2014

Blended Learning : A Program Evaluation in a Central Virginia K-12 School District

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BLENDED LEARNING: A PROGRAM EVALUATION

IN A CENTRAL VIRGINIA K-12 SCHOOL DISTRICT

A Dissertation

Presented to

The Faculty of Lynchburg College

In Partial Fulfillment

Of the Requirements for the Degree

Doctor of Education (Ed. D.)

By

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March 26, 2014

Lynchburg College
Lynchburg, Virginia

APPROVAL OF DISSERTATION

This dissertation, Blended Learning: A Program Evaluation in a Central Virginia K-12 School District, has been approved by the Ed.D. Faculty of Lynchburg College in partial fulfillment of the requirements for the Ed.D. degree.

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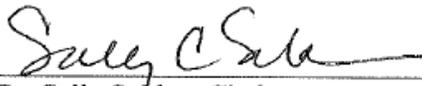
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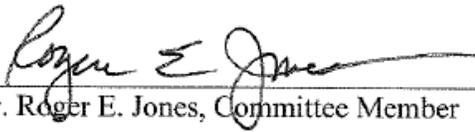
Dr. Roger E. Jones, Committee Member

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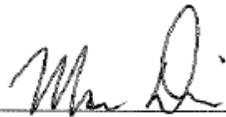
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Dedication

This dissertation is dedication to my daughters, Brittany (Hoisington) Fix and Breanne Hoisington, for their support, encouragement, and love. To my grandson, Liam S. Fix, to him I will always be Papa. Never stop learning! To my parents, Mr. Donald and Jane Hoisington, for their continued love and support—and for instilling in me all the skills necessary for this journey.

Acknowledgements

The past three years have been a journey that I would not have been able to complete without the support and encouragement of many friends and family. Thank you all for your continued assurance that made every step possible. To all my cohort colleagues, you have been and continue to be my support group. Your encouragement throughout our time together has been the difference between success and failure. Thank you for making Monday nights more than just an educational pursuit. Remember our mission: Survive, thrive, and arrive!

This journey for me started during my senior year in high school when I spent a day with my grandfather at his place of work. He told me to get as much education as I possibly could. After earning a Bachelor's of Science, a Master's of Arts, a Master's of Education, and a Doctor of Education, I think I have fulfilled his advice. Now that I'm the grandfather, I message to my grandson, Liam, is to never stop learning.

To the faculty at Lynchburg College, thank you for your dedication to education and your continued support. I would especially like to thank Dr. Sally Selden, the chair of my dissertation committee, her expertise, advice, and countless hours of editing has pushed me to be a better researcher. I would not have made it through SPSS and multiple regression without her. Additionally, I would to thank Dr. Roger Jones and Dr. Frederick (Mac) Duis for agreeing to be on my dissertation committee. Their insight and feedback has helped me complete this journey.

"Without continual growth and progress, such words as improvement, achievement,and success have no meaning." ~ Benjamin Franklin

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BLENDED LEARNING: A PROGRAM EVALUATION

Abstract

Edward A. Hoisington

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Dr. Frederick M. Duis, Committee Member

The purpose of this study was to evaluate a general education course offered in a blended learning environment in a Central Virginia public school district. Three research questions were addressed in this study: How satisfied are students with a blended learning environment in a general education Economics and Personal Finance course? Is a student's course grade affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course? Is a student's grade on a credential test affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course? A cross-section research design was utilized for this study. First, the study examined student data as it related to student grade point averages. Second, the study examined student data as it related to student final grades in this blended learning course and student scores on the Career and Technical Education (CTE) credential test. Additionally, this study collected data from students regarding their experience in this course through an online student survey.

A total of 342 students out of 390 (participation rate 87.7%) participated in this study. Overall, students indicated that they were not satisfied with the blended learning experience (45.1%). However, students reported favorability for working at their own pace, significant at the $p < 0.05$ level $F(2, 338) = 8.59$, $p = 0.000$, $r^2 = 0.048$. Additionally, 31.4% of student expressed they liked working at the own pace in the open-ended questions.

A multiple regression analysis was conducted to determine what factors influenced final course grade and participants' grade on a CTE credential test. The results showed that student perceptions of the quality of instruction and GPA were significant predictors of final course grade with GPA being the strongest predictor. Self-efficacy, quality of instruction, final course grade, and GPA were significant to participant success on the CTE credential test. Student perceptions of the quality of instruction and final course grade were the strongest predictors; however, quality of instruction was negatively associated with the test whereas final grade was positively related to success on this test.

CHAPTER 1: Introduction

Statement of the Problem

In 2010, the U.S. Department of Education (USDOE) published the National Technology Plan entitled *Transforming American Education: Learning Powered by Technology*. This plan recommended that schools "use technology to provide all learners with online access to effective teaching and better learning opportunities and options in places where they are not otherwise available and in blended (online and offline) learning environments" (U.S. Department of Education, 2010, p. 49). To this end, several states, including Virginia, have enacted laws requiring students to obtain an online credit prior to high school graduation. Additionally, school districts throughout the nation have embarked on exploring and implementing online and blended learning programs. A factor contributing to the rise of blended learning is the belief that a blended learning environment increases student engagement and interest in their learning (Kenney & Newcombe, 2011; Korkmaz & Karakus, 2009).

The focus of this study will be to evaluate a single course offered in a blended learning program in a Central Virginia public school district. The meaning of the term "blended learning" will need to be explored as it is not easily defined (Graham, 2006; Kenney & Newcombe, 2011; Picciano, 2006; Picciano, 2009; Watson, Murin, Vasham, Gemin, & Rapp, 2010; Watson, Murin, Vasham, Gemin, & Rapp, 2012). Many researchers in the field generally define blended learning as a learning system combining

face-to-face instruction with technology-mediated instruction (Bonk & Graham, 2006; Collopy & Arnold, 2009; Le Rossignol, 2009; So & Bonk, 2010). In addition, several blended learning models that contribute to the overall picture of blended learning. This study explores various models, along with the benefits and challenges of different blended learning environments and any factors that may influence a blended learning environment.

Purpose of the Study

The purpose of this study is to evaluate a single course offered in a blended learning environment in a Central Virginia public school district—specifically analyzing the blended learning model in a general education Economics and Personal Finance course. The original study was to complete a full program evaluation of all blended learning programs in this school district; however, the complexity of variables across blended learning models prevented a full study, and the study was narrowed to a single subject. Online learning has become an important part of the American K-12 educational landscape. Four states (Alabama, Florida, Michigan, and Virginia) require students to complete an online course as part of their high school graduation requirements (Watson et al., 2012). Blending online learning with a traditional instruction environment could benefit those students required to complete an online course (Kenney & Newcombe, 2011; Korkmaz & Karakus, 2009). An evaluation of the district's blended learning program was necessary to ensure this course is meeting students' needs and state graduation requirements.

Significance of the Study

This program evaluation of a school district's blended learning program is significant not only to the school district but to the greater body of research in this area. The school district at the heart of this study offers Economics and Personal Finance in a blended learning format. This course meets several state graduation requirements. Students in the state of Virginia are required to earn one credit through an online course, and students seeking a standard diploma need to "earn a board-approved career and technical education credential" in order to graduate (Virginia Department of Education, 2013). Additionally, effective as of July 1, 2011, students entering the ninth grade for the first time are required to take a general education course in Economics and Personal Finance prior to graduation. The district in this study has opted to combine these requirements; therefore, it is vital that this school district evaluate its blended learning program to ensure this course is meeting students' needs and state graduation requirements.

Research in the K-12 educational environment regarding blended learning is very limited. This study will add to the research that does exist and provide opportunities to build upon it.

Research Questions

The evaluation of this district's blended learning program will need to answer the following questions:

- How satisfied are students with a blended learning environment in a general education Economics and Personal Finance course?

- H_1: Students in a blended learning environment will be satisfied with their

   experience in a general education Economics and Personal Finance course.

- Is a student's course grade affected by the following: Technology, self-efficacy,

  course organization, quality of instruction, and student satisfaction in a blended

  learning course?

   - H_{2a}: A student's course grade will not be affected by the technology in a

      blended learning course.

   - H_{2b}: A student's course grade will not be affected by self-efficacy in a

      blended learning course.

   - H_{2c}: A student's course grade will not be affected by the course

      organization in a blended learning course.

   - H_{2d}: A student's course grade will not be affected by the quality of

      instruction in a blended learning course.

   - H_{2e}: A student's course grade will not be affected by student satisfaction

      in a blended learning course.

   - H_{2f}: Students with a high GPA will have a higher final course grade in a

      blended learning course.

- Is a student's grade on a credential test affected by the following: Technology, self-

  efficacy, course organization, quality of instruction, and student satisfaction in a

  blended learning course?

   - H_{3a}: A student's grade on a credential test will not be affected by the

      technology in a blended learning course.

- H$_{3b}$: A student's grade on a credential test will not be affected by self-efficacy in a blended learning course.

- H$_{3c}$: A student's grade on a credential test will not be affected by the course organization in a blended learning course.

- H$_{3d}$: A student's grade on a credential test will not be affected by the quality of instruction in a blended learning course.

- H$_{3e}$: A student's grade on a credential test will not be affected by student satisfaction in a blended learning course.

- H$_{3f}$: Students with a high GPA will have a higher grade on a credential test in a blended learning course.

- H$_{3g}$: A student's grade on a credential test will be positively affected by the student's final grade in a blended learning course.

Description of Terms

Asynchronous learning. Communication exchange which occurs in elapsed time between two or more people, e.g., email, online discussion boards, blogs, etc. (iNACOL, 2011).

Blended learning. Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace (Horn & Staker, 2011).

Cyber school (Virtual school). A formally constituted organization e.g. public, private, state, charter, etc. that offers full-time education delivered primarily over the Internet;

term used synonymously with the terms "virtual school," "eSchool," and "online school" (iNACOL, 2011).

eLearning. Digitally delivered learning (Singh, 2003).

Enriched-Virtual model. A whole school experience in which within each course, students divide their time between attending a brick-and-mortar campus and learning remotely using online delivery of content and instruction (Staker & Horn, 2012, p. 15).

Flex model. A program in which the delivery of content and instruction is primarily by the Internet, students move on an individually customized, fluid schedule among learning modalities, and the teacher-of-record is on-site (Staker & Horn, 2012, p. 12).

Flipped Classroom model. A Rotation model implementation in which within, a given course or subject, students rotate on a fixed schedule between face-to-face teacher-guided practice (or project) on campus during the standard school day and online delivery of content and instruction of the same subject from a remote location (often home) after school (Staker & Horn, 2012, p. 10).

Full-time online program. A structured education program in which content and instruction are delivered over the Internet and the students do not attend a supervised brick-and-mortar location away from home, except on a very limited basis in some cases, such as for proctored exams, wet labs, or social events (Staker & Horn, 2012, p. 7).

Hybrid learning (Blended learning). Online learning combined with traditional classroom-based instruction (Korkmaz & Karakus, 2009).

Individual Rotation model. A Rotation model implementation in which within a given

course or subject, students rotate on an individually customized, fixed schedule among

learning modalities, at least one of which is online learning (Staker & Horn, 2012, p. 11).

Lab Rotation model. A Rotation model implementation in which within a given course or

subject, students rotate on a fixed schedule or at the teacher's discretion among locations

on the brick-and-mortar campus (Staker & Horn, 2012, p. 9).

Mass Customized Learning. The capacity to routinely customize products and services

through computer applications and technologies to meet the specific needs and/or desires

of individuals without adding significantly to the cost of the product or service (Schwahn

& McGarvey, 2012, p. 20).

Multi-district programs (multi-division provider). Program administered by multiple

districts, often in a formal consortium. Not to be confused with a program administered

by a single district even though it accepts students from multiple districts (Watson &

Kalmon, 2005, p. 127).

Multi-division Online Provider (MOP). (i) A private or nonprofit organization that enters

into a contract with a local school board to provide online courses or programs through

that school board to students who reside in Virginia both within and outside the

geographical boundaries of that school division; (ii) a private or nonprofit organization

that enters into contracts with multiple local school boards to provide online courses or

programs to students in grades K through 12 through those school boards; or (iii) a local

school board that provides online courses or programs to students who reside in Virginia

but outside the geographical boundaries of that school division. However, "multi-division online provider" shall not include (a) a local school board's online learning program in which fewer than 10 percent of the students enrolled reside outside the geographical boundaries of that school division; (b) multiple local school boards that establish joint online courses or programs in which fewer than 10 percent of the students enrolled reside outside the geographical boundaries of those school divisions; (c) local school boards that provide online learning courses or programs for their students through an arrangement with a public or private institution of higher education; or (d) local school boards providing online courses or programs through a private or nonprofit organization that has been approved as a multi-division online provider. NOTE: All providers must be accredited by a national, regional, or state accreditation program approved by the Virginia Board of Education *(§ 22.1-212.23, Code of Virginia).*

Online learning. Instruction via a web-based educational delivery system that includes software to provide a structured learning environment (Watson et al., 2010).

