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Contextual Factor Profiling: Teacher-Created Classroom Website Design in Texas High Schools

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
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Walden University
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Abstract

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by

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ES, Walden University, 2012

MA, Grand Canyon University, 2009

MS, Capella University, 2003

BIS, University of Texas at El Paso, 2001

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

With increasing student access to technology and the Internet, Texas school districts have invested in content management systems (CMS), improved technology infrastructure, and professional development with little research available about best practices and current use of class websites. Using the technological pedagogical content knowledge (TPACK) framework, this study investigated how contextual factors predicted the number of website components related to the teacher information, communication, classroom management, and teaching content section of a class website designed by a Texas high school teacher. This quantitative, predictive correlational research design included data collected from a proportional allocation of 191 Texas high school teacher websites representing 20 geographic areas, 5 content areas, 5 grade levels, Title 1 designation, campus enrollment levels, and self-reported teacher technology readiness. Multiple regressions revealed the campus' Title 1 designation was a significant predictor of the number of teacher information and teaching content components included on the class websites of Texas high school teachers. The study revealed that opportunities to access online resources through class websites were reduced for students in Title 1 designated schools. Several possibilities that positively contribute to social change were discovered. Educational decision makers and administrators may use this information to determine where expenditures should be made to ensure development of class websites that meet students' needs. Estimates show a 2-day professional development to create class websites for Texas secondary teachers would cost $93,237,200. Ensuring funds spent results in sites that provide optimal academic support to students could improve learning and bring significant social change.

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Dedication

To my husband, Doug: This work would never have been completed without your unconditional love and support. Thank you for being by my side through this this journey, encouraging me at every step!

To Mom and Dad: You are the inspiration for this journey. You believed in me and I believed in you. Dad, I know that you are watching, talking to the table next to you in heaven, telling them the news. Mom, forever and 2 days!

To my daughters, Marki and Carli: You are the joys of my life! Marki, your amazing strength is an inspiration that got me through the most difficult of times. You are the strongest person I know. And, you do it with a crazy sense of humor! Carli, you've listened, encouraged, and kept this family together with amazing grace. The fact that you believed I could do this made all the difference!

To my 6 beautiful grandchildren: You light up my life in six of the most spectacular ways! The sparkle in your eyes, the laughter, and the warm hugs was all the motivation I needed when it seemed like this would never be completed. Quest, Zak, Sutton, Addy, MJ, and Charma – you taught me to believe!

To my grandmother: You always made me feel special. Your belief in me provided a foundation that made this a possibility. This wouldn't have been possible without you.

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Chapter 1: Introduction to the Study

The availability of teacher-created classroom websites has given students an opportunity to revisit concepts, practice skills, fill in gaps in their knowledge, and obtain essential class information at any time and on any day regardless of location. While educators have shared models of teacher-created classroom websites in both formal and informal settings where the design has supported student learning , little research has been done to understand what contextual factors may impact the design of the published sites. The availability of technology access and support for technology integration is available in almost all classrooms and schools, and classroom sites are often provided to teachers through their school district (Mooney & Baenziger, 2008; Werblow & Duesbery, 2009). If this is not available, other no-cost options are available to teachers to create their classroom websites through open-source programs and educational online environments (Ally & Samaka, 2013).

Districts are spending public dollars to provide these websites to teachers and to provide professional development to help them create and manage the sites without significant research to justify the expenditures (Killion, 2013; Kim, Kim, Lee, Spector, & DeMeester, 2013; Kumar, Rose, & D'Silva, 2008). When professional development is provided, many times the focus is on the mechanics of creating the classroom website rather than on how the website design can support and improve teaching and learning. Administrators, leaders, and professional development trainers do not have information that profiles the teachers they hope will create these websites so that they can establish expectations, differentiate instruction, and spend public dollars to maximize the design of the teacher-created classroom website.

The background of the study, problem statement, purpose of the study, and research question and hypotheses will be provided in the sections that follow. The theoretical framework

and nature of the study will provide insights into the theory that informs the study as well as the research approach. Assumptions and scope and delimitations are included in the discussion for further clarification of the study. Finally, in this chapter, I will look at the limitations and the implications for social change.

Background of Study

Teachers can provide their students a 24/7 virtual classroom that supports student learning both at home and school by creating a class website. The teacher-created classroom site has the potential to provide learning resources to students that correlates with the content curriculum throughout the school year (Cebi, 2013; Dunn & Peet, 2010; Friedman, 2006; Hill, Tucker, & Hannon, 2010; Unal, 2008). In addition, the teacher-created classroom website can inform parents and the community of critical class and school information so that they can more actively support the students and the school (Friedman, 2006; Rogers & Wright, 2008; Unal, 2008). The teacher makes choices when developing their classroom website. The design of the class website is the result of the various components they choose to include on the site and the relevance of those components to the content and classroom activities. The amount of information published for parents and the community may be a reflection of the teacher's technology readiness, knowledge, and pedagogical approach to teaching (Chai, Koh, & Tsai, 2011; Harris, Mishra, & Koehler, 2009; Koehler et al., 2011; Polly & Brantley-Dias, 2009; Schmidt et al., 2009).

There is a financial cost to creating classroom websites. Classroom websites may be formatted as traditional websites using either a content management system (CMS) or open education resources (OER) platforms, social media platforms, wikis, and blogs (Boling, Castek, Zawilinski, Barton, & Nierlich, 2008; Ceruolo, 2010; Gifford, 2010; Larusson, Alterman, &

Altermann, 2009; Leung & Ivy, 2003; Tubin & Klein, 2007). Teachers are then provided with professional development to help them develop their classroom websites. Professional development costs an estimated $350 per day for each teacher (Odden, 2011). If a teacher-created classroom site may be initially designed and completed in 2 full days of professional development training, a single high school of 100 teachers will cost $70,000 (2011). The cost of providing this training to all 133,196 Texas secondary teachers (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2012) is estimated to be $93,237,200. This amount does not include the cost of ongoing maintenance, supported through upcoming and future professional development trainings. This expenditure is reasonable if the goals are met and improved student academic results are achieved (Killion, 2013).

Little data exists that helps educational decision makers, school leaders, policy makers, researchers, and educators understand the actual patterns of use for teacher-created classroom websites. In addition, little research was found about the current design of teacher-created classroom websites and the actual inclusion of website components that supported instruction relevant to the content area taught by the teacher who created it. In this study, I addressed this gap in the research by identifying current profiles of teacher-created classroom use by Texas high school teachers. The results lead to the development of teacher profiles as they relate to classroom website design. The findings can be used to inform education practice so that decisions are made that result in maximizing the teacher-created classroom site to support student learning.

Problem Statement

Little is known about the factors that may be related to the classroom website designed by teachers and this is becoming an increasingly significant issue in education (Cebi, 2013; Dunn

& Peet, 2010; Fancövtuövj, Prokop, & Usak, 2010; Greenhow, Robelia, & Hughes, 2009b; Hill et al., 2010; Sweeny, 2010; Tingen, Philbeck, & Holcomb, 2011b). This issue has become more significant with the advent of Web 2.0 technologies, increased availability of technology in schools, and the growing ability of students and the public to access the Internet through mobile devices (Ceruolo, 2010; Greenhow et al., 2009b; Inan & Lowther, 2010; Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; May & Zhu, 2009; Reinhart, Thomas, & Toriskie, 2011; Tingen et al., 2011b; Wei & Hindman, 2011). Despite this lack of data, school districts are spending significant funds to provide a CMS that allows teachers to create and publish their teacher-created classroom websites. Additional expenses are incurred for professional development training and providing the technology infrastructure to support the website system (Killion, 2013; Odden, 2011; Penuel, Fishman, Haugan Cheng, & Sabelli, 2011). This money is being spent without knowing if it is resulting in teacher-created website design that supports student learning (Killion, 2013).

In order to address these lack of data, it is first necessary to know more about the contextual factors that may influence the design decisions of the Texas high school teacher when creating a classroom website. In this study, I analyzed Texas public high school teacher-created classroom websites to determine profiles based on the school enrollment, geographic location, Campus STaR Chart Summary Findings, content area(s) taught, and grade level taught of the teacher who designed the published site.

Purpose of the Study

The purpose of this quantitative study was to determine profiles of contextual factors that predict classroom website design in Texas high schools. The general population for this study

was Texas high school teachers who have published a class website. Texas was selected because of the large teacher population and geographical area that would allow for the collection of data representing teachers with diverse backgrounds. High schools were chosen because the students in Grades 9-12 had more access to a laptop, cell phone, or smart phone with Internet access than students in Grades K-8 (Wicks, 2010). The findings of this study filled a gap in the current literature by providing researched findings of the contextual factors of teachers that predict their choices when creating a classroom website.

Nature of the Study

The classroom website design consists of the combination of website components and information that a teacher includes on the site. The independent (predictor) variables were the Campus STaR Chart Summary Findings for Teaching & Learning Focus Area TL6, geographic location denoted by the Educational Service Center (ESC), campus Title 1 designation, content area taught, grade level, and campus enrollment as indicated by the University Interscholastic League (UIL). The dependent variables were separated into four categories: teacher information, communication, classroom management, and teaching content. The dependent variables were website components that could be found on a teacher-created classroom site.

A website evaluation form was created to record the presence of each variable and was called the Website Data Collection Form. The form also included a record, when appropriate, of the number of times that a particular variable was identified on the classroom webpage. For example, the number of assignments that were posteded on the teacher-created classroom website were recorded as an interval answer while the presence of the teacher's e-mail address was recorded as present or not present. The dependent variables for the teacher information category were the following: teacher room number, teacher class schedule, teacher information

and background, school information, and calendar. The dependent variables in the communication category were the following: parent information, teacher e-mail address or contact form, teacher phone number, and teacher conference time. The dependent variables for the classroom management category were classroom rules and class announcements. The dependent variables for teaching content were resources for exams, resources for assignments, repository of lesson information, links for lesson support, time since last update, number of web pages, assignment information, display of student work, grading information, and incorporates technology innovation.

Sources of Data

The website components were measured by a structured record assessment of published teacher-created classroom websites that documented the presence of specific website components (see Appendix A). Additional data in the logic model were gathered from the following resources: school division listings provided by the UIL 2014 Realignment Quick Reference Alphabetical List of all 1396 Schools; STaR Chart Campus Summary Results; National Center for Education Statistics Public School Data for school district, physical address, type, grade span, total students, classroom teachers, and Title I School status; and the districts served by Regional Education Service Centers report (Texas Education Agency, 2014b).

The Website Data Collection Form (Appendix A) was used to record all data and is based on two instruments and the literature review. The two instruments included Lunts' (2003) website evaluations tool and/or Unal's (2008) Essential Teacher Website Elements for Teachers and Parents.

Population, Setting, and Sample

The general population for this study was Texas high school teachers who had published a classroom website. Texas high school teachers were defined as adult, content-certified, faculty members who taught at a Texas high school. A Texas high school was defined as a public school that teaches students in Grades 9, 10, 11, and 12 that had no special designation such as charter school, adult education, or alternate title. A teacher-created classroom website was the published classroom site identified by a hyperlink from the school campus website. The teacher-created classroom site must identify the teacher who published it.

Websites included in this study were publicly accessible sites found through the use of the Internet. The sites were those hyperlinked to a Texas high school campus web page. The Texas high school had to be a Texas public school with no special designation such as charter school, adult education, or alternate title. G*Power 3.1.9.2 was used to determine that a sample size of 75 teacher-created classroom websites evaluated using the Website Data Collection Form (see Appendix A) was needed to achieve .80 power. The design of this study yielded 205 evaluated teacher-created classroom websites and exceeded the minimum sample size needed. This study used a systematic sampling approach within-cluster random sampling process without replacement. The power calculation used to determine this sample size is available in Chapter 3.

Sampling Plan

The unit of analysis for this study was the published teacher-created classroom website. This study used a systematic sampling approach within-cluster random sampling process without replacement. There were 1,169 Texas high schools (Texas Education Agency, 2013) meeting this standard. The secondary schools were located in 20 Texas ESC regions (Texas Education Agency, n.d.). In addition, the UIL classified each high school as a Division 1, II, III, IV, or V based on campus enrollment (UIL, n.d.). Division I represented the school with the smallest

enrollment while Division 5 identified the campus with the largest enrollment. For this reason, each Texas high school campus was classified in three ways: a public school with no special designation, the ESC where it was located, and the division identification given to it by the UIL. In order to ensure that all ESC regions, UIL Divisions, and content areas were fairly represented, a systematic process for determining the evaluation sample size based on ESC region and content area was created.

The following constructs were evaluated to determine what contextual factors predicted teacher-created classroom website design in Texas high schools: teacher information, communication, class management, and teaching content. Figure 1 provides a conceptual model of profiles developed based on analysis of contextual factors that influenced classroom website design. A more detailed discussion of the research design and methods used in this study is provided in Chapter 3.

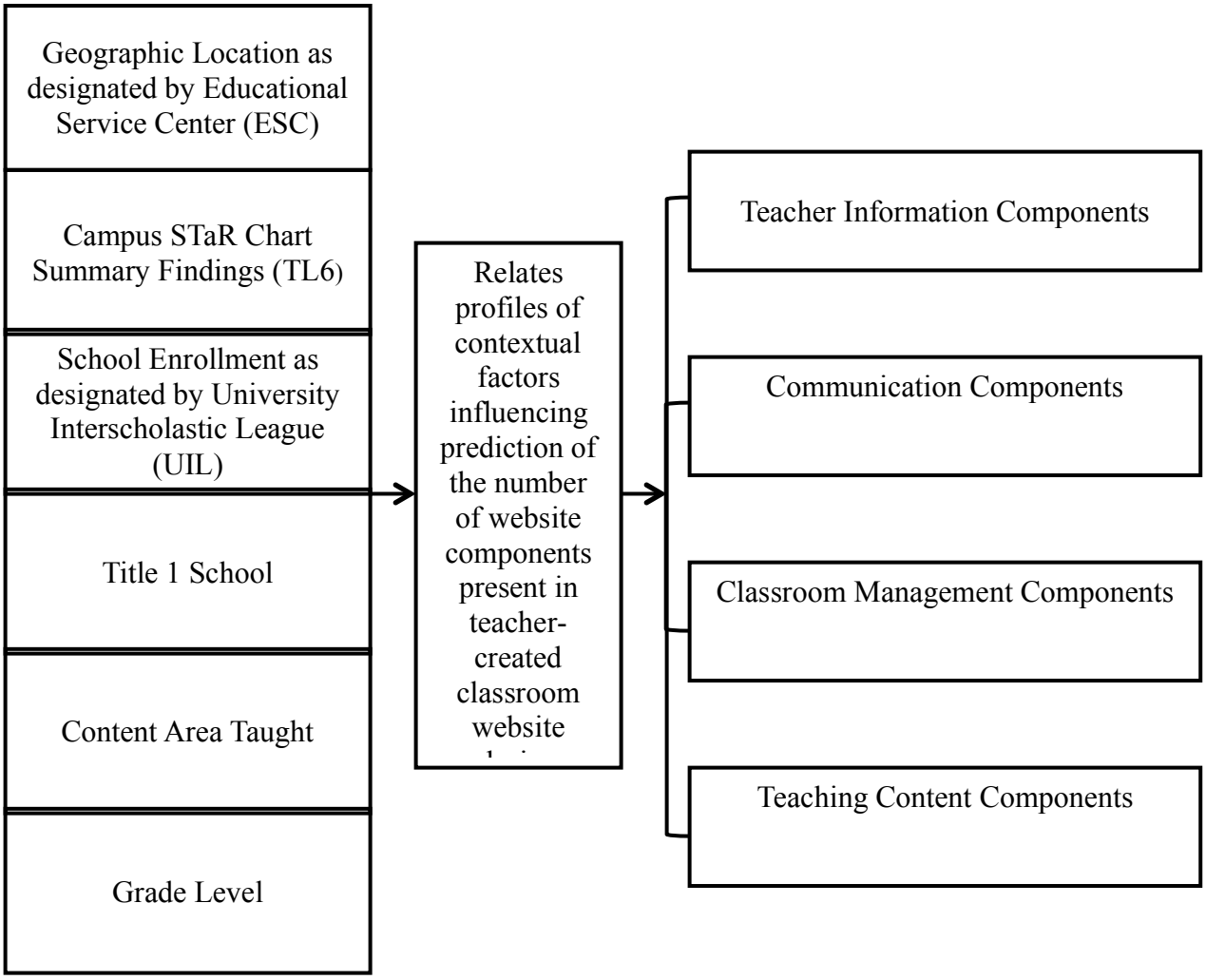

Figure 1. Conceptual model of profiles developed based on analysis of contextual factors that influence classroom website design.

Research Questions and Hypotheses

The published teacher-created classroom websites were the primary records that were investigated in this study. In order to determine what contextual factors predicted the design of classroom websites developed by classroom teachers in Texas high school teachers, four separate research questions were identified along with null and alternative hypotheses for each:

1. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching information section of a website designed by a teacher employed at that campus*?*

$H_0$1: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

2. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and

campus enrollment (UIL) predict the number of website components related to the communication section of a website designed by a teacher employed at that campus?

$H_0$1: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

3. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the classroom management section of a website designed by a teacher employed at that campus?

$H_0$1: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

4. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching content section of a website designed by a teacher employed at that campus?

H_01: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus.

Theoretical Framework

Successful technology integration is a function of meeting the learning needs of students so that they can master content goals through thoughtful use of educational

technologies. Technological pedagogical content knowledge (TPACK) framework refers to teachers' ability to teach a specific content area and select and use the appropriate technology to support learning (Chai et al., 2011; Harris et al., 2009; Keeler, 2008; Schmidt et al., 2009). This framework provides guidance for a comprehensive evaluation of teacher-created classroom sites and the correlation of this assessment to the self-reported technology self-efficacy of Texas high school teachers and website design. In addition, this framework correlates the components of technological pedagogical knowledge and content area knowledge that can be applied to the analysis of teacher-created class sites and the teachers' decisions made while designing their site. Further discussion of TPACK and the teacher-created classroom website will be presented in Chapter 2.

Definition of Terms

Below, common terms used throughout this study are more clearly defined. This list is not exhaustive, but it does contain the most critical terms to the purpose of this study.

Classroom management: Classroom management represents some aspects of pedagogical knowledge defined in TPACK and was defined as inclusion of specific website components that provides information or tools regarding expectations, class rules, and school or class policies that establish the online and classroom environment (Dunn, 2011a; Harris et al., 2009; Hill et al., 2010; Kabakci Yurdakul et al., 2012; Tingen et al., 2011b; Unal, 2008).

Communication: Communication was defined as inclusion of specific website components on a teacher-created classroom website that provides tools or information

that allows the site visitor to communicate or contact the teacher and is representative of some aspects of technological knowledge as defined by TPACK (Cebi, 2013; Dunn & Peet, 2010; Hartshorne, Friedman, Algozzine, & Isibor, 2006; Rogers & Wright, 2008; Unal, 2008). Communication may include information like the teacher's e-mail address or be an interactive tool such as an e-mail form that is filled out for submission.

Profile: A profile is a written description of a group of teachers whose identities are similar based on specific contextual factors determined through the data analysis of the classroom websites created and designed by the individual teachers. The profile includes data that are relevant to all areas of TPACK: technological, pedagogical, and content knowledge.

Regional Education Service Center (ESC): Texas is divided into 20 regions. Each region, and the districts geographically located in that region, are supported by an ESC. The ESC provides support to school districts, parents, and the community by providing training, technical assistance, and leadership (Texas Education Agency, n.d.). The ESC works under the guidelines of the Texas Educational Agency (TEA) and the educational laws established by TEA to further student achievement (n.d.). The ESC region to which it has been assigned by TEA identified the geographic location of the campus.

Teacher created-classroom website design: Teacher-created classroom website design that is the creation of a class website by a teacher in order to facilitate communication between teacher and the student, parent, and/or community, support student learning, and provide information about the classroom or the school (Lunts, 2003b; Unal, 2006). For the purpose of this study, teacher-created class website design is the published class site containing specific components which, when examined as a

completed website, provide data which may provide information about the influence of contextual factors on their design.

Teacher information: This construct includes teacher-created classroom website components that provide little or no information about the curriculum, are static in terms of the school year, and do not allow for interactive engagement of website visitor and is representative of some aspects of technological knowledge as defined in TPACK (Cebi, 2013; Dunn & Peet, 2010; Hartshorne et al., 2006; Unal, 2008).

STaR Chart: A yearly self-assessment administered to Texas public educators measuring teacher progress in effective technology integration (TEA, 2014c). A summary of campus results is publicly available. This situation is addressed in Chapter 3. The information provided on the STaR Chart is representative of the technological component of TPACK (Koehler et al., 2011; Koehler, Mishra, & Yahya, 2007).

State Board for Educator Certification (SBEC): Created in Texas in 1995, SBEC administers teacher certifications and the professional standards that educators must meet to obtain and retain certification (TEA, 2013a) In Texas, a database is available to search for an individual teacher to confirm certification (Texas Educational Agency, 2014a).

Teaching content: Teaching content is representative of content knowledge that is reflected on a teacher-created classroom website through the inclusion of site components that are directly related to content instruction and may be interactive and collaborative in their process (Cebi, 2013; Dunn, 2011a; Harris et al., 2009; Tingen et al., 2011b; Unal, 2008)

Texas Education Agency (TEA): The TEA administers public education in Texas for PK-12 schools supported by state and federal funds (TEA, 2014a).

University Interscholastic League (UIL): Created at the University of Texas at Austin in 1910, the UIL provides contests for Texas students in academics, athletics, and music (UIL, 2014). The UIL provides guidelines for the competitive activities that include school UIL Division designations of 1, 2, 3, 4, or 5 that are determined by the school enrollment. School size was recorded in this study based on the UIL division that has been provided by the League. Further discussion of campus size is included Chapter 3.

Web 2.0: Web 2.0 are the tools and practices of digital technology located on the world wide web that provide an interactive or communication component (Crook, 2012). A teacher-created classroom website is a Web 2.0 tool.

Assumptions

It was assumed that solely the teachers whose names are identified on the individual sites created the teacher-created classroom websites. It was also assumed that the teacher whose name appears on the teacher-created classroom website had ongoing access to the website as a creator and was able to create, modify, and update content on the site. It was also assumed that the teachers creating the classroom website were Texas certified teachers and, therefore, aware of the *State Board for Educator Certification Technology Applications Standards for all Teachers* (TEA, 2006b). As a result, it was assumed that the teachers who created the classroom websites included in this study understood and met the basic technology requirements set forth by the state of Texas for certification. To confirm teacher certification by TEA, an SBEC Official Educator Certificate search was completed for the teachers identified on the classroom sites included in the study.

Scope and Delimitations

This scope of this study was limited to teacher-created classroom websites that were hyperlinked to the campus website of Texas public high schools; were publicly accessible; and had no special designation such as charter school, adult education, or alternate title in the summer or fall of 2014. The campuses where the teacher-created classroom websites were linked were in Texas school districts served by one of 20 Educational Service Centers and were classified by one of five UIL Divisions. The teachers who created the classroom websites taught a wide variety of content areas including the four core content areas of math, English language arts/reading, science, and social studies. Teachers who taught any other content area were classified as "other."

Limitations

STaR Chart summaries are available at the campus, district, and state level only. As a result, the campus level results included in this study could differ from the actual self-reported technology readiness STaR Chart submission entered by the teacher who designed a classroom website included in this study. This measure was one component of the technology readiness construct measure but could impact the aggregate results of the technology readiness category. Further discussion can be found in Chapter 3.

The analysis using linear regression also had limitations. With regression, it is possible to ascertain relationships, but this does not indicate the cause of the relationship. For this reason, it is possible that a relationship was found, but the cause of the relationship could not be concluded with certainty (Field, 2013; Garson, 2012).

Significance

This study addressed an area of Texas high school education where little research exists in an effort to understand how teacher technology self-efficacy impacts the use of teacher-created classroom websites. The results of the study will provide critical data for districts and high school administrators that can be used to inform decision making about professional development, technology expenditures, and the development of best practices in teaching. In addition, this information will aid busy teachers as they make decisions about the methods they use to maximize learning opportunities for students effectively. With 1,169 school districts throughout Texas with an enrollment of 1,349,106 in the 2010-2011 school year and approximately 133,196 secondary teachers, the results of this study has the potential to inform a large educator population so that effective decisions are made for a large population of students (U.S. Department of Education, 2012). On a larger scale, state educational leaders can use this analysis in their efforts to establish standards that ensure that students have the opportunity and ability to maximize achievement in Texas public high schools.

