and speaking, and listening skills. Furthermore, as students gain academic competency in analysis skills across a variety of means of representation and expression, they learn to self-regulate their ability to concentrate and persist in their endeavors, one of the UDL objectives (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Create: Transforming information from one form to another, or transduction, allows for individualization of meaning making; one of the UDL-recommended ways of providing multiple means of representation. Producing media, also explained herein as a form of transmediation, allows students to bring their identity and self-expression to academic pursuits, engaging their diverse learning capacities as they develop critical reading, writing, and thinking skills (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Reflect: Incorporating this competency through discourse and making meaning through alternative demonstrations of knowledge foster collaboration and communication according to the UDL principle of providing multiple means of engagement. The process of reflection

encourages students to be metacognitive about their thinking, and to respond to and offer feedback with their peers as they reflect upon concepts and ideas across media. Additionally, thinking through academic concepts by creating a media presentation shifts the response to informational text and academic concepts from the efferent (factual) to aesthetic (artistic) mode, making learning personal (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Act: By providing options for recruiting interest, UDL guidelines support the self-determination of students by providing opportunities for them to engage in authentic relevant learning activities. Empowering students with diverse learning abilities with the confidence and tools to communicate through media production, prepares them for active participation in their lives and as citizens of a democracy (Hobbs, 2010, p. 19; Leach, 2017, pp. 38–39).

Transition from Tradition to Innovation

Pereira et al. (2012) studied the uses of video production among physics students in Brazil. They noted that education in the early 21st Century is beginning to change: “Currently school education can be seen in transition from traditional to innovative methodologies and mostly the students still remain as the receivers of information” (p. 45). After studying students as they produced video projects, Pereira et al. (2012) noted, “The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school” (p. 46). Pereira said video production allows the teachers to focus on intellectual, procedural, and cognitive-affective realms of student engagement (p. 46).

Pereira et al. characterized the value of video production as changing the environment of a physics classroom from merely one-way communication to introducing activities that are “planned, organized and performed by the students. When using a video camera they can externalize creative thoughts as well as warrant the pedagogical potential” (p. 46).

Summary

A plethora of past research has documented the benefits of using video production in the classroom for teacher and student alike. However, gaps in the research exist on how schools can use the Professional Learning Community process to encourage teachers to use classroom video technologies including YouTube. As teachers become more engaged in the uses of online and classroom-generated video content, students are increasingly likely to be more fully involved in their education. This teacher-student and student-to-student partnership will transform the educational culture into a collaboration of students serving students and students serving stakeholders as described at the end of Chapter 1.

The researcher investigated whether the integration of the use of YouTube in a video production-blended environment will find solutions to those challenges and encourage administrators, department heads, and collaborative teachers to incorporate these techniques into a whole system reform (Fullan, 2010) movement changing how schools operate in a media-literate environment. Dewey (1902/2013) said it best, “we never educate directly, but indirectly by means of the environment” (p. 17). Although Dewey could not have envisioned specifics of twenty-first century technology, he was perceptive in proposing that students should have a prominent role in their education, such as would be possible with wider uses of online and student-produced YouTube videos.

Most students in America today were practically born with a computer in hand. Morrell et al. states, “youth are acquiring sophisticated media production and distribution skills that could be useful to transition to academic achievement” (Morrell et al., 2013, p. 3). He added, “The power of new media in the lives of young people cannot be denied, and therefore, we advocate that media education be more effectively implemented into the K-12 curriculum”

(Morrell et al., 2013, p. 3). Educators must learn to throw off what have become comfortable educational methods and develop new ways of teaching that enthrall and excite students, involving them much more fully in their education journey today as they prepare for their roles on the world scene of tomorrow. Broader application of video and other classroom technologies including YouTube may be one such tool.

CHAPTER 3: METHODOLOGY

This chapter introduces the research methodology for this phenomenological qualitative study regarding teachers' perceptions of the effects of classroom technologies such as YouTube on Constructivism, Professional Learning Community time as an aid to more effective teaching, and levels of student engagement. This approach allowed for a deeper understanding and appreciation of teachers' experiences while attending Professional Learning Community training to learn about working with YouTube and other classroom technologies. Furthermore, the approach provided a way to code interviews and find themes to understand what motivates teachers to work with video production and online resources such as YouTube as fully functioning tools in the educator's teaching arsenal. The applicability of the qualitative method and Constructivist theory are discussed in depth in this chapter, the purposes of which include components of the research plan: research questions, methodology, study participants, procedures, analytical method, and ethical concerns.

Research Design and Rationale

In qualitative research, the logic and specifics of research problems and questions differ from those used in quantitative studies (McMillan & Schumacher, 2014, p. 63). For example, "Good qualitative central questions contain three elements—the central phenomenon, and indication of participation, and an indication of the site or location of the study" (McMillan & Schumacher, 2014, p. 66). The research used a data matrix at the suggestion of White (2017) to determine the proper steps to take and the right questions to ask before venturing out on data collection (White, 2017, p. 203). White noted that the researcher must choose the steps carefully, leading to additional questions that could shape the interviews and ultimately the collected data (p. 203). Therefore, several issues were resolved while planning this research: the best type of

data, the types of survey and interview instruments, which participants to select, and the types of data analysis to use. Following a careful consideration of these and numerous related issues, the researcher chose a two-pronged approach: an initial survey and Zoom audio or telephone interviews with selected faculty participants.

The researcher understands that qualitative data derived from any step in the process may force the questions to change and that themes may take time to develop. The research questions sought to determine if Constructivism is relevant in the 2020 classroom and whether incorporating YouTube training into Professional Learning Communities would give teachers knowledge on how self- and student-produced YouTube segments improve student learning by enhancing a student's motivation to remain engaged.

The Professional Learning Community questions related to a key component of the 2017 revised NETP, which suggested adding multimedia communication into the teaching of traditional academic subjects (U. S. Dept. of Education, 2017). This study sought evidence to support that doing so, perhaps through the medium of Professional Learning Community technology training, may have the benefit of enhancing student participation and engagement. Specifically, the U. S. Dept. of Education (2017) linked students' future roles in the global marketplace with how thoroughly schools integrated 21st century existing and emerging technologies into the educational experience (p. 10). The 2017 revised NETP noted that the path to that integration would strongly advise teachers to integrate multimedia resources as they taught, resulting in students' enhanced abilities to think critically, solve complex problems, form relationships, work collaboratively with one another, and develop strong personal and interpersonal caring attitudes and behaviors (U. S. Dept. of Education, 2017, p. 10).

Additionally, this research evaluated teachers' perceptions of the Professional Learning Community's role in building the technological skills recommended in the 2017 revised NETP to achieve several related results. In the plan, the U. S. Dept. of Education noted that effective integration of technologies into classroom instruction enables learners to think about concepts from multiple perspectives and to link concepts from several contexts, while simultaneously appealing to what interests and excites the students. These benefits "can help us align how we learn with what we learn" (U. S. Dept. of Education, 2017, p. 12).

This research sought solutions to those challenges and encourages administrators, department heads, and collaborative teachers to incorporate YouTube into Professional Learning Community time. Implementing such a wide-ranging paradigm shift will require what Fullan termed a whole system reform movement; such a shift could change how schools incorporate technology (such as YouTube) into the school's media-literate environment (Fullan, 2010; Fullan & Quinn, 2016). The 2017 NETP cautions, "technology use should never displace the role of unstructured, unplugged, interactive, and creative play and these principles may evolve for families and educators in regards to the active use of technology with early learners over time" (U. S. Dept. of Education, 2017, p. 13).

Qualitative Research Methodology

The researcher chose a qualitative research method within the structure of a phenomenological analysis. The outcomes are revealed in rich narrative themes which developed after transcribing and coding in-depth the responses to survey questions of the nonrandomized, purposeful, convenience/judgment sample. A qualitative-only study is appropriate when the goal of research is to rely on perceptions of the participants' experiences in a given situation (Fram,

2013, pp. 3 & 15; Lunenburg, 2008, pp. 88–89), which fits the common definition of an emic study.

In part explaining this emic perspective, Creswell and Poth (2013) stated that qualitative research reveals hidden meaning through interpretation of the attitudes, beliefs, and experiences of the people being studied. The researchers commended qualitative studies partially because they can be less intimidating than other forms of research; a result is that people being interviewed, commonly termed the participants, are less intimidated as they share details about revealing their own experiences and perceptions (Creswell & Poth, 2013, p. 44).

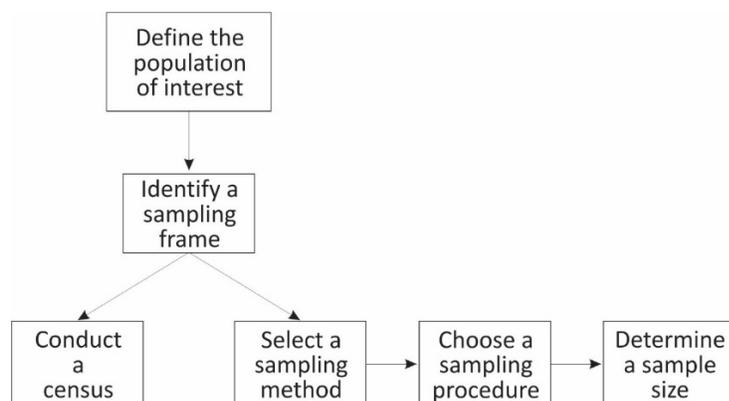
The researcher of the present study operated within a social Constructivist theoretical framework using a qualitative research and data analysis method. Creswell and Poth (2013) divided this research methodology into four common elements (pp. 34–35):

- Researchers define a problem and develop research questions to obtain a clear view of the matter being studied.
- Interpretation, the primary method of analysis, derives logically from data collection, analysis, and evaluation, all functioning within strict standards and ethics.
- The ethical requirements of qualitative research also note that the researcher must acknowledge his or her own potential biases and fully understand that true ownership of the information rests with the participants, not the researcher.
- Findings and recommendations of a qualitative study can be in traditional forms such as an article in a peer-reviewed journal or in more creative formats such as dramatic presentations or poetry; those findings may be reporting of the perceptions or specific recommendations for action or a paradigm shift.

This study used a qualitative approach to explain teachers' perceptions of the relationships among Constructivism, Professional Learning Community technology training, and student engagement. A key intent of this study was to seek impressions of educational practitioners with relation to the research questions, which when combined yield an omnibus guide to the implementation of this chapter and ultimately to the study's conclusions and recommendations of Chapter 5, including the primary issue: How would a Constructivist teacher, after Professional Learning Community technology instruction, implement YouTube to increase student engagement? Previous research has explored similar issues. Pereira et al. (2012) demonstrated that having students plan and create their own videos can motivate them to become more fully involved in their learning while developing critical thinking skills (p. 44). Buzzetto-More (2014) sought to understand how lessons and curricula utilized YouTube to enhance student learning and engagement. The researcher found a gap in the literature regarding how educators are trained to use technologies to teach and to allow students to submit assignments using technology.

Setting and Participants

McCormack and Hill (1997) emphasized the critical nature of participant selection because they are the source of information and the primary influencers of data quality (p. 49). The researcher chose what he felt was the most important stakeholders in the education process: teachers. The sample selection process is shown graphically in Figure 1. 1, each element of which is described in more detail following the figure (McCormack & Hill, 1997, Figure 3.1, p. 50).

Figure 1. 1*The Process of Sampling*

Since this research sought secondary teachers' perceptions about Constructivism, Professional Learning Community technology training, and student engagement, careful selection of study participants was critical. McCormack and Hill (1997) noted that the first step in sample selection is identifying the population of interest, essentially everyone who could provide information to answer the research questions (p. 49). The research questions for the present study relied on the perceptions of secondary school teachers, a broad category that includes educators of core subjects, electives, special education, and physical education, and who taught students in grade levels nine through 12. In a single district the number of teachers could be between 500 and 1,000 depending upon the number of high schools and student populations. Even at a single, medium to large size high school in southern California, the number of faculty could exceed 100, far larger than would be necessary or practicable for a qualitative study. Therefore, the researcher chose to limit the population of interest to a select group of teachers at a single school site, thus permitting the researcher to gather data on one campus with a well-known mission, philosophy, and clearly stated expected school-wide learning results.

McCormack and Hill (1997) describe the next phase of the research, selecting the sampling frame, as identifying people within the targeted population of interest (p. 51). Careful planning of the methodology's steps was a key feature of this step in the research process. Following a detailed review of pertinent literature and after gaining a clear understanding of issues related to the three research questions, the researcher selected a southern California district which comprises four high schools and three alternative education sites for secondary-level students. Data in the following discussion relate only to the district's traditional high schools and have been rounded to avoid identifying a specific district or school. Based on state-level data for the 2019–2020 school year, the district has a total of 9,100 secondary students and 400 teachers on the four traditional high school campuses. Based on a review of the School Accountability Report Cards and School Profiles for 2016–2019, the last years for which published data were available, the high school with the largest student population was selected as the target campus. Open for approximately 20 years, the school had a student population of approximately 2,800 students in 2017–2018, the most recent school year included in School Accountability Report Card data, with nearly 120 teachers that school year. The school ranks 9 out of 10 on the California School Ratings listings. Absenteeism, suspensions, and expulsions are less than 10% for the most recently reported year.

The selected high school has adopted a weekly late start day for Professional Learning Community training and Professional Development. The school's graduation rate has been at or above 95% consistently placing in the top 10% of all California high schools. Slightly more than 60% of graduates met all California A-G requirements for admission to the University of California or a California State University campus upon graduation following the school year 2016–2017, the latest reported year. The School's Accountability Report Card for the 2017–2018

School Year noted that the district “is committed to high-quality Professional Learning to support the instructional capacity of teachers and leaders.” One topic of focus within the district is “Integration of Technology and Use of Digital Tools.” During the COVID-19 distance learning period that ended the 2019–2020 School Year and began the 2020–2021 School Year, the school used a wide variety of local and online technical tools to enhance teaching and encourage student engagement. Among the tools used were Khan Academy AP Practice, Art History, Art Tutorials, High School Math, and SAT Math Test Preparation; Project Gutenberg, Google Arts and Culture; ClassLink Secondary; Webinar Video Storage; Kami (Annotation); Live Engagement Strategies; Microsoft Teams and Team Meetings; and Schoolwires.

Teachers invited to participate in the research included those who taught A-G courses and were employed full-time with no age or time on site limitation. Faculty participants were certificated teachers with either a single subject or vocational credential; all held at least a four-year, college-level degree. Career examples included, but were not limited to, teachers credentialed to teach one or more of the target disciplines described in the next paragraph. For the purposes of this study, the sampling frame included all teachers in the selected departments.