Personalized learning. Instruction paced to learning needs, tailored to learning preferences, and tailored to the specific interests of different learners. In an environment that is fully personalized, the learning objectives and content as well as the method and pace may all vary (U.S. Department of Education, 2010, p. 12).

Rotation model. A program in which within a given course or subject, students rotate on a fixed schedule or at the teacher's discretion between learning modalities, at least one of which is online learning (Staker & Horn, 2012, p. 8).

Self-Blended model. A scenario in which students choose to take one or more courses entirely online to supplement their traditional courses and the teacher-of-record is the online teacher (Staker & Horn, 2012, p. 14).

State virtual schools. School created by legislation or by a state-level agency, and/or administered by a state education agency, and/or funded by a state appropriation or grant providing online learning opportunities across the state (Watson et al., 2012).

Station Rotation model. A Rotation model implementation in which within a given course or subject, students rotate on a fixed schedule or at the teacher's discretion among classroom-based learning modalities (Staker & Horn, 2012, p. 8).

Single-district programs. Programs that serve students who reside within the district providing the online courses (Watson et al., 2012).

Supplemental online program. A small number of courses provided to students enrolled in a school separate from the online program (Watson et al., 2012).

Synchronous learning. Online learning in which the participants interact at the same time and in the same space (iNACOL, 2011).

Technology-rich instruction. A structured education program that shares the features of traditional instruction, but also has digital enhancements such as electronic whiteboards, broad access to Internet devices, document cameras, digital textbooks, Internet tools, and online lesson plans (Staker & Horn, 2012, p. 6).

Traditional instruction. A structured education program that focuses on face-to-face

teacher-centered instruction, including teacher-led discussion and teacher knowledge

imparted to students (Staker & Horn, 2012, p. 6).

Limitations of the Study

      As with any research project, this study has its limitations. A variety of threats to

validity are present, among which will be the online student survey. The researcher relied

on honest feedback from students. Students perceiving that survey results affected their

grade or rushing through the survey could have influenced and skewed the results.

Quality of instruction was based on student perceptions, not measureable objectives of

instruction; therefore, it should be considered a limitation. Another limitation will be with

the matching of the data—matching student grade point averages to a single course grade

or matching course grades prior to the blended learning program to one after.

Additionally, this was the first year for this blended learning Economics and Personal

Finance course in this school district, and as with any new endeavor, there were

unexpected issues that may have affected results such as teacher training, technology

glitches, and curriculum challenges. Furthermore, the results of this study will not be

generalizable to other school districts as this study evaluates a specific blended learning

program of a Central Virginia public school district.

CHAPTER 2: REVIEW OF THE RELATED LITERATURE

The purpose of this chapter is to review literature on blended learning environments in K-12 education. Blended learning in the corporate and higher education sectors has increased dramatically in the last 10-15 years (Dziuban, Hartman, Juge, Moskal, & Sorg, 2006). In the last several years, the K-12 education environment has seen an interest in blended learning (Picciano, Seaman, & Allen, 2010). As technology has expanded into the landscape of K-12 education and Internet access has become essential, a blended learning environment is a natural step to merge the existing pedagogy with the capabilities of technology and the Internet. Blended learning is an ever-changing field of study. It is evolving at a rapid rate and the literature from a K-12 education environment is limited.

This chapter is divided into five sections. The first section defines blended learning. Korkmaz and Karakus (2009) state simply that blended learning is online learning combined with traditional classroom-based instruction. However, other researchers in the field have their own interpretation as to the meaning of blended learning.

The second section explores the increased interest in blended learning in the K-12 learning environment. Blended learning has become an interest of the K-12 learning environment in the last few years for a variety of reasons. As more and more corporations and higher educational institutions move toward blended learning, it is only natural that this trend trickles down to K-12 education. Many colleges and

universities are now requiring students to take online courses as part of their graduation requirements. States and school districts throughout the United States have followed suit requiring high school students to have a virtual course credit as part of their graduation requirements. Researchers in the field believe that increased student engagement and interest are primary reasons for the increased interest (Kenney & Newcombe, 2011; Korkmaz & Karakus, 2009). Today's generation of students expect to have some degree of technology integrated into the learning environment. They not only expect colleges and universities to utilize online platforms, but expect their high schools to be using this technology (O'Connor, Mortimer, & Bond, 2011).

The third section of this chapter examines blended learning models. The models suggested by those in the field are as diverse as the definitions. The various models or practices of blended learning further muddle the definition. According to Staker and Horn (2012), part of the confusion may be the result of educational practices such as traditional instruction, technology-rich instruction, informal online learning, and full-time virtual learning all share elements of blended learning; however, they differ in significant ways that exclude them from fitting into a blended model. In their 2011 report, *The Rise of K-12 Blended Learning*, Horn and Staker identified six blended learning models. By their 2012 report, *Classifying K-12 Blended Learning*, they reduced those models to four with various subcategories. Those in the corporate and higher education end of the blended learning spectrum also have their views on blended learning models. In addition, various state, school district, and charter school models are discussed.

The fourth section of this chapter focuses on the benefits of a blended learning environment. A blended learning environment supports student learning in several ways.

One of those ways is to extend the educational opportunities that a student may not have otherwise been afforded. Whether it is family obligations, jobs, or other extenuating circumstances, some students may not be able to attend a traditional educational setting or the institution in which they attend may not have courses available. Through a blended learning environment, students have the flexibility to take coursework with the support of a face-to-face component at their own pace.

The final section of this chapter addresses the challenges of a blended learning environment. Without careful consideration of the instructional design, the online portion of a course can become disconnected from the face-to-face portion. This is a challenge to anyone designing a blended learning course to create a balance between what students receive online and what is taught in a traditional classroom.

This chapter will conclude with a review of the current literature on blended learning environments in K-12 education. Research in this field is limited; however, there is a great amount of educational interest in blended learning at both the national and state levels. State policies and laws are driving researchers to examine the validity and impact that a blended learning environment may have on student learning.

Blended Learning: What is it?

Blended learning is not easily defined (Graham, 2006; Kenney & Newcombe, 2011; Picciano, 2006; Picciano, 2009; Watson et al., 2010; Watson et al., 2012). Researchers in the field have their own ideas as to what constitutes a blended learning environment. The definition is complicated in that there are a variety of synonyms associated with blended learning (see Table 2.1—Synonyms associated with blended learning) within the corporate, higher education, and K-12 education fields, such as cyber

schools, eLearning, hybrid learning, online learning, or virtual school, all of which hold

different meanings to different groups (Watson, et al., 2010).

Table 2.1

Synonyms associated with blended learning	
Term	Definition
Cyber school (Virtual school)	A formally constituted organization (public, private, state, chart, etc.) that offers full-time education delivered primarily over the Internet; term used synonymously with the terms "virtual school," "eSchool," and "online school" (iNACOL, 2011).
eLearning	Digitally delivered learning (Singh, 2003).
Hybrid learning (Blended learning)	Online learning combined with traditional classroom-based instruction (Korkmaz and Karakus, 2009).
Online learning	Instruction via a web-based educational delivery system that includes software to provide a structured learning environment (Watson et al., 2010).

According to O'Connor et al. (2011), "blended learning is a flexible approach to

course design that supports the blending of different times and places for learning,

offering some of the conveniences of fully online courses without the complete loss of

face-to-face contact" (p. 64). Watson et al. (2010) define online learning as instruction

via a web-based educational delivery system that includes software to provide a

structured learning environment. Online learning is achieved entirely through the

Internet. Blended learning combines online learning with other modes of instructional

delivery (Watson et al., 2010). Singh and Reed (2001) define blended learning as an

instructional program that uses more than one presentation method to improve the cost of

program presentation and educational output, whereas, Korkmaz and Karakus (2009)

state simply that blended learning is online learning combined with traditional classroom-

based instruction. In her white paper, *Blended Learning: Let's Get Beyond the Hype*,

Margaret Driscoll (2007) takes a broader view of blended learning, arguing that there are

four different concepts (p. 1):

1. To combine or mix modes of web-based technology e.g., live virtual classroom, self-paced instruction, collaborative learning, streaming video, audio, and text to accomplish an educational goal.

2. To combine various pedagogical approaches e.g., constructivism, behaviorism, cognitivism to produce an optimal learning outcome with or without instructional technology.

3. To combine any form of instructional technology e.g., videotape, CD-ROM, web-based training, film with face-to-face instructor-led training.

4. To mix or combine instructional technology with actual job tasks in order to create a harmonious effect of learning and working.

Graham (2006) would argue that part of Driscoll's definition reflects the debate on the influence of media versus method of learning. He would also posit that this definition suffers from being too broad, encompassing virtually all learning systems. Picciano (2009) offers a visual representation of blended learning. He refers to the definition of the word "blended" citing that it is a mixture or combination. "When a picture is pasted above a paragraph of text, a presentation is created that may be more informative to the viewer or reader, but the picture and text remain intact and can be individually discerned" (Picciano, 2009, p. 10). Picciano goes on to relate blended learning to two cans of different colored paints mixed together, the idea being there is total integration, a fluidity of the parts. Both these visuals present the idea that the definition of blended learning involves a continuum of what and how much is blended. In a college or university setting, a three-hour course could be structured in a way that it meets online weekly for one contact hour and two hours in a face-to-face environment.

Both parts could be separated and stand on their own. At the other end of the spectrum might be a situation that requires students to take three online courses each lasting five weeks during a semester. Students in these courses would meet collaboratively on a project, both face-to-face and online, over the fifteen-week period, therefore overlapping the three online courses.   It would be difficult to separate the pieces of such a structure.

At a 2004 by invitation-only blended learning workshop sponsored by the Alfred P. Sloan Foundation, participates struggled with the definition of blended learning. One year later in another invitation-only workshop, participants formulated the following definition:

1. Courses that integrate online with traditional face-to-face class activities in a planned, pedagogically valuable manner; and

2. Where a portion (institutionally defined) of face-to-face time is replaced by online activity (Picciano, 2009).

Many researchers in the field of blended learning generally define it as learning systems combining face-to-face instruction with technology-mediated instruction (Bonk & Graham, 2006; Collopy & Arnold, 2009; Le Rossignol, 2009; So & Bonk, 2010). Michael B. Horn and Heather Staker, in their 2011 publication *The Rise of K-12 Blended Learning*, provide a definition that addresses the flexibility, time, place, and pace nature of blended learning: "Blended learning is any time a student learns at least in part at a supervised brick-and-mortar location away from home and at least in part through online delivery with some element of student control over time, place, path, and/or pace" (p. 3). The definition provided by Horn and Staker will serve as the definition for this study.

Why the Recent Interest in Blended Learning?

The reasons why blended learning is on the rise in the K-12 environment are just as varied as the definitions and models. The move toward a blended learning environment started with corporate training and in higher education 10 to 15 years ago with the increase in the numbers and availability of computers and web-based learning (O'Connor et al., 2011). Cost and resources were the driving factor for the corporate training field to move toward a blended learning environment. Many organizations have spent a great deal of funds developing materials for employee training in a face-to-face environment, and they are not about to throw that investment away (Driscoll, 2007). Utilizing a blended learning environment enables these companies to supplement the online environment with the materials from the traditional face-to-face environment (Driscoll, 2007). A blended learning environment also allows organizations to gradually move from a traditional learning environment to an eLearning or full-online environment (Driscoll, 2007). Bonk and Graham (2006) note that the combination of new educational technologies, the ability to deliver course content online, the changing student demographics, and the complexity of the business environment has led to the development of new teaching and learning approaches.

Many researchers in the field believe that increased student engagement and interest in online learning are primary reasons for the increased interest in blended environments in K-12 education (Kenney & Newcombe, 2011; Korkmaz & Karakus, 2009). Today's students approach learning differently from past generations; they are constantly using some form of technology whether it is a cell phone, iPod, iPad, or laptop to connect to the Internet (O'Connor et al., 2011). They use social media and texting to

connect with friends. When they want to know something, they Google and connect to

YouTube. They are comfortable with technology and embrace the idea that they can

access information anywhere, at any time. This generation is already comfortable with

the idea of blending traditional instruction with an online learning platform. It is for this

reason that Picciano (2006) and Kenney and Newcombe (2011) state that utilizing a

blended learning environment will provide students with greater access to the learning

environment. With greater access, students will have flexibility to engage in learning

anywhere at any time there is Internet access (George-Walker & Keeffe, 2010; Kenney &

Newcombe, 2011; Picciano et al., 2010; Rapp, 2011; Xu, Meyer, & Morgan, 2008).