Implications for Theory

This study contributed to the body of knowledge about the relationship of technology integration to campus enrollments, geographic location, content area taught, teachers' perceived technology readiness, and economic statistics. In particular, this study added to the research about these contextual factors and activity theory that strives to explain how district, school, and classroom systems interact to determine a teacher's technology integration practices (Anika Ball Anthony, 2012). In this case, the systems were the contextual factors. One area of importance was the relationship between the self-perceived technology readiness of the teachers and the design of their classroom

websites. The results helped me to determine if teachers who perceived themselves as technology ready applied that skill in creating a class website supporting student learning (Ertmer, 2005; Ertmer & Ottenbreit-leftwich, 2010; Kim et al., 2013). The data was analyzed further to determine relationships between other critical contextual factors and their influence on the actual practice of teachers documented by the website evaluations.

Implications for Practice and Social Change

An administrator or educational leader can use these findings to make decisions about expenditures of the school budget. With this information, an administrator can make informed decisions about professional development spending, website hosting purchases, and expenditures for hardware and technology infrastructure. In addition, the results of this study provide insights about the teacher who designed the classroom site so that better decisions about teacher expectations and needed professional development support can be made. Ultimately, these findings could lead to improved opportunities for learning for students through the use of a well-designed teacher-created classroom website

The data and results of this study may serve as a guide that can be referenced when reviewing a teacher's classroom website design so that optimal professional development is provided so that the class site meets meet the objectives of school administrators, communicates with the community, and supports learning for students. This study will aid administrators in understanding how demographic statistics, technological, pedagogical, and content knowledge influence the decisions teachers make when designing their sites. That understanding may benefit not only the decisions made

with regard to the establishment of expectations for teacher-created classroom websites, but it may provide insights to administrators about the teachers and campuses they lead.

Finally, this study provided data that may be used to make informed decisions about the use of district and school monies to provide the online environment for the creation of teacher-created class websites. With 1,169 school districts throughout Texas (Institute of Education Sciences, National Center for Education Statistics, 2012) with an enrollment of 1,349,106 in the 2010-2011 school year (U.S. Department of Education, Institute of Education Sciences, National Center for Education Statistics, 2012), and approximately 133,196 secondary teachers (2012), this information informs a large educator population. This allows for the most effective decisions to be made, perhaps most importantly, to increase opportunities for students to succeed in school.

Summary

In this chapter, I highlighted the significance and importance of this study emphasizing the gap that exists in the knowledge of teacher-created classroom website design. I also described critical components that lie at the foundation of this study: purpose, research questions, theoretical framework, and implications for social change. Together, these components facilitated the alignment of the components of the study and guided the analysis of teacher-created classroom website design. Chapter 1 also included the operational definitions, the nature of the study, assumptions, scope and delimitations, and limitations that further inform the study process. In Chapter 2, a review of the literature regarding the use of teacher-created classroom websites, technology readiness, content area taught, website components, and demographics will deepen understanding of

the knowledge available to educators presently and highlight the gap that exists in the literature.

Chapter 2: Review of Literature

The purpose of this study was to determine what contextual factors predict the number of website components included on a Texas public high school teacher-created classroom website. Several key concepts and principles are discussed in that context. This chapter provides an overview of relevant research pertaining to teacher-created class sites and contextual factors in the educational setting. The research related to demographic statistics, technological knowledge, pedagogical knowledge, and content knowledge and their influence on teacher-created website design will be discussed. Technology has been a focus in education for many years and access to technology is growing (Ho, 2009; Hughes, 2005; Inan & Lowther, 2010; Kumar et al., 2008; TEA, 2006a). The majority of that focus has been on the use of technology for the day-to-day, face-to-face instruction in a traditional classroom or laboratory. However, students are using technologies related to digital environments, such as text messaging, e-mail communication, and instant messaging (Baker, 2007). In fact, three of four teens, or 75%, report they access online information through the use of a mobile device (Madden et al., 2013). As these students move on to adulthood, they will likely find they continue to use technologies to function in their career, higher-level education, and to access critical information (Jaeger, Bertot, Thompson, Katz, & DeCoster, 2012). It is necessary to consider the use of digital environments to develop a better understanding of how they are supporting academic learning.

Technology can be used to develop teacher-created classroom websites that provide information and academic support to students 24 hours a day, 7 days a week. Greenhow, Robella, and Hughes (2009) stated that educators should extend their

conception of the traditional classrooms to include cyberspaces, such as the teacher-created classroom website in their understanding of teaching and learning. In fact, the number of schools increasing their web presence through school websites is growing (Leung & Ivy, 2003; Maio-Taddeo, 2007), and they are usually published from a link on the campus website. Many school districts support this effort by purchasing a CMS or similar tool that allows teachers to create a classroom.

The use of technology to create and maintain a classroom website can provide students with critical educational support during and after regular school hours. Research regarding the creation and design of teacher-created classroom sites is largely underdeveloped (Janicki & Chandler-Olcott, 2012); however, research exists about the use of technology in education (Halverson & Smith, 2009). When used effectively, technology can motivate students and increase interest in learning important concepts and state-mandated material. Teachers in all content areas can use their website to communicate with students, parents, and the community resulting in improved academic performance, increased support for educational efforts, and a positive community presence (Hill et al., 2010; Janicki & Chandler-Olcott, 2012).

A teacher's classroom website may provide relevant information to administrators regarding the technology readiness of the teacher and the campus as a whole (King, 2011; Macaulay, 2009; Polizzi, 2011). This data can inform budget expenditures and professional development planning. The design of the teacher-created classroom website may be representative of several indicators found in the TPACK framework that identify successful technology integration, such as technological, pedagogical, and content knowledge. Statistical data can provide insights into the influence of demographics on

website design outcomes as well. The goal of this study was to determine profiles of contextual factors that relate the design of teacher-created classroom sites in Texas high schools.

Seven databases were employed to search for relevant information for the literature review. The years sought were 2009-2014; however, relevant research was found predating those 5 years. These databases included ProQuest Dissertations & Theses Full Text, Dissertations & Theses @ Walden University, ProQuest Education Journals, ERIC – Educational Resource Information Center, Education from SAGE, Ed/IT Digital Library, and Education Research Complete. The following organizational sites were included in this review: the Department of Education's National Center for Education Statistics, Texas Educational Agency- Ask Ted, the UIL, Texas STaR Chart, and the TEA Reports & Data. Keywords used included *website, web site, class website, class web site, course website, course web site, teacher website, teacher web site, teacher created website, teacher created web site teacher-created website, teacher-created web site, educational website, educational web site, instructional website, instructional web site, technology integration, educational technology, technology readiness, teacher scholarly identity, TPACK, technology acceptance model, school size, campus size, campus website, campus web site, professional development, website professional development, web site professional development, website evaluation, web site evaluation,* and *STaR chart*.

The sections that follow provide an overview of TPACK as a framework, teacher-created website design, and implication of the study for education. Various approaches are included in this review of the literature to define and explore the components of

TPACK: technological, pedagogical, and content knowledge as they relate to the design of teacher-created classroom websites.

TPACK

Successful technology integration occurs when a teacher applies his or her specialized content knowledge, his or her ability as a professional educator to share that knowledge with others, and his or her technology knowledge and skills to create an educational opportunity for students. TPACK is a framework that combines the technological, pedagogical, and content knowledge so that it can be used to define and understand effective technology integration (Chai et al., 2011; Harris & Hofer, 2009; Jaipal & Figg, 2010; Schmidt et al., 2009). TPACK was introduced by Koehler and Mischra (Harris et al., 2009; Koehler et al., 2007; Koehler & Mishra, 2005) to serve as a guideline for teachers. This guide was designed to support teachers in creating curriculum for students that would support learning (Koehler & Mishra, 2005). At the foundation of TPACK is the belief that quality technology integration cannot occur when technology is the focus of the learning activity. Instead, the focus must be the content and the pedagogy with technology skillfully used as a tool to create engaging and interactive experiences that support learning.

TPACK serveed as the theoretical framework for this study. Originally developed by Mishra and Koehler (2006), TPACK was used to guide the development of curriculum that integrates technology effectively to support student learning. A s applied to this study, this theory holds that a teacher's perceived technology readiness and content area(s) taught would explain the decisions made during the creation of his or her classroom website. These design decisions reflect the teacher's pedagogical applications

of communication, classroom management, teaching content, and inclusion of teacher information because the website elements included in the teacher-created classroom website reflect an understanding of how website technology can be used for pedagogical purposes (Mishra & Koehler, 2009).

The contextual factors of school enrollment, geographic location, and economic factors also influence these classroom website design decisions. Mishra and Koehler (2009) stated, "Knowledge of technology, content, and pedagogy does not exist in a vacuum; it exists and functions within specific contexts. Teachers face a wide array of elements that make their contexts unique and different from other teachers" (p. 17). Using TPACK as a framework, I used the logic that a teacher-created classroom website: (a) reflects the design decisions of the classroom teacher creating the site; (b) those decisions are based on a combination of the teacher's technological, pedagogical, and content knowledge; and (c) contextual factors of school enrollment, geographic location, and economic factors would influence the decisions in design of the teacher creating a classroom website. I stopped reviewing here due to time constraints. Please go through the rest of your chapter and look for the patterns I pointed out to you. I will now look at Chapter 3.

Using technology to support learning in a specific content area is a research-based concept and requires that teachers develop their ability to create opportunities for students to increase their knowledge (Dexter, Doering, & Riedel, 2006). Much of the online discussion for integrating technology into content areas addresses the core subjects of math, social studies, English, and science (A. B. Anthony & Clark, 2011; Bull, Hammond, & Ferster, 2008; Fancövtuövj et al., 2010; Gorder, 2008) but does not address

technology integration as it impacts all of the content areas commonly taught in a typical high school (Dexter et al., 2006). The process of effective technology integration requires that the teacher have knowledge of their content, whatever that may be, as well as skills in the pedagogy and an ability to choose and use technology that can enhance the content to improve student learning (Koehler et al., 2007).

Some researchers have begun to use TPACK as more than just a guide. In fact, some have used TPACK to develop assessments that measure technology readiness, guide teacher evaluations, and prepare student teachers in their preparation for a teaching career (Jaipal & Figg, 2010; Schmidt et al., 2009). TPACK has served as a framework for guiding the implementation of Web 2.0 tools into the school curriculum (Bull et al., 2008). Most Web 2.0 tools are not created for use in the educational world; therefore, TPACK serves as a guide for educators who are recreating these tools for use as a support system for student learning (Koehler et al., 2011) Classroom websites are an example of Web 2.0 technology that can be recreated from a non-educational format to one that provides students opportunities for learning to take place using the framework of TPACK (Crook, 2012).

When technology is used for this purpose, it becomes a medium to help students understand and master concepts. Content and pedagogical knowledge merges with technology knowledge so that the students' prior knowledge and learning styles are considered and addressed as a means to emphasize and clarify new understandings (Koehler et al., 2007). Technology integration is not about learning technology skills, but rather the use of technology to build relationships with content, pedagogy, and technology that will be significant in the learning process ((Koehler et al., 2007; Koehler

& Mishra, 2005). Therefore, when a teacher-created classroom website is the technology tool, use of the TPACK framework indicates that the decisions about content and design are reflections of the teacher's technology integration abilities (Maio-Taddeo, 2007).

To create the instructional website, a teacher must draw on his or her knowledge of their content and their pedagogical understandings to create and develop an activity, lesson, or other element that will provide students what they need to learn (Crook, 2012; Harris et al., 2009). Ideally, the teacher then combines his or her content and pedagogical knowledge with their technology knowledge to develop an online environment, in the form of a website that allows students to access resources 24/7, increasing success in the classroom. In this context, the technological, pedagogical, and content knowledge of the teacher creating a class website results in a learning design. "Insofar as it addresses the content, pedagogy and technology elements of educational practice, the TPACK model can be used as a foundation for analyzing learning design employing Web 2.0 tools" (Bower, Hedberg, & Kuswara, 2010).

The research studied selected for this literature review focused on TPACK as a framework for the study, teacher-created classroom website design, and implications for education. The research pertaining to the technological, pedagogical and content knowledge components of teacher-created classroom website design was discussed. Literature was identified addressing contextual factors relevant to teacher-created website design. Research was included regarding the educational implications pertaining to school spending, professional development, and teacher evaluations.

Technological Knowledge

Teachers are responsible for knowledge of the content area or grade level they teach. In Texas, they are also responsible for mastery of five technology applications standards (TEA, 2013b). The State Board for Educator Certification (SBEC) in Texas identifies five technology applications standards for all teachers (TEA, 2013c). These proficiencies are to be mastered by teachers, administrators, and librarians. The goal of these five technology standards is to ensure that all teachers have the ability to ensure all students in all grades master the Technology Applications Texas Essential Knowledge and Skills (TEKS) designed to reflect the educational and employment needs required in the 21st Century (TEA, 2011).

One area addressed in the technology applications standards for all teachers was meeting the needs of diverse learners through technology integration. Standard IV of the Technology Applications Standards for all Teachers states, "All teachers communicate information in different formats and for diverse audiences" (TEA, 2014b). The classroom website is a means of communication that effectively addresses this requirement because it can be used to communication classroom and content information and, as a host, can support inclusion of a variety of formats to meet the needs of the student, parents, and the community (Hill et al., 2010; Lunts, 2003a; Tubin & Klein, 2007; Unal, 2008; Whittier, 2009).

The tools of technology become secondary to the development of pedagogical and content knowledge that will support student academic growth. A focus emerges about technology integration through TPACK on the knowledge of teachers and how they apply it in a learning environment (Chai et al., 2011; Polly & Brantley-Dias, 2009). While technological knowledge includes the skill level and ability of a teacher to use the

technology hardware efficiently, the more important aspect of this component is the teacher's ability to work with new technologies and adjust to the constantly changing technology environment (Koehler & Rosenberg, 2013). Technological knowledge would include a teacher's awareness of technologies, an understanding of how the technologies can support learning, the selection of the technology, and then applying technology skills to effectively use the technology to meet goals.

The emergence of Web 2.0 has given educators a new opportunity to create online learning environments through the teacher-created classroom website (Bull et al., 2008; Polly & Brantley-Dias, 2009). A teacher can apply and demonstrate their technological, pedagogical, and content knowledge through the design and selection of website components to include on a classroom website. The technology itself, whether that be a professionally designed educational website or a teacher-created classroom website, is simply the tool that hosts the components that represent the content knowledge and pedagogy of the designer (Bower et al., 2010). The technological knowledge of TPACK, however, is also a demonstration of the teacher's ability to make decisions about technology choices based on how those choices will impact learning outcomes (Jaipal & Figg, 2010).

The technological component of TPACK is closely aligned with the definition of technology readiness. Technology readiness is the ability of a teacher to accept and implement new technologies (Meng, Elliott, & Hall, 2009; Son & Han, 2011). In one model of accessing technology readiness, the rate of use of new technologies as well as the variety of new technologies employed were measured to help determine technology readiness (Son & Han, 2011). Usage of technology was again used as a measure to

determine the technology readiness of secondary school teachers (Kumar et al., 2008). In a study by Inan and Lowther (2009), the use of Web 2.0 learning tools was considered to be an indicator of the use of technology as a tool rather than for instructional preparation or delivery. In all of these cases, increased usage was a quantifiable indicator of technology readiness along with the types and variety of Web 2.0 tools included for use with students. In the case of the teacher-created classroom website, the use of specific website components may indicate the technological knowledge and readiness of the teacher (Maio-Taddeo, 2007).

Defining technology integration and technological knowledge has been a focus of educational research for many years as access to technology is growing and barriers lessening (Ho, 2009; Hughes, 2005; Inan & Lowther, 2010; Kumar et al., 2008; TEA, 2006a). Much of this focus has been on the use of technology for the day-to-day, face-to-face instruction in a traditional classroom or laboratory. However, students today are using technologies related to digital environments such as text messaging, e-mail communication, and instant messaging (Baker, 2007). In fact, three of four teens, or 75%, report they access online information through the use of a mobile device (Madden et al., 2013). As these students move on to adulthood, they will likely find they continue to use technologies to function in their career, higher-level education, and to access critical information (Jaeger et al., 2012). It is then logical to consider the use of digital, Web 2.0 environments such as the teacher-created classroom website in order to optimize their design for academic learning.

Some researchers and educators have expressed concern with this definition and application of technological knowledge in the TPACK framework. While it provides a

foundation for understanding the concept of technological knowledge, it does not explain why a teacher who has this knowledge may not use it in practice or why they may use it differently than another teacher with similar knowledge (Kim et al., 2013). It is impossible to know if this a result of inaccessibility to the necessary technology hardware and infrastructure, a reflection of a teacher's beliefs about technology integration, or the result of a host of unknown influences (Aldunate & Nussbaum, 2013; Kim et al., 2013).

This concern defines a problem in terms of what is absent rather than what is evident. For example, the reason for the absence of the use of a Web 2.0 tool such as a blog on a teacher-created website may not be definitively known; however, the presence of a blog is a clear indicator of usage of a Web 2.0 tool as defined by the technological knowledge component of TPACK. A recent study discovered that "teachers were able to enact technology integration practices that closely aligned with their beliefs" (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012, p. 432). In this study, it is the enacted teacher practices that are measured and are indicators of the technology readiness and knowledge of the teacher who designed the classroom website (Ertmer & Ottenbreit-leftwich, 2010; Mueller, Wood, Willoughby, Ross, & Specht, 2008; Ottenbreit-Leftwich et al., 2012).

Technology can be used to develop teacher-created classroom websites that provide important information and academic support to students 24 hours a day, seven days a week. Greenhow, Robella, and Hughes (2009) state that educators should extend their conception of the traditional classrooms to include cyberspaces such as teacher-created classroom websites in their conception of teaching and learning. In fact, the number of schools increasing their web presence through school websites is growing

(Leung & Ivy, 2003; Maio-Taddeo, 2007) and they are usually published from a link on the campus website. Many school districts support this effort by providing a CMS or similar tool that allows teachers to create a classroom website to support student learning.

The use of technology to create and maintain a classroom website can provide students with critical educational support during and after regular school hours. Research regarding the creation and design of teacher-created classroom websites is largely underdeveloped (Janicki & Chandler-Olcott, 2012); however, research exists about the use of technology in education (Halverson & Smith, 2009). When used effectively, technology can motivate students and increase interest in learning important concepts and state-mandated material. Teachers in all content areas can use their website to communicate with students, parents, and the community resulting in improved academic performance, increased support for educational efforts, and a positive community presence (Hill et al., 2010; Janicki & Chandler-Olcott, 2012).

Pedagogical Knowledge

Pedagogical knowledge is defined as the practice of teaching and includes the methodology, techniques, and strategies that are used to teach and assess learning as well as the knowledge required to manage the classroom and work with students (Chai et al., 2011; Koehler et al., 2007). A combination of beliefs about content area goals and the actual pedagogical practices was identified as "pedagogical orientation" (Voogt, 2010, p.461). A distinction in practice was made between pedagogical goals that were common among teachers and those that were higher level goals which were more aligned with the needs of the students (Voogt, 2010). Therefore, pedagogical knowledge includes tasks that include instruction and classroom management as well as an understanding of

diverse educational approaches to support students and their varying needs (Konig, Blomeke, Paine, Schmidt, & Hsieh, 2011; Voogt, 2010; Voss, Kunter, & Baumert, 2011). In addition, classroom assessment was considered important so that student progress could be determined (Voss et al., 2011)

Web 2.0 technologies provide opportunities for the teacher to apply pedagogical knowledge through the use of technology (Bower et al., 2010). The teacher-created classroom website may be used to make presentations provided in class available to students 24/7 or a teacher may include information for parents and students to communicate upcoming lessons, educational resources, classroom rules, or contact information (Dunn, 2011b; Fancövtuövj et al., 2010; Friedman & Carolina, 2006; Gifford, 2010; Tingen, Philbeck, & Holcomb, 2011a; Tubin & Klein, 2007; Unal, 2006). When these website components are included on a teacher-created classroom website, they may serve as a reflection of the pedagogical identity and beliefs of the classroom teacher (Greenhow et al., 2009b; Ottenbreit-Leftwich et al., 2012; Voogt, 2010; Voss et al., 2011). In addition, the teacher-created classroom website provides a publicly accessible historical record which can be quantified and coded for research purposes. This approach allows for analysis resulting from the collection of data to measure the inclusion of website components in three categories, technological design, pedagogical design, and content design (Chiou, Lin, & Perng, 2010; Law, Qi, & Buhalis, 2010; Lunts, 2003a; Unal, 2008).

Despite what appears to be a majority agreement of the definition of pedagogical knowledge, some researchers have found that the opposite is true; there is not enough research to provide a clear and definitive definition of pedagogical knowledge in

TPACK. In fact, they cite a lack of theoretical research and ability to define boundaries between the technological, pedagogical, and content knowledge components of TPACK as issues that weaken its potential as a usable theory (Angeli & Valanides, 2009; Graham, 2011). Still other researchers express concern that too many definitions of the constructs of TPACK are provided in research causing confusion and blurring of definitive definitions to build theory (Angeli & Valanides, 2009; Graham, 2011). They feel that the complex nature of TPACK diminishes its use as a theory to effectively measure technology integration.

Content Knowledge

Content knowledge is the third component of the TPACK framework. It refers to the teacher's knowledge about the subject or area that they teach (Harris et al., 2009; Schmidt et al., 2009). Content knowledge implies much more than just a mastery of facts related to a topic; it requires a comprehensive understanding of the theories, main ideas, frameworks, and specific methods necessary for transference of subject matter content knowledge to students (Archambault & Barnett, 2010; Harris et al., 2009). A teacher who teaches more than one content area will use content knowledge to differentiate between subject areas to provide instruction as an application of content knowledge (Schmidt et al., 2009). The content area of the teacher designing the classroom website will be recorded for analysis in this study, if available.

Grade level is relevant to the content knowledge required by the teacher who designs a classroom webpage. Content is likely to change with grade level (Cleary & Chen, 2009; Tingen et al., 2011a). In Texas, the fact that content knowledge requirements differ for grade levels is reflected in the subject-area Texas Essential

Knowledge and Skills (TEKS) state standards that outline what specific knowledge and skills are required of students based on their subject and grade level (TEA, 2014c). One research study determined that elementary teachers as a whole displayed more technological and pedagogical knowledge while post-secondary instructors showed more technological content knowledge (Cox & Graham, 2009). No research was found regarding the various knowledge differences between high school grade levels. The grade level taught by the teacher designing the classroom website was recorded for analysis in this study, if available.

Content knowledge may appear to be a clear and easily defined construct of TPACK. However, researchers note that the boundaries of content knowledge appear to be blurred with those of pedagogical knowledge (Angeli & Valanides, 2009; Graham, 2011). In a study of the use of a TPACK-based observation instrument to gather data about technology integration, the researchers noted that clear and precise training must be provided to observers because of the complexity of the classroom and the difficulty of measuring teachers' knowledge (Hofer, Grandgenett, Harris, & Swan, 2010). A teacher-created classroom website, however, is a publicly available historical document that provides a "snapshot" of the website in time and less complex than the actual classroom filled with live students and a teacher.

Summary

The TPACK framework provides definitions and understandings to guide the process of teacher-created classroom website design analysis. An analysis guided by the three constructs of TPACK, technological knowledge, pedagogical knowledge, and content knowledge, will provide data to develop profiles based on specific contextual

factors that influence teacher-created website design. The decisions that teachers make during the development of a classroom website are visible on the published website and provide indicators of the teachers technological, pedagogical, and content knowledge as well as their ability to use this knowledge to provide a content-rich, pedagogically sound, teacher-created classroom website.