Surveying the faculty of an entire campus faculty (census) was beyond the scope of this study; the researcher chose to focus on one teacher from each of four core subjects, world languages, special education, and electives. To do so, the researcher acquired from the school’s principal an email list of all teachers at that school. An initial faculty survey (Appendix C) was conducted using an email sent to all teachers. This phase sought to identify the desired survey population so that a range of experience and discipline would be represented.

Sampling Procedure

Based on the principal's list, the researcher emailed an invitation to participate in an electronic Survey Monkey instrument to all teachers on the campus. The instrument, included at Appendix C, asked basic demographic questions and sought information about the teachers' understanding of Constructivism. This phase enabled the researcher to invite representative teachers from the departments to form the pool of faculty participants for the one-on-one Zoom interviews (interview questions are included at Appendix D). Upon receipt of replies to the initial faculty survey (Appendix C), an analysis of the responses to demographic and attitudinal questions intended to reveal teachers as candidates to participate in the second research phase for teachers. However, only one teacher from each of the target departments agreed to participate in the interviews; one additional teacher volunteered and was selected due to extensive knowledge of research science, technology in the classroom, and technical equipment that enhances teacher effectiveness while encouraging sustained student engagement.

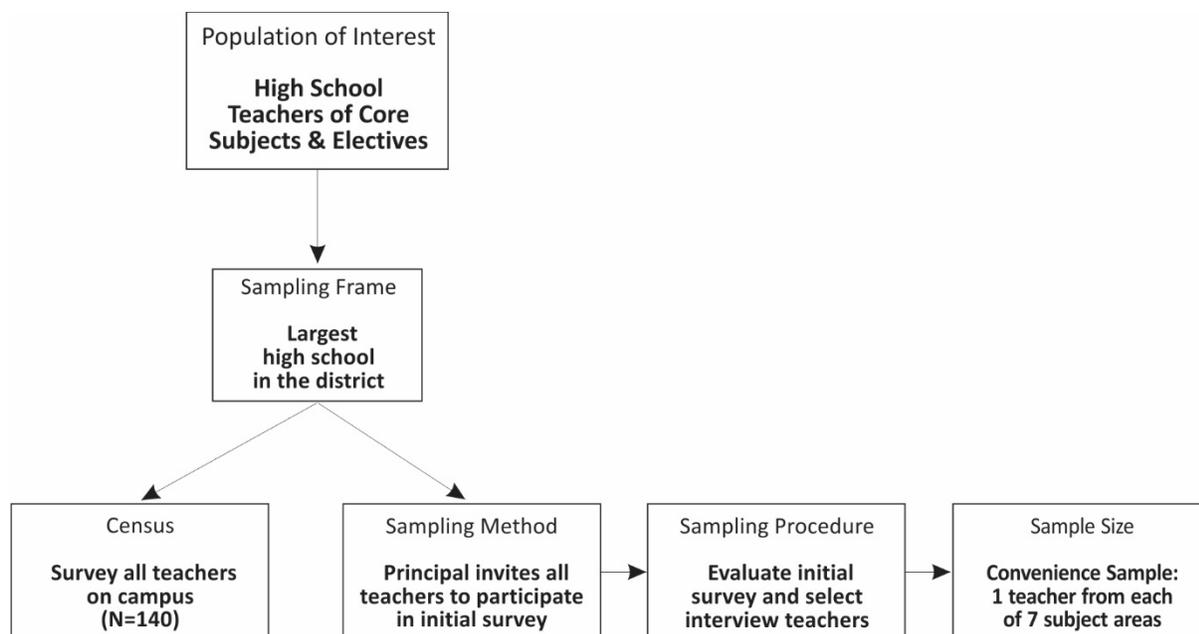
To explore those teachers' perceptions, the participants were asked to participate in a 30-minute Zoom audio or telephone interview. The questions investigated whether the participants considered Constructivism to be still relevant in the 2020 classroom, if they felt Professional Learning Community time was being used productively to help them understand advances in technology such as YouTube, and to gather their impressions of student engagement. This area of questioning derived in part from the revised NETP (U. S. Dept. of Education, 2017), which stated that "The focus on providing Internet access and devices for learners should not overshadow the importance of preparing teachers to teach effectively with technology and to select engaging and relevant digital learning content" (p. 8). The participants completed an Informed Consent Form (Appendix A), as required under federal guidelines, and an Audio

Recording Informed Consent Form (Appendix B), before participating in the interviews. No interview was conducted without confirming the written and verbal informed consent of the participants.

Overall, the selection of the faculty research participants followed the McCormack and Hill (1997) model with the specific steps illustrated in Figure 2. 1:

Figure 2. 1

Selection of the Survey Population for Teachers' Perceptions Research



Instrumentation

This study used a brief initial survey to access a random sample of the teaching faculty. The open-ended questions were used as a primary method of data collection. The initial faculty Survey Monkey instrument (Appendix C) gathered basic information about potential participants; the teacher-participants were asked a series of questions during one-on-one interviews (Appendix D) to collect data more specifically related to the three research questions.

This study sought teachers' perceptions, a process known in scientific research as a phenomenology study, which "describes the common meaning for several individuals of their lived experiences of a concept or phenomenon. Phenomenologists focus on describing what all participants have in common as they experience a phenomenon" (Creswell & Poth, 2013, p. 76). The researcher "collects data from persons who have experienced the phenomenon, and develops a composite description of the essence of the experience for all of the individuals" (Creswell & Poth, 2013, p. 76). Following selection of the participants from each of the disciplines, the participants were asked about their impressions of Constructivism, Professional Learning Community technology training, and student engagement. The interviews began with open-ended questions about the participant's initial interest in Constructivism and their ideas on student engagement. More detailed questions followed, with the intent to gather specific data on Professional Learning Communities and their effectiveness. The interviews concluded with more open-ended questions, which elicited more depth of knowledge, understanding, and evaluations regarding technology training during Professional Learning Community time.

Interviews were conducted over the internet using Zoom. This technique permitted the research to proceed without the need for travel time and expenses, and with full cognizance of the need to observe safe distancing which complied with the Novel COVID-19 pandemic shelter-in-place guidelines. Audio only of the interviews was recorded using a built-in record function on the Zoom application with the participants' verbal and written approval. Each of the one-on-one interviews took place in a single session. To ensure accuracy, completeness, and validity of the transcriptions, three of the transcripts were reviewed by a second individual who simultaneously followed the initial transcripts while viewing and listening to the recordings.

Validity and Reliability

The trustworthiness and validity of the qualitative research depends on what the researcher sees, hears, and collects, and how accurately the researcher interprets those variables. The researcher conducted a pilot study with educators in his cohort. The expert groups found the survey and interview questions to be reliable. Lincoln and Guba (1985) noted that credibility, transferability, dependability, and confirmability are important in establishing trustworthiness. Following development of the Zoom interview questions, the researcher conducted a pilot study with other members of Cohort 8 in the educational doctoral program at Concordia University Irvine. The five educators confirmed the interview questions' validity and reliability. One of the ways to ensure credibility and transferability is to ensure that those interviewed have the experience to discuss the phenomenon the researcher seeks to explore (Lincoln & Guba, 1985). Vignettes from the interviews will be used in figures to emphasized themes developed. When necessary, quotes will be included in the narrative to work towards a recommendation by the researcher (Leedy & Ormrod, 2013).

Data Analysis

This researcher used a series of surveys and interviews to collect data and information from the participating teachers. The study's structure grouped these surveys and interviews into two phases, each with a focus on the research questions. Following the survey and interview phases, the researcher coded participants' comments and evaluated relationships among each participant's responses and among the comments of other participants.

Transcript Coding

Coding of participants' comments was completed in the order of the interviews allowing the researcher to reflect and edit the interview responses as theories began to emerge from the

data. Coding was used to assist the researcher in understanding the perspectives of the participants and in analyzing their combined experiences. Codes were created during the research process. Based on the data, for the purposes of analysis, coding was conducted both manually and using computer-assisted, qualitative data analysis software.

Coding the transcription using qualitative analytic software broke the participants' comments down into meaningful and manageable chunks of data, a critical part of the data analysis. Coding used in phenomenology was instrumental in focusing the interview analysis on the experience of the participants in comparing their experiences. Coding helped to prevent the interviewer from overemphasizing the importance of any one aspect early in the study and helped ensure a thorough analysis of the entire interview (Bryant & Charmaz, 2010; Charmaz, 2006; Stak, 2010), ensuring ethical and unbiased depiction of the data and subsequent analysis and correlation.

Open Coding

Open coding is the phase when each line of transcribed interview text is coded individually (Urquhart, 2013), resulting in many codes. Line-by-line coding is a critical part of phenomenology methods (Birks & Mills, 2015; Bryant & Charmaz, 2010; Charmaz, 2006; Urquhart, 2013). This methods of coding helped the researcher focus in-depth on every interview and to obtain the maximum amount of usable data from comments made by each participant. The method also helped instill the discipline of phenomenology theory where the themes emerge from the data itself.

Selective Coding

A combination of inductive and deductive thematic development led the researcher to arrive at "Selective Coding." Selective coding begins to occur when there are no new open

codes, or when codes relate only to the core categories that begin to emerge (Urquhart, 2013, p. 23). Urquhart (2013) suggested revising the selective code categories if too many selective codes emerged from the original coding. Reinforcing that coding is an iterative process; Urquhart suggested that the researcher review selective codes to see which best represent the open codes identified. With this background, upon receiving the initial development of several hundred codes from an expert at GradCoach, the task of analyzing the codes and participants' comments began; the researcher was able reduce the codes to a manageable number of 14 codes. The researcher originally designed the data analysis to use MAXQDA and suggestions from other outsourcing coding experts. Despite that fact that the program contains tools for enriched data analysis (VERBI, pp. 1-15), the software was more complicated to use than this research required, and, therefore, was never used.

Ethical Issues

The researcher ensured that an ethical approach was of the utmost concern; care was taken and followed during each phase of the research and data analysis to ensure accuracy and an unbiased approach. Following the methods as outlined in this chapter was paramount in ensuring the validity and reliability of the study. The Informed Consent Form (Appendix A) was signed and returned by each participant. The Informed Consent Form follows U.S. federal guidelines, as outlined by Frankfort-Nachmias and Nachmias (2008) including, "a fair explanation of procedures, description of risks reasonably to be expected, a description of benefits reasonably to be expected, an offer of inquiry regarding the procedures, and an instruction that the person is free to withdraw" (p. 75). The risks to the study's participants were minimal. None of the participants demonstrated any impaired mental capacity, as determined by their ability to perform the positions that they hold in the school campus. Meeting these criteria qualified them

as participants in this study. The recorded material and the initial survey are stored in a mini safe at the researcher's home. Additionally, all recorded materials will be stored on a secure external hard-drive locked in a safe, and erased one year following final approval of this dissertation by the research committee, minimizing any future risks related to confidentiality. Transcribed interviews and coded documentation without a direct reference to the participants' names will be retained by the researcher.

During every phase of this project, from concept through data collection, analysis, and preparation of conclusion and recommendations, the researcher was cognizant of the possibility of situational and thematic bias. The researcher took every feasible effort to avoid this bias and sought a reader/editor's assistance to detect and eliminate any hint of bias in examining data, selecting the participants, ways of asking research question, and methods of recording and analyzing responses.

Summary

The goal of this chapter was to outline the methodologies used to answer the research questions. A discussion of the procedure, study participants, data collection, and interview questions outlined specifics on how the study was conducted and who participated in the study. A qualitative, Constructivist method was used to develop themes on teachers' beliefs about Constructivism, how Professional Learning Communities are being used to teach technology, and what motivates students. All study participants contributed to this by sharing their perceptions of the relevance of Constructivism, their experiences with the Professional Learning Community process; their perspectives of what technologies, including YouTube, worked best in their classrooms; and their impressions and perceptions of what motivates students. The next

chapter will present and analyze the qualitative data obtained from participants' responses during the open-ended Zoom interviews.

CHAPTER 4: PRESENTATION AND ANALYSIS OF DATA

Introduction

This study investigated the relevance of Constructivism and Professional Learning Community technology training and how these variables may influence and/or affect student engagement. The purpose of this study was achieved by examining teachers' perceptions of the three general study categories and several specific components of each. This chapter presents the results of the qualitative data analysis for the three interrelated research questions.

Descriptive Analysis

Based on teacher responses to the initial survey, the researcher found that only one teacher from each of the seven departments agreed to participate in interviews: electives, English, mathematics, science, social science, special education, and World language. An additional credentialed teacher was selected to participate in the interviews due to extensive knowledge of classroom technologies and related equipment; to enhance confidentiality and avoid potential identification of that specific teacher, the individual's department is listed as "Other" in Table 1. 1 This group of eight teachers enabled the researcher to build a panel of participants who could provide comments about their individual, common, and shared experiences (Creswell & Poth, 2013, p. 81). The researcher was intent on protecting each participant's privacy and confidentiality through this anonymity and data storage as suggested by McMillan and Schumacher (2010, p. 121).

Each of those teachers agreed verbally and in writing to be interviewed. Subsequently, an audio-recorded Zoom interview was conducted with each of the eight participants. First, each interview was sent to REV.com to be transcribed. Once transcribed the researcher compared each REV.com transcript with the original audio recording and made corrections as needed.

Based on the interview transcripts, the participants' responses were coded first by the researcher, looking for memorable quotes. The researcher highlighted significant quotes and developed a spreadsheet using Microsoft Excel to organize teacher's perceptions into thematic categories. The transcripts were sent to GradCoach. The researcher sent a list of inductive themes based solely on researcher assumptions. GradCoach was mindful of researcher bias so created their own list deductively based on the findings in the transcripts. These three different methods; REV.com's line-by-line coding, inductive coding by the researcher and deductive coding by GradCoach, providing for the triangulation of the data. Among the methods, themes began to emerge and Teachers' perceptions are listed as themes displayed in Table 2. 1.

Participants' identities were protected and confidentiality assured by alphabetizing the associated departments and then assigning each teacher a P## code from 01 through 08. The participants are identified in this chapter's data presentation and analysis as either P##, as shown in Table 2. 1, or by the P## code and department affiliation. The following discussion describes the basic demographics of the participants and includes a detailed presentation and examination of the participants' perceptions of the three research questions.

Table 2. 1 displays descriptive data collected during the initial survey to include gender, ethnicity, years of teaching experience, and subject matter taught.