Flexibility to learn anywhere at any time is one of the main reasons colleges and

universities have embraced blended learning (O'Connor et al., 2011). Students entering

college or university for the first time enter with more technological skills than previous

generations and expect that higher education institutions will utilize course management

systems to enhance the educational environment and offer flexibility (O'Connor et al.,

2011). Colleges and universities have been pressured in recent years to increase

enrollment and widen the access that students have to higher education. Online and

blended learning environments have allowed higher education institutions to reach

students who would not have been able to attend due to family obligations, jobs, and time

commitment (O'Connor et al., 2011). This idea of providing flexible learning

opportunities has expanded to the K-12 environment.

  With greater access to the learning environment, could come improved student

learning (Kenney & Newcombe, 2011; Korkmaz & Karakus, 2009; Vesisenaho,

Valtonen, Kukkonen, Havu-Nuutinen, Hartikainen, & Karkkainen, 2010) and increased

learning opportunities (Picciano, 2006; Picciano et al., 2010). As students take control

over when and where they access their learning environment, their level of learning will

improve (Kenney & Newcombe, 2011). Kenny and Newcombe (2011) found that 75% of

the undergraduate students in a blended introductory educational psychology course

believed "that the blended approach contributed to their learning" (p. 54).   Blended

learning provides students with greater opportunities to take classes that they otherwise

could not, including courses that the school district cannot provide in a traditional

environment due to the lack of funding or a qualified teacher. As students take more

control over their learning through blended learning, the role of the teacher changes.

According to Kenney and Newcombe (2011), using a blended approach will improve

pedagogy and change the role of the teacher from a "bank of knowledge from which

students withdraw information" to a coach (p. 49).

   Keeping Pace with K-12 Online Learning: An Annual Review of Policy and

Practice (2010), by the Evergreen Education Groups, states that "the role of the teacher is

critical, as blended learning requires a transformation of instruction as the teacher

becomes a learning facilitator; instruction involves increased interaction between student-

and-instructor, student-to-content, and student-to-student" (p. 40). As the teacher's role

changes and students take more control over their own learning, the ability to personalize

learning and address diverse learning styles is greatly enhanced (Picciano, 2006; Rapp,

2011). Teachers have the ability to determine what lessons, activities, and assessments

students will complete. Teachers can set daily or weekly goals and adjust those goals as

they see fit to address individual needs. Should a student need extra time, teachers can

change the course timeline to accommodate the student, granting more time to work on a

particular aspect of the course. If a student is performing poorly, the teacher can require the student to go back through a lesson or retake an assessment. The ability to personalize and individualize instruction is a powerful component to the blended environment and one reason for the increased interest in K-12 education (Picciano, 2006; Rapp, 2011).

The Commonwealth of Virginia has seen a recent interest in virtual and blended learning with the passage of several laws (Watson et al., 2012). In 2010, the "Virtual school programs" law (SB738) opened the door for multi-division providers to serve K-12 students with both supplemental and full-time online programs (Virginia General Assembly Legislative Information System, 2014). The Virginia General Assembly also passed into law House Bill 1061 and Senate Bill 489 changing secondary graduation requirements in the state of Virginia to include one virtual course (Virginia General Assembly Legislative Information System, 2014). This change went into effect July 1, 2012, and applies to those students entering the ninth grade for the first time in the 2013-2014 school year. As a result of these legislative changes, the Central Virginia school district, which is the focus of this study, adopted a new strategic plan with a key strategy to "transform primary instructional delivery model to a 'blended learning environment' that includes a continuum of traditional and technology-based methods and individualized time-independent student pacing/progress" (see Appendix A—Strategic plan from a Central Virginia K-12 School District for an appended version of the school district's strategic plan).

Models of Blended Learning

    Instructional Models

        Blended learning is divided into two categories regarding teaching and learning: synchronous and asynchronous. In synchronous teaching and learning, everything is happening in real time; the teacher and the student are working at the same time and at the same pace. The teacher keeps all students in "lock step," working through the curriculum together. The opposite is true with asynchronous teaching and learning; the teacher and the student are most likely working at different times. The student sets the pace, and the teacher might have students working in various places in curriculum.

        Graham (2006) states that one reason there is interest in the various models of blended learning is that instructional designers are interested in answering the question "how to blend?" He offers three categories for blended learning systems each provides ideas as to how to blend online and face-to-face learning environments: (p. 13)

1. Enabling blends: Primarily focus on addressing issues of access and convenience—for example, blends providing additional flexibility to the learners or blends that attempt to provide the same opportunities or learning experiences but through a different modality.

2. Enhancing blends: Allow incremental changes to the pedagogy but do not radically change the way teaching and learning occur. This can occur at both ends of the spectrum. For example, in a traditional face-to-face learning environment, additional resources and perhaps some supplementary materials may be included online.

3. Transforming blends: Blends that allow a radical transformation of the pedagogy—for example, a change from a model where learners are just receivers of information to a model where learners actively construct knowledge through dynamic interactions. These types of blends enable intellectual activity that was not practically possible without the technology such as problem-based training and simulations.

In 2010, the Innosight Institution conducted a market survey of emerging blended learning environments. This survey found that blended learning environments fell into six distinct clusters: (p.4-6)

1. Face-to-face driver—Programs fitting this model retain teachers to deliver a majority of the content to students in a face-to-face environment. The face-to-face teacher deploys online learning on a case-by-case basis to supplement or remediate, often in the back of the classroom or in computer lab.

2. Rotation—The main feature of this model is that students rotate on a fixed schedule between learning online in a one-to-one, self-paced environment and sitting in a classroom with a traditional face-to-face teacher within a given course. The face-to-face teacher usually oversees the online work in this model.

3. Flex—A program utilizing the flex model has an online program at the core of the curricula. A face-to-face teacher provides support as needed through tutoring sessions and small groups. Many drop out recovery and credit recovery blended programs fit into this model.

4. Online lab—The online lab model has an online platform for content delivery but in a brick-and-mortar lab environment. In most cases, an online teacher supervises student progress and a paraprofessional oversees the lab providing little assistance in the content area. Often students who participate in an online lab program take traditional courses the rest of day.

5. Self-blended—This model can best be described as an *a la carte* course option. Students self-blended for a variety of reasons; the foremost reason is that the school does not offer the course the student wishes to take. This form of online learning is always remote and is typically synchronous, which distinguishes it from the online lab model, but the traditional learning is in a brick-and-mortar school.

6. Online driver—Involves an online platform and teacher that deliver all the curricula. Students work remotely for the most part. Face-to-face check-ins are sometimes required. This model is more online learning than blended since face-to-face instruction is very limited.

Staker and Horn (2012) with the Innosight Institute revised their models reducing them to four basic clusters with various subcategories (see Appendix B—Diagram of Blended Learning Relationship). The reason for the change according the Staker and Horn is that "the language in the blended-learning definition is intended to distinguish the definition from other common forms of learning that many confuse with blended learning" (p. 4). According to Staker and Horn (2012), other educational practices such as traditional instruction, technology-rich instruction, informal online learning, and full-time

virtual learning complicate the understanding of the various blended learning models

because they share some of the same features; however, there are key differences that

prevent them from fitting into a blended learning model. In order to understand these

differences, Staker and Horn (2012) offer the following definitions: (p. 6)

- Traditional instruction—A structured education program that focuses on
  face-to-face teacher-centered instruction, including teacher-led discussion
  and teacher knowledge imparted to students. Students are matched by age,
  and possibly ability. Instructional materials are based on textbooks,
  lectures, and individual written assignments. All students in the classroom
  generally receive a single, unified curriculum. Subjects are often
  individual and independent instead of integrated and interdisciplinary,
  particularly in secondary school.

- Technology-rich instruction—A structured education program that shares
  the features of traditional instruction, but also has digital enhancements
  such as electronic whiteboards, broad access to Internet devices, document
  cameras, digital textbooks, Internet tools, and online lesson plans. The
  Internet, however, does not deliver the content and instruction, or if it
  does, the student still lacks control of time, place, path and/or pace.

- Informal online learning—Any time a student uses technology to learn
  outside of a structured education program. For example, students could
  play educational video games or watch online lectures on their own
  outside of any recognized school program.

- Full-time online learning—A structured education program in which
  content and instruction are delivered over the Internet and the students do
  not attend a supervised brick-and-mortar location away from home, except
  on a very limited basis in some cases, such as for proctored exams, wet
  labs, or social events.

The revised blended learning taxonomy includes these models (Staker & Horn, 2012, p. 8-15):

1. Rotation model—A program in which within a given course or subject
   students rotate on a fixed schedule or at the teacher's discretion between
   learning modalities, at least one of which is online learning.

   a. Station Rotation—A Rotation model implementation in which within a
      given course or subject students rotate on a fixed schedule or at the
      teacher's discretion among classroom-based learning modalities with
      at least one station for online learning.

   b. Lab Rotation—A Rotation model implementation in which within a
      given course or subject students rotate on a fixed schedule or at the
      teacher's discretion among locations on the brick-and-mortar campus
      with at least one of these spaces being a learning lab for predominantly
      online learning.

   c. Flipped classroom—A Rotation model implementation in which
      within a given course or subject students rotate on a fixed schedule
      between face-to-face teacher-guided practice on campus during the

standard school day and online delivery of content and instruction of
the same subject from a remote location (often home) after school.

    d. Individual Rotation—A Rotation model implementation in which
within a given course or subject students rotate on an individually
customized fixed schedule among learning modalities, at least one of
which is online learning. The Individual Rotation model differs from
the other Rotation models because students do not necessarily rotate to
each available station or modality.

2. Flex model—A program in which content and instruction are delivered
primarily by the Internet, students move on an individually customized, fluid
schedule among learning modalities, and the teacher-of-record is on-site. The
teacher-of-record or other adults provide face-to-face support on a flexible and
adaptive as-needed basis through activities such as small-group instruction,
group projects, and individual tutoring. Some implementations have
substantial face-to-face support, while others have minimal support.

3. Self-Blend model—Describes a scenario in which students choose to take one
or more courses entirely online to supplement their traditional courses and the
teacher-of-record is the online teacher. Students may take the online courses
either on the brick-and-mortar campus or off-site. This differs from full-time
online learning and the Enriched-Virtual model because it is not a whole-
school experience. Students self-blend some individual online courses and
take other courses at a brick-and-mortar campus with face-to-face teachers.

4. Enriched-Virtual model—A whole-school experience in which within each
    course students divide their time between attending a brick-and-mortar
    campus and learning remotely using online delivery of content and
    instruction. Many Enriched-Virtual programs began as full-time online
    schools and then developed blended programs to provide students with brick-
    and-mortar school experiences. The Enriched-Virtual model differs from the
    Flipped Classroom because in Enriched-Virtual programs, students seldom
    attend the brick-and-mortar campus every weekday. It differs from the Self-
    Blend model because it is a whole-school experience, not a course-by-course
    model.

Staker and Horn revised their blended learning taxonomy based on feedback from
other experts in the field (Staker & Horn, 2012). The most notable difference between
their two blended learning taxonomies is that the six previous models have been
condensed to four (see Table 2.2—Blended Learning taxonomy changes).

Table 2.2

Blended Learning taxonomy changes

Blended Learning Taxonomy 2010	Blended Learning Taxonomy 2012	Changes
Face-to-Face Driver Model		Eliminated
Rotation Model	Rotation Model	Divided into sub-models Station Rotation Model Lab Rotation Model Flipped Classroom Model Individual Rotation Model
Flex Model	Flex Model	Redefined to include elements of the Online Lab Model which was eliminated
Online Lab Model		Eliminated
Self-Blended Model	Self-Blended Model	
Online Driver Model	Enriched Virtual Model	Name changed to clear up confusion with other model or with full-time online learning

The Face-to-face driver model elimination was because it was not substantially different from the Flex and Rotation models (Staker & Horn, 2012). Also eliminated was the Online Lab model. This model was the same as the Self-Blend model (Staker & Horn, 2012). Another change was that the Rotation model was subdivided into four ways of implementation (Staker & Horn, 2012). Other changes include redefining the Flex model to include elements of the Online Lab model and changing the name of the Online Driver model due to its confusion with other models or with full-time online learning. The Online Driver model was renamed the Enriched Virtual model (Staker & Horn, 2012).