Teacher-Created Website Design

TPACK and Website Design

Using TPACK as a framework, the teacher-created classroom website design can be analyzed to determine what included components represent one of the three constructs: technological knowledge, pedagogical knowledge, and content knowledge. The choice of website components to be included on a teacher's website is at the core of designing classroom websites. Website design that includes innovative technologies, technologies that allow for interaction such as a blog or wiki, are actively updated, and include components that reflect the ongoing activities of the classroom are representative of advanced technology readiness (Bower et al., 2010; Dunn & Peet, 2010; Ertmer et al., 2012; Friedman & Carolina, 2006; Larusson et al., 2009; Maio-Taddeo, 2007). A teacher who designs his or her website to include these items reflects an increased technology readiness or technological knowledge (Holden & Rada, 2011; Kim et al., 2013; Kumar et al., 2008; Lin, Shih, & Sher, 2007)

Pedagogical knowledge was reflected in teacher-created classroom website design with the inclusion of components that address classroom management and concept presentation and support. Irrespective of the content area that is taught by teachers, best practices suggest that common website components are desirable in terms of school

website creation (Mcgee & Reis, 2012; Miller, Adsit, & Miller, 2005). These components include teacher information such as name, room number, phone number, e-mail address and/or e-mail form for contact, content area taught, grade taught, biography and/or background information, daily schedule, and conference times; classroom information including calendars with updated classroom events, current homework assignments, project information and documents, entry of important lesson dates on the calendar; student work; school information such as upcoming school events on the calendar, announcements about school activities and news; and parent components including specific parent resources to support learning. (Bower et al., 2010; Friedman & Carolina, 2006; Lunts, 2003a; Maio-Taddeo, 2007; Sharma & Singh, 2013; Tingen et al., 2011a; Tucker & Hill, 2009; Unal, 2008).

A teacher may indicate what content area(s) they teach when designing their classroom website. Content knowledge can be reflected by the inclusion of website components such as exam resources, a repository of downloadable files or available videos that support learning, and links to external resources that support subject area concepts (Fancövtuövj et al., 2010; Hill et al., 2010; Kember, McNaught, Chong, Lam, & Cheng, 2010; Lunts, 2003a; Tingen et al., 2011a). Components that include outdated content material are not likely to support the current classroom goals and so this information should be frequently updated (Friedman & Carolina, 2006).

Perception may play an important part in determining what components are included in a teacher-created classroom website. Teachers may see the teacher-created website as an instructional tool, a general form of technology, or a novelty (Cebi, 2013; Lee & Tsai, 2008). Other teachers may not understand what capabilities and

opportunities the web offers to support teaching and learning. In addition, teachers may not even be aware that an understanding of why it is important that they have the technology pedagogical knowledge and content knowledge as it relates to the design of teacher-created classroom (Kember et al., 2010; Lee & Tsai, 2008). Therefore, critical components that research has shown to be important to students, parents, and the community will be omitted only due to a lack of exposure to models that include these components as well as the research that supports specific components in the design model.

If the goal of the teacher-created classroom website is to increase the academic ability and knowledge of the student, in other words, to serve as an instructional tool that enhances and supports face-to-face instruction, research provides some specific components that should be included in their design (Hill et al., 2010; Kember et al., 2010). These pages are then linked to create the teacher-created classroom website so that it becomes a learning environment. The goal of an instructional classroom website is to engage the student in knowledge-building that requires active participation (Heafner & Friedman, 2008; Hohlfeld, Ritzhaupt, & Barron, 2010; Lightfoot, 2000). This model develops the classroom website so that it serves as a virtual classroom that is not constricted by time or place (Lightfoot, 2000; Sharma & Singh, 2013). Each component of the teacher-created classroom website represents a different function of the actual classroom (2000).

Technology Readiness

The teacher-created classroom website may provide insights into the technology knowledge as identified in TPACK or technology readiness of the faculty member

developing it. For example, self-efficacy and attitudes towards technology influences the results obtained when a teacher-created classroom website was used (Janicki & Chandler-Olcott, 2012; Park & Wentling, 2007; Tingen et al., 2011a). In fact, more than any other factor, teacher technology readiness was found to have the most impact on the transfer of knowledge to the application of skills to create a technology-based product such as a classroom website (Park & Wentling, 2007). A positive perception of online learning resulted in a greater probability that technology goals would be obtained (Ho, 2009; Inan & Lowther, 2010). Educators with negative attitudes about the worth of online learning and technology tools significantly impacted the likelihood that they would participate in creating and designing an online resource (Hung & Jeng, 2013).

While teacher technology integration is a commonly desired goal, a teacher-created classroom website serves as an example of the technology readiness of the person creating it. The website may be indicative of the teacher's computer proficiency, which is one of the most significant factors impacting technology integration (Ho, 2009; Inan & Lowther, 2010). When teachers are exposed to the concept of a teacher-created website for their classrooms, they go through the process of interpreting and evaluating the usefulness of this technology tool in meeting goals (Dunn & Peet, 2010; Hughes, 2005). The Technology Acceptance Model (TAM) specifically considers the perceptions of these individuals about and ease of use of technology as a predictor of behavior (Holden & Rada, 2011; Inan & Lowther, 2010; Meng et al., 2009). This model is appropriate for systems-based consideration because the individuals considered are not necessarily choosing to implement the technology but rather are doing so because of the requirements of their job or workplace (Lin et al., 2007). The teachers in this situation

presumably do not have the power to choose individually whether they will participate or choose among alternative actions or options (Lin et al., 2007).

The technology readiness of the teacher may be reflected in the decisions they make when creating and designing a teacher-created classroom website. These choices are expected to improve when teachers adopt and use technology to facilitate teaching and learning (Aldunate & Nussbaum, 2013; Lin et al., 2007). To be effective, teacher-created classroom websites requires a teacher who is ready to employ the technology to improve student academic outcomes (2008, Kim, Kim, Lee, Spector, & DeMeester, 2013). The teacher-created classroom website is an opportunity for the teacher to integrate technology to support teaching and learning in an environment that can be accessed at any time, regardless of school hours or location.

However, motivation to integrate technology into the curriculum is influenced by the teacher's perceptions of convenience (A. B. Anthony & Clark, 2011; Baek, Jung, & Kim, 2008). Teachers may believe that technology integration in the form of teacher-created classroom websites is not convenient but rather, something that requires extensive time and are difficult to complete and maintain (Friedman, 2006). Despite evidence that the creation of a classroom website can actually benefit the teacher and improve learning, the perceptions of inconvenience and difficulty may prove to be a barrier to their actual implementation (Friedman & Carolina, 2006; Tingen et al., 2011a; Unal, 2008). These perceptions serve as barriers that may be reflected in the published teacher websites (Miller et al., 2005). While the teacher-created classroom website is one indicator of teacher readiness, other indicators can be found in Texas STaR Chart reports addressing this area.

Texas STaR Chart

The STaR Chart is a planning and self-assessment tool that is intended for use by teachers, schools, and districts to evaluate their progress in meeting the goals of the Long Range Plan for Technology. It was developed and piloted in 1999-2001 by the Educational Technology Advisory Committee (ETAC) and required in 2004 (TEA, 2006a). The Long Range Plan for Technology was created by the TEA to support the mission of Texas public education which addresses providing quality education for all Texas children (TEA, 2006a). The STaR Chart is designed to indicate the self-reported development a teacher has made towards the SBEC Technology Standards and No Child Left Behind, Title II, Part D (TEA, 2006b). The plan specifically identifies school leadership and professional development as two areas where the STaR Chart results should be considered and used for school planning (TEA, 2006b). All teachers on campus are required to complete the STaR Chart annually.

The STaR Chart addresses four key areas in the assessment: teaching and learning; educator preparation and development; leadership, administration, and instructional support; and infrastructure for technology. Each key area is then further divided into six focus areas. Teachers select one of the following four descriptors of themselves as a teacher or their perception of the campus or district: Early Tech, developing tech, advanced tech, and target tech (2006b). The results of the STaR Chart are compiled and reported to local educational groups and committees and the summary data from the entire state is reported to state and federal policymakers. While data about the individual teachers is not available, summary data about the school and district is available and can contribute to the creation of a profile regarding technology readiness.

Knowledge components of TPACK address the willingness and ability of a teacher to effectively use new technologies to support student learning. Our discussion included research regarding the influence that teacher beliefs have on technology acceptance and ability (Ertmer et al., 2012; Judson, 2006; Kim et al., 2013; Mueller et al., 2008). Since the STaR chart is a self-assessment, it reflects the beliefs of the teacher about their own technology abilities and is relevant to the measurement of technological knowledge.

Teacher Scholarly Identity

When teachers use classroom websites to enhance the curriculum and support the student, they do more than just provide resources. Their efforts serve to model the use of the Internet to create a scholarly identity online (Greenhow et al., 2009b; Hyland, 2012). Often referred to as social scholarship, teachers use of Web 2.0 technologies, their scholarly identity, is a representation of their own research practices online (Greenhow et al., 2009b; Kirkup, 2010). The use of Web 2.0 capabilities such as the creation of a classroom website to display content that furthers the relationship between the knowledge presented on the site and the classroom activities reflects an understanding by the teacher about technology integration and an awareness of how to use these tools to further learning (Greenhow, 2009). This knowledge was defined as technological knowledge in our TPACK framework.

At the foundation of this understanding is the quality of the relationship between the classroom website and the classroom activities. Connectivism is the idea that learning occurs through a process where connections are made between a variety of information sources (Bell, 2011). These connections then reinforce learning and

increase understanding. Using the Internet and Web 2.0 technologies in a thoughtfully designed website that has an obvious relationship to activities in the face-to-face classroom positively impacts student learning (Kember et al., 2010). Using this resource as a function to share information does not fully take advantage of the capabilities of the teacher-created classroom website and underserves the student and community population (2010). Therefore, a teacher-created classroom website that makes use of this relationship reflects the scholarly identity of the teacher.

Demographics

A teacher-created classroom website is usually linked to the campus website where the teacher who created it is employed. That campus has demographic properties that may impact how teacher-created classroom websites are used. Research indicates that school size and the geographic location of a public high school are factors that impact student learning and academic success (Stewart, 2009). The digital divide was originally defined as the inequity of access to technology but researchers now believe that the growth and diffusion of technology into society calls for a reconsideration of this definition (Hargittai & Hinnant, 2008). Today's student finds a way to access the Internet, either by computer or another digital device (Warschauer & Matuchniak, 2010). The new definition of the digital divide focuses instead on the digital divide as the inequity of technology use and technology skills (Hargittai & Hinnant, 2008; Stewart, 2009; Warschauer & Matuchniak, 2010).

Research identifies a new definition of digital divide related to the demographic factors affecting students. A part of this new way of thinking about the digital divide is the inequity of exposure to new technologies (Hargittai & Hinnant, 2008; Stewart, 2009).

In order to overcome this new inequity, some of the changes must come from the way schools provide training, resources, and support to their students using Web 2.0 and 21st century skills (Warschauer & Matuchniak, 2010). In addition, these resources should be provided equally at school and in mediums that can be accessed away from school and after school hours (Warschauer & Matuchniak, 2010). Therefore, school size, socio-economic status, and geographical location are factors that contribute to the new definition of digital divide (Reinhart et al., 2011; Warschauer & Matuchniak, 2010; Wei & Hindman, 2011).

School Size

School size is based on the student enrollment at a single campus or school. Recent research has considered the effect of school size on educational outcomes (Jones, Toma, & Zimmer, 2008). Research shows that schools of smaller size have increased benefits for students (Werblow & Duesbery, 2009). Belland (2009) found that school size of less than 300 students enjoyed a 2.4:1 student to computer ratio. This ratio was better than that found in larger public schools of 3.8:1 (Belland, 2009; Weiss, Carolan, & Baker-Smith, 2010). Regardless of the school size, technology access and support for technology integration is available in almost all classrooms (Belland, 2009; Reinhart et al., 2011; Wei & Hindman, 2011).

A small school may use communication and information technologies to provide students with additional opportunities for learning (Stevens, 1995, Van Roekel, 2008). Educators in small town schools strongly agree that technology is important for them and their students and urban educators showed a belief that technology positively impacts students (Van Roekel, 2008). While no reports on teacher-created classroom websites

could be found as they related to school size, one research studied found that the school library websites of small schools either did not exist or were very basic in design (Chu, 2013). Another study found that access to digital content and resources was more available to larger schools than those attending small schools (Barbour et al., 2011). Therefore, access to a teacher-created classroom website can provide additional resources to support the student when the campus website does not.

No research could be found about the impact of school size on teacher-created classroom website design specifically; however, school size has been researched regarding technology integration. Research showed that people in similar backgrounds and environments tend to have similar preferences and beliefs (Belland, 2009). Therefore, the inclusion of this demographic as a predictor in the development of comprehensive profiles is warranted. In addition, Texas school enrollment impacts technology funding and purchasing (Leithwood & Jantzi, 2009; TEA, 2006a). An understanding of how this variable influences the teacher-created classroom website design will help develop comprehensive profiles.

Socio-economic Status

The research on the socio-economic status and ability to access current technology shows that students need exposure to technology to support learning. Information and communication technology (ICT) allows teachers to create, collect, and store resources to support and enhance learning for students (Tondeur, Sinnaeve, van Houtte, & van Braak, 2010). Recent studies have begun to focus on the difference between students who have access to technology to the ability to use technology to access information resources on a teacher-created classroom website when it is used as an

instructional tool (Tondeur et al., 2010). Of course, for this to occur, the teacher must make the information available and accessible, as well.

Students in lower socioeconomic situations need exposure to methods and opportunities to use technologies to further their academic pursuits (Kidd, 2009; Tondeur, Devos, Van Houtte, van Braak, & Valcke, 2009; Tondeur et al., 2010). Title I is a provision of the Elementary and Secondary Education Act that provides funding to schools that have a high percentage of students from low-income families (U.S. Department of Education, 2004). Inclusion of this statistic in our study as represented by campus Title 1 designation will help determine the influence of socio-economic status on teacher-created classroom website design.

Geographical Location

The result of geographical location on technology integration has been researched and the findings are varied. Some research found that teachers in urban areas faced fewer barriers in areas of cultural acceptance, capability, connectivity, and availability of content than those in rural areas (Page & Hill, 2008; Subramony, 2011). Disparities in technology access were more evident in urban schools (Cifuentes, Maxwell, & Bulu, 2011). Other research found that teachers in rural areas had a more positive attitude towards technology integration and that geographical area did not negatively impact hardware access, Internet connectivity, or professional development (Howley & Hough, 2011).

Teacher-created classroom websites provide an opportunity to increase communication between the teacher, student, and/or parent. One consistency between researchers is the need for the district and school to communicate and provide relevant

information to parents and students (Barley & Wegner, 2010). Another consistent finding is that rural schools favor learner-centered technology that promotes the active participation of the learner and can be achieved through the use of wikis, blogs, and teacher-created classroom websites (Halverson & Smith, 2009). This may be even more important in areas where remote geographic locations present physical barriers in accessing academic resources and information (Hannum, Irvin, Banks, & Farmer, 2009). In order to better understand how geographic locations impact the teacher-created classroom website design, the geographic locations of schools by ESC regions will be included in the analysis.

Summary

Formalized technology standards have been established for all teachers in Texas. Teachers in all content areas, administrators, and librarians are expected to master the five Texas technology standards (TEA, 2013c). The national technology standards established by ISTE also state specifically that all teachers must master the five national technology standards (International Society for Technology in Education, 2008). The goal is for teachers to use their abilities in these standards to integrate technology to support and enhance the learning process for students so that they achieve academic success (Koehler et al., 2007).

TPACK is a framework that guides assessment of technology integration and includes three key components: technological knowledge, pedagogical knowledge, and content knowledge (Chai et al., 2011; Kabakci Yurdakul et al., 2012; Niess, 2011; Schmidt et al., 2009). During the creation and design of a classroom website, teachers make decisions about the site components they will include to support student learning

(Friedman & Carolina, 2006; Kember et al., 2010; Maio-Taddeo, 2007; Miller et al., 2005; Tingen et al., 2011b). Those decisions, reflected in the published classroom website, are measurable indicators of the technological, pedagogical, and content knowledge of the teacher who created the site.

The Texas STaR Chart is a planning and self-assessment tool that reflects a teacher's belief about his or her own technology integration abilities and understanding (TEA, 2006b). The scholarly identity of the teacher, his or her ability to understand and employ technology integration to improve teaching and learning, can be represented by their teacher-created classroom website and the choice of website components included in their design (Greenhow et al., 2009b; Hyland, 2012; Kirkup, 2010). Demographic variables also contribute to the development of a comprehensive profile of contextual factors that influence teacher-created classroom website design (Howley & Hough, 2011; Leithwood & Jantzi, 2009; Tondeur et al., 2010).

Implications for Education

Purchasing Decisions

Classroom websites may be formatted as traditional websites using either a CMS or OER platform, social media platforms, wikis, and blogs (Boling et al., 2008; Ceruolo, 2010; Gifford, 2010; Larusson et al., 2009; Leung & Ivy, 2003; Tubin & Klein, 2007). They may be used for a variety of reasons ranging from improved parent communication to increasing literacy (Hohlfeld et al., 2010; Sweeny, 2010). A CMS provides webpages and websites for development by a classroom teacher to supplement teaching and learning. The CMS can include other tools such as campus-level and district-level websites as well as specific content creation editing tools to help the teacher in their

website creative efforts. Perhaps an even more compelling use of the CMS is the ability to control what is posted by its users and ensure that all legal standards, especially those related to student safety and privacy, are met (Hoder, 2009). The CMS has become a popular choice among school districts (Mooney & Baenziger, 2008). However, the use of a CMS means that school administrators must consider a significant expenditure from the school budget.

In order to provide a CMS to a district, schools must fund the purchase of the CMS as well as ensure that the district's technology infrastructure is capable of supporting the CMS system. Therefore, public funds are used to provide CMS systems that ideally will serve the student, the public, and the organization. Hill (2008) suggests that this is appropriate when the evidence shows that student development and support is positively increased in relation to the expenditure. Technology is one area where there is an especially low correlation between expenditures and student improvement (Beard, 2009; P. T. Hill, 2008). If a CMS system is not used, an OER could be provided and hosted in an online storage area that is accessible by Internet and mobile technology (Ally & Samaka, 2013). OER consists of free, educational resources readily available for teachers and students (Kanwar, Kodhandaraman, & Umar, 2010). While the use of an OER system may reduce the costs associated with the purchase of a CMS, other significant costs such as those associated with professional development or providing work time to teachers for classroom website development are usually necessary for both options.

Professional Development

Professional development must be provided since the development of teacher-created classroom websites must be supported through a professional development program (Akpinar, Lu, & BayramoĞlu, 2008; International Society for Technology in Education, 2009). In-depth professional development is necessary for effective technological use that includes not only skill with the technology, but, also, an understanding of the pedagogical opportunities and benefits that can be achieved (Keengwe, Onchwari, & Wachira, 2008). The goal of professional development is to cause change in the approaches to instruction that results in improved student academic success (Odden, 2011). Technology is one area where learning opportunities for teachers exist to provide access to content that meets the goals of the student, team, school, district, and state (Killion, 2013). In addition, results from professional development are improved when a relationship with other information and data systems is inherent in the training because this improves the relevancy for both teacher and student (Killion, 2013).

Professional development is then provided to teachers to help them develop their classroom websites. Professional development costs an estimated $350 per day for each teacher (Odden, 2011). If one supposes that a teacher-created classroom website may be initially designed and completed in 2 full days of professional development training, a single high school of 100 teachers will cost $70,000. This does not consider the cost of maintenance, upcoming, and future required professional development trainings to support teachers. The cost of providing this training to all 133,196 Texas secondary teachers (U.S. Department of Education, Institute of Education Sciences, National Center

for Education Statistics, 2012) would be estimated to be $93,237,200. Clearly, these costs are significant.

This expenditure is reasonable if the goals are met and improved student academic results are achieved; however, if the goals are not met, it is wasted (Killion, 2013; Kumar et al., 2008). Profiles of the contextual factors that influence classroom website design can assist school leaders and professional development trainers determine if the cost will produce the appropriate results. If training is provided, the profiles can help trainers optimize the time to produce outcomes that meet training goals.

Teacher Evaluation

Educational administrators may evaluate a teacher's classroom website to gain insights about their campus. A teacher's classroom website may provide important indicators of the technology readiness of a teacher and/or the campus as a whole (King, 2011; Macaulay, 2009; Polizzi, 2011). The design of a teacher-created classroom website may reflect the ability of the teacher to successful integrate technology, their technology readiness, and their attitude towards technology (Chang, 2012; Maio-Taddeo, 2007). In addition, the profiles of contextual factors that influence classroom website design can be used to support educators as they evaluate the classroom websites of the teachers employed at their campus.

Leadership is a critical component in building support for maximizing the use of classroom websites to improve student academic success. The principal and other administrative leaders can impact positive change through the use of teacher-created classroom websites by providing vision and ongoing motivation (Ertmer & Ottenbreit-leftwich, 2010; International Society for Technology in Education, 2009; King, 2011). In

fact, “adapting to external requests and others’ expectations” (Baek, Jung, & Kim, 2008, p. 232) was found to have the greatest impact on technology integration. However, the technology leader’s vision for technology integration may not be consistent or expectations may not be adequately expressed in terms of what they want achieved in terms of the use of teacher-created classroom websites (Culp, Honey, & Mandinach, 2005). Ambiguity and inadequately expressed administrative expectations may also confuse teachers and lead to a misunderstanding of what the educational goals are in terms of teacher-created classroom websites (Margolis & Doring, 2012). Therefore, school leaders that understand how classroom websites can make positive differences for students and share that vision while providing support for teachers are more likely to have quality classroom teacher-created websites evidenced on their campus website (Inan & Lowther, 2010).

The State of Texas has formalized their expectations of all teachers to master five technology integration standards. These standards are to be met regardless of the content subject and the grade level taught. The SBEC standards specifically address all teachers in their documentation outlining the five technology standards. Keeler (2008) notes that “all subject area standards address technology integration in some capacity” (p. 23). The standards established by the International Society for Technology in Education (ISTE) state “all teachers should meet the following standards and performance indicators” (p.1) before outlining their 5 national technology standards. There is inconsistency with teachers’ beliefs about technology integration and their actual practice integrating technology to improve academic success (Judson, 2006).

Teachers may be aware of and support the SBEC and ISTE Standards while not actually meeting the requirements detailed in their statements (Chen, 2008). In a study of teacher perceptions of instructional technology integration in the classroom, results found no significant difference in the perceptions regarding technology based on content area or grade level (Gorder, 2008). It was noted, however, only five content areas, business computer, English, fine arts, math science, and social science, were included in the study (2008). Therefore, the profiles developed in this study will provide the education administrator a resource to determine if the classroom websites created by teachers at their campus reflect mastery of these standards.

Summary

School districts commonly purchase CMS systems or other similar tools to provide classroom websites to their teachers (Boling et al., 2008; Ceruolo, 2010; Gifford, 2010; Larusson et al., 2009; Leung & Ivy, 2003; Tubin & Klein, 2007). Hill (2008) suggests that this is appropriate when the evidence shows that student development and support is positively increased in relation to the expenditure. Professional development is often used to guide and support teachers when they create and design a classroom website (Lawless & Pellegrino, 2007). The cost is high but considered appropriate if the results that meet the goals of the district, campus, teacher, students, and community, are achieved (Killion, 2013; Kumar et al., 2008). Technology readiness and professional development are influenced by the school leadership (King, 2011). Research shows that the campus website may be a reflection of the expectations, support, and technology readiness of the school leaders, as well (Culp et al., 2005; Inan & Lowther, 2010). The profiles developed in this study that identify the contextual factors that influence the

classroom website design can help educational inform decision makers, professional development trainers, and educational leaders by providing insights into the technological, pedagogical, and content knowledge of the teacher who create them.

Conclusion

Teacher-created classroom websites provide an opportunity for teachers to provide a 24/7 virtual classroom that supports student learning both at home and school. When teacher-created classroom websites include components that correlate with the activities and lessons of the face-to-face classroom, it can become a repository for educational content that adds to the resources available for students (Cebi, 2013; Dunn & Peet, 2010; Friedman, 2006; Hill et al., 2010; Unal, 2008). The technological, pedagogical, and content knowledge of a teacher may be reflected in the design of the teacher-created classroom website (Dunn & Peet, 2010; Fancövtuövj et al., 2010; Friedman & Carolina, 2006; Gifford, 2010; Hill et al., 2010; Lunts, 2003a; Maio-Taddeo, 2007; Tingen et al., 2011a; Tubin & Klein, 2007; Unal, 2008; Whittier, 2009). In effect, the teacher-created classroom website represents the scholarly presence of the teacher on the web and models the use of the Internet for educational purposes to students (Greenhow et al., 2009b; Hyland, 2011).

All Texas teachers, administrators, and librarians are required to master the five Texas Technology Applications Standards (TEA, 2006a). While a number of theoretical models on technology integration and readiness of teachers to use technology to enhance teaching and learning, TPACK has become one of the most widely accepted and used (Chai et al., 2011; Judi Harris & Hofer, 2009; Jaipal & Figg, 2010; Polly & Brantley-Dias, 2009; Schmidt et al., 2009). School leaders can evaluate the teacher-created

classroom website for indicators of TPACK for their teachers and access their mastery towards meeting the Standards (Chang, 2012; Inan & Lowther, 2010; King, 2011).