Table 2. 1*Participants' Demographic Statistics: Gender, Ethnicity, and Experience*

Participants	Gender	Ethnicity	Years Teaching	Department
P01	F	White	11+	Electives
P02	F	White	11+	English
P03	M	Hispanic	2+	Math
P04	F	White	6+	Other
P05	M	Asian American	2+	Science
P06	M	White	11+	Social Science
P07	F	Asian American	6+	Special Education
P08	M	Asian American	11+	World Language

Note. The group of participants includes four male and four female teachers; four White, three Asian, and one Hispanic teacher. No teacher self-identified as Black or African American or any related ethnic minority agreed to participate in the interviews. Years of teaching represented a wide range of experience from more than 20 years to beginner. Where possible, coding was used to develop themes related to the participants' four demographic categories.

The eight participants' transcripts produced by REV.com were analyzed and codes extracted. Initial coding by REV.com produced nearly 1,400 quotes which included some duplicates and redundancies, coded into nearly 700 categories, some of which the researcher had suggested prior to the coding. Such a large number of codes made data analysis cumbersome and impractical. So the researcher chose to synthesize the information from REV.com into 14 themes as displayed in Table 3, which contains the codes created after the eight transcripts were analyzed. These codes derive from one of the three questions or a combination: Relevance of Constructivism, Professional Learning Community Technology Training, and Student Engagement. Comments by the eight participants were coded into the 14 codes which Table 3. 1 groups into the three major research categories.

Table 3. 1*Themes Used to Organize Participants' Perceptions*

 Description of theme and Relation to Research Questions

Relevance of Constructivism

- Advantages of Constructivism
- Disadvantages of Constructivism
- Relationship of Constructivism to Student Engagement
- Elements of Constructivism to which Students Respond Negatively

Professional Learning Community (PLC) Technology Training and Application

- Advantages of PLC Technology Training
- Disadvantages of PLC Training on Classroom Technologies
- Planning Steps for Creating Subject-Related Videos
- Planning Steps for Students Preparing a Video
- Available Video Equipment & Software
- Video Production Equipment Needs
- Video Production Training and Student Access

Student Engagement

- Keeping Students Engaged During Instruction
 - Most Effective Engagement Techniques
 - Determining if a Student is Engaged
-

The three categories emerged from the researcher's analysis of the Zoom interview transcripts, the line-by-line coding and the inductive/deductive coding developed by GradCoach. The following presentation of the findings is arranged by the three research areas, which were resolved by responses to Zoom interview questions in each area:

1. What are teachers' perceptions of the relevance of Constructivism in the age of technology? Four themes emerged from the participants' perceptions to address this area of the research.
2. How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as

YouTube? Discussion related to seven themes centered on participants' Professional Learning Community training and Professional Development training to provide findings for this research area.

3. What are teachers' perceptions of student engagement? Three themes related to student engagement addressed this area.

Research Question #1—Relevance of Constructivism

What are teachers' perceptions of the relevance of Constructivism in the Age of Technology? To answer research question one, a qualitative approach was employed to review and organize the participants' comments which responded to four related questions. Major themes were identified in regard to the relevance of Constructivism in today's technology-rich society. The eight participants offered nearly 200 comments related to Constructivism in their classrooms. Most of the participants' perceptions described the positive aspects of Constructivism. Table 4. 1 shares some of the participants views on the relevance of Constructivism. Other perceptions noted that some students were uncomfortable in that setting because few of their other teachers used similar teaching techniques. Table 4. 1 summarizes the range of participant comments:

Table 4. 1*Question #1 – Relevance of Constructivism*

Participant	Response
P01	[Constructivism] can be a very powerful philosophy or pedagogy for students or for teachers to use, to really connect, engage with students, and give them an understanding of why they're doing something.
P02	Constructivism is going to ask them to engage more deeply with whatever the learning is and that really stretches the brain.
P06	It's extremely important to use Constructivism in the classroom because the kids get talked to a lot, versus having them included.
P07	[Constructivism gives] students the opportunity to actually interact and engage with material, to share their experiences and their perspective on a particular prompt, task, or question.

Campbell and Wahl (2015) noted that Constructivist classrooms encourage students to participate actively in their education; teachers as a result use student perspectives to refine the instruction in later lessons (pp. 28–30). The eight participants spoke enthusiastically and in depth about their perceptions of why Constructivism is still relevant in the 2020 classroom, whether on campus or remotely during the COVID-19 pandemic period of learning at home. The following discussion presents the participants' comments in detail, arranged by themes which emerged during data analysis of the participants' perceptions. Some verbal pauses and unnecessary repetition of words have been omitted while maintaining the tone, content, and accuracy of the interview transcripts.

Theme 1: Advantages of Constructivism

The participants identified several advantages of using Constructivism in a classroom setting in the present technological era as shown in Table 5. 1. Overall, the participants were unanimous in asserting that Constructivism assists in facilitating student-centered learning and project-based learning while also enhancing student engagement. Ashman (2020) stated the one

thing that all Constructivists believe is the idea that learners are not blank slates – that new knowledge is added to old knowledge (p. 1).

Table 5. 1

Advantages of Constructivism

Participant	Response
P02	The focus is on learning. It takes more to use Constructivism when teaching, because you're going at the pace of the students, the pace of what you think it should be.
P03	It's more relatable to students when they connect experiences in their past with essential standards in your class.
P06	[Constructivism] gives students the opportunity to help facilitate their learning [and] I like students to have the opportunity to dive into topics that interest them.
P08	I encourage chatting, I encourage questions. We have to have a give and take; there is collaboration and independent work as well.

Constructivism also helps students develop an ability to self-assess while simultaneously enabling teachers to find whether the students understood a concept or might need additional help including a tutor (Brooks & Brooks, 1999, p. 60; Hattie, 2009, pp. 24–26; Hattie, 2012, p. 88). This is underscored by teacher P08, a world languages teacher, who explained that he uses student self-assessments to determine if additional pre-teaching is necessary before more fully developing a topic. The aspects of self-assessment and checking for understanding also are key components of an active Constructivist classroom, as explained by other participants and summarized by an electives teacher (P01), who noted that checking for understanding is especially important in a classroom where some students either think they know little or nothing about the topic, or may be scared of it. Under the Constructivist classroom model, drawing on prior experiences in similar or related subject areas helps students realize they know much more than they thought at first.

Moreover, several of the participants noted that while Constructivism is not content-driven, it acknowledges the vital presence of the human element, constantly seeking feedback which enhances the motivation of learning among the students. Constructivism acts as a facilitator of knowledge acquisition. The World Languages teacher (P08) stated that both collaboration and independent work become more effective when students are encouraged to collaborate and to ask questions; such feedback helps guide and focus instruction in the Constructivist classroom. P06, Social Science, supported that concept while relating Constructivism to building student excitement and involvement in a lesson unit. Furthermore, P06 stated that Constructivism allows students to take ownership of how they learn.

The participants also perceived that effective education in a Constructivist classroom features active learning and student-directed instruction which encourages students to ask questions while making the subject being studied more relatable. This finding affirms previous research by Dennick (2016, p. 202). P08 (World Languages) stated that listening critically to student discussions leads to directed interaction among the teacher and students which has a direct influence on the strength of the teacher-student relationship and bond.

In summary, participants revealed that Constructivism helps to instill a sense of a more personal relationship with the lesson material being taught, rather than simply teaching random facts and figures. P05 (Science) stated as students develop a sense of subject and classroom ownership, and as the teacher and students develop a mutual, positive bond, student engagement improves. Analysis of participants' comments within this theme noted a general, overall positive impression of the value of Constructivism, with potential challenges from nonadopters or non-supportive administrators on campus. Participants acknowledged the extra time required by

Constructivist techniques, the effort paid great dividends to student engagement and learning, group interaction, and a more positive teacher-student relationship.

Theme 2: Disadvantages of Constructivism

While the eight participants noted that Constructivism offers a variety of advantages for both teachers and students, several comments identified negative factors and disadvantages, all centered on the common concept that, if not used carefully and judiciously, Constructivism could hinder students' education. Table 6. 1 lists participant's views on disadvantages of Constructivism.

Table 6. 1

Disadvantages of Constructivism

Participant	Response
P02	Constructivism is often at odds with the pacing guide. If I'm the first Constructivist teacher they've experienced, they are thrown way off guard.
P04	A disadvantage is when you have an open forum of questioning, typically you have the usual suspects [participating and responding to questions].
P07	[Constructivism] is a challenge for students who are not accustomed to it, because they're waiting for the teacher to [do all of the work].
P08	The major disadvantage is simply the diversity in the varying amounts of prior knowledge.

P06 (Social Science) noted that if the user doesn't keep an end goal in mind, the students can perceive the methods of Constructivist teaching as "arbitrary and random." P06 explained that the Constructivist teachers have to connect the technique with the material being taught. Additionally, P06 has reacted to student complaints about Constructivist techniques by turning the instructional strategy back to the students by asking them to critique the teaching technique and offer remedial suggestions.

Other disadvantages of Constructivism involve the diversity and varying amounts of prior knowledge, the time consumed while applying the principles of Constructivism, and the

challenges for students who are not accustomed to the principles of Constructivism. P03 (Mathematics) noted that some students lack confidence, are unable to ask questions, and often feel alienated. Echoing this perception, P08 (World Languages) observed that students who are more introverted or less confident may be increasingly intimidated in a Constructivist classroom where some more advanced students tend to dominate discussions.

P03 (Mathematics) stated that some students react negatively to Constructivism because they would rather have the teacher teach with only minimal direct student participation. Moreover, the participants noted that teachers' motivation is required to properly implement Constructivism, the implementation of which varies from subject to subject across the high school campus. P02 (English/Language Arts) perceives that Constructivism is more time consuming than direct instruction or lecture. Several of the participants also cautioned that Constructivist teachers can face a form of professional bullying from some administrators and other teachers on campus. This subtle form of isolation becomes a major disadvantage for teachers who prefer a Constructivist structure in their classrooms, and potentially can deter or discourage teachers from using the technique in their classrooms. P02 explained that if an administrator is not a Constructivist, teachers' jobs can be in jeopardy.

In summary, analysis of participants' comments related to this theme revealed that Constructivism helps to instill a sense of a more personal relationship with the lesson material being taught. P05 (Science) related this concept to home building. "It gives ownership of the education to the student, because I'm not just teaching random facts and figures." P05 said as students develop that ownership, they often find it easier to build on prior knowledge rather than trying to learn from concepts or facts just randomly put together, much like having someone build a house on your land or giving students a blueprint and asking them to build it. Potential

challenges arise from nonadopters or non-supportive administrators on campus. Although the participants acknowledged that the extra time required for Constructivism is often at odds with the pacing guides, the effort paid great dividends to student engagement and learning, group interaction, and a more positive teacher-student relationship.

Theme 3: Relationship of Constructivism to Student Engagement

This theme includes several positive elements pertaining to Constructivism from the students' perspective, as perceived by the participants: a sense of responsibility, student feedback, planning, length of the activity undertaken, the distinct teaching styles adopted, and the aspect of accountability. Table 7. 1 demonstrates the participant's belief that Constructivist principles improve student engagement.

Table 7. 1

Relationship of Constructivism to Student Engagement

Participant	Response
P02	Students like the idea that it's centered on them. I think making patterns and learning come innately and naturally for students, [so] they feel successful at it because it's an innate feature. They feel that it's usually more meaningful.
P03	It's more relatable to students when they connect experiences in their past with essential standards in your class.
P06	If it's properly planned out and it's clear, defined in terms of expectations, I feel like all of it can be positive.
P08	I encourage chatting, I encourage questions. We have to have a give and take; there is collaboration and independent work as well.

The Social Science teacher, P06, commented, "If it's properly planned out and it's clear, defined in terms of expectations, I feel like all of it can be positive." But P06 also stated that sometimes the length of the activity may have an effect on student engagement. P06 said, "Continuous feedback from the students develops a sense of responsibility and belongingness among the students." P06 noted that group activities tend to instill a sense of responsibility

among the students and also makes students liable and accountable for their actions. P06 said, “I’m a very big advocate of group work. Where they’re paired off into groups and they’re doing jigsaw activities and they’re really taking the onus and the responsibility of their own learning” (P06). This statement also indicates the differences in the teaching styles adopted by the teachers make the sessions more interactive which also affects the students positively. P02 perceived that “Students like the idea that it's centered on them. I think making patterns and learning comes innately and naturally for students, [so] they feel successful at it because it's an innate feature.

When used properly, P08, a World Languages teacher said, when we're going through a question response, we're going through inquiry, when talking about any real subject it's really cross-curricular. Special Education P07 said that the thing students react most positively to is that it takes away the anxiety. P07 has seen students who are more willing to buy in and contribute because the anxiety of being wrong is kind of taken away from them. In a field where problems commonly have only one answer, the mathematics teacher (P03) said a lot of students like the openness of certain problems [so they can] make some broad observations or generalizations.

Lastly, Constructivism involves use of positive words rather than negative words, helping to instill a feeling of positivity among the students while reducing their anxiety and stress levels. Special Education teacher (P07) stated that she does simple interactions with them and they need to learn or remember their multiplication chart. In the world of special education, P07 said materials like this are very important.

Most of the participants’ comments focused on favorable student reactions to the Constructivist structure of their classrooms and emphasized the need for careful planning. The participants noted their application of a variety of teaching styles appealed to students’ learning

style preferences. However, some students found the Constructivist methodologies were uncomfortable at first because few of their teachers followed that student-focused philosophy.

Theme 4: Elements of Constructivism Students Responded Negatively To

Apart from the benefits as discussed in the previous theme, using Constructivism in the technology-rich classroom also has its own potential or perceived negatives, largely because it involves active student participation and engagement; however, certain students are completely dependent on dictated information and on teachers who lecture, rather than taking on personal responsibility for their own education. Table 8. 1 gives examples of participant’s negative aspects of Constructivism.

Table 8. 1

Elements of Constructivism Students Respond Negatively To

Participant	Response
P02	My other classes aren't doing this and you want us to.... Why are you asking so many questions? You don't know the answer? What do you mean you don't know the answer? You can just hear the dialogue going on with kids.
P05	[Students can experience] anxiety that comes with being wrong. I've had students who didn't like that I don't give them any information, I'm just asking for their opinions. A lot of them are not willing to contribute because they don't want to be wrong.
P06	Some students are very apathetic and want to be hand-fed the information. Some students may look at it as a negative, because they actually have to put the work in and are being held accountable.
P08	When it comes down to remote learning right facial expressions are not always their strong suit for some. Others wear their emotions on their sleeve.