State, District, and Charter School Models

Online learning has become an important part of the American K-12 educational landscape and has grown at a rapid pace. Even though online learning has shown rapid growth, the growth and pace has been uneven as some states have embraced online and

blended learning whereas others have not (Watson et al., 2010). As of the 2012-2013 school year, 27 states have a virtual school (Watson et al., 2012). Four states require students to complete an online course as part of their high school graduation requirements—Alabama, Florida, Michigan, and Virginia (Watson et al., 2012). Idaho repealed legislation in November 2012 striping away the requirement that students take two online courses to graduate from high school (Russell, 2012). Blended learning may play an important role in these states as they prepare students to meet these graduation requirements. Watson et al. (2012) notes that blended learning is on the rise with single-district programs being the largest and fastest growing segment; however, "the actual number of students in these programs is less understood than in fully online schools or state virtual schools because it is not yet reported in a discrete and consistent way" (p. 5).

The school district in this study is in Virginia, one of four states that have a legislative requirement for high school graduation tied to online learning. These four states all have state virtual schools—schools created by legislation or by a state-level agency, and/or administered by a state education agency, and/or funded by a state appropriation or grant for the purpose of providing online learning opportunities across the state (Watson et al., 2012). All of these state virtual schools provide students with online learning opportunities to supplement their traditional education through the self-blended model (Staker & Horn, 2012).

In Alabama, the state virtual school, ACCESS (Alabama Connecting Classrooms, Educators, & Students Statewide) is essentially the only online educational opportunity for students in the state. ACCESS had 44,332 course enrollments in the 2011-2012 school year (Watson et al., 2012). The term course enrollment is used to count student

numbers in supplemental programs in which one student is enrolled in a one semester

long course. (Watson et al., 2012). Students in ACCESS receive courses at school sites

during set periods in the day. Alabama's online learning requirement states that "effective

for students entering the ninth grade in 2009-2010 school year (graduating class of 2012-

2013) Alabama students will be required to complete an online/technology enhanced

course or experience prior to graduation. Exceptions through Individual Education Plans

will be allowed" (Alabama State Board of Education, 2011, p. 3-1-23). Alabama does not

have a charter school law and data for single-district programs are not reported (Watson

et al., 2012).

Florida has the largest state virtual school in the United States. According to

Watson et al. (2012), Florida Virtual School (FLVS) had 303,329 course enrollments and

offers a full-time program with 3,866 K-12 students enrolled in 2011-2012. Florida

Statute 1003.428 states that "beginning with students entering grade nine in the 2011-

2012 school year, at least one course within the 24 credits required in this subsection

must be completed through online learning" (Florida Statues, 2012). Two virtual charter

schools opened in Florida for the 2012-2013 school year, both offer students full-time

online programs (Watson et al., 2012). Most district level online learning opportunities

for students are either full- or part-time, and no blended learning programs are reported

(Watson et al., 2012).

In 2006, Michigan was the first state in the nation to pass legislature mandating

that students meet "the online course or learning experience requirement" before

graduation (State of Michigan 93rd Legislature Regular Session, 2006, Public Act 124).

Michigan has one of the largest state virtual schools in the country offering self-blended

with 19,822 course enrollments in 2011-2012 (Watson et al., 2012). The first online

charter schools in Michigan were opened in 2011 (Watson et al., 2012). These schools

offer full-time online learning environments. Both Nexus Academy of Grand Rapids and

Nexus Academy of Lansing are blended high school programs that opened in the fall of

2012. These charter schools offer students college preparatory courses featuring

Advanced Placement and Honors level classes in mathematics, science, language arts,

humanities and social studies (Nexus Academy, 2012). Staker and Horn would classify

these two schools as Flex Model blended learning environments as instructional delivery

is primarily by the Internet and the curriculum customized to meet individual student

needs. Detroit's FAM Academy, a charter school, offers students who have dropped out

of high school the opportunity to earn a high school diploma and not a GED. FAM

operates a flexible blended learning model (FAM, 2012). Data for single-district

programs are not reported (Watson et al., 2012).

Virginia's virtual school, Virtual Virginia, services students across the state

offering supplemental courses. Students self-blend Advanced Placement (AP), Honors,

electives, and world language courses within their traditional face-to-face learning

environment (Watson et al., 2012). Over 64% of students enrolled in Virtual Virginia are

taking AP courses (Watson et al., 2012). In 2012, the Virginia General Assembly passed

legislation requiring students to complete one virtual course successfully. This legislation

begins with first time ninth graders in 2013-2014 working toward a standard or advanced

studies diploma (Virginia General Assembly Legislative Information System, 2014).

With the passage of SB738, Virginia for the first time authorized full-time online schools

(Watson et al., 2012). There are three full-time online schools in operation servicing 484

students in 2011-2012 (Watson et al., 2012). Virginia has a charter school law and there

are several in operation; however, there are no full-time online or blended learning

charter schools (Watson et al., 2012).

A variety of models exists within the blended learning environment both at the K-

12 and post-secondary levels. Those in instructional design are interested in how to blend

online with face-to-face instruction and to what degree. Researchers have developed

various categories or blended learning clusters to describe the level of blending between

online and face-to-face instruction. Graham (2006) suggested that there are three

categories used to describe blended instructional content: enabling, enhancing, and

transforming. The Innosight Institution survey in 2010 revealed that there are six clusters

used to describe a blended learning environment: face-to-face driver, rotation, flex, online

lab, self-blended, and online driver. Staker and Horn with the Innosight Institute in 2012

reduced their six clusters to four with subcategories in order to lessen confusion.

As online and blended learning become an important part of the educational

conversation, states and school districts are adopting polices and passing laws to

encourage their use. Four states have passed laws requiring students to complete an

online course as part of their high school graduation requirements—Alabama, Florida,

Michigan, and Virginia. All four of these states have state sponsored virtual schools that

provide students with a self-blended online model to supplement their traditional face-to-

face education. Local schools districts and charter schools in these states have developed

blended or online learning programs to meet the needs of students in order to meet state

graduation requirements.

Benefits of a Blended Learning Environment

The benefits of a blended learning environment are numerous. Several researchers note that a blended learning environment can extend learning and offers students flexibility to participate in their learning during a time that best fits their schedule (Calderon, Ginsberg, & Ciabocchi, 2012; Black, 2002; Bonk & Graham, 2006; De George-Walker & Keeffe, 2010; Gedik, Kiraz, & Ozden, 2012; Leh, 2002; Picciano, 2009; Ocak, 2010; Singh, 2003). Blended learning has also been shown to support student learning, allowing students to learn at the own pace (Black, 2002; De George-Walker & Keeffe, 2010; Ocak, 2010). Learning is reinforced through the usage of different mediums; the blending of online learning with traditional face-to-face instruction supports different learning styles and differentiation (Gedik et al., 2012; Picciani, 2006; O'Connor et al., 2011). Moreover, a blended learning environment has been shown to have an impact on communication. One researcher noted that teachers perceived that a blended learning environment increased the opportunity for continuous student feedback (Ocak, 2010). Another indicated that a blended learning environment provided students with more access to the instructor and other students in the class (Leh, 2002).

Extends Learning

Blended learning provides a variety of benefits that cannot be achieved through a single delivery medium (Singh, 2003). One benefit is that blended learning extends the reach of a learning program. A blended learning environment offers students the ability to access educational programs that they may have had difficulty attending. Family, work, and other external circumstances may prevent some students from attending a traditional

face-to-face class. A blended learning environment offers these students the flexibility to

participate during times that best fit their schedules (Black, 2002; Bonk & Graham, 2006;

De George-Walker & Keeffe, 2010; Gedik et al., 2012; Leh, 2002; Picciano, 2009; Ocak,

2010; Singh, 2003) and choose the best location for their learning (Leh, 2002; Ocak,

2010). Singh (2003) gives the example that a traditional classroom-training program

limits the access to that program to only those who can attend at a fixed time and

location, whereas an online class is inclusive of remote audiences and if the class is

asynchronous is not limited by time. Furthermore, a blended learning environment

provides a greater opportunity for students to take courses that may not be offered in a

traditional learning environment (Picciano, 2006).

Supports Learning

De George-Walker and Keeffe (2010) found that first year education majors

enrolled in a human development course conducted in a blended learning environment

reported that it supported their learning. A blended learning environment enabled

students to control the pace of their learning. Students in this study believed they could

work ahead or revise and review material already presented. The research conducted by

Black (2002) and Ocak (2003) support De George-Walker and Keeffe (2010) that one

advantage to a blended learning environment is that students can set their own pace of

learning. Important to the pace of learning is time. Students reported to researchers that a

blended learning environment enabled them to complete work at any time according to

their schedule and at any place (Brooks, Marsh, Schaber, Whiteside, & Wilcox, 2010;

Gedik et al. 2012; Leh, 2002; Singh, 2003). Students also believed that a blended learning

environment helped them to save time as they spent less time traveling to class and were

able to fit their studies into their daily schedules (Brooks et al., 2010; Leh, 2002).

Another time saving element was that course materials were in more than one location.

This enabled students to be more productive in finding necessary materials (Gedik et al.,

2012).

Several researchers note that enhanced opportunities for class discussion and peer

interaction contribute to support learning in a blended learning environment (Black,

2002; Collopy & Arnold, 2009; Gedik et al., 2012). A blended learning environment

provides more interaction with other students especially in large college or university

classes (Gedik et al., 2012). Students in a blended learning environment participate more

interactively and voice opinions more frequently. Researchers found that a blended

learning environment gives students a voice, especially those who may be uncomfortable

speaking up in a class (Black, 2002; Collopy & Arnold, 2009; Gedik et al., 2012).

Collopy and Arnold (2009) found that a blended class offered the opportunity to continue

class discussion beyond the classroom or to utilize class time to answer key questions that

originated from online discussions. Furthermore, students in a blended environment had

time to reflect, develop, and respond to questions or other comments. Gedik et al. (2012)

reported that students felt they could ask and respond to questions without time

limitations.

Reinforcement of Learning

Gedik et al. (2012) reported that reinforcement of learning was one of the most

frequently mentioned benefits of a blended learning environment by students in their

study. There was a perception that there were more resources and a wider range of ways

to learn. In addition, there was an opportunity to learn missed information through the use

of a variety of learning tools in an online environment e.g., PowerPoint posted online, online class discussions, video of lectures posted online. Through the usage of different mediums, a blended learning environment supports different learning styles and differentiation (Gedik et al., 2012; Picciani, 2006; O'Connor et al., 2011). Brooks et al. (2010) conducted a study of 25 students in a traditional classroom and 64 students in a blended learning environment; they found that the blended learning group had a significantly greater understanding of the material. Students in this study cited videos, in-class discussions, web-based text, and unstructured out-of-classroom discussions as contributing factors to their learning.

Online learning alone is not as effective as a blended learning environment as noted by Collopy and Arnold (2009). They found that students in an undergraduate teaching program reported significantly higher levels of learning in a blended learning environment than those in an online only environment. Students in this study believed they knew the content more than those enrolled in the online only class. The online only group reported that they did not perceive the content to be more complex and reported lower levels of learning even though the amount of time both the blended and online only groups spent on coursework did not differ (Collopy & Arnold, 2009). O'Connor et al. (2011) support these findings citing that in order for students to feel competent with the content of the course curriculum an online class needs the support of a face-to-face component.

Impact on Student Communication

Another benefit to a blended learning environment is that it offers multiple ways to communicate. Ocak (2010) noted that faculty perceived that a blended learning

environment provided the opportunity for continuous student feedback. Faculty felt that

blending allowed them to maintain familiarity and security of some face-to-face contact

with their students (Picciano, 2009). Graduate students in a 2002 study indicated that they

felt a blended learning environment allowed them more access to the instructor and the

other students (Leh, 2002).

Challenges of a Blended Learning Environment

Researchers also found many barriers or challenges to blending an online

component into a traditional face-to-face course. One challenge was noted by O'Connor

et al. (2011), the idea that face-to-face class sizes would be reduced due to a portion of

the class being moved to an online format; however, this was not the case in their study.

They cited a University of Florida study that argued that a blended learning course could

reduce class sizes by replacing a portion of the face-to-face time with online learning so

that a three-hour course would consist of one hour of actual face-to-face class time and

the rest would be online. O'Connor et al. (2011) found that what works best for students

was to utilize a portion of the face-to-face time for online simulations and actives during

lab time with academic staff available to assist students as needed with questions and talk

through issues students maybe having. What is important to note is the connection

between the online portion of the course and the face-to-face component. O'Connor et al.