In addition, it is necessary to provide professional development to support teachers as they endeavor to master the Standards and work with 2.0 technologies such as the classroom website. The high cost of professional development is only acceptable if it results in improved academic outcomes for students (Killion, 2013). Demographic data including campus size, socio-economic status, and geographic location provides information that is important in the development of profiles of teacher-created website design.

Chapter 3: Research Method

With the increased availability of teacher-created classroom websites and the high costs associated with providing these sites to teachers, the purpose of this quantitative, correlational research study was to identify profiles of contextual factors that influence teacher-created website design in Texas public high schools. Four categories were analyzed: teacher information, communication, classroom management, and teaching content. A detailed overview of the methods to be used in this research study is provided in this chapter. The research design is discussed in detail and includes descriptions of the research design, study setting, sampling method, data-analysis techniques, instrument, threats to validity, and procedures that were used to ensure that the research was completed with rigorous ethical standards.

Research Questions

In order to determine what contextual factors impact the design of classroom websites developed by teachers in Texas high school teachers, four separate research questions guided the study:

1. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching information section of a website designed by a teacher employed at that campus*?*

$H_0$1: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area

taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

2. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the communication section of a website designed by a teacher employed at that campus?

H_01: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of

website components related to the communication section of a website designed by a teacher employed at that campus.

3. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the classroom management section of a website designed by a teacher employed at that campus?

$H_0$1: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

4. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching content

section of a website designed by a teacher employed at that campus?

$H_0$1: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus.

Research Design

This study employed a quantitative, predictive correlational research design. A cross-sectional website evaluation collection form was used to obtain data about the website components selected by the teacher in their classroom site design and to analyze the relationship between these design decisions and school enrollment (UIL), Campus STaR Chart Summary Findings (TL6), geographic location (ESC), Title 1 designation, and grade level. No treatments were used in this design. This design was selected because there was no treatment or intervention provided (Creswell, 2009).

The Website Data Collection Form was used to gather and code historical data obtained from public web sites. In addition, the data collection form allowed for a quantitative evaluation of the website components included on the teacher-created

classroom websites which were then generalized to determine profiles of the sample population (Creswell, 2009; Garson, 2013). The data collection form allowed me to gather data about the sample population in a timely fashion and allowed for data collection with the use of the Internet in a well-organized, consistent, and efficient manner.

The website evaluation approach to gather and code historical data obtained from public web sites was the best choice for this study because it has effectively and accurately been used in the past to collect data about the current status of a phenomenon, its cause, and by what means it is occurring. The data collected about the defined variables of this study could be quantified efficiently so that any correlations identified between variables could be analyzed. This analysis was used to create profiles that are largely applicable to the whole population of this study. Collection of the data from a portion of the whole population in this manner enabled the results to be applied to the larger population (Creswell, 2009; Garson, 2013)

Electronic forms were used to record the data collected. This is an appropriate choice because it allowed me to record the data in an efficient and secure manner recorded while a computer was used to access the teacher-created classroom websites on the Internet. I was able to view the website online and enter the survey responses simultaneously through the use of two monitors. The data were then entered into an electronic database in Microsoft Excel, a software program designed for the storage of information in an organized fashion. The files produced in the database were named with the date of entry so that the most recent copy was identified by the file name. The Excel files will be saved in two locations: the my computer and in Dropbox cloud

storage. Data saved in cloud storage are secure because it is access protected and encrypted (Spillner, Müller, & Schill, 2013).

Sample

Target Population

The general population for this study was Texas high school teachers who had published a classroom website. Texas high school teachers were defined as adult, content-certified, faculty members who taught at a Texas high school. A Texas high school was defined as a public school that taught students in Grades 9, 10, 11 and 12 that had no special designation such as charter school, adult education, or alternate title. A teacher-created classroom website was the published classroom website identified by a hyperlink from the school campus website.

Sampling Procedure

The unit of analysis for this study was the published teacher-created classroom website. I used a systematic sampling approach within-cluster random sampling process without replacement. Within-cluster sampling was suitable for this project because of the unique classifications that can be associated with each teacher-created classroom website which was then used to group cases of data (Antonenko, Toy, & Niederhauser, 2012; Creswell, 2009). A simple random sample could result in some groups not being represented in the data and, therefore, would not be appropriate (2008). The systematic sampling approach was inappropriate for this study because the system applied could, again, result in groups being underrepresented or not represented in the data collection process (2008).

There are 1,169 Texas high schools (TEA, 2013) meeting this standard. The high schools are located in 20 Texas ESC regions (TEA, n.d.). In addition, the UIL has classified each high school as a Division 1, II, III, IV, or V based on their campus enrollment (University of Interscholastic League, n.d.). Division I represents the campus with the smallest enrollment while Division 5 identifies the campus with the largest enrollment (n.d.). Therefore, each Texas high school campus was classified in three ways: a public school with no special designation, the ESC that where it is located, and the Division identification given to it by the UIL.

In order to ensure that all ESC regions, UIL Divisions, and content areas were fairly represented, a systematic process for determining the evaluation sample size based on ESC region and content area was created. Table 1 displays the content area of the teacher-created classroom website that were included in the study differentiated by ESC region and UIL Division for all 20 ESC areas. The number preceding the content area indicates the number of websites evaluated in that content area for the indicated ESC Region and UIL designation.

Table 1

Systematic Determination of Content Area to Be Evaluated in Each Educational Service Center (ESC) Region

ESC Number	Number of High Schools	Division 1 High School	Division 2 High School	Division 3 High School	Division 4 High School	Division 5 High School
1	82	3 Math	3 Science	3 Social Studies	3 English	3 Other
2	39	1 Other	1 Math	1 Science	1 Social Studies	1 English
3	31	1 English	1 Other	1 Math	1 Science	1 Social Studies
4	157	5 Social Studies	5 English	5 Other	5 Math	5 Science
5	32	1 Science	1 Social Studies	1 English	1 Other	1 Math
6	58	2 Math	2 Science	2 Social Studies	2 English	2 Other
7	75	2 Other	2 Math	2 Science	2 Social Studies	2 English
8	31	1 English	1 Other	1 Math	1 Science	1 Social Studies
9	26	1 Social Studies	1 English	1 Other	1 Math	1 Science
10	161	5 Science	5 Social Studies	5 English	5 Other	5 Math
11	119	4 Math	4 Science	4 Social Studies	4 English	4 Other
12	56	2 Other	2 Math	2 Science	2 Social Studies	2 English
13	82	3 English	3 Other	3 Math	3 Science	3 Social Studies
14	32	1 Social Studies	1 English	1 Other	1 Math	1 Science
15	30	1 Science	1 Social Studies	1 English	1 Other	1 Math
16	38	1 Math	1 Science	1 Social Studies	1 English	1 Other
17	34	1 Other	1 Math	1 Science	1 Social Studies	1 English
18	25	1 English	1 Other	1 Math	1 Science	1 Social Studies
19	40	2 Social Studies	2 English	2 Other	2 Math	2 Science
20	81	3 Science	3 Social Studies	3 English	3 Other	3 Math

Using this system, 205 teacher-created classroom websites were selected as follows: 41 websites from each of the five UIL divisions and 41 websites from each of the five content areas. A stratified random sampling was used in this study to ensure greater precision than that which can be provided with a simple random sample (Garson,

2013). This approach ensured that the websites evaluated were representative of all critical areas: ESC region, School size (UIL division), and the five content areas.

In this study, the number of websites evaluated in each ESC Region was determined by a proportional allocation to the number of public high schools in the region. To ensure that each content area and UIL division was represented equally, the proportional allocation was rounded to the nearest number divisible by 5, which is the number of UIL divisions and content areas considered in this study. For example, in ESC Region 1, there were 82 high schools out of a total of 1169 high schools throughout Texas. This represents 7% of the total high schools. Therefore, 7% of 205 evaluations was rounded, as stated above, to 15 website evaluations that were completed in ESC Region 1, three from each content area and UIL Division. ESC Region 2 contained 39 websites which represented 3% of the total high schools in Texas which, when rounded as stated above, indicated 5 websites were evaluated, 1 in each content area and UIL Division. Table 2 provides the step-by-step random sampling protocol that will be followed to identify and complete the Website Data Collection Form (see Appendix A) for each of the 205 teacher-created classroom websites.

Table 2

Step-by-Step Sampling Protocol

Steps	Process
1	Identify each of the 20 Education Service Centers
2	Identify school districts within each of the 20 Education Service Centers
3	Identify high schools within each of the school districts not designated as charter, adult or alternative schools
4	Identify the University Interscholastic League Division of each of the high schools identified in Step 3
5	Cluster the high schools into groups of similar Education Service Centers and University Interscholastic League Division. Example: All High Schools in Education Service Center 1 with a University Interscholastic League Division designation of 1 will be included in one cluster.
6	Continue clustering until all high schools are clustered into 100 groups representing the 20 Education Service Centers and five University Interscholastic Leave Division.
7	Assign each high school within each cluster a consecutive numerical number
8	Use a random number table to select the number of high schools indicated in Table 1 from each of the 100 clusters. For example, five high schools would be selected in ESC Region 1.
9	Visit the high school campus website and locate the faculty page or page containing links to teacher-created classroom websites. If no teacher-created classroom websites are evident, repeat steps 8 and 9.
10	Identify the content area of teachers according to Table 1
11	Assign each teacher identified in Step 10 a consecutive numerical number
12	Use a random number table to select the content teachers from each high school
13	Complete the paper Website Data Collection Form
14	Enter the data recorded on the Website Data Collection Form in Microsoft Excel
15	Save the data files to the computer desktop, OneDrive Cloud Storage, Google Drive Cloud Storage, and Dropbox Cloud Storage
16	File the paper Website Data Collection Form in a locked file cabinet.

Sample Size

A power analysis was used to determine the number of teacher-created classroom websites included in this study. With the proper sample size, researchers are able to use the data gathered to make accurate inferences about the entire population or all of the units of analysis (Franzosi, 2008). The G*Power test was calculated with the use of G*Power 3.1.9.2 software. Using F tests for the test family and Linear multiple regression: Fixed model, R^2 deviation from zero, the A priori: Computer required sample

size – given α, power, and effect size power analysis type was selected. A f^2 effect size of .20, α error probability of 0.05, power of .80, and 6 predictors were used to determine a total sample size of 75 teacher-created classroom websites should be included. Our research design provided a sample size of 205 high schools. Therefore, data will be gathered from more than the minimum sample size suggested by G*Power. As a whole, this provided data about the teacher-created classroom websites of high school teachers at a determined number of schools representing five levels of enrollment across the diverse state.

Data Collection Protocols and Instruments

Instrument

A complete reliable and validated instrument did not exist that measured the research questions so an instrument was developed for the purpose of this study. The Website Data Collection Form was designed so that a possible analytic process could be conducted to determine if contextual factors could be used to make predictions about the design outcomes of teacher-created classroom website use. Most questions were based on Lunts' (2003) web site evaluations tool and/or Unal's (2008) Essential Teacher Website Elements for Teachers and Parents tool. Permission to use these published instruments was received and available for review for Lunts and Unal (Appendix B). Lunts (2003) created the web site evaluations tool for use in her Ph.D. dissertation of the teacher-created classroom websites of math teachers and completed a trial sampling to determine validity. Unal (2008) published his study in a peer-reviewed journal but did not discuss the validity process he used in the study.

Table 3 provides a grouping of sections on the Website Data Collection Form and the survey questions within each of those areas. Information about the origin of the survey questions is also included on the form is also provided.

Table 3

Website Data Collection Form Sections and Questions

Constructs	Questions
Teacher Information	• Teacher room number** • Teacher class schedule* • Teaching information and background**** • School information*** • Calendar****
Communication	• Parent information**** • Teacher e-mail address**** • Teacher phone number**** • Teacher conference time*
Classroom Management	• Classroom Rules*** • Class announcements***
Teaching Content	• Resources for exams*** • Resources for assignments* • Repository of lesson information** • Links for lesson support**** • Last update within** • Number of web pages** • Assignment information**** • Display of student work**** • Grading Information** • Incorporates interactive and communication technology innovations****

Note. Asterisks denote the origin of the questions.
*Denotes a question created by this researcher.
**Denotes a question taken from Lunts (2003) website evaluation tool.
***Denotes a question taken from Unal (2008) Essential Teacher Website Elements for Teachers and Parents tool.
****Denotes a question taken from both Lunts (2003) website evaluation tool and Unal (2008) Essential Teacher Website Elements for Teachers and Parents tool.

Data was collected using the Website Data Collection Form as quantitative values with construct-defined categories that may influence teacher-created classroom website design: teacher information, communication, teaching content, and classroom management (see Appendix A). These categories were identified through the literature review. These classifications were identified so that correlational analysis could be completed between the independent variables and the dependent variable. The instrument was divided into six sections. For example, general information was collected to allow for the proper coding input and will be recorded in Part One of the Website Data Collection Form. Part Two of the instrument included data related to demographic information that will be obtained for geographic location, school size, and Title 1 designation. The Description of Variables and Values to be used in SPSS Analysis (Appendix C) provided a detailed description of each variable including operational definitions, coding, and measure. A detailed explanation of the Website Data Collection Instrument follows.

Section One: General Data

The purpose of section one was to collect general information regarding the evaluated websites for identification and date notation. The origination of the question is available in Table 3. This information is for the purpose of identifying data and will be used in the analysis.

Website Number. Website number is a nominal variable that will be assigned consecutively to websites in the order that they are evaluated.

Date. This variable indicates the date when the teacher-created classroom website is evaluated. If the site is evaluated over more than one day, this date indicates when the evaluation is completed.

Section Two: Independent Variables

The purpose of section two is to record data pertaining to the independent variables included in the study such as Campus STaR Chart Summary Findings for Teaching & Learning Focus Area TL6, ESC region, UIL Division, Title 1 designation, content area(s), and grade level taught. The origination of the question is available in Table 3.

Campus STaR Chart Summary Findings for Teaching & Learning Focus Area TL6. This nominal value indicated the STaR Chart self-reported Campus Summary for Focus Area 6 (TL6) in the Teaching & Learning Key Area. TL6 is identified as measuring the following Focus Area: "Teacher has developed supplemental instruction such as reinforcement or enrichment activities and made those available to students through a location on the web" (TEA, 2006b). Individual teacher results were not available; therefore, the campus's aggregate results were used for the teacher's value. There are four indicators within this Focus Area: Early Tech, Developing Tech, Advanced Tech, and Target Tech. An indicator identified the average result for a Focus Area question for the campus of the teacher that created the classroom website. The answer choices for this question were: 1) Early Tech, 2) Developing Tech, 3) Advanced Tech, and 4) Target Tech. Research questions were created by the researcher.

ESC region. This nominal variable indicated the ESC that serves the campus with the link to the teacher-created classroom website. ESC regions are numbered consecutively in a range from one to 20. The answer choices offered were: 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and 20 and each of these choices indicate the ESC region. This information was found in the Districts Served by Regional Education Service Centers report (TEA, 2014b)

UIL Division. This ordinal variable indicated the UIL Division assigned to the campus with the link to the teacher-created classroom websites. UIL Divisions are numbered consecutively from one to five and represent campus enrollment as follows: 1) 199 and below, 2) 200 to 449, 3) 450 to 1004, 4) 1005 to 2089, and 5) 2090 and up. This information was collected from the UIL's 2012-13 and 2013-2014 Tentative Football and Basketball District Assignments and Reclassification Information packet (UIL, 2012).

Title 1 designation. This nominal variable indicated whether a campus had been identified as a Title 1 school. Title I is a provision of the Elementary and Secondary Education Act that provides funding to schools that have a high percentage of students from low-income families. The answer choices were: 0) No, and 1) Yes. These were collected from the National Center for Education Statistics Public School Data report.

Content area subject. This nominal variable indicated the content area subject of the teacher who created the classroom website. This information may have been listed on the campus website or teacher webpages, included in banners and images, or evident by other factors such as homework assignments and discussions. In some cases, the content area may not be apparent and this site was not included in the study. The answer choices for this question were: 1) Math, 2) English Language

Arts/Reading, 3) Science, 4) Social Studies, 5) Multi, and 6) Other. A response of Not Available for this question was not included in analysis.

Grade level. This ordinal variable indicated the grade level provided on the teacher-created classroom website. It is possible that no grade level could be identified as students may be enrolled representing a variety of grades. If more than one grade was indicated, the answer selected will be Multi to indicate more than one grade was provided on the website. If no grade level was indicated, the response selected was None. The answer choices for this question were: 1) 9th, 2) 10th, 3) 11th, 4) 12th, 5) Multi, and 6) None. If the website did not provide a number grade level and uses student classifications, they were recorded as follows: freshman was recorded as grade 9, sophomore was recorded as grade 10, junior was recorded as grade 11, and senior was recorded as grade 12. An answer choice of None was excluded from analysis.

Section Three: Teacher Information

The purpose of Section Three was to collect website data that reflected design choices that indicate the information about the teacher who created the classroom website. Elements included in this area were those consistently documented in the research as related to general information about the teacher who created and designed the class site and the campus where the teacher classroom website was hyperlinked. The elements included in this section were items such as teacher room number, teacher class schedule, teaching information and background, school information, and calendar. In order to be identified, this information must have been located on the teacher-created classroom website directly. The data in this section was designated as Found or Not Found based on their appearance in the teacher-created

classroom website except for Calendar which was recorded as an interval scale. The origination of the question is available in Table 3.

Teacher room number. This nominal variable indicated if the teacher room number was provided on the teacher-created classroom website. The room number is helpful to parents and to new students when they visit the school. The answer choices for this question were: 0) Not Found, and 1) Found.

Teacher class schedule. This nominal variable indicated if the teacher's class schedule was provided on the teacher-created classroom website. The class schedule is helpful to parents and to students when they attempt to contact the teacher, plan visits, or schedule appointments. A class schedule was considered to be present if it contained the times and courses that make up the teacher's day. Times may be written numerically or may have been indicated by terminology such as period 1, block 1, or other scheduling language. The answer choices for this question were: 0) Not Found, and 1) Found.

Teaching information and background. This nominal variable indicated if a teacher had dedicated a portion of the teacher-created classroom website to providing information about themselves, including their background. This area of the website may be in the form of a webpage, article, image, or section of a webpage. The answer choices for this question were: 0) Not Found, and 1) Found.

School information. This nominal variable indicated if school information was provided on the teacher-created classroom website. Any information that was related to the entire school such as school-wide event dates, school-wide activities,

school-wide articles were evidence of the inclusion of school information. The answer choices for this question were: 0) Not Found, and 1) Found.

Calendar. This interval variable indicated if a calendar was provided on the teacher-created classroom and, if present, the number of calendar items presented on the calendar. Calendars must have been in the format of a traditional calendar indicating day and month or an agenda format where the day, month, and event are listed sequentially. The calendar may have include any events, holidays, assignments, or any other entry. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Section Four: Communication

The purpose of Section Four was to collect website data that reflected the design choices of the teacher creating the website representing teacher communication. Elements included in this area were those consistently documented in the research. The elements included in this section were items such as parent information, teacher e-mail address, teacher phone number, and teacher conference time. In order to be identified, this information must have been located on the teacher-created classroom website directly. The data in this section was designated as Found or Not Found based on their appearance in the teacher-created classroom website except for parent information which was recorded as an interval scale. The origination of the question is available in Table 3.

Parent information. This interval variable indicated if a teacher has dedicated a portion of the teacher-created classroom website to providing information specifically for parents by indicating the number of items pertaining to

parent information present. This area of the website may have been in the form of a webpage, article, image, or section of a webpage. The answer choices for this question were: 0) 0 items, 1) 1 item, 2) 2 items, 3) 3 items, 4) 4 or more items.

Teacher e-mail address. This nominal variable indicated if the teacher e-mail address was provided on the teacher-created classroom website. The website address may be listed as text or may be in the form of a fill-in submission block which allows the visitor to contact the teacher by e-mail. The answer choices for this question were: 0) Not Found 1) Found.

Teacher phone number. This nominal variable indicated if the teacher phone number was provided on the teacher-created classroom website. The phone number is helpful to parents and to students attempting to contact the teacher. A phone number was considered to be present when it is the phone number of the school campus, a content department, or the individual teacher. The answer choices for this question were: 0) Not Found 1) Found.

Teacher conference time. This nominal variable indicated if the teacher's conference time was provided on the teacher-created classroom website. The conference time is helpful to parents and to students attempting to contact the teacher. The conference time was considered to be present if the conference time was specifically included in the website. Times may be written numerically or may be indicated by terminology such as period 1, block 1, or other scheduling language. The answer choices for this question were: 0) Not Found 1) Found.

Section Five: Classroom Management

The purpose of Section Five was to collect website data that reflected design choices that indicate the classroom management component choices of the teacher who created the class site. Elements included in this area were those consistently documented in the research. The elements included in this section were items such as classroom rules and class announcements. In order to be identified, this information must have been located on the teacher-created classroom website directly. The data in this section was designated as Found or Not Found based on their appearance in the teacher-created classroom website or an interval scale for class announcements. The origination of the question is available in Table 3.

Classroom rules. This nominal variable indicated if the classroom rules were provided on the teacher-created classroom website. The classroom rules establish teacher expectations for appropriate behavior in the classroom. The answer choices for this question were: 0) Not Found 1) Found.

Class announcements. This interval variable indicated if class announcements were provided on the teacher-created classroom website by indicating the number of class announcements present. Class announcements may be text announcements, images, or downloadable documents that relate to general classroom events, activities, and information. To be considered a class announcement, information on the website must have been related to general classroom activities and can be in the form of text, images, or video. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Section Six: Teaching Content

The purpose of Section Six is to collect website data that reflected design choices that indicate the teaching content component choices made by the teacher who created the classroom website. Elements included in this area were those consistently documented in the research. The elements included in this section were items such as resources for exams, resources for assignments, repository of lesson information, links for lesson support, last update within, number of web pages, assignment information, display of student work, grading information, and incorporation of interactive and communication technology innovations. The origination of the question is available in Table 3.

Resources for exams. This interval variable indicated if resources for exams were provided on the teacher-created classroom website by indicating the number of exam resources present. Resources for exams may be supporting documents, interactive activities, links to internal or external exam resources, notifications of study sessions, and grading documents will be evidence of assignment information. Resources for exams were indicated with titles or links that use words that indicate they are for the purpose of supporting exam preparation. The following is a list of words, though not all-inclusive, that indicate the resources are intended for exam support: exam, examination, test, review, STAAR, TAKS, quiz, exam study guide. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Resources for assignments. This interval variable indicated if resources for assignments were provided on the teacher-created classroom website by indicating the number of assignment resources present. Resources for assignments may be

supporting documents, interactive activities, text, audio, or video explanations, links to internal or external exam resources, notifications of study sessions, and grading documents will be evidence of assignment information. Resources for assignments were linked to actual school assignments. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Repository of lesson information. This interval variable indicated if a repository of lesson information was available on the teacher-created classroom website. To be considered as present on the website, evidence of a location must have existed on the website where academic information, resources, and other relevant materials are available on a variety of academic topics related to the content area of the teacher who created it. This information consisted of documents, multimedia, downloadable items, and printable materials. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Links for lesson support. This interval variable indicated if links for lesson support were available on the teacher-created classroom website. To be considered as present on the website, evidence of a location on the website must have existed where a collection of links were available on a variety of academic topics related to the content area of the teacher who created it. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Last update. This interval variable indicated when the teacher-created classroom website was last updated. Indications of the date of the websites last

update may have been provided in a variety of forms such as a statement of last update provided on the website or date of recent postings and uploads. When there were several different indicators of the last update on the website, the most recent date was recorded. In some cases, the date of last update was not apparent and will not be recorded as available. The answer choices for this question were: 0) Not Available, 1) 0-7 days ago, 2) 8-14 days ago, 3) 15-30 days ago, and 4) More than 30 days. A response of Not Available for this question was not included in analysis.

Number of web pages. This interval variable indicated the number of linked webpages on the teacher-created classroom website. These pages were included in this count if they were visible as links from the Home page. An answer choice of "0" indicated that the website was not available. The answer choices for this question were: 0) 0 Pages 1) 1-2 pages, 2) 3-4 pages, 3) 5-6 pages, 4) 7 or more pages.