Students have to manage their time and their work in order to become accountable. This became increasingly more pertinent as the COVID-19 home-bond isolation lengthened through the end of 2020. Such students often perceive Constructivism negatively. P06 (Social Science) stated some students are very apathetic and want to be hand-fed the information. P06 said he does not believe in lectures. He said, “I'm a believer in, ‘Okay, this is what we need to do, and

let's get there together'." Some students may look at it as a negative, because they actually have to put the work in and are being held accountable. And they know that if they don't do their portion of it, then their group suffers as a result. And they are implicitly called out. Fortunately, according to P06, that's really the exception rather than being typical of an entire class.

Other elements that students react negatively to are disadvantages of distance learning, different interpersonal relationships, changes in teaching methods, the influence of multiple intelligences, multiple explanations, political and nonpolitical attitudes among student peers and at home, and differences between teachers. The English/Language Arts (P02) teacher said if I'm their first Constructivist teacher, they absolutely feel at odds with it and they absolutely push back. It's a matter of trust as well. Because especially at the beginning with distance learning and virtual learning, it is more difficult to establish relationships and trust, especially because I'm not seeing them every day. And even though I have other avenues to reach out and interact with them on an asynchronous day, and I have ways for them to ask questions and to get feedback fairly immediately on asynchronous days, there's the trust factor. They don't know who I am. Similarly, the World Languages teacher (P08) commented: "Whatever I do might be so fast that it may not give some students time to react, ask questions, or ask for clarification."

Another element of Constructivism that can foster student negativity is perceived or actual differences among grading systems and philosophies from classroom to classroom. P01, an art teacher, commented that she doesn't receive consistent support from all teachers, a perception that may be common to students as well. For example, some students have told her that they felt unfairly graded in other classes. P01 said, "Because of the way that they were treated and the way that they were graded was very unfair, they actually thought that they were bad artists." P01 saw their work and graded it differently. Moreover, the fear of being wrong is

often associated with Constructivism. P05 (Science) stated, “[Students can experience] “anxiety that comes with being wrong. I've had students who didn't like that I don't give them any information, I'm just asking for their opinions.” P05 said with students there is anxiety with being wrong, “I don't want to be wrong. I don't want to be laughed at.’ Even though pretty much everyone in the class is in the same boat as they are, they are not willing to contribute because there's still that anxiety.” Teachers perceived an inconsistency in grading practice between their Constructivist classroom and others on campus. Some students reported feeling unfairly graded in some classrooms and complained to their current teachers.

Although this section described some negativity associated with Constructivism among the participants, the eight teachers in this research expressed the unanimous view that indicated a general agreement with modeling their classroom using a Constructivist structure and techniques. The participants offered several dozen comments which P07 (Special Education) summarized: “Constructivism is such a good concept. Anything that will help students remember important information or an important skill for the math concept I'll be presenting, I think that's always positive.”

Research Question #2 – Professional Learning Community Technology Training

How effective are Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube? The second major question sought participants' perceptions about school and district training on the uses of educational technologies. The participants responded to a series of eight questions related to their impressions about the value and effectiveness of Professional Learning Communities technology training in a Constructivist classroom as it may relate to enhancing student engagement. A

growing concern amongst the majority of the participants is that Professional Learning Community training and Professional Development need to be relevant and useful.

Theme 5: Advantages of Professional Learning Community Technology Training

The first question in this section sought participants' responses to the general subject of professional development, usually accomplished during a late-start morning: "What do you think of when you hear you're going to be attending a professional development session of the Professional Learning Community on technology?" Table 9. 1 lists some advantages of PLC tech training.

Table 9. 1*Advantages of Professional Learning Community Technology Training*

Participant	Response
P06	I consider myself a sponge. I like to learn different things, as long as professional development is relevant and there are things that I can realistically use.
P05	I treat it like a gamble to be very frank. I have attended PLCs on technology and how to incorporate into our classroom. And to me, it's always a huge gamble.
P06	I want those types of things that can help me do my job better. How can I keep students engaged? But when it's something where it's like, "Okay, is this just like a blanket PD?" If there's not any type of relevancy with what I'm doing, then for me, it's a waste of time.
P07	What I like about our PLC lately, I would say this has been happening for two to three years now. They have implemented what we call common assessment and they have implemented a rule, when a student transfers to another teacher, the student should have a smooth transition. The idea is everybody should be doing the same thing or at least at the same pace.

From the participants' perspectives, such professional training must be useful and relevant and should result in useful outcomes. P06, who teaches Social Science, revealed that he prefers technology training that he can use in his classroom. He said, "I consider myself a sponge. I like to learn different things, as long as professional development is relevant and there are things that I can realistically use" (P06). P06 was frank in stating, "I want things that can help me do my job better. How can I keep students engaged? But when it's something where it's just like a blanket PD without relevancy with what I'm doing, then for me, it's a waste of time" (P06). This sentiment was echoed by several of the participants who said they want Professional Learning Community technology training to teach something that will benefit them in the classroom, "as opposed to maybe learning about something that I'm just not going to use" (P06).

Similarly, other participants are also in favor of Professional Learning Community technology training and love the associated groups which they attend regularly. P07 (Special Education) stated that, "It's interesting how PLC has been defined in different ways. I have

attended some PLCs at the district level, which they call professional development, and yes, there was a guest speaker who helped us learn new things.” P07 liked the addition of common assessment that made teachers align their lesson plans and unit plans so, when a student transfers to another teacher, the student should have a smooth transition. P07 said that common assessment is the idea everybody should be doing the same thing or at least at the same pace.”

P05 (Science) stated, “I treat it like a gamble to be very frank. I have attended PLCs on technology and how to incorporate into our classroom. And to me, it's always a huge gamble” (P05). P05 said, “Some of the older teachers struggle a lot with Google classroom, but to me this is my bread and butter.” P08 stated, “If the PLC happens to be something that's so basic that it's just like an intro to something, I do an eye roll; I lose interest right away because I know where it's going.” The English/Language Arts Teacher (P02) wants to have a clear understanding of “What's the focus of it? What can I learn from it? How can I use it? What is it about? And then logistical things like how long it is.” PLC training garnered a mixed response from the participants. Some believe that it is crucial for existence, while the others believe that it is a waste of time.

Theme 6: Disadvantages of Professional Learning Community Technology Training

This theme includes the professional training which may be required on classroom technologies such as the production and uses of YouTube or other videos. Several participants voiced negative concerns surrounding disadvantages of PLC tech training and Table 10. 1 highlights those concerns.

Table 10. 1*Disadvantages of Professional Learning Community Training on Classroom Technologies*

Participant	Response
P01	How can we continue to integrate technology into project-based learning? There are so many different technology applications it boils down to which ones should we use.
P02	They have to have layers of PD. The first one is nuts and bolts. The second one is going to be pedagogical. And I think the third one is going to be “Where are you now with this?” This is really a Constructivist approach to PD.
P04	I feel like I’m devolving when I go to a PD because a lot of times somebody reads the PowerPoint, and they think that we got trained. We go to a PD, there's no interaction between my colleagues.

It was found that the training must focus on technology and how to integrate it into lesson preparation and presentation both in the classroom and online. P01 (Electives) stated, “How can we continue to integrate technology into project-based learning?”. She said that there are so many different technology applications it boils down to which ones teachers should use. Similarly, P04 backed this statement by revealing that she had helped a fellow teacher learn to use new computer software as an enhancement in her educational arsenal. She provided training for an English teacher who wasn’t comfortable with teaching the technology to the students.

Because some teachers lack necessary technological knowledge, Professional Learning Community training needs to be structured and tailored; it also requires more dialogue and needs more time. P02 (English/Language Arts) stated, “They have to have layers of PD. The first one is nuts and bolts. The second one is going to be pedagogical. And I think the third one is going to be ‘Where are you now with this?’ This is really a Constructivist approach to PD.” Moreover, the PLC training must address the distance learning problem. Special Education teacher P07 stated, “Whenever I present lessons, luckily my laptop is touch screen and we have this pen right here. I have been literally just using white board, the app on this computer, it's called white board. I

share my screen and make notes” (P07). This participant said that some teachers use iPads and write notes on them. P07 stated, “I would love to learn what materials I can use on my basic materials on top of my laptop and lovely pen that I can use when teaching live” (P07). Further, P04 feels Professional Learning Community training has been largely a waste of time since most of the instruction has been simply reading a PowerPoint presentation; the training typically is not hands-on (P04). They're the complete opposite of what development should be, as P04 explained: “I feel like I'm devolving when I go to a PD because a lot of times somebody reads the PowerPoint, and they think that we got trained.” P04’s experience with professional development indicates no interaction among colleagues, no hands-on training or role-playing; “there's none of that stuff, and so we just sit there” (P04). Trainers tend to teach using handout materials, saying such things as, “Look at the packet, fill in the packet. Great, you're now trained.” P04 evaluated such a comment: “No, we're not.”

Theme 7: Planning Steps for Creating Subject-Related Videos

Each of the participants uses distinct and unique steps for creating a subject-related video. Table 11. 1 displays participants’ views on their planning steps for creating a subject-related video.

Table 11. 1*Planning Steps for Creating Subject-Related Videos*

Participant	Response
P02	I would have some metacognitive questions mixed in there. And asking them questions about things like “Okay, what makes the most sense to you?” And I always add, “And why” on every question. “What doesn't make sense to you?”
P06	I kind of take that backward learning model where I identify what I need to do, the objective, [and] my end result? And then I kind of work my way back from there.
P07	You have to start off with your objectives. What are you trying to assess? What do you want the students to be able to know by the end of the video? After identifying the rationale and beginning to develop an assessment strategy.

P06 reveals that he uses backward learning or a backward design model, which begins by focusing on the learning outcomes and then makes plans. He adopts multiple approaches and consequently adapts to the needs of the students. “I kind of take that backward learning model where I identify what I need to do, the objective, [and] my end result? And then I kind of work my way back from there.” Specifically, P06 focuses on what he wants the students to learn, evaluates available instructional strategies, and then identifies technologies he can use to achieve his goals. Similarly, P02 revealed that time constraints and desired content of videos are taken into consideration while planning and making a video. P02 stated, “I would have some metacognitive questions mixed in there. And asking them questions about things like ‘Okay, what makes the most sense to you?’ And I always add, ‘And why’ on every question. Then, ‘What doesn't make sense to you?’” (P02).

Moreover, the English/Language Arts teacher (P02) noted that student feedback informs not only current instruction, but helps to plan for the future, depending upon the number of different classes a teacher might have daily. P02 said, “I ask metacognitive questions about when was the last time you used certain items or methods. And if they say, ‘Well, I have never used it

before,' that's great feedback to me because they don't understand the real-world implications” (P02). P02 also said she would use more video if she had more prep periods but with three or four classes to prepare, she does not have enough time. P03 (mathematics) supported the strategy, noting that, videos allow students to replay the information as often as necessary until they grasp the concepts. P03 cautioned that planning for teacher- and student-produced videos needs to factor in the intended audience and length of the video. The professional literature suggests a solution so teachers can combine their resources in subject-specific work groups and not duplicate one another’s efforts (DuFour & Fullan, 2013, p. 68).

Also, P07 (Special Education) noted that script-writing is a crucial step in the video production process. “I like to be really scripted, detailing everything I'm going to be saying, the activities I'm going to be using, have them all worked out.” Not comfortable with speaking impromptu or even extemporaneous comments, P07 prefers to have everything written out: “My videos tend to be a lot more coherent that way and, and it usually [takes only a] few tries until I'm able to complete the video.”

Teachers who commented on this topic were unanimous in recommending careful preproduction planning including storyboards and planning backward from the lesson objective. This reversed model was lauded as a strategy that helps teachers prepare videos that will educate students in a thorough and entertaining manner while remaining true to the desired outcome.

Theme 8: Planning Steps for Students Preparing a Video

Before making a group project video or individual project, the participants suggested several steps such as scaffolding, planning the project, breaking things down, incorporating planning steps for video, identifying a goal or a driving question, and adopting different learning

styles, approaches, and intelligences. Table 12. 1 has some of the participants ideas for steps students should take for preparing a video assignment.

Table 12. 1

Planning Steps for Students Preparing a Video

Participant	Response
P01	So, I really break it down. At times I maybe scaffold a little too much for them, but what I often do is I cater to the different learning styles and the multiple intelligences.
P02	Students do the initial planning, talk about strengths they bring to the group, and comment that they want to play to the strengths of other group members.
P04	They need to make sure the focal point of what the message is in terms of the video is clear. What is it that we're trying to achieve? What is the end goal?
P05	You have to start with a draft, you got to show me first what your plan is, stage one, start with a draft, what problem are you going to use and then show it to me.

P01 stated, “So, I really break it down. At times I maybe scaffold a little too much for them.” P02 (English/Language Arts) agreed and commented that students do the initial planning, talk about strengths they bring to the group, and comment that they want to play to the strengths of other group members. P04 also had a similar perception regarding the planning and first, “What is it that we're trying to achieve? What is the end goal?” P05, a Mathematics teacher, identified a crucial step, “You have to start with a draft, you got to show me first what your plan is, stage one, start with a draft, what problem are you going to use and then show it to me.” P07 agreed and stated that a script is needed, “I would expect them to create a script, to write down the key points that they want to address. And then I would ask them to do a mock run of their video before they record it.”

Teacher-modeling of production planning was important, according to the participants, some of whom observed many students who tended to just turn on a camera and begin recording without any measurable prefilming planning. To correct this procedural mistake, the participants

demonstrate the planning process and then explain carefully and fully the value of planning including script-writing and thinking about shooting B-roll materials before shooting and editing a student-produced video. Two of the eight participants do not ask their students to produce subject-related videos.

To summarize, six of the eight participants emphasized the value for students of careful preproduction planning with a specific goal in mind for each video. The participants encourage students to critically think through the project, write and edit drafts of the production script, rehearse, and film both primary video and B-roll as part of the project. The participants noted that the process helped to build small-group effectiveness as the students shared their strengths and skills while learning from one another.

Theme 9: Available Video Equipment and Software

The close of 2020 presented teachers with unprecedented situations; distance learning has become not only a trend but a reality throughout this school and district. State- and district-mandated schooling at home presumes availability of suitable devices for students. Students should have phones, cameras, and internet access, as the minimum, to participate in online classes and for creating their own videos. Table 13. 1 lists some other video equipment and software available to students

Table 13. 1*Available Video Equipment and Software*

Participant	Response
P01	Since we're in distance learning, everybody has a device, internet access; their phones can act as a camera. They have an infinite amount of obvious resources online. And so they have what they need.
P02	Students use the free Screencastify. There's a lot of free versions like Loom. I prefer Loom over Screencastify when I use the video.
P05	I've heard of teachers using Edpuzzle; however, I did not attempt [this] because I was hoping we'd go back to in-person instruction; that has been the hope. Our students need a lot of support and having them watch a video is just really not enough for most of them.
P08	I recorded some of her lectures last year, and Siri on my iPad allows me to record my drawings on a presentation. And I can use that to interact with my computer, which already has PowerPoint.