(2011) studied students in their first year of higher education business course. The course

was initially an online only course with students reporting to a face-to-face class if they

were struggling to keep up. Feedback on this course was poor. Students who were

required to report to the remedial face-to-face class felt singled out. As a result, the online

content gradually reduced in the semesters that followed and replaced with face-to-face

classes in which all students in the course participated. Again, student feedback was poor citing that there was a disconnection between the face-to-face content and the online portion. This is contrary to Gedik et al. (2012) who found that students viewed the interdependence of the online and face-to-face environments to be a barrier. Students in this study felt that success in one environment was dependent on the other. They noted that online activities, bound to face-to-face activities and vice versa, are very challenging.

Another challenge noted in the Gedik et al. (2012) study was that students specifically complained about the number of assignments and large amount of reading requirements in the blended environment. This demonstrates the need to balance activities between the face-to-face traditional environment and the online. The scope of required activities should not be doubled due to the two environments. Students perceived that the workload was heavier in a blended environment than in a traditional face-to-face course. The amount of the workload had a negative impact on time, which meant more time spent in the blended course. Brooks et al. (2010) state that "good online learning is not attained by just adding technology; thoughtful course design and tool selection and employment are paramount for effective learning experiences" (p. 16). In order to fully reap the rewards or benefits of a blended learning environment, a close analysis of the curriculum will need to be conducted. Course designers cannot simply insert online activities into a course without close scrutiny; otherwise, the benefits of the online aspect become a barrier to student learning (Brooks et al., 2010; O'Connor et al., 2011).

O'Connor et al. (2011) reported administrative complexity as a challenge to instructors in their study. Instructors found it difficult trying to blend the already existing

system into a new system offered by the course publisher. This process of blending in-house quizzes, tests, and modules into another system required time and additional resources. A blending of already existing material and new material offered by a publisher may not be the case in all blended learning environments; however, what is important to note is that blended learning instructors will need additional time for administrative tasks related to the course management system or the publisher's online system.

Factors that may Influence a Blended Learning Environment

Research has shown that there are benefits and challenges of a blended learning environment that may impact student success and perceptions. Other factors such as the technology use, student self-efficacy, the organization of the course, and the quality of instruction also have the potential to influence student achievement and satisfaction in a blended environment. The research regarding these factors is limited with most pertaining to distance learning in industry and higher education.

Technology

A key component to any blended learning environment is technology. The technology in the classroom and the technology skills the student possesses may influence student satisfaction and how he/she performs in a blended learning environment. Much of the research in this area has been in higher education in online learning environments. According to Mitchell, Chen, and Macredie (2005), students who have a higher level of experience with technology tend to be more satisfied with their online learning experience. Researchers have found that a student's familiarity with technology influences his/her level of satisfaction and is an important part of an online

learning environment (Changchit, 2007; Liu, Teh, Peiris, Choi, Cheok, Mei-Ling, et al., 2009).

In a higher education study of 197 students enrolled in a blended learning course, Calderon, et al. (2012) found that students' limited computer skills were one of the least effective aspects of the blended learning course. This study suggested that students should receive training or an orientation in basic computer functions. Technology training was also a suggestion that emerged from studies conducted by Kenney and Newcombe (2011) and Kuo, Walker, Belland, and Schroder (2013). Kuo et al. (2013) found that technical problems may contribute to student dissatisfaction in an online course and that technology training may help increase student confidence in performing Internet-based tasks.

The quality of interaction between instructor and student in the online learning environment may depend on the technology tools employed during the learning process (Parsad & Lewis, 2008). Kuo et al. (2013) analyzed the effect of important predictor variables on student satisfaction in an online learning environment during a summer session in a higher education setting. Their results indicated that the strongest predictor of student satisfaction was learner-content interaction. Learner-content interaction was described as "a process of individual learners elaborating and reflecting on the subject matter or the course content" (Kuo et al., 2013, p. 18). This study determined that Internet self-efficacy was a significant predictor to student satisfaction; however, not as significant as learner-content and learner-instructor interaction.

Student Self-Efficacy

Self-efficacy is the belief in one's capabilities to perform a course of action (Bandura, 1977). According to Peterson and Arnn (2005), self-efficacy is the foundation on which human performance is built upon. Self-efficacy is crucial for learning as it affects many aspects of the learning process such as the choice of learning task, the amount of effort, goal setting, persistence, and achievement (Bandura, 1977; Schunk, 1995). Yukselturk and Bulut (2007) found that the student self-efficacy in an online computer programming course was significantly correlated to student achievement. Artino (2010) reported that self-efficacy was positively related to student achievement outcomes in a study of 564 undergraduate students enrolled in an online course at a service academy. Additionally, this study found that self-efficacy may positively influence students' choice about future learning activities. Students with greater confidence in their ability to learn in an online learning environment seem to be more likely to choose online learning options (Artino, 2010).

Joo, Bong, and Choi (2000) reported that academic self-efficacy did not predict performance on a web-based test; however, performance on a written test was predicted. Lee and Witta (2001) and DeTura (2004) found that self-efficacy was not a predictor of performance in an online course or final exam. In an asynchronous online math course, Hodges (2005) reported that self-efficacy was a weak predictor of achievement.

Joo, Lim, and Kim (2013) reported that self-efficacy was significant to learner satisfaction for 897 students enrolled in an online university in Korea. They found that learners with higher perceived levels of self-efficacy were more satisfied with the online university courses. Additionally, they cited that student self-efficacy exerted significant

effects on student achievement. In this study, self-efficacy was important in that it directly affected both student satisfaction and achievement. Artino (2010) and Joo et al. (2013) suggested that online teachers may be able to positively influence students' instructional choices by first addressing their self-efficacy beliefs and incorporating instructional design strategies that increase self-efficacy into the online learning environment.

Course Organization

The course organization or design of content in a blended learning environment can be a complex task. Ward, Peters, and Shelley (2010) found that students participating in synchronous interactive online instruction preferred the ease of access an online learning environment provided when compared to a face-to-face course. Furthermore, content in an online learning environment must be presented in a way that contributes to its understandability and relevance to students. Simply inserting online activities or adding technology to a face-to-face course without careful consideration may create a barrier to effective learning experiences (Brooks et al., 2010; O'Connor et al., 2011). Gedik et al. (2012) found that undergraduate students in a blended learning course addressed the online environment more than the face-to-face part of the course. This suggests that when designing a blended learning course initial attention should be given to the online components (Gedik et al., 2012).

A blended or online learning environment offers course designers a variety of learning tools. Brooks et al. (2010) found in a study of graduate students that the most effective activities for a blended learning environment were videos followed by in-class discussions, web-based text, and unstructured out-of-classroom discussions. According to

Singh (2003) a well-designed blended learning program was able to demonstrate an overall 10% better learning outcome for graduate students than the traditional classroom learning format. Additionally, course designers need to consider a balance of activities (Ocak, 2010). A course designer needs to pay close attention to sustain a balance between "students' workload and time devotion, support mechanisms and guidance, and assessment" (Gedik et al., 2012, p. 114).

As previously cited, Kuo et al. (2013) found that learner-content interaction was the strongest predictor of student satisfaction in an online learning environment. The results of their study suggest "the design of the online content may be the most important contributor to student satisfaction" (p. 30). Therefore, course designers need to pay close attention to content design and organization given that learner-content interaction substantially contributed to student satisfaction.

Quality of Instruction

The research regarding the quality of instruction in an online or blended learning environment is very limited since much of the instructional delivery is through video and online text. One of the benefits of a blended learning environment is the ability for students to take control of their own learning. As students take more control over their learning through blended learning, the role of the teacher changes from a "bank of knowledge from which students withdraw information" to a coach (Kenney & Newcombe, 2011, p. 49). In the role of learning coach, the teacher is able to provide direction and redirection regarding student understanding of the content, feedback is maximized, and the teacher is then able "to get out of the way when learning is progressing towards the success criteria" (Hattie, 2009, p. 23).

The sense of control over one's learning can be important. As students take control over when and where they access their learning environment, their level of learning will improve (Kenney & Newcombe, 2011). Ross (1988) reported that learning outcomes in science were highly related to level of control students had over their own learning. When students have the ability to take more control over their own learning, the ability for the teacher to personalize learning and address diverse learning styles is greatly enhanced (Picciano, 2006; Rapp, 2011).

The interaction between the teacher and student is a critical component to student achievement and satisfaction. Ocak (2010) noted that faculty in higher education perceived that a blended learning environment provided the opportunity for continuous student feedback. Graduate students in a 2002 study indicated that they felt a blended learning environment allowed them more access to the instructor and to the other students (Leh, 2002). Kuo et al. (2013) reported that learner-instructor interaction was a significant predictor of undergraduate and graduate student satisfaction in an online learning environment.

Conclusion

The purpose of this chapter was to provide a review of the literature that serves as a basis for the recent interest in blended learning environments in K-12 education. The U.S. Department of Education (USDOE) and several states have initiated interest in blended learning through various policies and laws. Four states currently require students to obtain an online credit prior to graduation, and the USDOE has made online and blended learning a goal in the National Technology Plan 2010 (U.S. Department of Education, 2010). Even though various definitions exist among researchers, it is prudent

to adopt a definition or formulate one for institutions implementing a blended learning

program. For the purpose of this study, blended learning will be defined as "any time a

student learns at least in part at a supervised brick-and-mortar location away from home

and at least in part through online delivery with some element of student control over

time, place, path, and/or pace" (Horn & Staker, 2011, p. 3). Furthermore, it is important

to this study to review the various models of a blended learning environment. The

blended learning model utilized in any program may influence the success and perception

of students.

Additionally, the benefits and challenges of a blended learning environment may

impact student success and perceptions. One important benefit is that a blended learning

environment offers students the flexibility to participate during times that best fit their

schedules extending the reach of the learning program (Black, 2002; Bonk & Graham,

2006; De George-Walker & Keeffe, 2010; Gedik et al., 2012; Leh, 2002; Picciano, 2009;

Ocak, 2010; Singh, 2003). Other benefits of a blended learning environment include

supports learning (Black, 2002; De George-Walker &Keeffe, 2010; Ocak, 2003);

reinforces learning (Brooks et al., 2010; Gedik et al., 2012; Picciani, 2006; O'Connor et

al., 2011); and positively impacts student communication (Leh, 2002; Picciano, 2009;

Ocak, 2010). The challenges for students in a blended learning environment relate to the

connection between the traditional course content and that of the blended learning content

as well as the amount of assignments (Brooks et al., 2010; Gedik et al., 2012; O'Connor

et al., 2011).

Finally, factors such as technology use, student self-efficacy, the organization of

the course, and the quality of instruction may influence student achievement and

satisfaction in a blended environment. Students who have a higher level of experience with technology tend to be more satisfied with their online learning experience (Mitchell et al., 2005). Researchers have found that student self-efficacy significantly correlated to student achievement and satisfaction in an online learning environment (Artino, 2010; Joo et al., 2013; Yukselturk & Bulut, 2007); however, student self-efficacy did not predict performance on a web-based test or online final exam (DeTura, 2004; Lee & Witta, 2001; Joo et al., 2000) and was a weak predictor of achievement in an asynchronous online math course (Hodges, 2005). Careful consideration must be given when designing or organizing an online or blended learning course as poor design may create barriers to the learning process and inhibit learner-content interaction (Brooks et al., 2010; Gedik et al., 2012; Kuo et al., 2013; Ocak, 2010; O'Connor et al., 2011; Singh, 2003). Changes in the role of the teacher from a "bank of knowledge" to learning coach enable the student to take control of their own learning (Kenney & Newcombe, 2011; Picciano, 2006; Ross, 1988; Rapp, 2011) and may facilitate more learner-instructor interaction and teacher feedback (Kuo et al., 2013; Leh, 2002; Ocak, 2010).

CHAPTER 3: METHODOLOGY

The focus of this chapter will be the methodology and research design of this study. The research and methodology design is driven by the purpose of the study (Rudestam & Newton, 2007), which was to evaluate a blended learning environment in a single course in a Central Virginia public school district. The uniqueness of this study may be found in the educational setting; no previous study has focused on a blended learning environment in a single secondary general education course in three different high schools. Each of the three high schools in this school district represented a different educational setting. Students enrolled in the blended learning Economics and Personal Finance course at each high school represented a group, and students enrolled in this blended learning course at all three high schools collectively were also treated as a single group. Moreover, no previous study has considered the student perspective in a secondary educational environment. Within this school district three different secondary educational settings were evaluated. Additionally, this study was designed to give students participating in a blended learning environment a voice regarding the program. The goal was to evaluate student success in a secondary school blended learning program and to document student perceptions about this experience.