Assignment information. This interval variable indicated if assignment information was provided on the teacher-created classroom website. Assignment information such as assignment names, due dates, interactive activities, supporting documents, links to internal or external additional assignment resources, and grading documents was considered evidence of assignment information. The answer choices for this question were: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Display of student work. This interval variable indicated if student work was displayed on the teacher-created classroom website. This area allows for publishing of student-made projects, creations, documents, and any other student-made content-

related material the teacher had shared on the site. The answer choices for this question were: 0) 0 items, 1) 1 item, 2) 2 items, 3) 3 items, 4) 4 or more items.

Grading information. This interval variable indicated if grading information for classroom was provided on the teacher-created classroom website. Grading information may have been included as a rubric, answer key, document with grading descriptions, or other similar resources. The answer choices for this question were: The answer choices for this question are: 0) 0 items, 1) 1-5 items, 3) 6-10 items, 4) 11-15 items, and 5) 16 or more items.

Incorporates interactive and communication technology innovations. This interval variable indicated if interactive and communication technology innovations were included on the teacher-created classroom website. Interactive and communication technology included items that provide students an opportunity to interact with the site such as a game, blog, wiki, message board, or other similar feature. Individuals or groups of individuals can use this technology but the key identifier is that of feedback. The activity must provide feedback either from the program itself or by the responses and interactions of other students and the teacher. The answer choices for this question were: 0) 0 items, 1) 1 item, 2) 2 items, 3) 3 items, 4) 4 or more items.

Appendix A contains a copy of the Website Evaluation Data Collection Form that was used to collect data about and from each website. Appendix C provides a summary of the categories created and data questions contained within each of the categories as well as the codebook for the variables.

Preparation of the Data

The researcher gathered data for each teacher-created classroom website evaluated on a digital form of the Website Data Collection Form (See Appendix A). Each of the answers to the questions on the form were collected and recorded. Depending on the question format, the answers may be written or a choice was made from a set of appropriate responses correlated to the form questions.. One form was completed before another website analysis began. An electronic file was maintained to collect the completed forms in numerical order and the file was kept on the researcher's computer in a secure location. A second, password-protected file was maintained on Dropbox, a cloud service, to ensure that the data was available. be locked in a file cabinet when not being accessed to maintain the integrity of the process.

To ensure that the coding was accurate, two independent coders selected a random sample of teacher-created classroom websites from those that have been completely coded by the researcher and evaluated them to determine if total agreement in coding was achieved. In addition to this validation process, the same process was completed in advance of the study initiation to ensure the codebook was accurate. Therefore, the codebook and the data set were both checked for coding accuracy.

Upon completion of data collection of the 205 teacher-created classroom websites, the data was entered into an Excel spreadsheet. Excel spreadsheet software was used to collect the data electronically in one location. After entry, the data was rechecked to ensure that it has been transferred to Excel accurately. The data was then entered into the IBM SPSS Statistics 21 Software. The information was coded according to the information in Appendix C. If any outliers, omissions, or missing data were discovered, the teacher-created website or reference report will be evaluated again to

ensure that the information is correct. If a teacher-created classroom website must be evaluated a second time for these reasons, the second evaluation was be used for the final data input.

Analytical Strategy

IBM SPSS Statistics 21 software was used to perform statistical tests on the data input from the collection process. The analysis included descriptive data related to the design of teacher-created classroom websites, frequency data for independent variables, and multiple and binary regression. This form of analysis was suited to analyze the impact and relationship between the independent and dependent variables (Field, 2013; Garson, 2014). The data was analyzed using the method of least squares to minimize the sum of squared errors (Field, 2013). The residual sum of squares will be used to determine how well our results fit the data. The F-ratio will provide analysis about the improvement shown between the prediction and the model that is determined (Field, 2013). The t-statistic test will test will be used to test the null hypothesis. A codebook is included in the Description of Variables and Values to be used in SPSS Analysis document in Appendix C. Coding was adjusted depending on the type of analysis being completed. In this study, the data was analyzed to identify a predictive relationship between the independent variables, school enrollment, geographic location, Campus STaR Chart Summary Findings, content area(s) taught, and grade level taught, and the website design choices evidenced on the teacher-created websites of Texas high school teachers.

Prediction of Profiles of Teacher-Created Classroom Website Design

Linear regression was selected as the method used to consider the relationship between the dependent variables (teacher information components, communication components, classroom management components, and teaching content components) and the independent variables in the categories of geographic location, Campus STaR Chart Summary Findings, school enrollment, Title 1 school designation, and content area taught. The individual independent variables were grouped in subsets based on the component they represented as identified in the literature and their subtotals aggregated to determine profiles of the contextual factors that influence teacher-created classroom website design (See Appendix A).

Threats to Validity

Consideration was given in two areas of this analytical plan: was the model influenced by a small number of website findings and can we generalize the model? To determine whether there was influence by a small number of findings, outliers and residuals will be identified. If identified, Cook's distance will be used to determine the influence of the outlier or residual on the model (Field, 2013). To determine if the findings could be generalized, we first considered the assumption of our model. One assumption was that of additivity and linearity which means that our results should have a linear relationship with the predictors (Field, 2013). In this study, the sample size was larger than what was determined necessary so this will be used to cross-validate the samples. This will determine if the model was accurate for a different sample using the same set of predictors. This analysis used the adjusted R^2 to make this determination.

The dependent variables were selected because they were shown to be indicative of the technology, pedagogical, and content knowledge of the teacher by their inclusion

on their classroom website. However, the list was not exhaustive. Some variables included in previous studies were omitted because they were out-of-date in relation to current technology practices. It is also possible that there may be variables that were not identified in the research that would also provide this data. The date the website evaluation was completed could impact the validity. Teacher-created websites are updated and changed and it is possible that a website could change significantly from one date to another. However, the research indicates that this is unlikely. It is possible that this could have been a threat to external validity of the study because it may have impact the ability of the study to be replicated.

Ideally, all of the information included in this study would be unique to the individual teacher. However, some of it was not and this can be a threat to the validity of the process. The STaR Chart teacher technology readiness results are not available by teacher but are available by campus. Therefore, the Campus STaR Chart Summary Findings (TL6) were recorded for the teacher based on their campus affiliation. To eliminate this threat to validity, only one teacher was selected from each campus to ensure that this was a unique score for each teacher.

Ethical Procedures

This study relied upon historical data collected from publicly accessible teacher-created classroom websites linked to a public high school in Texas. All schools and teacher-created classroom websites included in the study were assigned random, numerical numbers to protect confidentiality. All data that was included was available publicly at the time of collection either through the teacher-created classroom website,

the school website, or a database of educational statistics. All data collected for this study was secured nightly in a secure file on the researcher's computer and backed up to Dropbox, a cloud storage service. The researcher was the sole person with access to the files.

Summary

In this chapter, the research method proposed for a study to determine profiles based on the contextual factors influencing teacher-created website design was completed. The study sought to take advantage of the public access of teacher-created classroom websites hyperlinked to the campus website to collect data for analysis. The study employed a multiple regression strategy to quantitatively model the predictive power of the identified constructs on the dependent variables (teacher information, communication, classroom management, and teaching content). The predictor variables (school enrollment (UIL), geographic location (ESC), Campus STaR Chart Summary Findings (TL6), content area(s) taught, and grade level taught) were analyzed to determine if a relationship exists with the dependent variables. These relationships will predict the number of website components found on the class websites of Texas secondary teachers based on the class site design. The Website Data Collection Form (see Appendix A) was developed and used to record data that was acquired from accessing the teacher-created classroom websites of high school teachers throughout Texas.

In addition, data (see Appendix C) was collected from five sources: the structured record assessment of teacher websites (see Appendix A); school Division listings provided by the UIL 2014 Realignment Quick Reference Alphabetical List of all 1396

Schools; STaR Chart Campus Summary Results; National Center for Education Statistics Public School Data for school district, physical address, type, grade span, total students, classroom teachers, and Title I School status; and the Districts Served by Regional Education Service Centers report (TEA, 2014b) to identify which school districts are served by the twenty ESCs. IBM SPSS Statistics 21 software will be used to perform statistical tests on the data collected and those results were analyzed to determine if predictions could be determined based on the contextual factors influencing teacher-created website design.

Chapter 4: Results

In this study, I sought to determine what contextual factors impact the design of classroom websites developed by classroom teachers in Texas high schools. Four separate research questions and hypotheses guiding this study were as follows:

1. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching information section of a website designed by a teacher employed at that campus*?*

$H_0$1: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching information section of a website designed by a teacher employed at that campus.

2. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the communication

section of a website designed by a teacher employed at that campus?

$H_0$1: There is no significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

H_a1: There is a significant relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

3. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the classroom management section of a website designed by a teacher employed at that campus?

$H_0$1: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the classroom management section of a website designed by a teacher employed at that campus.

4. How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching content section of a website designed by a teacher employed at that campus?

H_01: There is no relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus

H_a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) and prediction of the number of website components related to the teaching content section of a website designed by a teacher employed at that campus.

The sections that follow provide an overview of the pilot study, data collection process, data analysis, and results obtained for this study. Each of the research questions

will be discussed and the findings of the analysis, along with any significant determinations, will be presented. Finally, an opportunity for supplemental analysis was discovered and these results will be presented and discussed.

Pilot Study

A pilot study was conducted in advance of the initiation of the study to ensure the codebook was accurate and that the proposed process maximized the likelihood of accuracy in data collection. Two independent coders selected a random sample of teacher-created classroom websites from those that have been completely coded by the researcher and evaluated them to determine if total agreement in coding is achieved. According to the study results, three variables (resources for exams, resources for assignments, repository of lesson information) and three section definitions (teacher information, communication, classroom management) in the study needed further clarification to facilitate increased accuracy. In these instances, the coders required additional specifics about the website components in order to correctly identify and record them. Those variable definitions and clarifications are provided in Table 4. In addition, the process of data collection was streamlined through the use of an online collection form that duplicated the original Essential Website Assessment resulting in less likelihood of error in data entry.

Table 4

Adjustments to Instrument Definitions Based on Pilot Test Results

Essential Website Element	Addition to Element Definitions
Section Three: Teacher Information	In order to be identified, this information must be located on the teacher-created classroom website directly.
Section Four: Communication	In order to be identified, this information must be located on the teacher-created classroom website directly.
Section Five: Classroom Management	In order to be identified, this information must be located on the teacher-created classroom website directly.
Resources for Exams	Resources for exams are indicated with titles or links that use words that indicate they are for the purpose of supporting exam preparation. The following is a list of words, though not all-inclusive, that indicate the resources is intended for exam support: exam, examination, test, review, STAAR, TAKS, quiz, exam study guide.
Resources for Assignments	Resources for assignments are linked to actual school assignments.
Repository of Lesson Information	This information consists of documents, multimedia, downloadable items, and printable materials.

The collection of data during the pilot study also resulted in a change to the use of the Essential Website Assessment form used to collect data. It was clear that the use of paper forms was cost prohibitive. In addition, the forms increased the likelihood of error and required additional steps to add the data to the proposed Excel document. Therefore, an online form duplicating the Website Data Collection Form was created at Google Drive and used to collect the data found during data collection. The data collected were

immediately added to a spreadsheet by the Google Drive form and negated any errors in data entry between the data collected and the spreadsheet. Therefore, the need to store loose paper documents was no longer required. The Google Drive Form and spreadsheet was saved in two locations: my password-protected computer and in secondary storage through my Google Drive account.

Data Collection

The Institutional Review Board (IRB) of Walden University approved the data collection protocol for this study and issued approval number 10-21-14-0286041 on October 21, 2014. The selection of teacher-created classroom websites to be evaluated using the systematic determination of content area for each ESC region was completed by October 29, 2014. Two unique findings impacted the actual data collection process and are noted below. I stopped reviewing here. Please go through the rest of your chapter and look for the patterns I pointed out to you. I will now look at Chapter 5.

Two unique findings impacted the actual data collection process and are noted below. First, during the selection of teacher-created classroom websites for inclusion in the study, it was noted that no teacher-created classroom websites were evident on a number of campus websites. According to the proposed plan described in Chapter 3, this situation required that the process be repeated until the appropriate numbers of websites for evaluation were determined. It soon became clear that the number of school campuses that did not have teacher-created classroom websites available could be large. In fact, 77 of the 268 campuses randomly selected for inclusion in the study, or 28.7%, were found to have no evidence of teacher-created classroom websites. Table 5 shows the frequency chart representing this finding.

Table 5

Websites Available for Study Inclusion

	Frequency	Percent	Valid Percent	Cumulative Percent
Found	191	71.3	71.3	71.3
Not Found	77	28.7	28.7	100.0
Total	268	100.0	100.0	

Secondly, the proposed plan called for the evaluation of 205 Texas high school teacher-created websites. However, 191 sites were actually evaluated. This discrepancy is due to the lack of schools that could be identified based on the systematic determination of the content areas to be assessed in each ESC as shown in Table 2. For example, in ESC Region 3, one teacher-created math classroom website was to be selected from UIL Division 5. However, there are no schools in ESC Region 3 designated as UIL Division 5. For this reason, it was impossible to include a website that met the plan criteria in ESC Region 3, UIL Division 5. Table 6 shows the number of websites proposed based on this plan and the number of sites available that actually met the study's criteria.

In total, 14 less Texas high school teacher-created classroom websites were evaluated than proposed. The actual number of evaluated sites, despite this discrepancy, still far exceeded the sample size determined through power analysis.

Table 6

Discrepancy from Systemic Determination of Content Area to be Evaluated in each Educational Service Center (ESC)

ESC	University Interscholastic League (UIL) Number	Content Area	Proposed Number	Actual Number	Difference (-)
1	1	Math	3	1	2
3	5	Social Studies	1	0	1
4	1	Social Studies	5	1	4
5	1	Science	1	0	1
8	5	Social Studies	1	0	1
9	5	Science	1	0	1
13	1	English	3	2	1
14	5	Science	1	0	1
15	5	Math	1	0	1
19	1	Social Studies	2	1	1
Total			205	191	14

Examining the impact of the final data collection totals of the individual variables, 22% of the UIL Division 1 and 13% of UIL Division 5 evaluations were not available. The most significant impact on the data collection was the content area of Social Studies where 17% of the websites were not available. A 16% difference occurred in ESC 4 where four sites were not available for evaluation. Table 7 identifies the difference in Texas high school teacher-created website evaluations based on the dependent variables: ESC, UIL, and Subject.

Table 7

Difference in Texas High School Teacher-Created Website Evaluations based on the Independent Variables: Educational Service Center (ESC), University Interscholastic League (UIL), and Subject

Dependent Variable	University Interscholastic League (UIL) Number	Proposed Number	Actual Number	Difference (-)
ESC				
	1	3	1	2
	3	1	0	1
	4	5	1	4
	5	1	0	1
	8	1	0	1
	9	1	0	1
	13	3	2	1
	14	1	0	1
	15	1	0	1
	19	2	1	1
UIL				
	1	14	5	9
	5	5	0	5
Subject				
	Math	4	1	3
	English	3	2	1
	Science	3	0	3
	Social Studies	9	2	7

The independent (predictor) variables were the ESC number, UIL Division, Title I school identification, Content Area Taught, and the Campus STaR Chart Summary Findings for Teaching & Learning Focus Area TL6. The dependent variables were

separated into four categories: teacher information, communication, classroom management, and teaching content.

Table 8 reflects the study sample frequency data for the following independent variables: Title 1 school designation, content area taught, Campus STaR Chart Summary Findings for Teaching & Learning Focus Area (TL6), Grade Level, and campus enrollment (UIL) for the study sample. In addition, the frequency data for the state is provided to show that the sample population was representative of the state population when possible. In general, the study population was representative of the state data with close percentages representing the frequency. The grade level data could not be included at state level because secondary teacher data was provided by content area. However, it is important to note that only 13.1% of the websites evaluated included information about the grade level taught. Due to this low number, the information for grade level is presented as informational and should be interpreted with caution.

Table 8

Characteristics of the Sample: Title 1 School Designation, Content area Taught, and Campus STaR Chart Summary Findings for Teaching & Learning Focus Area (TL6)

Demographics	Frequency	%	State Frequency	%
Title 1 School				
Yes	149	78.0	979	83.7
No	42	22.0	190	16.3
Content area Taught*				
Math	38	19.9	137,455	19.9
English/Language Arts	40	20.9	164,220	23.8
Other	41	21.5	142,431	20.7
Science	37	19.4	122, 321	17.7
Social Studies	35	18.3	122, 832	17.8
Campus STaR Chart Summary Findings for Teaching & Learning Focus Area (TL6)				
Early Tech	16	8.4	92	7.5
Developing Tech	133	69.6	925	75.3
Advanced Tech	19	9.9	165	13.4
Target Tech	6	3.1	24	2.0
Not Available	17	8.9	83	6.4
Grade Level				
9th Grade	6	3.1	NA	NA
10th Grade	2	1.0	NA	NA
11th Grade	1	0.5	NA	NA
12th Grade	1	0.5	NA	NA
Multi Grade	15	7.9	NA	NA
No Grade Listed	166	86.9	NA	NA
Campus Enrollment (University Interscholastic League)				
Division 1 – 199 and below	32	16.8	154	13.2
Division 2 – 200 – 449	41	21.5	282	24.1
Division 3 – 450 – 1004	41	21.5	230	19.7
Division 4 – 1005 to 2089	41	21.5	279	23.9
Division 5 – 2090 and up	36	18.8	225	19.2

Note: *State totals represent number of classes taught per content area

In this study, the number of websites to be evaluated in each ESC Region was determined by a proportional allocation of the number of public high schools in the region. Table 9 shows that the actual number of Texas high school teacher-created websites evaluated in each region was proportional to the actual number of secondary schools included in each region. Slight differences in the percentages reflect the impact of the discrepancies noted previously but did not result in significant differences. These differences can be viewed by comparing the percentage columns in the table.

Table 9

Characteristics of the Sample: Educational Service Center (ESC)

Educational Service Center	Actual Count of Evaluated Teacher-Created Websites	% of Evaluated Teacher-Created Websites	Actual Count of Texas High Schools	% of Texas High Schools
1	13	6.8	82	6.7
2	5	2.6	39	3.2
3	4	2.1	31	2.5
4	21	11	157	12.8
5	4	2.1	32	2.6
6	10	5.2	58	4.7
7	10	5.2	75	6.1
8	4	2.1	31	2.5
9	4	2.1	26	2.1
10	25	13.1	161	13.1
11	20	10.5	119	9.7
12	10	5.2	56	4.6
13	14	7.3	82	6.7
14	4	2.1	32	2.6
15	4	2.1	30	2.4
16	5	2.6	38	3.1
17	5	2.6	34	2.8
18	5	2.6	25	2.0
19	9	4.7	40	3.3
20	15	7.9	81	6.6
Total	191	99.9	1229	100

Upon completion of the data collection, the results were entered into the IBM SPSS Statistics 21 software. A large number of cases were found to have missing data indicating that the website component had not been discovered during the teacher-created classroom website evaluations. These findings were representative to the study as they indicate that a website component was not selected by the teacher for inclusion on their site and were coded as zero.

Four separate analyses were conducted. The four analyses were aligned with the first four research questions of the study. Each analysis tested the null hypothesis as stated for each of the four research questions, testing whether the Campus STaR Chart Summary Results (TL6), campus enrollment (UIL), geographic location (ESC), campus Title 1 designation, content area taught, and grade level predict the number of website components related to the teacher information, communication, classroom management, and teaching content sections of a website designed by a teacher employed at that campus. These independent variables were regressed against the dependent variables.

Analysis

Initially, a frequency analysis was completed on the entire data set to obtain the frequency of website components included on teacher-created classroom sites. Multiple regression was used to answer the questions outlined in this study because it allows the researcher to make a prediction based on multiple independent variables (Pallant, 2013). The independent variables may be categorical or continuous, and the dependent variable must be continuous (2013).

The independent variables in this study consisted of the teacher scores for each of the four website categories of teacher information, communication, classroom management, and teaching content. To obtain these scores, the sum of the specific site components, which were aligned with a particular category, were determined. As a result, each teacher received four scores, one for the sum of the teacher information category, the communication category, the classroom management category, and the teaching content category. Four new variables were then created as shown in Table 10.

Table 10

New Variables Representative of the Four Categories: Teacher Information, Communication, Classroom Management, and Teaching Content

New Variable Name	Combination of Dependent Variables	Possible Score
teacher_information	Teacher room number	*1*
	Teacher class schedule	*1*
	Teacher information and background	*1*
	School Information	*1*
	Calendar	*4*
	Category Total Points	8
Communication	Parent Information	4
	Teacher E-mail address	1
	Teacher phone number	1
	Teacher conference time	1
	Category Total Points	7
classroom_mgmt	Classroom rules	1
	Class Announcements	4
	Category Total Points	5
Teachingcontent	Resources for exams	4
	Resources for assignments	4
	Repository of lesson information	4
	Links for lesson support	4
	Last update within	4
	Number of web pages	4
	Assignment information	4
	Display of student work	4
	Grading information	4
	Incorporates interactive and communication technology innovations	4

Category Total Points	40
Total Possible Points	60

Several assumptions were considered. First, sample size must be adequate. This requirement was met and exceeded as described in Chapter 3. Secondly, the variables were evaluated for multicollinearity to determine if any of the dependent variables had high correlations with each other. None of the independent variables in this study were found to be multicollinear and this assumption was met. The distributions of scores were checked for normality, linearity, homoscedasticity, and independence of residuals. These assumptions were tested and met. Finally, no outliers were discovered in the data set.

Results

Table 11 shows the frequency of website components, or dependent variables in this study, that were found on the evaluated teacher-created classroom sites.

Table 11

Frequency of Website Components Found on Teacher-Created Classroom Websites

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Teacher E-mail Address	169	88.5%	22	11.5%	191	100.0%
Teacher Phone Number	168	88.0%	23	12.0%	191	100.0%
School Information	165	86.4%	26	13.6%	191	100.0%
Conference Time	94	49.2%	97	50.8%	191	100.0%
Teacher Information and Background	89	46.6%	102	53.4%	191	100.0%
Class Announcements	74	38.7%	117	61.3%	191	100.0%
Class Schedule	73	38.2%	118	61.8%	191	100.0%
Assignment Information	59	30.9%	132	69.1%	191	100.0%
Links	53	27.7%	138	72.3%	191	100.0%
Calendar	52	27.2%	139	72.8%	191	100.0%
Repository of Lesson Information	49	25.7%	142	74.3%	191	100.0%
Assignment Resources	45	23.6%	146	76.4%	191	100.0%
Teacher Room Number	41	21.5%	150	78.5%	191	100.0%
Last Updated	40	20.9%	151	79.1%	191	100.0%
Exam Resources	29	15.2%	162	84.8%	191	100.0%
Interactive Communication and Technological Innovations	23	12.0%	168	88.0%	191	100.0%
Grading Information	22	11.5%	169	88.5%	191	100.0%
Class Rules	17	8.9%	174	91.1%	191	100.0%
Display of Student Work	7	3.7%	184	96.3%	191	100.0%

a. Website Available = Found

The data indicates that teacher e-mail address (88.5%), phone number (88%), school information (86.4%) were the components most often identified on a teacher-created classroom website. The least identified were display of student work (3.7%), classroom

rules (8.9%), parent information (2%), grade level taught (3.1%), and exam resources (5.2%). The dependent variables are listed in order of their frequency on the teacher-created classroom site from greatest to least.

The results of the Campus STaR Chart Summary Results (TL6) were analyzed to determine the frequency for Levels of Progress. Those findings show that 69.6% of Texas high school campuses had a Level of Progress of Developing Tech. Early Tech, Advanced Tech, and Target Tech were identified for 8.4%, 9.9%, and 3.1% of the researched campuses, respectively. Finally, 8.9% of the sample was found to have no Level of Progress available. This data indicates that most of the study population felt that their technology readiness was developing but some progress had been made towards mastery.

Frequency analysis was completed to determine the ESC regions ranked according to the score earned on the Data Collection Worksheet. The average score was 11.82 out of a possible 60 points indicating that the mean class website contained 20% of the measured site components. Table 12 provides the results of this analysis and shows that teacher-created classroom websites located in ESC Region 13 scored an average of 16.79, nearly 8% higher than the average. On the other hand, sites in ESC Region 14 scored an average of 5.50, or 11% less than the mean. The range in mean website score is 11.29 points or a 19% difference between the highest and lowest percentage. The highest score earned was 40, or 67%, in ESC Region 1 and the lowest score received was three, or 5%, in ESC Regions 14, 16, 18, and 19. In total, eight ESC regions scored higher than the study's average, ESC Regions 13, 9, 4, 6, 17, 2, and 11 while ESC Regions 10, 1, 15, 19, 18, 8, 20, 12, 3, 16, 5, and 14 scored less.