While the perceptions were not unanimous, most of the participants commonly stated that their students do have access to at least a minimal amount and quality of equipment to participate in COVID-19 online instruction. In this context, P01 (Electives) commented that most students at least have simple technology such as a cellular phone: “Since we're in distance learning, everybody has a device, Internet access; their phones can act as a camera. They have an infinite amount of obvious resources online. And so they have what they need.” P02 (English/Language Arts) identified a variety of new concepts: “Students use the free Screencastify. There's a lot of free versions like Loom. I prefer Loom over Screencastify when I use the video.” P05 (Science) uses his cell phone and written material. “I've heard of teachers using Edpuzzle,” he said; however, he did not begin using Edpuzzle, hoping the school would soon return to in-person instruction. “Our students need a lot of support and having them watch a video is just really not enough for most of them” (P05).

Aside from basic technologies like cell phones, Flipgrid and Google Chrome can be effective. This was the focus of a comment by P06 (Social Science), who noted that some of his

students do not have a cellular phone or the equipment they may have does not function adequately to produce videos. Finally, P08 (World Languages) revealed the use of iPad, Siri, and Chromebooks for creating student videos, and he recommends their use while creating or planning and creating videos. Concerning this, P08 stated some of her lectures were recorded last year, and Siri, “on my iPad allows me to record my drawings on a presentation. And I can use that to interact with my computer, which already has PowerPoint.”

The participants reported only minimal equipment availability. Cellular phones showed wide but not universal availability among the teachers and students, with ownership of some Chromebooks, iPads and similar handheld devices, and smaller computers such as notebooks.

Theme 10: Video Production Equipment Needs

Several teachers suggested unique techniques and tools that could prove useful for video creation. Good quality cameras, cell phones with high-end cameras, and green screens are some of those tools cited as potentially useful. Table 14. 1 shares the participants video equipment needs.

Table 14. 1*Video Equipment Needs*

Participant	Response
P01	I need a nice camera in addition to cell phones, which have high quality camera lenses, and maybe a green screen.
P02	Kids in some families will not request [equipment] from the school because of pride, shame, fear, all of that type of stuff. If they say, every kid is going to get a Chromebook, across the board, it takes the sting out of it, and it creates an equitable playing field.
P03	A minimum essential hardware list must include a good quality camera and related equipment that is compatible; suitable portable lighting equipment and reflector; and one or more quality microphones, whether wireless, lapel, or handheld. (His advice became quite specific on the subject of lighting.)
P04	When we're making content, something has to be that's intuitive in terms of hardware. If it's a camera, it has to be intuitive to use. It has to also be quality. It has to be durable, something that is going to stand the test of time, so to speak.

P01 (Electives) suggested a “nice camera” in addition to cell phones which have high quality camera lenses. P03 (Mathematics) also believes that it is essential to have a good camera and a good microphone. The participant revealed that video equipment and related software needs to be user-friendly and easy to use with a short learning curve; desired features and characteristics include equipment with high quality, durability, and compatibility with other equipment in the teachers’ inventory. P03 said equipment such as cameras needs to be intuitive, high quality, and durable, adding that new equipment has to be compatible with items already in use. Similarly, P08 (World Languages) noted that students can produce quality videos with their phones.

P02 (English/Language Arts) stated some families will not request equipment from the school because of pride, shame, and fear.

If they say, every kid is going to get a Chromebook, across the board, it takes the sting out of it, and it creates an equitable playing field. But I've got kids, I even tell them, I can

get you tech. 'My mom says we can't check it out.' There's nothing I can do with that.

That is the number one thing I would want, right there.

P04 stated that portable lighting is a plus, "but you don't always have to have that because you can get a one of those foldout reflector things that photographers use." I do photography as well. They can take that out and they can set that up somewhere where the sun is not in their eyes, they reflect the sun off of that reflector and then point it to their face, and now that subject is now well-lit, and now you have a pretty good video going on right there.

Participants unanimously commented on the need for quality equipment and easy-to-use editing and production software. Although most of the participants did not specify items by brand or model number, all did mention the need for quality cameras, tripods, audio and lighting equipment, and computers.

Theme 11: Video Production Training and Student Access

The participants commented that their school's Professional Learning Community technology training has not prepared them to teach students how to create video projects. Table 15. 1 lists some of the participants comments about video production training.

Table 15. 1*Video Production Training*

Participant	Response
P01	Stating that she has been able to help students with the video planning and production process even without school- or district-sponsored training: “Oh, truth be told, I feel like that actually comes from me more than within my PLC.
P05	I'm sorry to say, we just don't have time, to be honest. That's the reality of it. Every time we meet, there's just no time to do everything, to do what's on the agenda. So it has just been whatever is important. Here's, what's important right now. When you could discuss our pacing, we need to discuss testing, we need to discuss this special ED stuff, the concerns, and nothing about technology.
P06	We don't have any technology. We just don't have enough. So, if we're doing a PLC on technology in this particular district, it cracks me up because we don't really have access.
P07	I know that a lot of students are really familiar with media. They use media all the time, and I've never had any experience with it. I think that's something that would be a great tool.

However, P01 (Electives) was not deterred, stating that she has been able to help students with the video planning and production process even without school- or district-sponsored training: “Oh, truth be told, I feel like that actually comes from me more than within my PLC. I do introduce a lot of the things that I work on in class [during] our PLC; one of the teachers in our PLC group was asking what they can do.” P05 (Science) stated “I'm sorry to say, we just don't have time, to be honest. That's the reality of it. Every time we meet, there's just no time to do everything, to do what's on the agenda.” P06 (Social Science) described an unfortunate situation, “We don't have any technology. We just don't have enough. So, if we're doing a PLC on technology in this particular district, it cracks me up because we don't really have access.” P07 (Special Education) stated that she has been to training where they have been shown how to create videos and P07 thought it would be a great tool to use. P07 said, “a lot of students are really familiar with media. They use media all the time, and I've never had any experience with it. I think that's something that would be a great tool.” These views were supported by P05

(Science) who spoke about the limited technical knowledge base. P05 said he finds himself teaching other teachers. He said the school needs an experienced technologies teacher to help all teachers on campus.

P01 (Electives) noted that students should have full access to YouTube with the exception of restricting views of irrelevant and inappropriate content. P02 (English/Language Arts) believes there is a lack of connection between Professional Learning Community technology training and professional development training: “I think the PD and the PLC need to talk to each other right now. They're asynchronous; they're not connected.” P04 noted that “YouTube is a vast platform; if you don't have strong security measures in there, you have content that can take you to another content that leads you to inappropriate content. YouTube is one vast wasteland for some areas and really great content for others.” P05 (Science) revealed that time constraints limit full development of topics: “Time is a concern; we don't we really have time to do more technology-wise in a 7:30–8:15 late start day. I think we need to dedicate a separate day.” This participant also suggested training on technology- and YouTube-related topics so teachers can become more accustomed to using computer and cellular apps which enhance distance learning, helping students become more interactive, and keeping students more engaged during Zoom sessions. P06 (Social Science) agreed with the importance of improving PLC training and stated that the training regarding video production must be improved. P07 (Special Education) believed. “It’s important for the training to be relevant to the specific school sites. I think whoever does training for the PLCs should have an understanding of our school culture and dynamics.” P06 felt that trainers must know what technology is available at the school site. P06 confessed that at this particular school site they really don't have a lot of technology: “We don't have a lot of devices for the students, so we tend to shy away from it. And

especially now, being online, it's definitely a challenge for our school site to deliver our instruction using technology.”

Research Question #3 – Student Engagement

The final research area focused on how student engagement in a Constructivist classroom is or might be affected by a teacher’s Professional Learning Community technology training.

Theme 12: Keeping Students Engaged

The participants described multiple techniques they use to keep students engaged during class time including emotional and physical connection, regular two-way feedback, avoiding mere lecture, and intense collaboration among students. Table 16. 1 displays participants responses to keeping students engaged.

Table 16. 1

Keeping Students Engaged

Participant	Response
P01	[I encourage students to] feel like it’s their classroom. I’m the engine; they’re the GPS [and] they tell me where they want to navigate, and I’m going to take them to that spot. I don’t use the textbook as much; it has a lot of material they don’t care about.
P02	The trick is to make sure [instruction] is centered truly on learning. I respond to their texts because I’m building that social-emotional learning and I’m listening to them.
P03	If students don’t want to share, then I have them create a reflection journal, like a diary, to talk about the topics so they don’t have to share aloud.
P04	I keep my activities pretty short, within a 10–15-minute timeframe. You have kids that are not going to be locked on, and it’s a normal, normal thing.

The participants suggested other factors and techniques they use to build and maintain student engagement: encouraging group projects, and blended learning, building social-emotional learning, listening to students, enhancing human focus, encouraging unresponsive students to participate, listening to their emotional needs, emotionally engaging the students,

encouraging regular Google classrooms and Zoom meetings, ensuring timely responses, imparting smaller chunks of content, being flexible on the format, adapting to the needs of the students, and checking for understanding. This can be observed from a P01 (Electives) comment noting her success with building an emotional bond with the students. One student, excited about getting a book, texted the teacher, who responded “Yay for you” in the next day’s class and says about the students: “I need to respond to them as people first.”

By October 2020, P01 (Electives) noted widespread symptoms of student fatigue due to the online instruction mandated by COVID-19 concerns. During an art class one day, P01 observed a student who was visibly upset, but uncommunicative despite several attempts to get the student to respond. After some time, the student finally began writing to the teacher in a private chat not visible to others in the class. P01 asked the reason for the student’s frustration. P01’s concern calmed the student, who eventually noted confusion regarding an assignment. P01 observed that the art student remained engaged because of the teacher’s personal connection; P01 also noted that maintaining close contact with students takes more time, one of the common elements of the Constructivist classroom. Additionally, P01 encourages student engagement by breaking instructional materials into manageable, bite sized materials that are meaningful, stripping away all the busy work.

Some of the participants enhance student engagement by breaking class periods into smaller sections, beginning with a brief introduction of what would be covered and the time allotted for each concept. When first used, this technique can be confusing for some students who are not used to block scheduling. When the students know the day’s expectations, they remain engaged. P03 (Mathematics) revealed that collaboration and asking questions help to build and maintain student engagement. The participant added that regular assessment and

collaboration also maintain student engagement. Some students remain engaged largely because they have entered a phase of criticizing the topic, P03 noted, by making comments such as, “Why do I have to learn this?” But this particular mathematics teacher responds to such questions by explaining the potential future value of a topic and relating it to issues that can interest students, such as measuring a package’s internal volume to determine how many products will fit into a container, or how to maximize profits—each of these responses encourages student engagement not only of the questioner but of the rest of the class as well.

The participants use a variety of techniques to help students remain engaged even during, ranging from carefully observing body language, eye contact, and levels of comment and feedback. Some techniques work better during in-class instruction than when online.

Theme 13: Most Effective Engagement Techniques

This theme emerged as participants described their most effective techniques for keeping their students engaged. The participants did not offer a single set of effective engagement techniques, however, suggesting that a technique showing effectiveness in one department might not work in another classroom. Table 17. 1 shares some of the participants comments.

Table 17. 1*Most Effective Engagement Techniques*

Participant	Response
P01	[While studying the French Revolution], I had students draw a beautiful French Revolution poster and then narrate that picture to us.
P02	Constructivism is going to ask them to engage more deeply with whatever the learning is and that really stretches the brain. I do entrance and exit tickets. The second thing for engagement is I need to make sure that I have a chunk-able, bite sized materials curriculum that is meaningful, stripping away all this busy work.
P03	I allowed them to use different creative ways that they came up with to express what they knew about the topic we were doing and to share with me. And then I also use technology in a way to get that across because I'm sitting miles and miles away from them.
P08	Students are more willing to buy in and contribute because the anxiety of being wrong is kind of taken away from them.

P01 (Electives) believed that student engagement can be enhanced by demonstrating learning, such as by drawing, a technique used by several of the participants. P01 (Electives) said this technique makes projects more of an opportunity to learn and less of a learning chore. P08 (World Languages) uses Quizlet and timed dialogue to keep students engaged. P05 (Science) said in a normal year, lab time kept students engaged, a factor missing this year during distance learning. He noted that evaluating engagement is more difficult this year because of not being able to see the whole student, sometimes only part of a face.

Theme 14: Determining If a Student Is Engaged

This theme reveals the distinct indicators that the participants said they use to determine if a student is engaged, such as body language, spoken reflections, student feedback, and regular checks of understanding. Table 18. 1 quotes some of the participants responses to how they determine if a student is engaged.

Table 18. 1*Determining If a Student Is Engaged*

Participant	Response
P01	Sometimes students give feedback, sometimes they like to complain. Students are taking the onus and the responsibility for their own learning, and it really holds them liable and accountable. If there's a lack of conversation, then I know they're probably not as engaged because it's not interesting to them.
P02	I use cameras as feedback [and an indicator of student engagement]. If the cameras are going off, I know the students aren't interested and I'm missing the mark.
P04	[The students] understand it's not always about winning, but it's about the process and the progress. As long as I'm encouraging that and reiterating it all the time, you can tell these kids are engaged.
P05	I know they're engaged if they can answer a question. I also ask them to take a picture of their notes at the end of a class, just to make sure they're with me.

Typical of the participants' perspectives, P01 (Electives) commented that evidence of student engagement includes both body language and a willingness to be part of class discussions. P01 (Electives) described a physical manifestation of lagging engagement as a student's drooping head. Students who sit upright, perhaps leaning forward, tend to be more engaged than students who slouch or lean back, P01 noted, adding that a lack of conversation in a small group indicates that the topic or discussion is not interesting or important to them.

P03 (Mathematics) described the difficulty of evaluating student engagement during online instruction. Using gestures while teaching, P03 also encourages student to be physically active because he has learned that students who are still likely are not engaged. However, P03 has learned from student journals that they often report having been engaged and actually learned more than he had expected. Other indicators for predicting student engagement were tone of voice, asking questions, and facial expressions. P04 observed that facial expressions cannot be the only indicator; even some students with bland expressions will often ask probing questions indicating a higher level of engagement than the teacher observed initially.