This chapter will be divided into four sections. The first section will focus on the rationale for a non-experimental cross-sectional research design. The second section will describe research participants. The third section will outline the study procedures. This section will delineate the steps the researcher completed in order to carry out a research

study in this Central Virginia public school system and the procedures required to complete the Internal Review Board process. This section also explains the study's data collection methods and measures. The fourth section explicates the data analysis process. This chapter will conclude with a summary of the methodology and limitations of the study.

Rationale for Research Design

Evaluation research is intended to determine the worth, merit, or value of an evaluation object such as an educational program (Johnson & Christensen, 2012; Rossi, Lipsey, & Freeman, 2004). The focus of this study was an impact evaluation of a single general education course in offered in a blended learning program in a rural school district. "The evaluation of a program generally involves assessing one or more of five domains: (1) the need for the program, (2) the program's design, (3) its implementation and service delivery, (4) its impact, or outcomes, and (5) its efficiency" (Rossi et al., 2004, p. 18). The program's design, its implementation and service delivery, and its impact or outcomes will be the domains this study will address. This study will need to answer the following questions:

- How satisfied are students with a blended learning environment in a general education Economics and Personal Finance course?

  - H_1: Students in a blended learning environment will be satisfied with their experience in a general education Economics and Personal Finance course.

- Is a student's course grade affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

- H_{2a}: A student's course grade will not be affected by the technology in a blended learning course.

- H_{2b}: A student's course grade will not be affected by self-efficacy in a blended learning course.

- H_{2c}: A student's course grade will not be affected by the course organization in a blended learning course.

- H_{2d}: A student's course grade will not be affected by the quality of instruction in a blended learning course.

- H_{2e}: A student's course grade will not be affected by student satisfaction in a blended learning course.

- H_{2f}: Students with a high GPA will have a higher final course grade in a blended learning course.

- Is a student's grade on a credential test affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

  - H_{3a}: A student's grade on a credential test will not be affected by the technology in a blended learning course.

  - H_{3b}: A student's grade on a credential test will not be affected by self-efficacy in a blended learning course.

  - H_{3c}: A student's grade on a credential test will not be affected by the course organization in a blended learning course.

  - H_{3d}: A student's grade on a credential test will not be affected by the quality of instruction in a blended learning course.

- H_{3e}: A student's grade on a credential test will not be affected by student satisfaction in a blended learning course.

- H_{3f}: Students with a high GPA will have a higher grade on a credential test in a blended learning course.

- H_{3g}: A student's grade on a credential test will be positively affected by the student's final grade in a blended learning course.

This evaluation was conducted at specific time within the framework of a blended learning program and was partly motivated by the need for improvement. Any improvements warranted will need to be made prior to the next school year. Given that a specific time or period of time dictated when this study would occur, a cross-section research design was utilized. According to Johnson and Christensen (2012), a cross-sectional research design data are collected from the research participants at a single point in time or during a single, relatively short period of time. Data for this study were collected in spring 2013. Consistent with a cross-sectional research design, this study collected both quantitative and qualitative data from multiple groups and types of participants (Johnson & Christensen, 2012). First, the study examined student data as it related to student grade point averages. Specifically, data were collected from students enrolled in the blended learning Economics and Personal Finance course regarding grade point averages without the blended learning course and grade point averages with the blended learning course. Second, the study examined student data as it related to student final grades in this blended learning course and student scores on the Career and Technical Education (CTE) credential test. Additionally, the study collected data from

students regarding their opinion of the blended learning course as it related to the following:

- o Technology

- o Student self-efficacy

- o Course organization

- o Quality of instruction

- o Student satisfaction

The primary data collection instrument for this part of the study was an online student survey (see Appendix C—Student Survey). A readability tool built within Microsoft Word was utilized to determine that the reading level for this survey averaged a Flesch-Kincaid grade level of 8.2. The online survey uploaded to SurveyMonkey consisted of closed and open-ended questionnaire items. The closed-ended questions were given a Likert Scale rating system. Emerging themes were gathered from the open-ended questions. Rossi et al. (2004) states that "when it is necessary to get very accurate information on the extent and distribution of a problem and there are no existing credible data, the evaluator may need to undertake original research using sample surveys or censuses" (p. 113). Since this study was designed to gain students' perception of a blended learning course, a survey or questionnaire served as the best tool to achieve this goal. Additionally, in order to capture the success of this blended learning course, it was necessary to collect data regarding student GPAs without the blended learning course, student GPAs with the blended learning course, student final course grades, and scores on the CTE credential test. This data were retrieved from the district's student information system (SIS) and guidance department.

Research Participants

The research sample consisted of secondary students in grades 9-12 enrolled in a blended learning Economics and Personal Finance course from three high schools in a Central Virginia school district. A total of 390 students enrolled in the Economics and Personal Finance blended learning course of which 342 students participated in this study (participation rate 87.7%). A majority of those participating in the study were in the 10th grade with 90.4% (n = 309). The other three grades were not as well represented with 9th grade at 3.5% (n = 12), 11th grade at 2.6% (n = 9), and 12th grade at 3.5% (n = 12). Three high schools in this school district offered an Economics and Personal Finance course in a blended learning format. High School 1 had 43.9% of the participants, High School 2 had 33.6%, and High School 3 had 22.5% (see Table 3.1—Participants by School).

Table 3.1

Participants by School

	Percent	N
High School 1	43.9%	150
High School 2	33.6%	115
High School 3	22.5%	77

Notes: N = 342

A majority of the participants were white/not Hispanic, with 91.2% of the sample reporting white as their race. Minorities were 0.6% American Indian/Alaska Native, 1.2% Asian, 5.6% Black/not Hispanic, and 1.5% two or more races non-Hispanic. Additionally, there were 45.3% female and 54.7% male participants (see Table 3.2— Race/Ethnicity and Gender).

Table 3.2

Race/Ethnicity[1] and Gender[2]

	Participants %[3]	N
American Indian/Alaska Native	0.6%	2
Asian	1.2%	4
Black, not Hispanic origin	5.6%	19
Hispanic	0.0%	0
Native Hawaiian/Pacific Islander	0.0%	0
Non-Hispanic, two or more races	1.5%	5
White, not Hispanic origin	91.2%	312
Unspecified	0.0%	0
Female[2]	45.3%	155
Male[2]	54.7%	187

Notes: Participants N = 342
Source: [1]Student Information System (SIS) and the Virginia Department of
Education ; [2]Participant Survey Question 2
[3]Due to rounding, numbers may not total 100%

More information regarding the research participants is presented in Chapter 4:

Setting.

Procedure

The first step of the research process was to gain approval from the school district

regarding this study. The school district has a policy for all requests for research or

experimental projects involving students. This policy states that all requests for research

or experimental projects involving students should to be submitted to the Supervisor of

Assessment and Planning. The researcher worked with division officials to gain approval

for this research. The completion of an application to the Lynchburg College Institutional

Review Board (IRB) was the next step in the research process (see Appendix D—IRB

Request for Expedited Review and Appendix E—Approval of Research Proposal). The

application was considered for an expedited review status as the nature of this study

"involves no more than minimal risk" (Johnson & Christensen, 2012). The application

included the procedures outlined in this chapter, the student survey opt-out form, the

informed assent agreement, and the survey instrument.

Participant Selection

Participants for this study were selected based on their blended learning

educational setting. According to Johnson and Christensen (2012), in convenience

sampling, the researcher recruits individuals willing to participate in the study. Those

students enrolled in the Economics and Personal Finance blended learning course were

the population of interest for this study. A total of 390 students were enrolled in the

Economics and Personal Finance course at the time of this study. Emails explaining the

nature of this study were sent to the seven teachers at the three high schools teaching this

course in early spring 2013. The Student Survey Opt-out form was handed out in each of

the blended learning Economics and Personal Finances classes a week prior to the

distribution of the survey. Students or parents of students opting out of this study were

instructed to return the form to their Economics and Personal Finance teacher. On the day

that surveys were conducted at each of the three high schools the study was explained to

each class and students were given another opportunity to opt out of the survey. The

Informed Assent Agreement was distributed and students were required to sign this form

in order to participate. A total of 342 students participated in this study out of a possible

390 (participation rate 87.7%). Non- participants were not in attendance when surveys

were conducted therefore excluded from the data. No students opted out and all students

present during survey days participated and submitted an Informed Assent Agreement.

Data Collection and Analysis

The quantitative data were collected at the end of the semester in the spring 2013. The division's SIS and guidance department were employed to collect Economic and Personal Finance course grades, student grade point averages (GPAs) without the blended learning course, student GPAs with the blended learning course, and scores on the CTE credential test. An online survey was utilized to collect both quantitative and qualitative data and consisted of closed and open-ended questionnaire items. The closed-ended questions were given a Likert Scale rating system. Participants responded to these questions with answers ranging from strongly agree to strongly disagree. Responses were converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or disagree, 2 disagree, and 1 strongly disagree. Emerging themes were gathered and analyzed from the open-ended questions.

The student survey was piloted in early spring 2013 with 19 students who had taken a general education math course in a blended learning environment the previous school year. Students participating in the survey pilot met prior to the school day to take a paper copy of the survey. The research study was explained to the students participating in the survey pilot, and students were asked to not only answer the questions but to provide feedback on each. Grammatical and clarifying changes were made to the survey based on pilot feedback. Survey questions were grouped based on the predictors (independent variables) that may affect student course grades (dependent variable) and student scores on the Career and Technical Education credential test (dependent variable). Category groups were as follows: Technology, student self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning

environment. The reliability coefficient supported combining participant responses in each of these categories into an overall construct for each of the aforementioned categories. Coefficient alpha (Cronbach's alpha) indicates to what degree items are interrelated, and according to Johnson and Christensen (2012), "the size of coefficient alpha should generally be, at a minimum, greater than or equal to 0.70 for research purposes" (p. 142). See Table 3.3—Reliability coefficient for each category.

Table 3.3

Reliability Coefficient

Category	Coefficient Alpha
Technology	0.74
Self-Efficacy	0.82
Course Organization	0.93
Quality of Instruction	0.92
Student Satisfaction	0.86

The raw data from the online participant survey (SurveyMonkey) were first exported into Microsoft Excel (2013) as were the raw data from the school district's SIS. Data from both the survey and district's SIS were then imported into IBM Statistical Package for the Social Sciences (SPSS) Graduate Pack version 21 for Microsoft Windows 2007. SPSS was used to analyze quantitative data through paired t-test, multiple regression analysis, and analysis of variance (ANOVA). A paired t-test was utilized to compare means between student GPAs without the blended learning course and student GPAs with the blended learning course. An analysis of variance was conducted to further examine data related to participant satisfaction reported in the survey section regarding student satisfaction. The impact of the independent variables (technology, student self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning environment) on the dependent variables (student

course grades and CTE credential test) was analyzed. IBM Statistical Package for the

Social Sciences (SPSS) Text Analytics for Surveys (Version 4.0.1) and Microsoft Excel

(2013) were used to analyze imported open-ended survey responses. This study used

SPSS Text Analytics to extract concepts and create categories then Microsoft Excel was

used to further refine and confirm results of emerging themes.

Limitations

As with any research project, this study has its limitations. There are a variety of

threats to validity among which will be the online student survey. The researcher relied

on honest feedback from students. If students perceived that survey results affected their

grade or if students rushed through the survey, this could have influences and skewed the

results. Quality of instruction was based on student perceptions, not measureable

objectives of instruction; therefore, it should be considered a limitation. Another

limitation will be with the matching of the data—matching student grade point averages

to a single course grade or matching course grades prior to the blended learning program

to one after. Additionally, this was the first year for this blended learning Economics and

Personal Finance course in this school district, and as with any new endeavor, there were

unexpected issues that may have affected results such as teacher training, technology

glitches, and curriculum challenges. Furthermore, the results of this study will not be

generalizable to other school districts as this study evaluates a specific blended learning

program of a Central Virginia public school district.

CHAPTER 4: SETTING

The research setting for this study involved one county's three high school student populations enrolled in a blended learning general education Economics and Personal Finance course. The purpose of this chapter is to describe the district in which the research took place and describe the research setting for each of the three high schools providing an overall view of the student population as a group.

The School District

The public school division in this study consists of 769 square miles located in Central Virginia. This school division is located between two larger urban areas; however, a majority of this district is considered rural. This school division has a student population of approximately 10,300 students. According to the Virginia Department of Education's website, this school district has a student population that is mostly white, not Hispanic origin (see Table 4.1—District Demographics 2012-2013)[1].