Table 12

Statistical Findings for Educational Service Center Regions and Website Evaluation Scores

Educational Service Center Region	Mean Website Score	Websites Evaluated (N)	Sum of Scores	Minimum Score	Maximum Score	Range of Scores	Median Score
Region 13	16.79	14	235	4	32	28	20.00
Region 9	16.25	4	65	6	38	32	10.50
Region 4	15.90	21	334	5	34	29	12.00
Region 6	15.60	10	156	5	28	23	16.50
Region 17	15.40	5	77	5	28	23	10.00
Region 2	13.20	5	66	5	30	25	10.00
Region 11	12.05	20	241	4	30	26	11.00
Region 7	12.00	10	120	5	25	20	9.00
Region 10	11.28	25	282	4	25	21	8.00
Region 1	11.23	13	146	4	40	36	8.00
Region 15	10.50	4	42	4	17	13	10.50
Region 19	10.44	9	94	3	23	20	9.00
Region 18	9.80	5	49	3	17	14	8.00
Region 8	8.50	4	34	6	12	6	8.00
Region 20	8.47	15	127	4	23	19	7.00
Region 12	7.80	10	78	4	15	11	6.00
Region 3	7.75	4	31	4	11	7	8.00
Region 16	7.00	5	35	3	11	8	7.00
Region 5	5.75	4	23	4	7	3	6.00
Region 14	5.50	4	22	3	7	4	6.00
Total All ESC Regions	11.82	191	2257	3	40	37	9.00

Frequency analysis was then completed to determine the ESC regions rankings for each of the four categories of the evaluated classroom websites. The first analysis

completed was for the teacher information category. The average score was 2.82 out of a possible eight points indicating that the mean class website contained 35% of the measured site components in this category. Table 13 provides the results of this analysis for the teacher information section and indicates that teacher-created classroom websites located in ESC Region 15 scored an average of five, nearly 28% higher than the average. On the other hand, sites in ESC Region 5 scored an average of 1.25, or 19% less than the mean. The range in mean website score was eight points, or 100% difference. The highest score earned was eight, or 100%, in ESC Regions 4, 9, 13, and 15. The lowest score obtained was zero, or 0%, in ESC Regions 2, 10, 16, 19, and 5. In total, seven ESC regions scored higher than the study's average, ESC Regions 15, 9, 6, 17, 13, 4, and 11 while ESC Regions 2, 3, 10, 18, 7, 8, 20, 19, 12, 16, 14, 1, and 5 scored less.

Table 13

Statistical Findings for Educational Service Center Regions and Website Evaluation Scores for Teacher Information

Educational Service Center Region	Mean Website Score	Number of Websites Evaluated	Sum of Scores	Minimum Score	Maximum Score	Range of Scores	Median Score
Region 15	5.00	4	20	1	8	7	5.50
Region 9	4.75	4	19	2	8	6	4.50
Region 6	4.70	10	47	2	7	5	5.50
Region 17	4.40	5	22	2	7	5	3.00
Region 13	3.71	14	52	1	8	7	3.00
Region 4	3.38	21	71	1	8	7	2.00
Region 11	3.20	20	64	1	7	6	2.00
Region 2	2.80	5	14	0	7	7	3.00
Region 3	2.50	4	10	1	5	4	2.00
Region 10	2.48	25	62	0	7	7	2.00
Region 18	2.40	5	12	1	4	3	2.00
Region 7	2.30	10	23	1	7	6	2.00
Region 8	2.25	4	9	1	4	3	2.00
Region 20	2.13	15	32	1	4	3	2.00
Region 19	2.11	9	19	0	7	7	1.00
Region 12	2.10	10	21	1	5	4	1.50
Region 16	2.00	5	10	0	4	4	2.00
Region 14	1.75	4	7	1	3	2	1.50
Region 1	1.54	13	20	1	3	2	1
Region 5	1.25	4	5	0	2	2	1.50
Total	2.82	191	539	0	8	8	2.00

Next, a frequency analysis was completed for the communication section. The average score was 2.44 out of a possible eight points indicating that the mean class website contained 35% of the measured site components in this category. Table 14 provides the results of this analysis for the communication category and indicates that teacher-created classroom websites located in ESC Region 4 scored an average of 3.14, or 10% higher than the average. On the other hand, websites in ESC Region 12 scored an

average of 2.10, or 5% less than the mean. The range in mean site score was seven points, or 100% difference. The highest score received was seven, or 100%, in ESC Region 4. The lowest score obtained was zero, or 0%, in ESC Regions 10 and 12. In total, seven ESC regions scored higher than the study's average, ESC Regions 4, 8, 9, 16, 18, 6, and 15 while ESC Regions 2, 7, 11, 19, 20, 13 3, 5, 14, 17, 10, 1 12 scored less.

Table 14

Statistical Findings for Educational Service Center Regions and Website Evaluation Scores for Communication

Educational Service Center Region	Mean Website Score	Number of Websites Evaluated	Sum of Scores	Minimum Score	Maximum Score	Range of Scores	Median Score
Region 4	3.14	21	66	1	7	6	3.00
Region 8	3.00	4	12	2	4	2	3.00
Region 9	3.00	4	12	3	3	0	3.00
Region 16	2.80	5	14	2	3	1	3.00
Region 18	2.80	5	14	1	4	3	3.00
Region 6	2.60	10	26	1	3	2	3.00
Region 15	2.50	4	10	2	3	1	2.50
Region 2	2.40	5	12	2	3	1	2.00
Region 7	2.40	10	24	2	4	2	2.00
Region 11	2.35	20	47	1	4	3	2.50
Region 19	2.33	9	21	1	4	3	2.00
Region 20	2.33	15	35	1	5	4	2.00
Region 13	2.29	14	32	1	4	3	2.00
Region 3	2.25	4	9	2	3	1	2.00
Region 5	2.25	4	9	2	3	1	2.00
Region 14	2.25	4	9	1	3	2	2.50
Region 17	2.20	5	11	1	3	2	2.00
Region 10	2.16	25	54	0	5	5	2.00
Region 1	2.15	13	28	1	5	4	2.00
Region 12	2.10	10	21	0	3	3	2.00
Total	2.44	191	466	0	7	7	2.00

The classroom management section was analyzed next. The average score was .54 out of a possible five points indicating that the mean class website contained 11% of the measured site components in this category. Table 15 provides the results of this analysis for the classroom management section and indicates that teacher-created classroom websites located in ESC Region 2 scored an average of 1, or 9% higher than the average. On the other hand, sites in ESC Regions 5 and 15 scored an average of 0, or 11% less than the mean. The range in mean website score is five points, or 100% difference. The highest individual score earned was seven, or 100%, in ESC Regions 10 and 20. The lowest individual score received was zero, or 0%, in every ESC Region. In total, nine ESC regions scored higher than the study's average, ESC Regions 2, 17, 18, 8, 6, 4, 20, 10, and 19, ESC Region 1 scored the same as the average, and ESC Regions 3, 7, 9, 13, 11, 16, 14, 12, 5, and 15 scored less.

Table 15

Statistical Findings for Educational Service Center Regions and Website Evaluation Scores for Classroom Management

Educational Service Center Region	Mean Website Score	Number of Websites Evaluated	Sum of Scores	Minimum Score	Maximum Score	Range of Scores	Median Score
Region 2	1	5	5	0	3	3	1
Region 17	0.8	5	4	0	3	3	0
Region 18	0.8	5	4	0	1	1	1
Region 8	0.75	4	3	0	2	2	0.5
Region 6	0.7	10	7	0	2	2	1
Region 4	0.67	21	14	0	2	2	1
Region 20	0.67	15	10	0	5	5	0
Region 10	0.64	25	16	0	5	5	0
Region 19	0.56	9	5	0	2	2	0
Region 1	0.54	13	7	0	2	2	0
Region 3	0.5	4	2	0	2	2	0
Region 7	0.5	10	5	0	1	1	0.5
Region 9	0.5	4	2	0	1	1	0.5
Region 13	0.5	14	7	0	3	3	0
Region 11	0.4	20	8	0	2	2	0
Region 16	0.4	5	2	0	1	1	0
Region 14	0.25	4	1	0	1	1	0
Region 12	0.2	10	2	0	1	1	0
Region 5	0	4	0	0	0	0	0
Region 15	0	4	0	0	0	0	0
Total	0.54	191	104	0	5	5	0

Finally, the teaching content section was analyzed. The average score was 6.01 out of a possible 40 points indicating that the mean class website contained 15% of the measured site components in this category. Table 16 provides the results of this analysis for the communication section and indicates that teacher-created classroom websites located in ESC Region 13 scored an average of 10.29, or 11% higher than the average. On the other hand, sites in ESC Regions 14 scored an average of 1.25, or 12% less than

the mean. The range in mean website score was 30 points, or 75% difference. The highest individual score received was 31, or 75%, in ESC Regions 1. The lowest score obtained was one, or 3%, in every ESC Region. In total, nine ESC regions scored higher than the study's average, ESC Regions 13, 4, 9, 17, 6, 1, 2, 7, and 11; ESC Regions 10, 19, 18, 12, 20, 14, 3, 8, 5, 16 scored less.

Table 16

Statistical Findings for Educational Service Center Regions and Website Evaluation Scores for Teaching Content

Educational Service Center Region	Mean Website Score	Number of Websites Evaluated	Sum of Scores	Minimum Score	Maximum Score	Range of Scores	Median Score
Region 13	10.29	14	144	1	24	23	9.5
Region 4	8.71	21	183	1	25	24	3
Region 9	8	4	32	1	26	25	2.5
Region 17	8	5	40	1	18	17	5
Region 6	7.6	10	76	1	20	19	7.5
Region 1	7	13	91	1	31	30	4
Region 2	7	5	35	1	17	16	5
Region 7	6.8	10	68	1	20	19	5
Region 11	6.1	20	122	1	21	20	5
Region 10	6	25	150	1	19	18	4
Region 19	5.44	9	49	1	14	13	4
Region 18	3.8	5	19	1	9	8	3
Region 12	3.4	10	34	1	10	9	3
Region 20	3.33	15	50	1	9	8	3
Region 15	3	4	12	1	7	6	2
Region 3	2.5	4	10	1	4	3	2.5
Region 8	2.5	4	10	1	4	3	2.5
Region 5	2.25	4	9	1	3	2	2.5
Region 16	1.8	5	9	1	4	3	1
Region 14	1.25	4	5	1	2	1	1
Total	6.01	191	1148	1	31	30	3

The new definition of digital divide is defined as the inequity of exposure to new technologies (Hargittai & Hinnant, 2008; Stewart, 2009) is evident in the preceding tables 12-16. There is a discrepancy among the twenty regions and the website components available to the students. In order to eliminate the new digital divide, Warschauer & Matuchniak (2010) noted that resources should be provided equally at school and in mediums that can be accessed away from school and after hours. However, the data in these tables show that Texas high schools are not provided equal access to online resources and information.

Research Question 1

How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teacher information section of a website designed by a teacher employed at that campus?

The maximum score for the teacher information section of the teacher-created classroom website was 8 points and includes the following components: teacher room number, teacher class schedule, teacher information and background, school information, and calendar.

A multiple regression was conducted to evaluate how well contextual factors predicted the number of website components related to teacher information. The predictors were the five contextual factors of STaR Chart Summary Results (TL6), Title 1 designation, content area taught, grade level, and campus enrollment (UIL). The assumptions of linearity, independence of errors, homoscedasticity, unusual points, and normality were met. The linear combination of contextual factors was significantly

related to the number of website components related to teacher information, $F(6, 184) = 2.741$, $p < .05$, $R^2 = .082$.

In Table 17, the individual predictors are presented. Of the five contextual factors, only one, Title 1 designation, was statistically significant ($p < .05$). On the basis of this analysis, a predictor equation of 3.274 – (1.254 x Title 1) was determined. Regression coefficients and standard errors can be found in Table 17.

Table 17

Summary of Multiple Regression Analysis for Teacher Information Section

Variable	*B*	SE_B	β	Sig
Intercept	3.274	.662		
STaR Chart Summary Results (TL6)	.002	.005	.028	.697
Title 1 Designation	-1.254	.354	-.253	.000*
Content Area	-.008	.102	-.005	.941
Grade Level	.163	.112	.110	.146
Campus Enrollment (UIL)	.132	.110	..088	.230

Note. *p < .05; B = unstandardized regression coefficient; SE_B = standard error of coefficient; β = standardized coefficient

Table 18 provides the predicted score for the number of website components for the teacher information category.

Table 18

Score Prediction for Number of Website Components for Teacher Information

Title 1 School Designation	Equation 3.274 - (1.254 x Title 1 Designation)	Predicted Score	Total section score out of 7 possible points (%)
Not Found	3.274 - (1.254 x 0)	3.274	41
Found	3.274 – (1.254 x 1)	2.020	25

Research Question 2

How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the communication section of a website designed by a teacher employed at that campus?

The maximum teacher score for the communication section of the teacher-created classroom website was seven points and is the sum of the site evaluation score for the following components: parent information, teacher e-mail address, teacher phone number, and teacher conference time.

A multiple regression was conducted to evaluate how well contextual factors predicted the number of website components related to communication. The predictors were the five contextual factors of STaR Chart Summary Results (TL6), Title 1 designation, content area taught, grade level, and campus enrollment (UIL). The assumptions of linearity, independence of errors, homoscedasticity, unusual points, and normality were met. The linear combination of contextual factors was significantly related to the number of website components related to communication, $F(6, 184) = 3.466$, $p < .05$, $R^2 = .102$.

In Table 19, the individual predictors are presented. Of the five contextual factors, only one, grade level, was statistically significant ($p < .05$). On the basis of this analysis, a predictor equation of 2.582 + (.202 x grade level) was determined. Regression coefficients and standard errors can be found in Table 19, as well.

Table 19

Summary of Multiple Regression Analysis for Communication Section

Variable	*B*	SE_B	β	Sig

Intercept	2.582	.307		
STaR Chart Summary Results (TL6)	.003	.003	.086	.230
Title 1 Designation	-.210	.164	-.090	.202
Content Area	-.077	.047	-.114	.105
Grade Level	.202	.052	.292	.000*
Campus Enrollment (UIL)	.034	.051	.048	.503

Note. *p < .05; B = unstandardized regression coefficient; SE_B = standard error of coefficient; β = standardized coefficient

Table 20 provides detailed information about the predictive significance for each grade level.

Table 20

Score Prediction for Number of Website Components for Communication Section

Grade Level	Equation 2.582 + (.202 x grade)	Predicted Score	Total section score out of 7 possible points (%)
No Grade Listed	2.582 + (.202 x 0)	2.582	37
9th Grade	2.582 + (.202 x 1)	2.784	40
10th Grade	2.582 + (.202 x 2)	2.986	43
11th Grade	2.582 + (.202 x 3)	3.188	46
12th Grade	2.582 + (.202 x 4)	3.390	48
Multi Grade	2.582 + (.202 x 5)	3.592	51

Research Question 3

How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the classroom management section of a website designed by a teacher employed at that campus?

The maximum teacher score for the classroom management section of the teacher-created classroom website was five points and is the sum of the site evaluation score for the following components: classroom rules and class announcements.

A multiple regression was conducted to evaluate how well contextual factors predicted the number of website components related to classroom management. The predictors were the five contextual factors of STaR Chart Summary Results (TL6), Title 1 designation, content area taught, grade level, and campus enrollment (UIL). The assumptions of linearity, independence of errors, homoscedasticity, unusual points, and normality were met. The linear combination of

contextual factors was significantly related to the number of website components related to teacher information, $F(6, 184) = 2.805$, $p < .05$, $R^2 = .084$.

In Table 21, the individual predictors are presented. Of the five contextual factors, only two, grade level and STaR Chart Summary Results (TL6), were statistically significant ($p < .05$). On the basis of this analysis, a predictor equation of .483 + (.132 x grade level) - (.005 x STaR Chart Summary Results (TL6)) was determined. Regression coefficients and standard errors can be found in Table 21.

Table 21

Summary of Multiple Regression Analysis for Classroom Management

Variable	*B*	SE_B	β	Sig
Intercept	.483	.267		
STaR Chart Summary Results (TL6)	-.005	.002	.167	.022*
Title 1 Designation	-.172	.143	-.086	.230
Content Area	-.059	.041	-.102	.150
Grade Level	.132	.045	.222	.004*
Campus Enrollment (UIL)	.065	.044	.107	.144

Note. *$p < .05$; B = unstandardized regression coefficient; SE_B = standard error of coefficient; β = standardized coefficient

Table 22 provides detailed information about the predictive significance for each grade level and Campus STaR Chart Summary Result (TL6).

Table 22

Score Prediction for Number of Website Components for Classroom Management Section

Prediction Equation .483 + (.132 x Grade Level) – (.005 x Campus STaR Chart Summary Results (TL6))	Early Technology	Developing Technology	Advanced Technology	Target Technology
No Grade Listed	.478	.473	.468	.463
9th Grade	.610	.605	.600	.595
10th Grade	.742	.737	.732	.727
11th Grade	.874	.869	.864	.859
12th Grade	1.006	1.001	.996	.991
Multi Grade	1.138	1.133	1.128	1.123

Research Question 4

How does the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching content section of a website designed by a teacher employed at that campus?

The maximum teacher score for the teaching content section of the teacher-created classroom website was 40 points and is the sum of the site evaluation score for the following components: resources for exams, resources for assignments, repository of lesson information, links for lesson support, last update, number of web pages, assignment information, display of student work, grading information, and incorporates interactive and communication technology innovations.

A multiple regression was conducted to evaluate how well contextual factors predicted the number of website components related to teaching content. The predictors were the five contextual factors of STaR Chart Summary Results (TL6), Title 1

designation, content area taught, grade level, and campus enrollment (UIL). The assumptions of linearity, independence of errors, homoscedasticity, unusual points, and normality were met. The linear combination of contextual factors was significantly related to the number of website components related to teaching content, $F(6, 184) = 3.954$, $p < .05$, $R^2 = .114$.

In Table 23, the individual predictors are presented. Of the five contextual factors, only three, Title 1 designation, subject taught, and campus enrollment (UIL), were statistically significant ($p < .05$). On the basis of this analysis, a predictor equation of 9.464 – (2.535 x Title 1 designation) - (.859 x subject taught) + (.687 x campus enrollment (UIL)) was determined. Regression coefficients and standard errors can be found in Table 23.

Table 23

Summary of Multiple Regression Analysis for Teaching Content

Variable	*B*	SE_B	B	Sig
Intercept	9.464	2.019		
STaR Chart Summary Results (TL6)	.003	.016	.012	.863
Title 1 Designation	-2.535	1.079	-.164	.020*
Content Area	-.859	.310	-.193	.006*
Grade Level	.498	.341	.109	.145
Campus Enrollment (UIL)	.687	.335	.146	.042*

Note. *$p < .05$; B = unstandardized regression coefficient; SE_B = standard error of coefficient; β = standardized coefficient

Table 24 provides detailed information about the predictive significance for each grade level and Campus STaR Chart Summary Result (TL6).

Table 24

Score Prediction for Number of Website Components for Teaching Content Section

Prediction Equation 9.454 – (2.535 x Title 1) – (.859 x Content Area) + (.687 x Campus Enrollment (UIL))	UIL Division 1, Campus Enrollment 199 and below	UIL Division 2, Campus Enrollment 200 to 449	UIL Division 3, Campus Enrollment 450 to 1004	UIL Division 4, Campus Enrollment 1005 to 2089	UIL Division 5, Campus Enrollment 2090 and up
Title 1 School					
Math	6.757	7.444	8.1319.	8.818	9.505
English	5.898	6.585	7.272	7.959	8.646
Science	5.039	5.726	6.413	7.100	7.787
Social Studies	4.180	4.867	5.554	6.241	6.928
Other	3.321	4.008	4.695	5.382	6.069
Non-Title 1 School					
Math	9.292	9.979	10.666	11.353	12.040
English	8.433	9.120	9.807	10.494	11.181
Science	7.574	8.261	8.948	9.635	10.322
Social Studies	6.715	7.402	8.089	8.776	9.463
Other	5.856	6.543	7.230	7.917	8.604

Supplemental Analysis

These research findings prompted the addition of a fifth question to be answered by this study:

> How does the Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL) designation relate the availability of teacher-created classroom websites linked to a campus website?

$H_0$1: There is no relationship between the Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL) and the availability of teacher-created classroom websites linked to a campus website.

*H*a1: There is a relationship between the Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL) and the availability of teacher-created classroom websites linked to a campus website.

This analysis was aligned to a question that was developed after completion of the data collection found a large number of Texas high school campuses did not have teacher-created classroom websites linked to their campus site. A frequency distribution was completed to determine the percentage of available and unavailable websites based on the independent factors of Campus STaR Chart Summary Results (TL6), Title 1 designation, and Campus Enrollment (UIL). Table 25 shows the results of this analysis.

Table 25

Frequency of Available Classroom Websites Linked to Campus Sites

Independent Variable	N	Percent
Campus STaR Chart Summary Results (TL6)		
Not Available	12	15.6
Early Tech	3	3.9
Developing Tech	54	70.1
Advanced Tech	8	10.4
Target Tech	0	0
Title 1 Designation		
Not Found	12	15.6
Found	65	84.4
Campus Enrollment (University Interscholastic League)		
Division 1 – 199 and below	25	32.5
Division 2 – 200 – 449	18	23.4
Division 3 – 450 – 1004	16	20.8
Division 4 – 1005 to 2089	14	39.0
Division 5 – 2090 and up	4	5.2

The availability of a teacher-created classroom website was regressed against the Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL). A logistic regression was conducted to evaluate how well contextual factors predicted the availability of teacher-created classroom sites linked to a school

website. The predictors were the three contextual factors of Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL). The assumptions of linearity, independence of errors, homoscedasticity, unusual points, and normality were met. The logistic regression was significantly related to the availability of teacher-created classroom websites linked to a campus site, $X2(9) = 22.349$ ($p < .05$). This model explained 11.5% (Nagelkerke R^2) the variance in website availability and correctly classified 72% of cases. Sensitivity was 97.4%, specificity was 9.1%, positive predictive value was 72.7% and the negative predictive value was 58.3%.

In Table 26, the individual predictors are presented. Of the three predictors, only campus enrollment (UIL) was significant ($p < .05$) for UIL(4) which represents the largest school enrollment of 2090 and up or UIL Division 5. A Division 5 campus had 6.96 higher odds to have class websites available linked to the school site. For each unit of increase in campus enrollment (UIL), a school was 1.41 more likely to have teacher-created campus websites available.

Table 26

Logistic Regression Predicting the Availability of Teacher-Created Campus Websites based on Campus STaR Chart Summary Results (TL6), Title 1 Designation, and Campus Enrollment (UIL)

Variable	*B*	*SE*	Wald	*df*	*p*	*Odds Ratio*	*95% CI for Odds Ratio*	
							Lower	Upper
Campus Enrollment (UIL)								
Division 1			10.987	4	.027*			
Division 2	.613	.400	2.352	1	.125	1.846	.843	4.040
Division 3	.617	.414	2.224	1	.136	1.854	.824	4.173
Division 4	.792	.433	3.353	1	.067	2.208	.946	5.154
Division 5	1.941	.605	10.305	1	.001*	6.963	2.129	22.769
Title 1 Designated School	-.270	.376	.517	1	.472	.763	.365	1.594
STaR Chart SummaryResults (TL6)								
Not Available			2.829	4	.587			
Early Tech	1.2327	.752	2.685	1	.101	3.427	.785	14.953
Developing Tech	.204	.439	.216	1	.642	1.227	.519	2.901
Advanced Tech	.314	.585	.288	1	.591	1.369	.435	4.309
Target Tech	20.467	16395.283	.000	1	.999	774060491	.000	

Note. *p < .05; B = unstandardized regression coefficient; SE_B = standard error of coefficient; β = standardized coefficient

Summary

This study examined how the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the four different sections of a website designed by a teacher. The four sections of the website represent the categories of teacher information, communication, classroom management, and teaching content. Data collected throughout the study also identified a fifth question

examining how Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, and campus enrollment (UIL) relate the availability of teacher-created classroom websites linked to a campus website.