Summary

This chapter introduced and analyzed eight Zoom interviews to evaluate the participants' perceptions. Overall, Question #1, relevance of Constructivism, was supported by the eight participants, who modeled their classrooms and online instruction on a Constructivist philosophy, giving strong support to the first research question which studied the current relevance of Constructivism. For these teachers, Constructivism is still a valid concept even after 120 years. "Teachers more readily understand and practice constructivist methodologies when (1) they are exposed to specific programs and approaches with constructivist frameworks; (2) they have classroom support for altering their practices, such as peer-coaching, script-taping of lessons, and team teaching" (Brooks & Brooks 1999, p. 121). However, the participants noted that they felt somewhat isolated on their campus due to only minimal knowledge and use of the methodology by campus administrators and other teachers. As Yilmaz (2008) noted, active learning in the Constructivist classroom features students who think critically about new information and respond to teacher questions with fully formed thoughts (p. 170).

Results from Question #2 regarding Professional Learning Community technology training revealed mixed, though largely negative reactions. For these eight participants, the training was barely adequate and did not fully prepare them to use technological tools to prepare class-related videos or teach students to create project-related videos. A general lack of equipment and suitable software was also cited.

Finally, Question #3 regarding the link between Professional Learning Community training and student engagement, the participants did not perceive a positive relationship. They cited Constructivist teaching techniques as a stronger factor that encouraged sustained student

engagement. However, the participants did not link professional development community technology training to Constructivism nor to student engagement.

The present study involved interviews with eight participants, each from one of the major departments: Electives, English/Language Arts, Mathematics, Science, Social Science, Special Education, and World Languages, plus a classroom technology expert. The current study analyzed the major advantages and disadvantages of using Constructivism in the classroom in the technological era. Further, the study analyzed the elements of Constructivism that students react to positively and to what elements of Constructivism the students react negatively.

Further, the study analyzed the perceptions of the teachers regarding professional development or professional learning communities training on technology. The researcher assessed the PLC training required regarding classroom technologies. Moreover, the participants acknowledged the planning steps taken before making a subject related video and the planning steps that encourage students to use before they make an individual or group project video. The study also highlighted the equipment and software that are available for teachers to create their videos and the way professional learning community time or other PD trained the teachers to teach students to create their own videos. Finally, the study focused on student engagement and analyzed the techniques that teachers use to engage the students.

CHAPTER 5: CONCLUSION

Introduction

In the preceding chapter, the presentation and analysis of data have been reported. Chapter 5 consists of key findings from Chapter 4, a comparison of the study's findings with the literature review, answers to the research questions, implications for the school's teaching practices, implications for educational theory, limitations and delimitations related to applying this study's findings to southern California high schools which use Professional Learning Community technology training, recommendations for future research, and conclusions.

Discussion of Key Findings

This phenomenological qualitative study examined teachers' perceptions of the relevance of Constructivism, Professional Learning Community technology training time as an aid to more effective teaching, and an evaluation of student engagement in the classroom and online with distance learning. Each of this study's eight participants reported patterning their classrooms on a Constructivist model with no variation based on gender or teaching longevity; they uniformly did not give Professional Learning Community technology training high marks; and they evaluated student engagement as generally high in their classrooms.

Finding One: The participants' perceptions were unanimous in commending the value of using Constructivism in the classroom as a structure that focuses on student learning in a caring and supportive environment and which features active student participation and interaction. This research supported the findings of Campbell and Wahl (2015), who noted that teachers often refine their future instruction based on perspectives offered by their students. Finding Two: However, the participants also revealed that they do not receive widespread support for using Constructivism and often feel criticism rather than support from other teachers and

administrators. This may be occurring at this school site due to a general decline in the acceptance of Constructivism as noted by Ashman (2020). He reported that Constructivism began a decline around 2009: “From then on, constructivism was living on borrowed time as the gradual shift away from it in the research community worked its way out into the wider educational ecosystem where constructivism probably still survives in some dark corners.”

The findings of this study also have far-reaching implications for many persons interested in the Professional Learning Community process. Finding Three: The participants said they have no direct role in planning such training and get little new information from most Professional Learning Community training sessions. Administrators must understand that Professional Learning Community technology training will be effective only if teachers have a voice in designing it, and only if the Professional Learning Community process emerges from a schoolwide cultural change as noted by DuFour and Fullan (2013). Finding Four: Several of the participants stated they seldom know the purpose of training sessions until they arrive. Teachers must be informed as to the specific purpose of each Professional Learning Community technology training session as reported by Williams and Hierck (2015) who support this finding: “When you take responsibility for the state of your culture, it gives you an opportunity to learn from it, and you are then empowered to build a new culture” (p. 5). Finding Five: Several of the study participants noted that Professional Learning Community technology training was not effective. Hattie (2012) emphasized the importance of teacher involvement in planning (p. 41). The current study’s participants may be the school’s best resource for improving technology training, and they may in fact be responsible for changing the current paradigm rather than following the lead of other teachers who passively evaluate the current training.

Student engagement was reported as a key, positive element in the participants' classrooms. Finding Six: The study participants gave student engagement generally high marks in their Constructivist classrooms because of a strong teacher-student relationship as suggested by Bond and Bedenlier (2019, p. 2). However, some students react negatively in that environment because few other campus teachers follow the model. Finding Seven: The participants linked student engagement to group interaction and the teacher's ability to break down instructional materials into meaningful, smaller components. This finding follows recommendations in research by Bond and Bedenlier (2019).

Findings Compared to and Contrasted with Literature Review

This study's findings related to Constructivism mirrored the related literature wherein the classroom model was described as critical to student engagement (Ashman, 2020, pp. 1-3; Brooks & Brooks, 1999, p. ix; Hubbard, 2012, p. 160). With regard to professional development community technology training, this study's findings compared favorably with numerous sources in the relevant literature. Professional Learning Communities will become more effective with active participation by the teachers being trained and when those teachers respond to their "obligation to be an instrument for cultural change—rather than waiting for others to make the necessary changes" (DuFour & Fullan, 2013, p. 4). Furthermore, this study found links between classroom technologies, video, and student engagement, the importance of which was described by Carmichael et al. (2018, p. 7). Bond and Bedenlier (2019) also linked student engagement to classroom technologies and active teacher involvement throughout the educational process (p. 8), a concept widely described by this study's participants.

Answers to Research Questions

Research Question One sought participants' perceptions of the relevance of Constructivism in the Age of Technology. Each of the eight participants noted that Constructivism was still relevant and an important factor in their success as teachers. They did, however, comment that they were limited in how widely they applied Constructivist methodologies and practices because the school's administrators and many other campus teachers were not aware of Constructivism's benefits to student engagement and acquisition of knowledge. They also found Constructivism caused longer teaching times on some instructional units because many of the students were either unfamiliar or uncomfortable with the Constructivist environment, or critiqued the student-centered nature of the classroom as causing them to do too much of the learning on their own.

Research Question Two addressed the participants' perceptions regarding the effectiveness of Professional Learning Communities in addressing the development of teacher growth/understanding of the use of technologies such as YouTube. The participants offered mostly negative perceptions of their school's professional leadership community and professional development technology training.

Research Question Three evaluated teachers' perceptions of the indicators of student engagement. The eight participants noted a variety of student behaviors that indicated when engagement was strong and when it lagged. Several factors emerged as most important especially during online instruction due to COVID-19 remote learning: body and head position, camera on or off, student comments, and quality and quantity of collaborative discussions.

Implications for Secondary School Teaching Practices

The entire student body on secondary campuses would benefit from several major systemic improvements to faculty and instructional strategies. First, teachers should become aware of the value to students of a Constructivist classroom. Brooks and Brooks (1999) noted that students in a Constructivist classroom “take responsibility for their own learning and become problem solvers and, perhaps more important, problem finders” (p. 103). Second, teachers should allow students to submit assignments using the latest video technologies such as YouTube. Pereira et al. (2012) found, “The production of a video independently made by the students brings a fresh perspective to the practical work they experience in school” (p. 46). Campbell and Cox (2018) also reported that “A digital video assignment moves students from being consumers to be producers of their own content. Student created video is limited only by the students’ ideas, creativity, and technical abilities” (p. 13). Third, school and district Professional Learning Community and professional development technology training should focus on state-of-the-art techniques and equipment. Adequate budgeting will be needed to purchase the equipment and install adequate bandwidth; other technological considerations will need to be examined, designed, and installed by district engineers. As noted by Hobbs (2010), teachers will need technical knowledge and skills to develop digital and media literacy education (p. 40). Fourth, as they become more active participants in their education, students will need to adopt a thorough understanding that the success of their education rests solidly on their own engagement throughout the educational process (Fredricks et al., 2011). Fifth, teachers and students will need to work more closely and collaboratively. Together, they will learn that the Constructivist classroom model with its emphasis on interaction and collaboration is a key to their current and future educational success (Brooks & Brooks, 1999). Sixth, training planners

need to involve teachers while training sessions are planned and designed. Then the planning team will need to inform all teachers of the content and desired outcomes for each Professional Learning Community and professional development training session. Such teamwork will help to convince teachers they have a share in both the content and desired outcomes of training (DuFour & Fullan, 2013). Seventh, school librarians should be the center of the technological exchange (U. S. Dept. of Education, 2017, p. 1). Eighth, teachers should follow the advice of Buzzetto-More (2014), who suggested that teachers use video-sharing services, such as YouTube, especially if they teach primarily online: “YouTube has tremendous potential to augment a wide-range of aspects of instruction, much of which has yet to be exploited” (p. 30).

Implications for Educational Theory – Remote Learning and Beyond

Education in the early 2020s faced unique challenges due to online learning that was necessitated by state and county restrictions during the Novel COVID-19 pandemic. Nonetheless, the year-long absence from many classrooms offers three major opportunities when in-person education resumes. First, teachers who adopt a Constructivist philosophy will help students become more actively involved in their education even if some of those students initially aren’t comfortable in the Constructivist setting (Yilmaz, 2008). Second, Teachers will need thorough training so they can use classroom technologies efficiently and effectively even with limited equipment (U. S. Dept. of Education, 2017). Teachers and students working together can encourage active student participation in classes to maintain the highest levels of engagement (Bond & Bedenlier, 2019; Bond et al. 2020). When fully understood by teachers and students, and when fully adopted in classroom, these three factors will help students learn principles and skills they need for success in that class, in future high school and college classes, and in the global workplace of the future.

Further Research Recommendations

Future research in three specific, related areas would benefit schools and teachers across the United States:

- Examine links among Professional Learning Community technology training and the behavioral, cognitive, and affective aspects of student engagement, especially in the Constructivist classroom.
- Evaluate the content, teacher involvement, and success of Professional Learning Community technology training at other secondary schools across the nation.
- Focus research on students' perceptions of how the Constructivist classroom, technologies, and student engagement affect learning.

Conclusions

The findings of this study expanded the work of previous research in the areas of Constructivism, Professional Learning Community training, and student engagement. This investigation revealed that the participants believe in the positive value of Constructivism as well as the need to encourage and maintain student engagement. A further assessment of training activities found that administrators and organizers should take time to thoroughly plan Professional Learning Community and professional development time with thoughtful input from teachers. Moreover, the participants strongly indicated that schools need a cultural shift in both teaching approaches and in the availability and use of classroom technologies. Intentional, strong adoption of a Constructivist philosophy will enable teachers to develop closer intellectual bonds with their students, leading to enhanced student engagement. The Professional Learning Community literature indicates that Professional Learning Community teamwork leads to a dramatic change in collective teaching efficacy. The literature also suggests a need for

Professional Learning Community leaders who can visualize and execute in ways that focus on student engagement, routinely examine current student data, and suggest adjustments that help teachers and students who need it. The key concept for teachers to understand is that the former ways of teaching may not be effective in many of today's classrooms. Once understood, more educators will believe that all students can learn from teachers who care.

This concept was described wisely at the national level 160 years ago. In the concluding remarks of his Annual Message to Congress on December 1, 1862, President Abraham Lincoln said:

The dogmas of the quiet past, are inadequate to the stormy present. The occasion is piled high with difficulty, and we must rise -- with the occasion. As our case is new, so we must think anew, and act anew. We must disenthrall ourselves, and then we shall save our country (Kent, 2017).

REFERENCES

- Abrahamson, D. (2017). Embodiment and mathematics learning. In K. Peppler (Ed.), *The SAGE encyclopedia of out-of-school learning* (Vol. 1, pp. 248-252). SAGE Publications, Inc.
<https://www.doi.org/10.4135/9781483385198.n98>
- Abrahamson, D., Lamberty, K. K., Blikstein, P., & Wilensky, U. (2005, June 8-10). *Mixed-media learning environments*. Proceedings of the 2005 Conference on Interaction Design and Children, E. Eisenberg & A. Eisenberg (Eds.) of Instructional Design and Children. Boulder, CO. Association for Computing Machinery.
https://www.academia.edu/2743029/Mixed_media_learning_environments
- Akdeniz, N. O. (2017, July). Use of student-produced videos to develop oral skills in EFL classrooms. *International Journal on Language Literature and Culture in Education*, 4(1), 43–53. <https://doi.org/10.1515/llce-2017-0003>
- Ali, H. M., & Aslam, S. (2020). *YouTube by the numbers: Stats, demographics & fun facts*.
<https://www.omnicoreagency.com/youtube-statistics/>
- Animoto.com. (2020). *Do it yourself video making, made easy*.
<https://www.animoto.com/education/classroom>
- Ashman, G. (2020, May 23). Whatever happened to constructivism (Web blog post)? *Filling the Pail*. WordPress. <https://gregashman.wordpress.com/2020/05/23/whatever-happened-to-constructivism/>

- Aulia, M., Suwatno, S., & Santoso, B. (2018, September 19). Improving learners' oral communication skills through storytelling learning method and learning facilities. *Advances in Economics, Business, Entrepreneurship, and Finance*, 65. *Proceedings of the 1st International Conference on Economics, Business, Entrepreneurship, and Finance (ICEBEF 2018)*, Bandung, Indonesia. Atlantis Press.
<https://www.doi.org/10.2991/icebef-18.2019.50>
- Bass, B. (2020). *Build relevant skills for education today*. International Society for Technology in Education. <https://iste.org/learn/iste-u>
- Beatty, J. (2016). Perceptions of online styles of news video production. *Journal of Visual Literacy*, 35(2), 126–146. <https://dx.doi.org/10.1080/1051144X.2016.1270629>
- Berk, R. A. (2008). *Integrating video clips into the “Legacy Content” of the K–12 curriculum: TV, movies, and YouTube in the classroom*.
<https://www.researchgate.net/publication/267854486>
- Berk, R. A. (2009). Multimedia teaching with video clips: TV, movies, YouTube, and mtvU in the college classroom. *International Journal of Technology in Teaching and Learning*, 5(1), 1-21. <https://www.researchgate.net/publication/228349436>
- Birks, M., & Mills, J. (2015). *Grounded theory: A practical guide* (2nd ed.). Sage Publications Ltd.
- Bond, M., & Bedenlier, S. (2019). Facilitating student engagement through educational technology: Towards a conceptual framework. *Journal of Interactive Media in Education*, 2019(1), 1-14. <https://doi.org/10.5334/jime.528>