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[1] The name of the county will be excluded from references.

Table 4.1

District Demographics2012-2013

	Percent
American Indian/Alaska Native	0.25%
Asian	1.73%
Black, not Hispanic origin	7.27%
Hispanic	2.46%
Native Hawaiian/Pacific Islander	0.06%
Non-Hispanic, two or more races	3.02%
White, not Hispanic origin	85.22%
Unspecified	0.00%

Notes: n = 10,313
Due to rounding, numbers may not total 100%
Source: Virginia Department of Education

Due to the rural nature of this locality, the school district in cooperation with the county's Broadband Advisory Committee conducted a survey in the fall of 2013 to determine Internet accessibility. Survey questions were part of the fall 2013 student registration process. This survey had a response rate of 69.8%. The results indicated that 86.7% of students have some level of Internet service in their homes (Broadband Advisory Committee Internet Accessibility Survey for the County, 2013). Additionally, the Virginia Center for Innovation (CIT) reported that 70-80% of households in this county have access to high-speed broadband service (2014). Internet access from home is important to the flexibility of a blended learning program. The ability to learn anywhere at any time is one of the main reasons colleges and universities have embraced blended learning (O'Connor et al., 2011).

Further analysis of student demographics indicated that 32.7% of the division is classified as economically disadvantaged—students in the free and reduced lunch program. Economically disadvantaged students may not have the necessary tools such as a computer or Internet connectivity at home that support an online or blended learning

environment. A third of all high school students district-wide were enrolled in an

Advanced Placement course during the 2012-2013 academic year. The on-time

graduation rate for this school district was 90.7%, which was on par with the state

average of 89.1% (Virginia Department of Education, 2013). On-time graduation rate is

important as the state continues to raise the annual benchmark for graduation. As of July

1, 2013, students entering the ninth grade for the first time in the 2013-2014 school year

in a Virginia public school will be required to have one credit through an online course,

and students seeking a standard diploma will need to "earn a board-approved career and

technical education credential" in order to graduation (Virginia Department of Education,

2013). Additionally, effective as of July 1, 2011, students entering the ninth grade for the

first time are required to take a general education course in Economics and Personal

Finance prior to graduation. The district in this study has opted to combine these

requirements into a single course.

This school district has had a virtual school prior to this current blended learning

program. In April 2008, the school board for this district unanimously approved the

implementation of a grade K-6 virtual school. This approval was the result of much

discussion and debate. In prior school board meetings, district personnel and virtual

program vendors presented information to this district's school board. The school district

mailed out informational packets with surveys to 405 families with registered

homeschooled students to determine interest in a virtual program. From surveys sent to

these families, 142 were returned with 91 families reporting no interest in the program;

however, 51 families were interested in a virtual program for their children. A total of 76

children were part of these families that expressed interest. The virtual school began

during the 2008-2009 school year. During the 2008-2009 school year there were 45

students enrolled with 13 students who lived within the county of this school district and

32 students who lived outside this district. Students completed required coursework

online with the support of a learning coach and access to instructional support from a

virtual school teacher. During the first year, 43 of the 45 students completed the program.

During the 2009-2010 school year, the virtual school experienced a 20% drop in

enrollment. This school year there were 36 students with 17 from within the district and

19 from out of district enrolled in the virtual school. The desire was that this virtual

school would be self-sustaining. Students who lived within the school district did not pay

tuition, but those students from outside the district paid $408 per course. The district

received state funds for students enrolled in the virtual program based on Average Daily

Membership (ADM). Due to the drop in enrollment, the virtual school operated at a loss

to the school district. An evaluation committee was formed during the 2009-2010 school

year to review the program and make recommendations to the school board. In January

2010, the evaluation committee presented its finding to the school board and

recommended that the virtual program be discontinued after the 2010-2011 school year.

The school board suspended its rules during this meeting and voted to terminate the

virtual program after the 2009-2010 school year giving families time to seek alternate

arrangements.

This first attempt to establish a virtual presence created a sense of apprehension

regarding online education and any future endeavors. However, in 2010 the

Commonwealth of Virginia passed the "Virtual school programs" law (SB738) which

opened the door for multi-division providers to serve K-12 students with both

supplemental and full-time online programs (Virginia General Assembly Legislative

Information System, 2014). Additionally, the Virginia General Assembly passed into law

House Bill 1061 and Senate Bill 489, which changed secondary graduation requirements

in the state of Virginia to include one virtual course (Virginia General Assembly

Legislative Information System, 2014). This change went into effect July 1, 2012, and

applied to those students entering the ninth grade for the first time in the 2013-2014

school year. As a result of these legislative changes, this school district adopted a new

strategic plan with a key strategy to "transform primary instructional delivery model to a

'blended learning environment' that includes a continuum of traditional and technology-

based methods and individualized time-independent student pacing/progress" (see

Appendix A—Strategic plan from a Central Virginia K-12 School District for an

appended version of the school district's strategic plan).

The focus of this study was secondary students in grades 9-12 of whom there

were approximately 3400 in three district high schools, and approximately 11% were

enrolled in a blended learning Economics and Personal Finance course. One of the three

high schools is fully accredited through the state accreditation system, and two are

accredited with warning (Virginia Department of Education, 2013). "School accreditation

ratings reflect student achievement on Standards of Learning Assessments and other tests

in English, history/social science, mathematics, and science" (Virginia Department of

Education, 2013). Student achievement is based on tests taken during the previous

academic year and may also reflect a three-year average of achievement. The two schools

accredited with warning did not meet the benchmark set in mathematics. Additionally, all

three of the schools did not meet the Federal Annual Measurable Objectives (AMO) for

proficiency in mathematics tests in 2013 (Virginia Department of Education, 2013). One

school missed the Federal AMO due to the "meet higher expectations requirement,"

which requires schools to maintain the previous year's passing rate within 5% or make

continuous improvement in the Asian subgroup only (Virginia Department of Education,

2013).

As previously stated, the state graduation requirements have changed for students

entering the ninth grade for the first time during the 2013-2014 school year. Students will

be required to have an online credit and complete a general education course in

Economics and Personal Finance prior to graduation. The school district in this study has

chosen to combine these two requirements in a general education offering of an

Economics and Personal Finance class in a blended format. This new course was offered

for the first time during the 2012-2013 school year. All three high schools in this district

offered the blended learning format for this course in a Flex model (Staker & Horn,

2012). Students enrolled in this course reported to a computer lab during a scheduled

period in the school day. The course content and instruction were delivered primarily

through the Internet and an online course management system purchased by the district to

provide core and elective instruction in a virtual and blended learning environment.

Students progressed through the course content independently. Teachers offered

individual support and small or large group instruction on an as needed basis.

Participants

The participants in this study consisted of secondary students in grades 9-12

enrolled in a blended learning Economics and Personal Finance course from three high

schools in a Central Virginia school district. A total of 390 students were enrolled in this

course during the 2012-2013 school year; however, 342 students out of the 390

participated in this study. The response rate for participation was 87.7%. All submitted an

Informed Assent Agreement.

A majority of those participating in the study were in the 10th grade with 90.4%.

The other three grades were not as well represented, with 9th grade at 3.5%, 11th grade at

2.6%, and 12th grade at 3.5%. Three high schools in this school district offered an

Economics and Personal Finance course in a blended learning format. High School 1 had

43.9% of the participants, High School 2 had 33.6%, and High School 3 had 22.5% (see

Table 4.2—Participants by School and Table 4.3—Participants by Gender and School).

Table 4.2

Participants by School

	Percent	N
High School 1	43.9%	150
High School 2	33.6%	115
High School 3	22.5%	77

Notes: N = 342

Table 4.3

Participants by Gender and School

	% Female[1]	% Male[1]	N
High School 1	48.7%	51.3%	150
High School 2	47.0%	53.0%	115
High School 3	36.4%	63.6%	77

Notes: N = 342

Source: [1]Student Survey Question 2

A majority of the participants were white/not Hispanic, 91.2% of the sample

reporting white as their race. Minorities were 0.6% American Indian/Alaska Native, 1.2%

Asian, 5.6% black/not Hispanic, and 1.5% two or more races non-Hispanic. Additionally,

there were 45.3% female and 54.7% male participants (see Table 4.4—Race/Ethnicity

and Gender).

Table 4.4

Race/Ethnicity[1] and Gender[2]

	Participants %[3]	District %[3]
American Indian/Alaska Native	0.6%	0.25%
Asian	1.2%	1.73%
Black, not Hispanic origin	5.6%	7.27%
Hispanic	0.0%	2.46%
Native Hawaiian/Pacific Islander	0.0%	0.06%
Non-Hispanic, two or more races	1.5%	3.02%
White, not Hispanic origin	91.2%	85.22%
Unspecified	0.0%	0.00%
Female[2]	45.3%	48.7%
Male[2]	54.7%	51.3%

Notes: Participants N = 342; District N = 10,313

Source: [1]Student Information System (SIS) and the Virginia Department of

Education ; [2]Student Survey Question 2

[3]Due to rounding, numbers may not total 100%

High School 1

High School 1 was the largest of the three high schools with student enrollment of

1,371. With one principal and three assistant principals, this high school had an

instructional staff of 97 and operated a seven period schedule with six periods offered

during the regular school day and a zero period prior to the start of school (see Table

4.5—High School 1—Bell Schedule).

Table 4.5

High School 1—Bell Schedule

Time	Period
7:50	Warning Bell
7:55 – 8:50 (55 min.)	Zero Period
8:20 – 8:50 (30 min.)	Breakfast served
8:55 – 9:58	First Period
8:55 – 9:48 (53 min.)	Instructional Time
9:48 – 9:58 (10 min.)	Moment of Silence, Pledge of Allegiance, and Announcements
10:04 – 11:13	Second Period
10:04 – 10:59 (55 min.)	Instructional Time
10:59 – 11:13 (14 min.)	Channel One and Free Reading on Fridays
11:19 – 12:12 (55 min.)	Third Period
12:12 – 1:38	Fourth Period and Lunch Rotations
12:12 – 12:38 (26 min.)	First Lunch
12:43 – 1:38 (55 min.)	Instructional Time for First Lunch
12:18 – 12:43 (25 min.)	Instructional Time for Second Lunch
12:43 – 1:08 (25 min.)	Second Lunch
1:13 – 1:38 (25 min.)	Instructional Time for Second Lunch
12:18 – 1:13 (55 min.)	Instructional Time for Third Lunch
1:13 – 1:38 (25 min.)	Third Lunch
1:44 – 2:37	Fifth Period
1:44 – 2:35 (51 min.)	Instructional Time
2:35 – 2:37 (2 min.)	Announcements
2:43 – 3:35 (52 min.)	Sixth Period

Source: High School 1's website

The student population for this high school was predominately white with 84.25% percent being of a white, not Hispanic origin. Among the minority groups at this high school, black, not Hispanic origin, made up 7.15% (see Table 4.6—Three High Schools—Demographics 2012-2013).

Table 4.6

Three High Schools–Demographics2012-2013

	High School 1	High School 2	High School 3
American Indian/Alaska Native	0.15%	0.21%	0.37%
Asian	3.21%	0.32%	0.54%
Black, not Hispanic origin	7.15%	11.67%	3.78%
Hispanic	2.77%	2.00%	2.61%
Native Hawaiian/Pacific Islander	0.22%	0.00%	0.00%
Non-Hispanic, two or more races	2.26%	2.73%	2.88%
White, not Hispanic origin	84.25%	83.07%	89.82%
Unspecified	0.00%	0.00%	0.00%

Notes: High School 1 N = 1,371; High School 2 N = 951; High School 3 N = 1,110
Due to rounding, numbers may not total 100%
Source: Virginia Department of Education

According to the Virginia Department of Education, the percentage of students enrolled in advanced programs is a key indicator of school quality at the secondary level. In 2012-2013, High School 1 had 374 students enrolled in an AP course with 54.5% of students taking an AP test passing with a 3 or higher. Additionally, 203 total CTE credentials were earned by students during the 2012-2013 year school. According to the school report card on the Virginia Department of Education's website (see Table 4.7—School Information), 16.4% of this high school's student population was considered to be economically disadvantaged. High School 1 had 65.7% of its students graduate in 2013 with an Advanced Diploma and 32.7% with a Standard Diploma (see Table 4.8—School Information—Diploma Types).