Teacher Information.

The first question examined the predictive ability of the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teacher information section of a website designed by a teacher employed at that campus. Five variables comprised this category of the teacher-created classroom website. Title 1 designation ($p = .000$) was a significant negative predictor of the number of website components related to the teacher information section of a site designed by a teacher employed at that campus.

Communication.

The second question examined the predictive ability of the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the communication section of a website designed by a teacher employed at that campus. Four variables comprised this section of the teacher-created classroom website. Grade level ($p = .000$) was a significant positive predictor of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

Classroom Management.

The third question examined whether the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the classroom management section of a website designed by a teacher employed at that campus. Two variables comprised this section of the teacher-created classroom website. Grade level ($p = .004$) was a significant positive predictor and Campus STaR Chart Summary Results (TL6) ($p = .022$) was significant negative predictor of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

Teaching Content.

The fourth question examined whether the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components related to the teaching content section of a website designed by a teacher employed at that campus. Ten variables comprised this section of the teacher-created classroom website. Campus enrollment (UIL) ($p = .042$) was a positive predictor while Title 1 designation ($p = .020$) and subject area taught ($p = .006$) were significant negative predictors of the number of website components related to the communication section of a website designed by a teacher employed at that campus.

Website Availability.

The fifth question examined how the Campus STaR Chart Summary Results (TL6), Title 1 designation, and campus enrollment (UIL) relate the availability of teacher-created classroom websites linked to a campus website. Campus enrollment

(UIL) for Division 5 (Wald 10.305, p = .001) was a significant positive predictor that relate the availability of teacher-created classroom websites linked to a campus website.

The findings of this study indicate that there are contextual factors that are significant and predict the number of website components found on a teacher-created classroom website in Texas high schools. Title 1 designation was a negatively significant variable for the teacher information category while grade level was positively significant for the communication category. Grade level was a positive predictor for the classroom management category while the Campus STaR Chart Summary Results were a negative predictor. For the teaching content section, campus enrollment was a positive predictor while the subject area taught negatively predicted the number of website components related to this category of the class site. Finally, the contextual factor of campus enrollment for the largest student enrollment, Division 5, was positively significant in relating the availability of teacher-created classroom websites linked to Texas high school campus websites. In the next chapter these insights will be discussed as they relate to the five research questions that guided this study. The findings will be interpreted for their significance in the educational discipline and recommendations for further research based on this study's outcomes will be provided.

Geographic location was not a significant contextual factor predicting the number of website components included on a teacher-created classroom website in any of the four site categories: teacher information, communication, classroom management, or teaching content. In addition, the Campus STaR Chart Summary Results did not predict the category if teacher information, communication, or teaching content. Title 1 designation had no impact on communication, classroom management, or teaching

content. Grade level taught did not predict teacher information or teaching content. Subject level taught was not significant in predicting teacher information, communication, or classroom management. The contextual factor of campus enrollment (UIL) was not significant in predicting teacher information, communication, or classroom management. Of the three contextual factors tested for the availability of teacher-created classroom websites linked to the campus site, the Campus STaR Chart Summary Results (TL6) and Title 1 designation were not significant predictors of website availability.

Chapter 5: Interpretations, Recommendations, Implications, and Conclusions

The purpose of this quantitative study was to determine profiles of contextual factors that influence classroom website design in Texas high schools. Specifically, I investigated whether the Campus STaR Chart Summary Results (TL6), geographic location (ESC), Title 1 designation, content area taught, grade level, and campus enrollment (UIL) predict the number of website components included in four sections of a teacher-created classroom website. Those four sections are teacher information, communication, classroom management, and teaching content. They were selected because the website components the campus teacher may select for inclusion on their teacher-created classroom website could be categorized into one of the four sections based on research and were believed to represent the technological, pedagogical, and content knowledge of successful technology integration (Chai et al., 2011; Judi Harris & Hofer, 2009; Jaipal & Figg, 2010; Schmidt et al., 2009). Using the results of the study, I developed teacher profiles based on contextual factors that district and high school administrators would use to inform decision-making about professional development, technology expenditures, and the development of best practices in teaching as it related to the use of teacher-created classroom websites. In addition, teachers would be able to use this information to make more effective and efficient decisions that maximize their use of the Internet to support student achievement.

Analysis of the data suggested that Title 1 designation, grade level, Campus STaR Chart Summary Results (TL6), and campus enrollment (UIL) were predictive of the number of website components included on a teacher-created classroom website. In addition, a supplemental analysis was completed that identified campus enrollment (UIL)

and geographic location (ESC) was predictive of the availability of classroom websites linked to a Texas high school main campus website. Moreover, evidence presented supports research supporting the new definition of the digital divide which identifies the inequity in exposure to technology use and technology skills is more prevalent (Hargittai & Hinnant, 2008; Stewart, 2009; Warschauer & Matuchniak, 2010).

Interpretation of the Findings

Of the five contextual factors that were studied, four were found to be significant predictors of the number of website components included on a Texas high school teacher-created classroom website. Those four contextual factors were Title 1 designation, grade level, Campus STaR Chart Summary results (TL6), and campus enrollment (UIL). Each of these contextual factors were significant in different sections of the teacher-created classroom website: Title 1 designation was significant for teacher information and teaching content; grade level was significant for communication and classroom management; Campus STaR Chart Summary results (TL6) was significant for classroom management and teaching content; and campus enrollment (UIL) was significant for teaching content.

The study led to the inclusion of a supplemental research question which sought to determine if Title 1 designation, grade level, Campus STaR Chart Summary Results (TL6), and campus enrollment (UIL) were predictive of the availability of classroom websites linked to a Texas high school main campus website. For this question, campus enrollment (UIL) and geographic location (ESC) were found to be significant predictors.

Teacher Information

For teacher information, Title 1 designation was found to be a significant contextual factor predicting the number of website components related to the teacher information section of a website designed by a teacher employed at that campus. This section of the teacher-created classroom website had a maximum of eight points that could be scored based on the number of included website components with an average score of 3.274, or 41%, of the total number of website components included. The included site components were teacher room number, teacher class schedule, teacher information and background, school information, and calendar. This number reflects that Texas high school teachers are using their teacher-created classroom websites to provide less than half of the possible teacher-information website components to students and the community.

The predicted score dropped 2.02 points, or 25%, for schools with a Title 1 designation. This indicates a predicted score 1.254 points, or 16%, lower for Texas high schools with a Title 1 designation. This finding is inconsistent with meeting the needs of students in lower socioeconomic situations that indicate a greater need for exposure to technology resources to support their academic success (Tondeur et al., 2010). The study included 78% Title 1 schools and Texas has 83.7% Title 1 schools. According to study findings, Texas high school students in Title 1 designated schools are receiving fewer opportunities to access teacher information on a teacher-created class site.

Campus STaR Chart Summary Results (TL6). Despite the fact that the Campus STaR Chart Summary Results (TL6) was designed to be a reflection of the self-reported ability of the teachers at a specific campus to create supplemental instruction and make it available through a location on the web (TEA, 2006b) at the lowest level of

Early Tech, this factor was not significant in predicting the number of teacher information website components included in the Texas high school teacher-created classroom website. It would be expected that campuses with results of four, Target Tech, would have a significantly better score while schools with results of one, Early Tech, would have a significantly lower score. However, I found that the Campus STaR Chart Summary Results (TL6) played no role in the teachers' final scores in this category. This indicates that the Campus STaR Chart Summary Results (TL6) did not accurately reflect the technology level of the teachers who designed the class website. This finding indicates that the results of the Campus STaR Chart is not a valid measurement tool to ascertain the technology readiness and development of teachers towards the SBEC Technology Standards and No Child Left Behind, Title II, Part D (TEA, 2006b) area TL6.

Geographic location (ESC). The geographic location (ESC) of the campus where the teacher-created classroom website is linked was not significant in predicting the number of website components included in the teacher information section of the website. This is inconsistent with research that showed that urban schools faced fewer barriers in connectivity and availability of content (Page & Hill, 2008; Subramony, 2011). The results of this analysis shows that less than half of the teacher information components were available to students, parents, and the community and that geographic location was not significant in this finding. Therefore, the geographic locations (ESC) with a large number of urban area schools were not significantly predicted to have more teacher information content nor were ESC Regions with a large number of rural area campuses predicted to have less access to teacher information content.

If urban schools face fewer barriers in connectivity and availability of content (Page & Hill, 2008; Subramony, 2011), then additional support must be provided to Texas high school administrators and faculty to use those resources to ensure that teacher information is effectively provided on a class website. Schools in remote geographic locations are presented with physical barriers that may make access to online resources and information more important (Hannum, Irvin, Banks, & Farmer, 2009). The Texas high school administrators and teachers in rural and remote areas need support to increase their technological skill and knowledge to provide this teacher information to students in online class sites.

Title 1 designation. Title 1 designation was found to be a significant contextual factor predicting the number of website components related to the teacher information section of a website designed by a teacher employed at that campus. Texas high school teachers in schools with Title 1 designations, indicating a high percentage of low-income families (U.S. Department of Education, 2004), were predicted to have 16% fewer teacher information website components on their websites. While students in lower socioeconomic situations need exposure to technology (Kidd, 2009; Tondeur et al., 2010), the findings of the study of this study indicate students in these situations in Texas high schools have less opportunities to access resources through a class website.

Title 1 designation and the digital divide. This data found reflects evidence of the new digital divide that is defined as the inequity of exposure to new technologies (Hargittai & Hinnant, 2008; Stewart, 2009). For all schools, the availability of teacher information components was 41%. However, schools designated as Title 1 are predicted to have an even lower number of these items available on a class website. This supports

the research that shows that socioeconomic status is a factor that contributes to the new definition of the digital divide (Reinhart et al., 2011; Warschauer & Matuchniak, 2010; Wei & Hindman, 2011). With 78% of the schools in this study designated as Title 1 schools and 83.7% of Texas high schools designated as Title 1, the students in Title 1 designated Texas high schools have access to less teacher information in a teacher-created classroom website than students in non-Title 1 schools.

Students in lower socioeconomic situations have a greater need for exposure to technology resources to support their academic success (Tondeur et al., 2010). With the large number of Title 1 high schools in Texas which include 78% schools in this study and 83.7% of Texas high schools, the students in Title 1 designated schools are receiving fewer opportunities to access teacher information on a teacher-created class site. This finding identifies a critical area that should be addressed to ensure equity for all Texas high school students regardless of socioeconomic status.

Content area taught. The content area taught by the teacher who created the classroom website was not significant in predicting the number of website components included in the teacher information section of the site. Regardless of content taught, teachers did not make full use of the available website components to share teacher information. Teachers in all content areas are using less than half of the teacher information website components considered in this study. This is in contrast to research that indicates that teachers in all content areas can use their websites to share teacher information with students and the community (Hill et al., 2010; Janicki & Chandler-Olcott, 2012). In addition, the design of the website is a result of the choices made by the teacher to include various components on the site and those choices reflect

technology readiness (Chai et al., 2011; Harris et al., 2009; Koehler et al., 2011; Polly & Brantley-Dias, 2009; Schmidt et al., 2009). Design choices made for all teachers and in all content areas represent a need for steps to improve technology readiness. Because teachers in all content areas are using only a small number of teacher information site components, the study strongly indicates a need to provide all teachers with additional technology skills and knowledge support for providing teacher information content to their sites.

Grade level. The grade level taught by the teacher who created the classroom website was not significant in predicting the number of website components included in the teacher information section of the website. Research indicates that content is likely to change with grade level (Cleary & Chen, 2009; Tingen et al., 2011a); however, this factor did not play a significant role in predicting the number of website components included on the teacher information section of the website. The students of the teachers in this study are most likely to be teens since all of the campuses were high school level. Research has shown that three out of four teens have access to online information through the Internet (Madden et al., 2013). In addition, as students move closer to adulthood and higher-level education, they will need to access and use online resources efficiently (Jaeger, Bertot, Thompson, Katz, & Decoster, 2012). Yet, students at the Senior grade level did not have access to more teacher information components than those at the Freshman level. Only 13.1% of the teacher sites evaluated included data specifying the grade level taught. Therefore, this information should be considered with caution and does not constitute strong evidence.

Campus enrollment (UIL). The campus enrollment (UIL) where the teacher-created website is linked was not significant in predicting the number of website components included in the teacher information section of the website. Despite research that indicated that digital content and resources were more available to larger schools than smaller ones (Barbour et al., 2011), this contextual factor did not result in difference in the number of site components included in the teacher-information category of large schools. In addition, despite a strong belief by educators in small towns that technology positively impacts student achievement (Van Roekel, 2008), this did not result in a different outcome for the number of teacher information components for schools with small enrollments. The data strongly indicates that administrators and teachers of campuses of all enrollment sizes should provide support to their teachers to develop their teacher information sections of their class website.

Summary. The most basic components of the classroom website are those found in this category. In terms of TPACK, these components are aligned with technological knowledge, as it requires no specialized understanding of pedagogy or content. Technological knowledge is shown when the teacher is able to adjust to new technologies and use them to achieve goals (Koehler & Rosenberg, 2013). An average score of 3.274 out of a possible eight points indicates that the teachers who have created these sites did not fully understand the purpose of the class website or use it to provide teacher information to students, parents, and the community. The low score showed that the teachers who designed these websites did not make effective decisions about the components necessary to achieve goals and lack technology readiness (Jaipal & Figg, 2010).

Despite the fact that the availability of technology access has grown and Web 2.0 technologies are commonly available to provide 24/7 access to information, teachers in Texas high schools are choosing to include less than half of the teacher information components on their classroom websites. Of more concern, teachers in schools designated as Title 1are predicted to include even less of these components, contributing to the new definition of the inequities of the digital divide for lower socioeconomic schools (Hargittai & Hinnant, 2008; Stewart, 2009). Finally, the fact that the score received in this category of teacher information does not accurately mirror the Campus STaR Chart Summary Results indicates that the Texas STaR Chart is not a valid instrument to ascertain the technology readiness or technology knowledge of Texas high school teachers as it relates to TL6.

Communication

For communication, grade level was found to be a significant contextual factor predicting the number of website components related to the communication section of a website designed by a teacher employed at that campus. This category had a maximum of seven points that could be awarded for inclusion of parent information, teacher e-mail address, teacher phone number, and teacher conference time. The average score received was 2.582, or 37% of the total number of site components. This number reflects that Texas high school teachers are using their teacher-created classroom websites to provide just over one-third of the possible communication components to students and the community. Analysis results showed that the predicted score was positively significant increasing .202, or 3%, as the grade level increased from ninth grade to twelfth grade.

Finally, the largest number of communication components was predicted for sites where teachers had identified themselves as teaching multi-grades.

Campus STaR Chart Summary Results (TL6). The Campus STaR Chart Summary Results (TL6) were not significant in predicting the number of communication website components included on a class site designed by a teacher in a Texas high school. Developing, Advanced, and Target Tech levels include specific measurement of an online location where students can communicate and interact online (TEA, 2006b). However, the results of this study indicant there is no significant improvement in the number of communication components for these three levels of technology readiness when analyzed with the lowest level of technology readiness, Early Tech. This finding indicates that the STaR Chart does not accurately reflect the technology readiness of the teacher and reflects inaccurate scores for those campuses whose mean scores on this performance indicator was higher than the first level, Early Tech. This is an important result as only 8.4% of schools in sample study had an average STaR Chart Summary Result (TL6) of Early Tech and 82.6% had a higher average performance indicator. The evidence strongly indicates the Texas STaR Chart is not a valid instrument for measuring technology readiness and development for the communication category of Texas high school teacher's class website as measured my TL6.

Geographic location (ESC). The geographic location (ESC) of the campus where the teacher-created classroom website is linked was not significant in predicting the number of website components included in the teacher information section of the site. Therefore, schools in all regions were similar in providing only 37% of the possible website components in this category. Interestingly, researchers consistently reported that

all schools, whether in rural or urban settings, needed to establish communication opportunities with parents and students (Bartley & Wegner, 2010). The mean score of 2.52 out of a possible seven earned indicates that secondary schools throughout Texas are not taking full advantage of the opportunities available to support communication. This supports the research of Howley and Hough (2011) who found that schools in rural areas were not negatively impacted by hardware access, Internet connectivity, or professional development. Instead, this finding strongly indicates that administrators and teachers in all Texas high schools require additional training and support to create class websites that provide communication content and resources to students.

Title 1 designation. The Title 1 designation of the campus where the teacher-created classroom website is linked was not significant in predicting the number of website components included in the communication section of the website. Research indicated that students in lower socioeconomic situations need exposure to opportunities to use technology to model and enhance learning (Kidd, 2009; Tondeur et al., 2010). The overall low percentage (37%) of communication components included by secondary teachers throughout Texas, whatever the campus Title 1 designation, is an indication that Teachers at Title 1 schools do not understand the increased importance to provide online resources for the students. Park & Wentling (2007) found that this strongly indicates a lack of technology readiness to use technology to post communication resources in a location on the web to facilitate student learning for students. In addition, these findings indicate that the pedagogical knowledge of Teachers in all Texas high schools does not include an understanding of the use of Web 2.0 technology to provide the students with differentiated exposure to learning resources (Konig, Blomeke, Paine, Schmidt, & Hsieh,

2011; Voight, 2010; Voss, Kunter, & Buamert; Bower et al, 2010). This finding is particularly important in Title 1 schools where opportunities to access learning resources is critical (Kidd, 2009; Tondeur et al., 2010).

Content area taught. The content area taught by the teacher who created the classroom website was not significant in predicting the number of website components included in the communication section of the website. The average score in this category was 2.582 out of seven possible indicating that teachers in all content areas were providing about 37% of the possible communication website components related to content area. Therefore, secondary teachers in all content areas are providing only a small percentage of communication resources to students. As noted by Maio-Taddeo (2007), the use of specific website components indicates the technological knowledge and readiness of the teacher. The low use of these communication components is, therefore, an indicator of the low technology knowledge and readiness of high school teachers in all content areas. The data strongly indicates that Texas administrators and secondary teachers in all content areas require additional support to develop the technology skills and readiness to effectively develop the communication section of their class website.

Grade level. Grade level was found to be a significant contextual factor predicting the number of website components related to the teacher information section of a website designed by a teacher employed at that campus. Content is likely to change with grade level (Cleary & Chen, 2009; Tingen et al., 2011a). This finding indicates that, as grade level increases additional website components are included in the communication section of the website, increasing 3% at each level. While a ninth grade

teacher would be predicted to include 40% of the communication website components, a twelfth grade teacher would be predicted to include 48% of the communication components.

In addition, this finding supports the idea that the differing requirements for students based on grade level, reflected by the TEKS state standards of Texas, results in an increased prediction for communication score as additional student knowledge and skill requirements increase with grade level (Texas Educational Agency, 2014c). This same understanding would hold true for multi-grade teachers, predicted to include the most communication components (51%). The increased complexity of providing multi-content to students who have differentiated learning needs would require increased communication and resources and the teacher is likely to benefit from the organizational value of an online class website (Cleary & Chen, 2009: Tingen et al., 2011a). Yet, even with this increased likelihood, only half of the communication components were predicted to be included in a class website to improve the connection between the school and the student, parents, and community.

The data in this area should be considered with care as only a small percentage (13.1%) of the websites evaluated indicated which grade level was taught by the teacher who created it. The findings were informational but should not be considered strong evidence due to the lack of data in this area.

Campus enrollment (UIL). The campus enrollment (UIL) of the school where the teacher-created website is linked was not significant in predicting the number of website components included in the communication section of the website. All Texas high schools, regardless of their campus enrollment, used only a small number of the

communication site components. In fact, only 2.582 out of seven possible communication components were included on class sites. Research showed that digital content and resources were more available to larger schools than smaller schools. Yet, this had no impact on the number of included communication components on a classroom website. Similarly, the finding that small town teachers, which would presumably have smaller school enrollments, believed technology positively impacted student achievement did not influence the design decision of Texas secondary teachers included in this study (Van Roekel, 2008). In fact, no matter the campus enrollment number, Texas high schools used only a small number of components on their website to facilitate communication between the school and the community they serve.

The findings strongly indicate a need to provide administrators and teachers in all Texas high schools with the knowledge and support to provide students with communication resources accessible on a teacher's class website. Barley and Wegner (2010) identified communication between districts and schools and the students and their parents as one of the greatest needs for supporting student learning. However, this finding shows that teachers in Texas high schools are not using their class websites to address this necessity.

Summary. Communication between teachers and the students, parents, and community is critical (Barley & Wegner, 2010). Parents and communities that are well informed about school information can provide more active support for the students and the schools goals (Friedman, 2006; Rogers & Wright, 2008; Unal, 2008). A classroom website provides parents and the community additional opportunities to communicate with the teacher, enhancing relationships, and most importantly developing a support

network for students to increase their likelihood of their success. The majority of teens today, those served by the teachers who created the class sites that were the focus of this study, have access to the Internet and technology, especially through mobile devices (Madden et al, 2013). Web 2.0 technology has become commonplace and websites are readily available and used throughout most of the world (Madden et al, 2013). However, this study found that teachers are not embracing this tool to improve communication opportunities with students, parents, and the community.

Once again, the results of the study indicate that the technology readiness of secondary teachers in Texas for providing materials and resources for students in an online location needs improvement. Despite most school districts providing high school teachers with class websites to develop, they teachers chose to include only 2.582 out of seven communication components on them. Therefore, they provided only 37% of the components that could increase communication opportunities for students and parents. There are two issues that are apparent with this finding: Many Texas school districts are spending public monies to provide a tool that has great potential to support students but this expenditure has not been utilized to increase communication with parents and students.

Classroom Management

For classroom management, grade level and Campus STaR Chart Summary Results (TL6) were found to be significant contextual factors predicting the number of website components related to the classroom management section of a website designed by a teacher employed at that campus. This section of the teacher-created classroom website had a maximum of five points that could be achieved based on the number of

included website components with an average score of .483, or 1%, of the total number of website components included. This number reflects that Texas high school teachers are not using their teacher-created classroom websites to provide classroom management website components to students and the community. The predicted score was significantly positive with .132, or 3%, increase as the grade level moved from ninth to twelfth grade. Websites that indicated they were created for multi-grades predicted the largest number of communication website components. In addition, the predicted score decreased .005, or .1% negative significance, as the Campus STaR Chart Summary Results (TL6) increased.

Campus STaR Chart Summary Results (TL6). The Campus STaR Chart Summary Results (TL6) was found to have a negative significance in predicting the number of classroom management website components included on a classroom site. A higher level of progress on the STaR Chart was found to result in less likelihood that the classroom management components would be included on the class site. In contrast to what would be expected, teachers at a campus with a STaR Chart level of progress of Early Tech were found to have a higher likelihood of including the classroom management components on the site than teachers at campuses indicating they had mastered this stage in their technology developing and noting their level as Target Tech. The findings strongly indicate that the Campus STaR Chart Summary Results (TL6) did not accurately reflect the teachers' technology readiness for developing classroom management material that would be included through a location on the web (TEA, 2006b) and was not a valid instrument for determining attainment of this development stage. The overall mean score of .483 (1%) out of a possible total of five indicates this

area is the category earning the lowest percentage score. Secondary administrators and teachers in Texas high schools should address these findings by furthering their knowledge of the classroom management section of a classroom website to better understand the relationship of technological and pedagogical knowledge as it relates to supporting student learning through the use of classroom management site components.

Geographic location (ESC). The geographic location (ESC) of the campus where the teacher-created classroom website is linked was not significant in predicting the number of classroom management site components included on the class site. All schools, regardless of their location in the state, used only .483 (1%) of the class management components researched for this category. Despite researched evidence that the inclusion of common website components are desirable for website creation (Mcgee & Reis, 2012; Miller, Adsit, & Miller, 2005), high school s in all ESC regions of Texas rarely included content management website components on their class sites. Therefore, the data strongly indicates the technology readiness and pedagogical knowledge of secondary teachers throughout Texas in the development of the classroom management section of their class site is low. Successful technology integration to create effective classroom management website sections would require that these teachers receive support to improve their technological readiness and pedagogical ability (Koehler & Mishra, 2005).