- Bond, M., Buntins, K., Bedenlier, S., Zawacki-Richter, O., & Kerres, M. (2020, January 22). Mapping research in student engagement and educational technology in higher education. *International Journal of Educational Technology in Higher Education*, 17(2).
<https://doi.org/10.1186/s41239-019-0176-8>
- Brooks, J. G., & Brooks, M. G. (1999). *In search of understanding: The case for constructivist classrooms*. Association for Supervision and Curriculum Development.
- Bryant, A., & Charmaz, K. (2007). Introduction: Grounded theory research: Methods and practices. In *The SAGE Handbook of Grounded Theory: Paperback Edition* (pp. 1–28). SAGE Publications, Ltd.
- Burgess, S., & Sievertsen, H. H. (2020, April 1). Schools, skills, and learning: The impact of COVID-19 on education. <https://voxeu.org/article/impact-covid-19-education>
- Burke, S. C., Snyder, S., & Rager, R. C. (2009, January). An assessment of faculty usage of YouTube as a teaching resource. *The Internet Journal of Allied Health Sciences and Practice*, 7(1). <https://nsuworks.nova.edu/ijahsp/vol7/iss1/8/>
- Buzzetto-More, N. A. (2014). An examination of undergraduate student's perceptions and predilections of the use of YouTube in the teaching and learning process. *Interdisciplinary Journal of E-Learning and Learning Objects*, 10, 17–32.
<http://www.ijello.org/Volume10/IJELLOv10p017-032Buzzetto0437.pdf>
- Campbell, L. O., & Cox, T. (2018, January). Digital video as a personalized learning assignment: A qualitative study of student authored video using the ICSDR model. *Journal of the Scholarship of Teaching and Learning*, 18(1), 11–24.
<https://doi.org/10.14434/josotl.v18i1.21027>

- Campbell, K., & Wahl, K. H. (2015). *If you can't manage them, you can't teach them: Advice for running a chaos-free classroom where middle and high school students can really learn*. Incentive Publications.
- Carmichael, M., Reid, A. K., & Karpicke, J. D. (2018). *Assessing the impact of educational video on student engagement, critical thinking and learning: The current state of play*. A Sage White Paper. SAGE Publications, Inc.
https://education.report/Resources/Whitepapers/aa1c324d-7d2e-4dd5-916a-e146ef5e2884_hevideolearning.pdf
- Charmaz, K. (2006). *Constructing grounded theory* (1st ed.). SAGE Publications Ltd.
- Clabaugh, G. (2018). *An educational theorist profile of Jean Piaget: A multidimensional analysis*. New Foundations. <http://www.newfoundations.net/GALLERY/Piaget2.html>
- Creswell, J. W., & Poth, C. N. (2013). *Qualitative inquiry & research design: Choosing among five approaches* (3rd ed.). SAGE Publications, Inc.
- Davidson, C., Given, L. M., Danby, S., & Thorpe, K. (2014, September). Talk about a YouTube video in preschool: The mutual production of shared understanding for learning with digital technology. *Australasian Journal of Early Childhood*, 39(3), 76–83.
<https://doi.org/10.1177/183693911403900310>
- Deakin Learning Futures Teaching Development Team. (2013). *Using audio and video for educational purposes*. Deakin University. <https://www.deakin.edu.au>
- Dennick, R. (2012, April). Twelve tips for incorporating educational theory into teaching practices. *Medical Teacher*, 34(8), 618–624.
<http://doi.org/10.3109/0142159X.2012.668244>

- Dewey, J. (1900). *The school and society: The child and the curriculum*. The University of Chicago Press.
- Dewey, J. (2013). *Democracy and education: An introduction to the philosophy of education*. MacMillan. (Original work published 1902).
- Dewey, J. (1938). *Experience & education*. Free Press.
- Dixson, M. D. (2015). Measuring student engagement in the online course: The online student engagement scale (OSE). *Online Learning, 19*(4), 1–15.
<http://dx.doi.org/10.24059/olj.v19i4.561>
- Dorn, E., Hancock, B., Sarakatsannis, J., & Viruleg, E. (2020, June 1). *COVID-19 and student learning in the United States: The hurt could last a lifetime*. McKinsey and Company.
<https://www.mckinsey.com/>
- DuFour, R., & Fullan, M. (2013). *Cultures built to last: Systemic PLCs at work*. Solution Tree Press.
- Frankfort-Nachmias, C., & Nachmias, D. (2000). *Research methods in the social sciences* (6th ed.). Worth.
- Freire, P. (1970). *Pedagogy of the oppressed*. Continuum.
- Fullan, M. (2010). *All systems go: The change imperative for whole system reform*. SAGE Publications, Inc.
- Fullan, M., & Donnelly, K. (2013). *Alive in the swamp: Assessing digital innovations in education*. Nesta/New Schools. https://media.nesta.org.uk/documents/alive_in_the_swamp.pdf
- Fullan, M., & Quinn, J. (2016). *Coherence: The right drivers in action for schools, districts, and systems*. Corwin.

- Gjergo, E., & Samarxhiu, S. (2014, December). Basic principles of “collaborative learning.” *European Scientific Journal*, 17, 22–36. <https://doi.org/10.19044/esj.2011.v17n0p%25p>
- Glass, D., Meyer, A., & Rose, D. H. (2013, Spring). Universal design for learning and the arts. *Harvard Educational Review*, 83(1).
<https://doi.org/10.17763/HAER.83.1.33102P26478P54PW>
- Goodenow, C. (1993, February). Classroom belonging among early adolescent students: Relationships to motivation and achievement. *Journal of Early Adolescence*, 13(1), 21–43. <https://doi.org/10.1177/0272431693013001002>
- Green, P. (2018). *50 Ways to use YouTube in the classroom*. Raising a Maker.
- Guo, P. J., Kim, J., & Rubin, R. (2014, March). How video production affects student engagement: An empirical study of MOOC videos. In *Proceedings of the 1st ACM Conference on Learning @ Scale Conference* (pp. 41-50). Atlanta, GA. Association of Computing Machinery. <http://dx.doi.org/10.1145/2556325.2566239>
- Hakkarainen, P. (2011). Promoting meaningful learning through video production-supported PBL. *Interdisciplinary Journal of Problem-Based Learning*, 5(1).
<https://doi.org/10.7771/1541-5015.1217>
- Harste, J. C. (2014). The art of learning to be critically literate. *Language Arts*, 92(2), 90–102.
<https://library.ncte.org>
- Hattie, J. A. C. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement* (1st ed.). Routledge.
- Hattie, J. (2012). *Visible learning for teachers: Maximizing impact on learning*. Routledge.

- Hobbs, R. (2010). *Digital and media literacy: A plan of action. A white paper on the digital and media literacy recommendations of the Knight Commission on the information needs of communities in a democracy* [Report]. Aspen Institute.
<https://eric.ed.gov/?id=ED523244>
- Hubbard, G. T. (2012). Discovering constructivism: How a project-oriented activity-based media production course effectively employed constructivist teaching principles. *Journal of Media Literacy Education* 4(2), 159–166. <https://digitalcommons.uri.edu/jmle/vol4/iss2/6>
- Hymel, S., Schonert-Reichl, K. A., & Miller, L. D. (2006). Reading, 'riting, 'rithmetic and relationships: Considering the social side of education. *Exceptionality Education Canada*, 16(2–3), 149–192. <https://eric.ed.gov/?id=EJ771426>
- Jenkins, L. (2012, May). Reversing the downslide of student enthusiasm. *School Administrator* 69(5), 16–17. <https://www.aasa.org/content.aspx?id=23242>
- Kent, D. J. (2017, August). Abraham Lincoln—The dogmas of the quiet past are inadequate for the stormy present. <http://www.davidkent-writer.com/2017/08/17/abraham-lincoln-the-dogmas-of-the-quiet-past-are-inadequate-for-the-stormy-present/>
- Lee, C. D. (2007). *Culture, literacy, and learning: Taking bloom in the midst of a whirlwind*. Teachers College Press.
- Leach, A. M. (2017, October). Digital media production to support literacy for secondary students with diverse learning abilities. *Journal of Media Literacy Education*, 9(2), 30–44. <https://doi.org/10.23860/JMLE-2019-09-02-03>
- Leedy, P., & Ormrod, J. (2013). *Practical research: Planning and design* (10th ed.). Pearson.

- Lincoln, A. (1862). *President Abraham Lincoln's Second Annual Message to Congress, December 1, 1862*. National Archives. <https://www.archives.gov/legislative/features/sotu/lincoln.html>
- Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry* (1st ed.). Sage Publications.
- Liu, C. H., & Matthews, R. (2005). Vygotsky's philosophy: Constructivism and its criticisms examined. *International Education Journal*, 6(3), 386–399.
<https://eric.ed.gov/?id=EJ854992>
- Luiselli, J. K., Putnam, R. F., Handler, M. W., & Feinberg, A. B. (2005, April). Whole-school positive behaviour support: Effects on student discipline problems and academic performance. *Educational Psychology*, 25(2–3), 183–198.
<https://doi.org/10.1080/0144341042000301265>
- Lunenburg, F. C., & Irby, B. J. (2014). *Writing a successful thesis or dissertation: Tips and strategies for students in the social and behavioral sciences*. SAGE Publications.
- McCombs, B. L. (2004). The learner-centered psychological principles: A framework for balancing academic achievement and social-emotional learning outcomes. In J. E. Zins, R. P. Weissberg, M. C. Wang, & H. J. Walberg (Eds.), *Building academic success on social and emotional learning: What does the research say?* (pp. 23–39). Teachers College Press.
- McCormack, B., & Hill, E. (1997). *Conducting a survey: The SPSS workbook*. International Thomson Business Press.
- McMillan, J. H., & Schumacher, S. (2014). *Research in education: Evidence-based inquiry* (7th ed.). Pearson.

- Maddox, K., & Feng, J. (2013, October 17-18). *Whole language instruction vs. phonics instruction: Effect on reading fluency and spelling accuracy of first grade students* [Online submission]. Georgia Educational Research Association Annual Conference, Savannah, GA, United States. <https://eric.ed.gov/?id=ED545621>
- Manolopoulou, M. (2012, November 12). *Educational video production: When educators become producers*. <https://elearningindustry.com/educational-video-production-when-educators-become-producers>
- Martin, F., & Bolliger, D. U. (2018, March). Engagement matters: Student perceptions on the importance of engagement strategies in the online learning environment. *Online Learning*, 22(1), 205–222. <http://dx.doi.org/10.24059/olj.v22i1.1092>
- Marzano, R. J. (2003). *What works in schools: Translating research into action*. Association for Supervision & Curriculum Development.
- Marzano, R. J., & Marzano, J. S. (2003, September). The key to classroom management. *Educational Leadership*, 61(1), 6–13. <http://www.ascd.org>
- Maziriri, E. T., Gapa, P., & Chuchu, T. (2020, April). Student perceptions towards the use of YouTube as an educational tool for learning and tutorials. *International Journal of Instruction*, 13(2), 119–138. <https://doi.org/10.29333/iji.2020.1329a>
- Mind Tools. (2018, June 21). *The top ten learning theories*. Emerald Works. <https://emeraldworks.com/resources/blog/tips-and-expertise/the-top-ten-learning-theories>
- Morrell, E., Dueñas, R., Garcia, V., & López, J. (2013). *Critical media pedagogy: Teaching for achievement in city schools*. Teachers College Press. <https://eric.ed.gov/?id=ED540008>

- Muhammad, A., & Cruz, L. F. (2019). *Time for change: 4 essential skills for transformational school & district leaders*. Solution Tree Press.
- National Association for Media Literacy Education (NAMLE), (2007, November). *Core principles of media literacy education in the United States*. <https://www.NAMLE.net>
- Norton, P., & Hathaway, D. (2010). Video production as an instructional strategy: Content learning and teacher practice. *Contemporary Issues in Technology and Teacher Education*, 10(1), 145–166. <https://www.learntechlib.org/primary/p/31472/>
- Oakes, J. (1985). *Keeping track: How schools structure inequality*. Yale University Press.
- Patrick, H., Hicks, L., & Ryan, M. (1997). Relations of perceived social efficacy and social goal pursuit to self-efficacy for academic work. *Journal of Early Adolescence*, 17(2), 109–128. <https://doi.org/10.1177/0272431697017002001>
- Peck, R. (2012, February 21). *Lights, camera . . . engagement! Three great tools for classroom video*. <https://www.edutopia.org/blog/using-video-in-classroom-ron-peck>
- Pereira, M. V., Barros, S. d S., de Rezende Filho, L. A. C., & de A. Fauth, L. H. (2012, January). Audiovisual physics reports: Students' video production as a strategy for the didactic laboratory. *Physics Education*, 47(1), 44–51. <https://eric.ed.gov/?id=EJ977815>
- Polikoff, M. S. (2017, January-March). Is Common Core “working”? And where does Common Core research go from here? *American Educational Research Association Open*, 3(1), 1–6. <https://doi.org/10.1177/2332858417691749>
- Polirstok, S. (2017, October-December). Strategies to improve academic achievement in secondary school students: Perspectives on grit and mindset. *SAGE Open*, 7(4), 1–9. <https://doi.org/10.1177/2158244017745111>

- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. Oxford.
- Rogowsky, B. A., Calhoun, B. M., & Tallal, P. (2015). Matching learning style to instructional method: Effects on comprehension. *Journal of Educational Psychology, 107*(1), 64–78.
<http://dx.doi.org/10.1037/a0037478>
- Shewbridge, W., & Berge, Z. L. (2004, January-March). The role of theory and technology in learning video production: The challenge of change. *International Journal on E-Learning, 3*(1), 31–39. <https://www.learntechlib.org/primary/p/12781/>
- Sinatra, G. M., Heddy, B. C., & Lombardi, D. (2015). The challenges of defining and measuring student engagement in science. *Educational Psychologist, 50*(1), 1–13.
<https://doi.org/10.1080/00461520.2014.1002924>
- Sorden, S. D. (2005). A cognitive approach to instructional design for multimedia learning. *Informing Science Journal, 8*, 263–279. <https://www.scribd.com/document/123562887/A-Cognitive-Approach-to-Instructional-Design>
- Speed, C. J., Lucarelli, G. A., & Macaulay, J. O. (2018, August). Student produced videos – An innovative and creative approach to assessment. *International Journal of Higher Education, 7*(4), 99–109. <https://doi.org/10.5430/ijhe.v7n4p99>
- Steinmayr, R., Weidinger, A. F., Schwinger, M., & Spinath, B. (2019, July). The importance of students' motivation for their academic achievement—Replicating and extending previous findings. *Frontiers in Psychology, 10*(1730), 1–11.
<https://doi.org/10.3389/fpsyg.2019.01730>
- Urquhart, C. (2013). *Grounded theory for qualitative research: A practical guide* (1st ed.). Sage.
<https://dx.doi.org/10.4135/9781526402196>