Title 1 designation. The Title 1 designation of the campus where the teacher-created classroom website is linked was not significant in predicting the number of classroom management site components included in the classroom management category. Students in Title 1 schools need exposure to diverse learning opportunities through the

use technology (Texas Educational Agency, 2014b; Tondeur et al., 2010). The ability to provide this support through a location on the web using Web 2.0 technologies is an indicator of technology readiness and pedagogical knowledge (Chai et al, 2011; Koehler et al, 2007; Koehler & Rosenberg, 2013). Irrespective of the Title 1 designation of the school, the small number of classroom management site components included on class websites strongly indicates that all high school teachers need additional support to improve their technological and pedagogical knowledge. Since access to additional resources has been found to be even more important to students in Title 1 schools, administrators and teachers in Title 1 schools especially should be provided support to develop their understanding of the use of Web 2.0 technologies to support the needs of students in lower socioeconomic situations (Kidd, 2009; Tondeur, Devos, Van Houtte, van Braak, & Valcke, 2009; Tondeur et al, 2010).

Content area taught. The content area taught by the teacher who created the classroom website was not significant in predicting the number of classroom management site components included in the classroom management category. The average score was .483 out of five possible indicating teachers in all content areas were providing about 1% of the possible class management site components. Therefore, the websites of teachers in all content areas indicated the need for additional support to improve technology readiness and pedagogical knowledge and skills in developing the classroom management sections of their sites (Chai et al, 2011; Koehler et al, 2007; Koehler & Rosenberg, 2013). This finding is strongly supported by the research of Dexter, Doering, and Riedel (2006) who noted that using teachnology to support learning

is a research-based concept that requires that teachers develop their ability to create opportunities for students to increase their knowledge.

Grade level. The grade level taught by the teacher who created the class website was significant in predicting the number of classroom management components included in the classroom management category. Grade levels increased from ninth to twelfth grade with multi-grade representing the highest level. As the grade level increased from 9th to Multi-grade, the predicted score increased by .132 or 3%. Since the average score was .483 out of five (1%), this shows that a small positive increase in the predictive score in a one unit increase in grade level for the classroom management category. Teachers of multi-grades are predicted to score higher in this category than those teaching ninth, tenth, eleventh, or twelfth grade. This also indicates a slight increase in the technological and pedagogical knowledge of the teachers as grade level increases (Chai et al, 2011; Koehler et al, 2007; Koehler & Rosenberg, 2013). Regardless of this increase, the overall low mean score for this website section indicates that all teachers, regardless of grade level, need additional support to improve technological and pedagogical knowledge.

Of the 191 high school websites evaluated, only 13.1% of them included information that indicated the grade level taught by the teacher who created the site. Therefore, the information provided here is informational only.

Campus enrollment (UIL). The campus enrollment (UIL) of the school where the class website was linked was not significant in predicting the number of classroom management components included in this category. Texas teachers in all secondary schools, regardless of their enrollment status, provided only 1% of the classroom management components to students and parents through their site. This small

percentage strongly indicates that all teachers, regardless of campus enrollment, need additional support for technology readiness and pedagogical knowledge to develop their classroom management website sections. Despite research that indicated benefits to students in both large and small schools (Barbour et al, 2011; Belland, 2009; Werblow & Duesbery, 2009), they were not realized in providing classroom management resources to students and parents.

Summary. Pedagogical knowledge includes tasks that include classroom management and an understanding of the approaches that support student needs (Konig, Blomeke, Paine, Schmidt, & Hsieh, 2011; Voogt, 2010; Voss, Kunter, & Baumert, 2011). The lack of inclusion of classroom management components on the websites may indicate that the teachers' pedagogical goals during development were not closely aligned with the needs of the students and additional support is needed (Voogt, 2010) to develop this knowledge. Technology readiness was found to have the most impact on the transfer of knowledge to the application of skills for the creation of a technology-based product such as a classroom website (Park & Wentling, 2007).

The inclusion of site components in the classroom management category was the lowest of all of the categories with only .483 or 1% selected by teachers in their website design. Texas high school teachers are not using their class sites to provide this resource effectively. Teachers in schools that identified themselves on the Campus Summary STaR Chart (TL6) as Target Tech, the highest level performance description for technology readiness in this area, were found to be less likely than school where teachers identified themselves at the lowest level of technology readiness, Early Tech. Therefore,

the Campus Summary STaR Chart (TL6) is not accurately reflecting the actual practice of Texas secondary teachers in this area.

In addition, as discovered with the categories of teacher information and communication, Texas school districts are spending public monies to provide a tool that has great potential to support students but this expenditure has not been utilized to provide classroom management information to parents and students.

Teaching Content

For teaching content, Title 1 designation, subject level, and campus enrollment (UIL) were found to be significant contextual factors predicting the number of website components related to the teaching content section of a website designed by a teacher employed at that campus. This section of the teacher-created classroom website had a maximum of 40 points that could be achieved based on the number of included website components with an average score of 9.464, or 24%, of the total number of website components included. This number reflects that Texas high school teachers are using their teacher-created classroom websites to provide less than one-fourth of the teaching content website components to students and the community. The predicted score decreased 2.535, or 7%, for schools with a Title 1 designation, decreased 2% for subject levels Math, English, Science, Social Studies, or Other, respectively, and increased 2% per level as campus enrollment increased.

Campus STaR Chart Summary Results (TL6). The Campus STaR Chart Summary Results (TL6) were not significant in predicting the number of teaching content site components included in the Texas high school teacher-created class website. Designed to be a reflection of the self-reported ability of the teachers at a specific campus

to create supplemental instruction and make them available through a location on the web (TEA, 2006b), the results failed to indicate that schools that identified themselves at the highest level, Target Tech, used teaching content components more frequently than teachers at an Early Tech level of progress. This finding strongly indicates that the Campus STaR Chart Summary Results (TL6) is not a valid instrument that reflects the actual practice of a teacher to create teaching content material to be included on their class site.

The mean number of website components used for the teaching content category was 9.464 or 24% of the 40 items that were evaluated. This indicates that the additional work is needed to improve the technology readiness of Texas secondary teachers to develop materials that are placed online to support students. The teaching content area addresses the content knowledge area of TPACK and, while receiving the second highest mean score of the four sections of the website, strongly indicates most Texas high school teachers are not fully utilizing their class websites to provide content resources, including interactive components, to maximize student learning.

Geographic location (ESC). The geographic location (ESC) of the campus where the teacher-created classroom website is linked was not significant in predicting the number of teaching content components included in the teaching content category. High school teachers throughout Texas are providing, on average, only 24% of the teaching content resources included in this study. This strongly indicates that Texas high school teachers, regardless of geographic location, need support to develop online content resources to increase the number of content resources available to students. TPACK identifies this area as content knowledge and includes the ability of teachers to identify

diverse methods to facilitate the transference of knowledge (Archambault & Barnett, 2010; Harris et al., 2009).

Title 1 designation. Title 1 designation was found to be a significant contextual factor predicting the number of website components included in the teaching content category of a site designed by a teacher employed at that campus. Research indicates that students in lower socioeconomic situations need exposure to opportunities to use technology to model and enhance learning (Kidd, 2009; Tondeur et al., 2010). Despite this finding, Texas high school teachers in schools with Title 1 designations, indicating a high percentage of low-income families (U.S. Department of Education, 2004), were predicted to have 6% less teaching content components on their websites. Since all secondary teachers used only 24% of the available teaching content components in this study, this decrease indicates even less resources were available to students in Title 1 schools. As a result, Title 1 secondary campus teachers, in particular, need additional support to increase their technological and content area knowledge for serving their students. The data strongly indicates that secondary administrators and teachers in all Texas high schools, but especially those with a Title 1 designation, need to improve their content knowledge and technology ability to provide content-related resources to students through their classroom website.

Content area taught. The content area taught by the teacher who created the classroom website was found to be significant in predicting the number of teaching content components. The number of teaching components decreased by 2% for math teachers, 4% for English teachers, 6% for science teachers, 9% for social studies teachers, and 11% for other content area teachers. These findings support the research that

indicates that critical website components will be omitted from a teacher-created classroom website because the teacher lacks exposure to quality models or the research that supports the use of classroom websites to improve student learning (Kember et al., 2010; Lee & Tsai, 2008). In addition, since the average score in this section of the teacher-created website was 9.464 out of 40 possible, this strongly indicates that teachers in all content areas were providing about 24% of the possible classroom management website components related to content area. Additional support is needed to help teachers in all content areas develop their technology readiness and content knowledge to provide resources for students in a location on the web. A special focus is needed to align that support for the individual content areas that teachers support to maximize learning opportunities for content-related specific needs.

Grade level. The grade level taught by the teacher who created the classroom website was not significant in predicting the number of website components included in the teaching content section of the website. Research indicates that content is likely to change with grade level (Cleary & Chen, 2009; Tingen et al., 2011a); however, this factor did not play a significant role in predicting the number of components included in the teaching content section of class websites. This category of site components provides opportunities for differentiating the content resources available for students. In Texas, different content knowledge requirements based on grade level is reflected in the subject-area Texas Essential Knowledge and Skills (TEKS) state standards that outline what specific knowledge and skills are required of students based on their subject and grade level (Texas Educational Agency, 2014c). This did not impact, however, the number of content resources available to students in relation to the different TEKS standards.

There was minimal data analyzed in this category because only 13.1% of the teachers who created the evaluated class sites in this study indicated what the grade level taught. Therefore, caution should be taken when considering these findings which are provided for informational purposes.

Campus enrollment (UIL). The campus enrollment (UIL) where the teacher-created website was linked was significant in predicting the number of website components included in the teaching component section of the site. With each level increase in campus enrollment, the number of teaching content components predicted increased by 2%. Therefore, the largest schools would be expected to have a 10% increase in the number of teaching content website components. These findings support research that indicated that digital content and resources were more available to larger schools than smaller schools (Barbour et al., 2011). In addition, this data strongly indicates that secondary teachers on campuses with higher enrollment may have an increased technology readiness and content knowledge for providing resources in a location on the web for students.

Summary. The teaching content category of a class website reflects the technological and content knowledge for developing online materials for students to place on the web (Archambualt & BArnett, 2010; Harris et al., 2009; Koehler & Rosenberg, 2013; Schmidt et al., 2009). The results of this study show that Texas secondary teachers need additional support to develop their abilities in this area. Overall, teachers were utilizing only 24% of the teaching content components available in this study. Administrators and educational decision makers should note that campuses that identified themselves as target tech level in their technology proficiency actually were

predicted to provide fewer resources than those campuses identifying themselves as early tech. In addition, the opportunities to access online resources was reduced for students in Title 1 schools where there is actually a greater need to provide students additional exposure to content support (Kidd, 2009; Tondeur et al., 2010). Finally, teachers at schools with smaller campus enrollments were predicted to use less teaching content components on their websites resulting in fewer resources available to these students. All high school teachers in Texas were found to need additional support to increase their technological and content knowledge in this area.

The Campus STaR Chart Summary Results again reflected a difference in the actual practice of teachers in developing material to include in a location on the web and the average school level of progress indicated on the report. In fact, teachers at campuses who indicated their were at the highest level of progress, Target Tech, were predicted to include less teaching content components on their websites than those at early level, considered the least technology proficient. This study has shown that the STaR Chart Results are not mirroring the technology readiness indicated by the average campus level of progress report. Developers of this measurement tool should analyze these results and consider if the STaR Chart is providing accurate information for understanding the technology readiness of Texas teachers.

Finally, these results have once again indicated that most Texas school districts are providing websites for teachers to develop to support learning but secondary teachers are not maximizing their use to effectively develop materials for students to access online. The large expenditure for providing this tool to teachers is not resulting in increased opportunities for students to access resources to support learning. With the

advent of Web 2.0 technologies, increased availability of technology in schools, and the increasing ability of students to access the Internet, especially through mobile devices, the availability of class websites is essential (Ceruolo, 2010; Greenhow et al, 2009b; Inan & Lowther, 2010; Madden, Lenhart, Duggan, Cortesi, & Gasser, 2013; May & Zhu, 2009; Reinhart, Thomas, & Toriskie, 2011; Tingen et al., 2011b; Wei & Hindman, 2011). Therefore, educational administrators and decision makers should consider approaches to increase the effective use of this technology to support students and maximize the benefit of the funds spent in this endeavor.

Website Availability

A total of 77 of the 268 Texas high school campuses, or 28.7%, randomly selected for inclusion in the study had no evidence of teacher-created classroom websites linked to their school site. A binary logistic regression was performed to ascertain the effects of Campus STaR Chart Summary Results (TL6), Title 1 designation, and Campus enrollment (UIL) on the likelihood that a teacher-created class site was available linked to the school website. School enrollment (UIL) found to be a significant contextual factor in predicting the availability of teacher-created classroom websites linked to a campus website for the largest schools with a student population of 2090 or more. As a result, a Texas secondary school with a student population of 2090 or more reflected an increased likelihood of 6.936 times higher odds to have teacher-created class websites available.

Campus STaR Chart Summary Results (TL6). The Campus STaR Chart Summary Results (TL6) was not significant in the likelihood that a teacher-created class website linked to the school website was available. However, frequency statistics found

that the STaR Chart progress level of the schools with the largest number of unavailable websites was Developing Tech. Teachers at this level are defined as creating two or more online lessons and providing class communication to interact online (TEA, 2006b). The findings strongly indicate that teachers did not use class websites linked to the campus site to complete this objective. Educational Administrators and decision makers may reference this finding as they consider how teachers at their campuses will meet the Texas standards for technology integration required for teacher certification (TEA, 2013a) and provided by SBEC standards for all teachers (TEA, 2013c).

Title 1 designation. The Campus Title 1 designation was not significant in the likelihood that a teacher-created class website linked to the school website was available. However, frequency statistics identified 84% of the campuses without class websites available were Title 1 schools. Research indicates that students in lower socioeconomic situations need exposure to opportunities to use technology to model and enhance learning (Kidd, 2009; Tondeur et al., 2010) While the logistic regression did not indicate this was significant, this finding does indicate that students in some Title 1 schools are not receiving the benefit of a class website to access resources to support their learning. Educational Administrators and decision makers may reference this finding as they consider how teachers at their campuses can provide additional support for students in lower socioeconomic situations.

Campus enrollment (UIL). The campus enrollment (UIL) where the teacher-created website is linked was significant in predicting the availability of teacher-created class sites linked to a campus site. The findings strongly support research that indicated that digital content and resources were more available to larger schools than smaller

schools (Barbour et al., 2011). The schools with the largest campus enrollments were more likely to have high school teacher-created classroom websites available on their campus website.

TPACK

TPACK was originally designed to guide the development of curriculum that successfully integrates technology to support student learning (Mishra and Koehler, 2006). In this study, TPACK was used to guide the evaluation of Texas high school teacher-created classroom websites to ascertain contextual factors that predicted website design choices. The practice of using TPACK as a tool for analyzing Web 2.0 learning design has been implemented and discussed in the research (Bower, Hedberg, & Kuswara, 2010; Jaipal & Figg, 2010; Schmidt et al., 2009). Crook (2012) specifically discussed the use of TPACK to modify Web 2.0 technology from non-educational to one that supported student learning.

The Texas high school teacher-created classroom websites evaluated for this study indicate that the teachers who designed them are not effectively integrating technology to provide online resources for students that provide learning resources for students. The maximum possible score that a teacher could earn on the Website Data Collection Form was sixty. This represents the sum of the four sections of the Website Data Collection Form: teacher information, communication, classroom management, and teaching content. The average score earned was 11.82 out of sixty possible points, or 19.7%. The lowest score was a three while the highest score was a 40. This indicates that teachers are not including website components in their website design that research has found to enhance communication and provide support for student learning. Maio-

Taddeo (2007) noted that decisions made about content and design are reflections of the technology integration abilities of the teacher. Therefore, this result indicates that teachers' technology integration abilities in designing classroom websites are low.

Technological knowledge. A teacher's ability to accept and implement new technology is an indicator of their technology readiness (Mcgee & Reis, 2012; Meng, Elliott, & Hall, 2009; Miller, Adsit, & Miller, 2005; Son & Han, 2011). When a teacher employs Web 2.0 technology, this indicates their ability to use technology as a tool rather than just for instructional preparation or delivery (Inan & Lowther, 2009). The results of this study strongly indicates a low level of technology readiness for Texas high school teachers in the area of using Web 2.0 tools, specifically, classroom websites, to support communication and learning. With 75% of teens indicating they access online information through a mobile device, the results indicate that teachers are not taking advantage of this fact to develop classroom websites as an avenue to facilitate learning (Madden et al., 2013).

Pedagogical knowledge. Research indicates that the inclusion of certain website components on a teacher-created classroom website serves as a reflection of the pedagogical identity and beliefs of the classroom teacher (Greenhow et al., 2009b; Ottenbreight-Leftwich et al., 2012; Voogt, 2010; Voss et al., 2001). The results of this study strongly indicate that critical website components that research has shown to be important to students, parents, and the community have not been included on the websites of Texas high school teachers, in general (Mcgee & Reis, 2012; Miller et al., 2005). In fact, 80.3% of the website components which best practices indicates should be included on a classroom website to maximize communication and provide optimal student learning

resources were, on average, omitted from the classroom websites of the teachers in our study.

Content knowledge. This area of TPACK refers to the content knowledge of the subject area taught by a teacher (Harris et al., 2009; Schmidt et al., 2009). One area of content knowledge that indicates of master of content knowledge is an understanding of specific methods necessary for transference of subject matter content knowledge to students (Archambault & Barnett, 2010; Harris et al., 2009). The results of this study strongly indicates that teachers in all content areas are not using Web 2.0 technologies, specifically the classroom website, as a method for transference of subject matter content knowledge to students. Social Studies teachers, in particular, used classroom websites to provide communication and educational resources to students. As indicated earlier, the average Website Data Collection form score out of a possible sixty points for this study was 11.82,or 19.7%. A closer look shows that teachers of different content areas received different scores. While all scores are low, scores for classroom websites designed by social studies teachers and teachers who taught other courses were at least 4% lower than those designed by math, English, and science teachers.

Limitations of the Study

While the findings of this study did address the research questions under investigation, there were limitations that should be noted. Overall, Texas high school teachers scored very low on the Website Data Collection form evaluation earning an average score of 11.82 out of sixty possible points. This indicates that teachers did not include a large number of possible website components on their teacher-created

classroom websites and many of the observations were marked as zero or not available. Had the websites included a higher quantity of website components and a wider variety of website components, a more thorough analysis could have been completed. This was particularly important for the contextual factor of grade level. Only 13.1% of the teachers who created the classroom website included their grade level on their classroom website. If more data had been available for analysis of this question, stronger evidence of the predictive quality of this contextual factor would be available.

The Campus STaR Chart Summary Results provided important data that furthered the analysis of the data and informed the results of this study. However, the fact that STaR Chart Summary Results are available at the campus, district, and state level only meant that the campus level results included in this study could differ from the actual self-reported technology readiness entry submitted by the teacher who has designed a classroom website that is included in this study. If the individual data had been available, a deeper analysis of this contextual factor would have been possible.

Finally, the content area of the high school teacher who designed the teacher-created classroom website was recorded for analysis. This data was collected from the campus website or the website of the teacher whose website was evaluated for this study. It was possible that this information was incorrectly listed and, if a teacher had not recently worked on their classroom website, this information could be outdated. For this study, the content area listed was assumed to be correct but additional data that confirmed the accuracy of the content area taught by the teacher who created the classroom website would have been optimal and ensured accuracy.

Recommendations For Further Research

This study has provided a foundational look at the status of Texas high school teacher-created website use. Educators, administrators, educational decision makers, and researchers can use this data to make predications about the contextual factors as they relate to classroom website design. However, since this study was specific to the state of Texas and high school teachers only, future research should repeat this study for all states and expand it to include elementary and middle school grade levels, as well.

With the findings of this study indicating a minimal use of classroom websites to further instruction, future research should explore areas to make improvements to the current standard of teacher-created classroom website use. A future study that explored methods that increased the use and quality of teacher-created classroom website for instructional purposes is recommended. Expansion of this study to include the influence of specific actions such as professional development and administrative expectations would be beneficial. In addition, the influence of the district and campus administrators and educational leaders should be researched. This research should include analysis of the leaders' own technology skills, their beliefs about technology integration and, specifically, the use of the classroom website to facilitate instruction, and their professional development needs as it relates to classroom websites.

Future research analysis should be done that considers the needs of the various content areas taught as it relates to the use of teacher-created classroom websites to further content instruction. An in-depth, qualitative analysis that specifically addresses the specific needs of the student learning specific content should be done to optimize the design and use of teacher-created classroom websites. This analysis could be repeated to

focus on grade level and demographic-specific influences such as geographic location and economic status.

Finally, the results of this study indicate a disparity between the Campus STaR Chart Summary Results and the total number of website components included on a classroom website research has indicated facilitates student learning. The study evidence shows that the Campus STaR Chart was an invalid measurement of the technology development of teachers for the area of TL6. Future research that evaluates the STaR Chart as an effective tool for measuring technology integration in Texas schools should be done to ensure that an appropriate measurement tool is used to determine the technology readiness and technology integration skills of Texas teachers.

Implications

Positive Social Change

A teacher-created classroom website can provide learning resources to students that correlates with the curriculum throughout the school year providing them a greater opportunity to succeed (Cebi, 2013; Dunn & Peet, 2010; Friedman, 2006; Hill et al., 2010; Unal, 2008). In addition, the classroom website can further communication with students, parents, and the community which may lead to increased involvement and support for students and the school (Friedman, 2006; Rogers & Wright, 2008; Unal, 2008). With students using technologies at an increasing rate and 75% of teens found to have online access through the use of mobile technology (Baker, 2007; Madden et al., 2013), a classroom website provides an opportunity to connect with students to positively impact student learning. However, if the teacher-created classroom website is not used or not adequately developed to provide these resources, this opportunity is lost.

Texas high school teachers are not effectively using their classroom websites to further instruction and enhance communication as indicated by the results of this study. The evidence presented here indicates that an opportunity is available to provide additional support to students that may improve overall learning outcomes. In addition, the campus administrator or educational decision maker can use this information to make predictions about the educators they lead to provide more specific support to improve the use of classroom websites as an instructional tool. Therefore, there is great potential to improve the amount and quality of learning resources available for students and communication opportunities for parents.

Throughout this study, the CMS was used repeatedly to provide the classroom websites that were included for evaluation. In some instances, a CMS was available but did not include classroom websites. There is a significant financial cost to provide the CMS for developing an online presence for campus teachers (Killion, 2013; Odden, 2011; Penuel et al., 2011). The results of this study show that the CMS' were not used to maximize the availability of learning resources for students or increase the communication opportunities with parents and students. Since public funds are used to fund the cost of a CMS, the results of the expenditure should serve the public and, perhaps most importantly, the student. Hill (2008) suggests that this is appropriate when the evidence shows that student development and support is positively increased in relation to the expenditure. This analysis can be used to help educational decision makers make determinations about this expenditure or to improve guidelines so that learning and communication is positively related to the expense.

Theoretical Implications

The results of this study contributed to the body of knowledge about TPACK and the use of this theory to create assessments and analyze data to enhance understanding of technology integration. The results show that TPACK was successfully used as a guide to differentiate website components based on their potential purpose and the technological, pedagogical, and content knowledge areas (Koehler et al., 2007). Specifically, TPACK was used to develop a Website Data Collection Form to gather information from the evaluation of Texas high school teacher-created websites and align it to the technological, pedagogical, and content knowledge areas. This supported the theory that TPACK could serve a framework for analyzing the use of Web 2.0 tools such as a classroom website (Bull et al., 2008). It is important to note that, contrary to those who express concerns that TPACK does not clearly differentiate pedagogical knowledge (Angeli & Valanides, 2009; Graham, 2011), this study found the definition served as a clear definition that was used for analysis. Finally, the use of TPACK as a foundation for this analysis supports its use as more than just a guide for the development of curriculum that integrates technology (Mishra & Koehler, 2006), but is effective for developing measurements and supporting analysis of developed curriculum.

Conclusion

With increased access to technology and the Internet, especially with mobile devices, an opportunity to develop a new learning resource for students is possible through the use of teacher-created classroom website. These websites can mirror the learning activities of the classroom and provide 24/7, ongoing support to support learning. Most importantly, the teacher-created classroom website can provide students a greater opportunity to succeed (Tubin & Klein, 2007).

The findings of this study provides data about the use of Texas high-school teacher-created classroom websites and indicated what contextual factors served as predictors to the number of website components included on a classroom website. The results indicate there is much work to be done to effectively use the classroom website to further communication and facilitate student learning. However, this also means that there is great opportunity for improvement if this information is used to make changes to our current approach to the use of classroom websites. The results provided here help to predict where the first steps in developing this opportunity may be taken to optimize the outcomes for students.

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