- U.S. Department of Education, Office of Educational Technology. (2017, January). *Reimagining the role of technology in education: 2017 National Education Technology Plan Update* [Report]. <https://tech.ed.gov/files/2017/01/NETP17.pdf>
- VERBI. (2020). *MAXQDA: The art of data analysis*. <https://maxqda.com/what-is-maxqda> [and] <https://www.maxqda.com/qualitative-analysis-software>
- Watkins, J., & Wilkins, M. (2011). Using YouTube in the EFL classroom. *Language Education in Asia*, 2(1), 113–119. https://doi.org/10.5746/LEiA/11/V2/I1/A09/Watkins_Wilkins
- Watt, D. (2019, June). Video production in elementary teacher education as a critical digital literary practice. *Media and Communication*, 7(2), 82–89. <https://doi.org/10.17645/mac.v7i2.1967>
- White, G. E. (2017). *The dissertation warrior: The ultimate guide to being the kind of person who finishes a doctoral dissertation or thesis*. Triumphant Heart International.
- Whitney, C. R., & Candelaria, C. A. (2017, July-September). The effects of No Child Left Behind on children's socioemotional outcomes. *American Educational Research Association*, 3(3), 1–21. <https://doi.org/10.1177/2332858417726324>
- Williams, K. C., & Hierck, T. (2015). *Starting a movement: Building culture from the inside out in professional learning communities*. Solution Tree Press.
- Yilmaz, K. (2008). Constructivism: Its theoretical underpinnings, variations, and implications for classroom instruction. *Educational Horizons*, 86(3), 161–172. <https://www.jstor.org/stable/42923724>
- Zhang, J. (2020, August 22). The knowledge network for innovations in learning and teaching (KNILT). [https://knilt.arcc.albany.edu/The_Knowledge_Network_for_Innovations_in_Learning_and_Teaching_\(KNILT\)](https://knilt.arcc.albany.edu/The_Knowledge_Network_for_Innovations_in_Learning_and_Teaching_(KNILT)).

Zins, J. E., Bloodworth, M. R., Weissberg, R. P., & Walberg, H. J. (2007). The scientific base linking social and emotional learning to school success. *Journal of Educational and Psychological Consultation, 17*(2–3), 191-210.

<https://psycnet.apa.org/doi/10.1080/10474410701413145>

APPENDICES

Appendix A: Informed Consent Form

TITLE OF STUDY

TEACHERS' PERCEPTIONS OF THE EFFECTS OF Constructivism and PROFESSIONAL LEARNING COMMUNITY training ON STUDENT Engagement: A PHENOMENOLOGICAL STUDY

PURPOSE OF STUDY: You are being asked to take part in a research study that is designed to learn about the views of high school teachers on the general subjects of Constructivism, Professional Learning Community and late start day training about using video including YouTube in the classroom, and student engagement.

DESCRIPTION: The research will be conducted in the fall of 2020, beginning in early October and concluding in late November or early December 2020. The research begins with an initial survey of questions which you will be able to answer by checking a box or boxes that match your response. The initial survey will take about 10 or 15 minutes to complete. During the second phase, the researcher will invite seven teachers to participate in a one-on-one Zoom interview that will feature questions seeking your ideas and opinions about certain teaching practices and how video might contribute to enhancing student engagement. For planning purposes, this phase will be scheduled for 30 minutes, but you might be asked to participate in a longer interview session to help the researcher get more information.

To ensure accuracy of the researcher's notes and transcripts, Zoom interviews will be audio-recorded. The interviews will not be recorded on video. Only the researcher and the dissertation editor will have access to the audio recordings and the transcripts; both of those individuals will

sign an agreement not to disclose any of the information contained in your comments beyond that which may appear in the dissertation's text. The resulting transcripts will be used by the researcher to discern and evaluate data to aid in answering the research questions.

PARTICIPATION: Your participation is voluntary. Refusal to participate will involve no penalty or loss of benefits to which you are otherwise entitled. You may decline to answer any or all questions and you may terminate your involvement at any time if you choose. It is up to you to decide whether or not to take part in this study. If you decide to take part in this study, you will be asked to sign an acknowledgment of consent which appears below the horizontal line following this paragraph. After you sign the consent form, you are still free to withdraw at any time and without giving a reason. Withdrawing from this study will not affect the relationship you have, if any, with the researcher. If you withdraw from the study before data collection is completed, your data will be returned to you or destroyed, whichever you may prefer, upon telephonic or email notice to the researcher. Before you decide to participate in this study, it is important that you understand why the research is being done and what it will involve. Please read the following information carefully. Please ask the researcher if there is anything that is not clear or if you need more information.

RISKS: To the best of the researcher's knowledge and belief, there is and shall be no risk to you or any of the other participants in this study.

VIDEO/AUDIO/PHOTOGRAPHY: The audio of your possible Zoom or telephone interview will be recorded to ensure accuracy of the researcher's transcript and data analysis. No video will be recorded and no photographs will be taken of you during any phase of this research. If you participate in a Zoom or telephone one-on-one interview, the researcher will ask you to cover or turn off the camera function on your laptop, computer, or phone. Please also initial and sign the accompanying form entitled "Audio Recording Informed Consent Form."

Participant's Initials _____

CONFIDENTIALITY: Your responses to the survey questions and Zoom interview will be anonymous unless you grant permission to associate your name with those parts of the research. Please do not write any identifying information on your surveys. Every effort will be made by the researcher to preserve your confidentiality including the following:

- Assigning code names/numbers for participants that will be used on all research notes and documents.
- Keeping notes, interview transcriptions, and any other identifying participant information in a locked file cabinet in the personal possession of the researcher.
- Participant data will be kept confidential except in cases where the researcher is legally obligated to report specific incidents. These incidents include, but may not be limited to, incidents of abuse and suicide risk.

COMPENSATION: There is no compensation for participating in this study.

CONTACT INFORMATION: The principal researcher is Mr. Jonathan J. Wright, a Doctoral Candidate at Concordia University Irvine. If you have questions at any time about this study, or you experience adverse effects as the result of participating in this study, you may contact the researcher whose contact information is provided on the first page. If you have questions regarding your rights as a research participant, or if problems arise which you do not feel you can discuss with the Primary Investigator, please contact the Concordia University Irvine Institutional Review Board at (865) 354-3000, ext. 4822. You may contact Mr. Wright by using his university email address: jonathan.wright@eagles.cui.edu or by calling his cell phone number: 909.437.5402.

RESULTS: The results of this study will be published in the researcher's doctoral dissertation which will be part of the library archives at Concordia University Irvine.

CONSENT

I have read and I understand the provided information and have had the opportunity to ask questions. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving a reason and without cost. I understand that I will be given a copy of this completed and signed consent form. I voluntarily agree to take part in this study.

CONFIRMATION STATEMENT:

I have read and understand the consent document and agree to participate in your study.

SIGNATURE: Please initial the bottom left of pages 1 and 2 of the Informed Consent Form, sign on the Participant's signature line below, and print the date you signed.

Participant's Signature: _____ Date: _____

Printed Name: _____

Researcher's Signature: _____ Date: _____

Printed Name: _____

The extra copy of this consent form is for your records.

Participant's Initials _____

Appendix B: Audio Recording Informed Consent Form

As part of this research project, we will be recording the audio of your participation in the Zoom or telephone interviews. Please indicate what uses of this audiotape you are willing to consent to by initialing below. You are free to initial from one to all of the spaces. We will only use the audiotape in the way or ways you agree to. In any use of this audiotape, your name will not be identified. You will be identified only by the type of class or classes you teach and/or the grade level of that class or those classes. If you do not initial any of the spaces below, the audiotape will be destroyed. If you do not grant permission for the researcher to record your interview, please clearly state your preference before the interview begins.

Please indicate the type of informed consent:

The audiotape can be studied by the research team for use
in the research project.

Please initial _____

A transcript or summary of my audiotape can be used
for scientific publications.

Please initial _____

The audiotape can be played in public presentations
to nonscientific groups.

Please initial _____

Signature: _____ Date: _____

Printed Name: _____

The extra copy of this consent form is for your records.

Appendix C: Initial Faculty Survey

The Initial Faculty Survey consists of nine multiple-choice questions, using the basic technique described in Figure 3. 1:

Figure 3. 1

Guidelines for Using the Response Scale

Please read each statement. Pick the column that best indicates how much you agree or disagree with that statement. Then check or darken the appropriate box.

	Strongly Agree	Agree	Neutral/No Opinion	Disagree	Strongly disagree
11 PLCs are always productive	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12 PLC technology training helped me to improve student engagement	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note. This sample reflects Likert scale items as they might appear on a paper-and-pen survey.

The present research used an electronic survey using Survey Monkey. Participants selected their response by placing the pointer/cursor at the appropriate box and clicking. Changing an answer was as simple as selecting a different response on the same line and clicking inside that box.

The following survey will be converted to a Survey Monkey format and then emailed to all teachers at the selected high school in these departments: Electives, English/Language Arts, Mathematics, Science, Social Science, Special Education, and World Languages (listed alphabetically in the survey questions). The goal is to identify teachers who could articulate their perceptions of and familiarity with Constructivism, their level of Professional Learning Community technology training and video usage, and their general perceptions of student engagement.

1. How long have you been teaching?

- 0–2 years
- 3–5 years
- 6–10 years
- 11 or more years

2. In what subject area(s) do you teach for three or more periods per day? (Check all that apply)

- Electives
- English/Language Arts
- Mathematics
- Science
- Social Science
- Special Education
- World Language (or Foreign Language)
- Other
- None

3. Do you teach video production?

- Yes
- No

4. How relevant is Constructivism to how you teach in your classroom.

- Very relevant
- Somewhat relevant
- No opinion
- Somewhat irrelevant

5. How do you use Constructivism in your classroom? (Select all that apply)

- I introduce a topic and invite the students to ask questions about it.
- I encourage many ideas about a topic and ask the students to discuss them.
- Students meet in small groups to work through new material.
- I suggest solutions to a problem and encourage students to ask questions and experiment.
- Students relate new materials to something they already know.
- Students collaborate and solve problems together.
- Students inquire, investigate, draw conclusions, and ask more questions.
- Students work together to find out “why” if they come up with a “wrong” answer.
- I have a few other ideas of my own about Constructivism in my classroom:

If you would be interested in being part of the next phase of this research, please print your email address or cell phone number here so the researcher can contact you. [Thank you for helping!]

Appendix D: Faculty Zoom Interview Questions (One-On-One)

This set of questions will be conducted during one-on-one Zoom interviews with the faculty participants. The goal is to elicit more detailed information from the teachers regarding their familiarity with and uses of Constructivism; their perceptions of Professional Learning Community training and knowledge of video usage including YouTube; and their perceptions of student engagement as it may be influenced or shaped by video usage during classroom discussions and homework, and/or as student-produced video projects. In the first section on Constructivism, participants answered specific questions depending upon their responses to the fifth question on the initial survey. The basic questions and instructions at “A” are for the researcher/interviewer’s use. The lines with each question were for the researcher to use for limited notetaking during the Zoom interviews.

A. You mentioned in your responses to the initial survey that Constructivism is (check one based on the participant’s response to question 4 of the initial survey):

- Very relevant in your classroom (Ask only Questions 1–2)
- Somewhat relevant (Ask only Questions 1–2)
- Such that you didn’t offer an opinion (Ask only Questions 3–4)
- Somewhat irrelevant (Ask only Questions 5–6)
- Not relevant (Ask only Questions 5–6)

1. What is the major advantage of using Constructivism in your classroom?

2. What disadvantage if any have you noticed using Constructivism in your classroom?

3. To what elements of Constructivism do your students react most positively?

4. To what elements of Constructivism do your students react most negatively?

Skip to Question 9.

5. Have you tried Constructivist techniques in your classroom? Please explain.

6. How did your students react to that approach?

Skip to Question 9.

7. Have you tried Constructivist techniques in your classroom? Please explain.

8. What about Constructivism doesn't work for you in your classroom?

I'd like to switch our discussion to professional development about classroom technologies.

9. What do you think of when you hear you're going to be attending a professional development session or Professional Learning Community on technology?

-
-
10. What Professional Learning Community or late start day training would you like to have regarding classroom technologies including uses of YouTube and other videos?

-
-
11. What planning steps do you use before making a subject-related video?

-
-
12. What planning steps do encourage your students to use before they make an individual or group project video?

-
-
13. What equipment and/or software is available for you to create your own videos or for students to use while creating videos?

-
-
14. What equipment and/or software would you like to have available to create your own videos or for students to use while making videos?

-
-
15. How has Professional Learning Community time or other professional development trained you to teach students to create their own videos?
-

-
16. [If enough time remains in this section of the interview, ask:] What else might you have to add about professional development training on classroom technologies, videos, and using YouTube?
-
-

For the final section of our interview, I'd like to talk about student engagement in your classroom.

17. What techniques do you use to keep your students engaged during a class period?
-
-

18. What techniques do you think keeps students most engaged during a class period?
-
-

19. What classroom techniques or activities seem to cause students to lose focus?
-
-

20. What indicators do you use to determine if students are engaged?
-
-

Appendix E: Concordia University Irvine Institutional Review Board Approval

**INSTITUTIONAL REVIEW BOARD (IRB) DECISION FORM**

Review Date September 30, 2020
Reviewer ID# 151036
Category Expedited Review [45 CFR 46.110](#)
 Full Board Review [45 CFR 46](#)

IRB Application #	5765
Title of Project	Teacher perceptions of the effects of constructivism and PLC training on student engagement: a phenomenological study
Principal Investigator Name (PI)	Jonathan Wright
PI Email (use CUI email, if applicable)	Jonathan.wright1@eagles.cui.edu

DECISION

Approved

Effective duration of the IRB Approval: October 1, 2020 - September 30, 2021

For Expedited and Full Board Approved, Please Note:

- a. *The IRB's approval is only for the project protocol named above. Any changes are subject to review and approval by the IRB.*
- b. *Any adverse events must be reported to the IRB.*
- c. *An annual report or report upon completion is required for each project. If the project is to continue beyond the twelve month period, a request for continuation of approval should be made in writing. Any deviations from the approved protocol should be noted.*

Needs revision and resubmission

Not approved

COMMENTS