Table 4.7

School Information						
	Enrollment	AP Enroll.	CTE Credentials	Econ. Dis.	Limited Eng. Prof.	Students w/ Disabilities
High School 1	1,371	27.2%	14.8%	16.4%	0.01%	0.06%
High School 2	951	23.3%	18.8%	50.2%	0.00%	13.0%
High School 3	1,110	24.6%	12.9%	48.0%	0.00%	10.7%

Source: Virginia Department of Education

Table 4.8

School Information—Diploma Types				
	Enrollment	Advanced Diploma	Standard Diploma	Special Diploma
High School 1	1,371	65.7%	32.7%	0.0%
High School 2	951	47.6%	45.3%	0.0%
High School 3	1,110	42.0%	48.7%	5.2%

Source: Virginia Department of Education

High School 1 offered seven sections of a blended learning general education Economics and Personal Finance course during the 2012-2013 school year. Two teachers taught this course in two desktop computer labs. Staker and Horn (2012) would classify the blended learning model utilized at this school as the Flex Model. Two sections of this course were offered during the school's zero period in which students in these classes worked more independently or asynchronously. There were 172 students enrolled in the Economics and Personal Finance course with 150 participating in this study for an 87.2% participation rate for this school.

High School 2

With an enrollment of 951 during the 2012-2013 school year, High School 2 was the smallest of the three schools. High School 2 had one principal and two assistant principals. This school operated with an instructional staff of 74 on an A/B block

schedule. In an A/B block schedule students take four classes daily, one of which met

every day. This school had block class periods of 95 minutes and a period (third period)

that met every day for 55 minutes (see Table 4.9—High School 2 and 3—Bell Schedule).

Table 4.9

High School 2 and 3—Bell Schedule

Time	Period
8:50	Warning Bell
8:55 – 9:05 (15 min.)	Homeroom
9:10 – 10:45 (95 min.)	First Period
10:50 – 12:25 (95 min.)	Second Period
12:30 – 1:55	Third Period and Lunch Rotations
12:30 – 12:55 (25 min.)	First Lunch
1:00 – 1:55 (55 min.)	Instructional Time
12:30 – 12:55 (25 min.)	Instructional Time
1:00 – 1:25 (25 min.)	Second Lunch
1:30 – 1:55 (25 min.)	Instructional Time
12:30 – 1:25 (55 min.)	Instructional Time
1:30 – 1:55 (25 min.)	Third Lunch
2:00 – 3:35 (95 min.)	Fourth Period

Source: High School 2's website

High School 2 had a predominately white, not Hispanic origin, student population

with 83.07% reporting white as their race; however, this school had a larger black, not

Hispanic origin, student population than the other two high schools with 11.67%

reporting their race as black (see Table 4.6—Three High Schools—Demographics 2012-

2013). According to the Virginia Department of Education, 50.2% of the students in this

high school were economically disadvantaged (Virginia Department of Education, 2013).

During the 2012-2013 school year, High School 2 had 222 students enrolled in an AP

course with 21.9% of students taking the Advanced Placement test. Additionally, 179

total CTE credentials were earned by students in this school during the 2012-2013 year

school (see Table 4.7—School Information). High School 2 had 47.6% of its students

graduate in 2013 with an Advanced Diploma and 45.3% with a Standard Diploma (see

Table 4.8—School Information—Diploma Type).

This high school offered five sections of the blended learning general education

Economics and Personal Finance course during the 2012-2013 school year. Two teachers

taught this course in two desktop computer labs. Staker and Horn (2012) would classify

the blended learning model utilized at this school as the Flex Model. There were 129

students enrolled in the Economics and Personal Finance course with 115 participating in

this study for an 89.1% participation rate for this school.

High School 3

The third high school in this study, High School 3, had a student enrollment of

1,110 for the 2012-2013 school year. This high school had one principal and two assistant

principals with an instructional staff of 84. Operating on an A/B schedule, High School

3's schedule was the same as High School 2's schedules (see Table 4.9—High School 2

and 3—Bell Schedule). Similar to the other two high schools, this school had a

predominately white, not Hispanic origin, student population with 89.82% reporting

white as their race (see Table 4.6—Three High Schools—Demographics 2012-2013).

According to the Virginia Department of Education, High School 3 had a 48.0%

economically disadvantaged student population (Virginia Department of Education,

2013). High School 3 had 273 students enrolled in an AP course with 24.23% of students

taking the Advanced Placement test. Additionally, 143 total CTE credentials were earned

by students in this school during the 2012-2013 year school (see Table 4.7—School

Information). This high school had 41.95% of its students graduate in 2013 with an

Advanced Diploma, 48.69% with a Standard Diploma, and 5.24% graduated with a

special diploma (see Table 4.8—School Information—Diploma Types).

High School 3 offered four sections of the blended learning general education

Economics and Personal Finance course during the 2012-2013 school year. Two teachers

taught this course in two desktop computer labs and a third teacher utilized laptops in a

traditional classroom. Staker and Horn (2012) would classify the blended learning model

utilized at this school as the Flex Model even though one section used laptops in a

traditional classroom. There were 89 students enrolled in the Economics and Personal

Finance course with 77 participating in this study for an 86.5% participation rate for this

school.

Conclusion

Three high schools in a Central Virginia public school division were the center of

this study. This district had approximately 10,300 students in grades kindergarten through

grade 12 during the 2012-2013 school year. A majority (85.22%) of the students in this

district were reported as white, not Hispanic origin according to the Virginia Department

of Education. The focus of this study was students in grades 9-12 enrolled in a blended

learning Economics and Personal Finance course. In the past several years, the K-12

education environment has seen an increased interest in blended learning (Picciano et al.,

2010). The Commonwealth of Virginia has passed legislation requiring students to earn

one credit in an online learning program prior to graduation as of July 1, 2013 (Virginia

General Assembly Legislative Information System, 2014). Additionally, Virginia has

added to its graduation requirements the need for students to take a course in Economics

and Personal Finance. Furthermore, students are required to earn a career and technical

education (CTE) credential. CTE credentials can be earned through a board-approved credential test.

The school district in this study has chosen to combine these graduation requirements into a single course. Students in this study were enrolled in a blended learning Economics and Personal Finance course, and those seeking a standard diploma were required to earn a CTE credential. This school district had a strong academic program with one-third of all high school students taking an Advanced Placement course and an on-time graduation rate of 90.7%.

CHAPTER 5: RESULTS

This chapter presents data in three sections. First, the descriptive statistics are explored. Data for this section were gathered utilizing the school district's SIS and questions from the student survey results. Second, questions from the student survey are presented along with emerging themes from the open-ended questions. This section is divided into subsections based on the student survey question categories. Categories regarding technology, self-efficacy, course organization, quality of instruction, and student satisfaction are explored. Third, an examination of the research questions are conducted as they relate to the data collected. This chapter concludes with a summary and ideas for further investigation.

Descriptive Statistics

The purpose of this study was to measure student success and satisfaction in a blended learning general education Economics and Personal Finance course. This section explores the data from the school district's SIS and general questions related to gender, grade level, and school from the student survey. The raw data from the online student survey (SurveyMonkey) was first exported into Microsoft Excel (2013) as was the raw data from the school district's SIS. Participants responded to survey questions with answers ranging from strongly agree to strongly disagree. Responses were converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or disagree, 2 disagree, and 1 strongly disagree. Data from both the survey and school district's SIS were then imported into IBM Statistical Package for the Social Sciences (SPSS) Graduate

Pack version 21 for Microsoft Windows 2007. Additionally, questions from the student

survey regarding previous blended/online learning experience are presented in this

section.

The research sample consisted of secondary students in grades 9-12 enrolled in a

blended learning Economics and Personal Finance course from three high schools in a

Central Virginia school district. With a response rate of 87.7% a total of 342 students

participated in this study out of a possible 390. Non-participants were not in attendance

when surveys were conducted, therefore excluded from the data. No students opted out,

and all students present during survey days participated and submitted an Informed

Assent Agreement. A majority of those participating in the study were in the 10th grade

with 90.4%. The other three grades were not as well represented, with 9th grade at 3.5%,

11th grade at 2.6%, and 12th grade at 3.5% (student survey question 3). Three high

schools in this school district offered an Economics and Personal Finance course in a

blended learning format. High School 1 had 43.9% of the participants, High School 2 had

33.6%, and High School 3 had 22.5% (see Table 5.1—Participants by School and Table

5.2—Participants by Gender and School).

Table 5.1

Participants by School

	Percent	N
High School 1	43.9%	150
High School 2	33.6%	115
High School 3	22.5%	77

Notes: N = 342

Table 5.2

Participants by Gender and School

	% Female[1]	% Male[1]	N
High School 1	48.7%	51.3%	150
High School 2	47.0%	53.0%	115
High School 3	36.4%	63.6%	77

Notes: N = 342

Source: [1]Student Survey Question 2

A majority of the participants were white/not Hispanic, with 91.2% of the sample

reporting white as their race. Minorities were 0.6% American Indian/Alaska Native, 1.2%

Asian, 5.6% black/not Hispanic, and 1.5% two or more races non-Hispanic. Additionally,

there were 45.3% female and 54.7% male participants (see Table 5.3—Race/Ethnicity

and Gender).

Table 5.3

Race/Ethnicity[1] and Gender[2]

	Participants %[3]	District %[3]
American Indian/Alaska Native	0.6%	0.25%
Asian	1.2%	1.73%
Black, not Hispanic origin	5.6%	7.27%
Hispanic	0.0%	2.46%
Native Hawaiian/Pacific Islander	0.0%	0.06%
Non-Hispanic, two or more races	1.5%	3.02%
White, not Hispanic origin	91.2%	85.22%
Unspecified	0.0%	0.00%
Female[2]	45.3%	48.7%
Male[2]	54.7%	51.3%

Notes: Participants N = 342; District N = 10,313

Source: [1]Student Information System (SIS) and the Virginia Department of
Education ; [2]Student Survey Question 2
[3]Due to rounding, numbers may not total 100%

According to question 5 on the student survey, only 12.6% of the students

participating in this study had previously taken a blended/online learning course with a

majority of those students (7.9%) only having taken one blended/online learning course.

Moreover, half (48.8%) of the students who took a blended/online learning course rated

their experience as poor (see Table 5.4—Satisfaction with Previous Blended/Online

Learning Course).

Table 5.4

Satisfaction with Previous Blended/Online Learning Course

	Percent	N
Positive	14.0%	6
Neutral	37.2%	16
Poor	48.8%	21

Notes: N = 43
Source: Student Survey Question 7

An analysis of student grades in the blended learning Economics and Personal

Finance course indicated that students performed well in the course with three-fourth,

75%, of the students earning a grade of a C or better with the average course grade being

82.4%. 16.7% of students earned an A, 34.2% a B, and 23.7% earned a C (see Table

5.5—Grade Expected vs. Grade Earned). Question 18 of the student survey asked

respondents to give the grade they expected to earn in the Economics and Personal

Finance course. Table 5.5 provides that data from this question along with course grades

earned which was exported from the SIS (see Table 5.5—Grade Expected vs. Grade

Earned). Student overall GPA ranged from 0.77 to 4.30 with the Economics and Personal

Finance course with a mean GPA of 2.79. Table 5.5 compares participant GPAs,

examining overall grade point averages with and without the Economic and Personal

Finance course factored in (see Table 5.6—Overall GPA—with and without Economics

Course).

Table 5.5

Grade Expected vs. Grade Earned

Expected	What grade do you expect to earn for the year in the Economics and Personal Finance course?					
Earned	Actual grade earned.					

	A	B	C	D	F	N
Expected[1]	20.8%	40.8%	22.3%	9.0%	6.1%	341*
Earned[2]	16.7%	34.2%	23.7%	17.0%	8.5%	342

Due to rounding, numbers may not total 100%
Source: [1]Student Survey Question 18; [2]Student Information System (SIS)
*One student did not answer this question on the Student Survey

Table 5.6

Overall GPA—with and without Economics Course

	GPA with Course	GPA w/o Course
4.00 & up	8.2%	4.4%
3.00-3.99	33.6%	31.6%
2.00-2.99	40.4%	43.9%
1.00-1.99	15.5%	17.8%
0.00-0.99	2.3%	2.3%

Notes: N = 342
Source: Student Information System (SIS)

In order to graduate from a public high school in Virginia, students entering the ninth

grade for the first time in the 2013-2014 school year are required to have one credit

earned through an online course. Additionally, students seeking a standard diploma will

need to "earn a board-approved career and technical education credential" (Virginia

Department of Education, 2013). A national standardized Financial Literacy Certification

(CFL) test was given to students enrolled in the blended learning Economic and Personal

Finance course to satisfy the graduation requirement set forth by the Virginia Department

of Education regarding Career and Technical Education (CTE) credentials.

This CFL test has a pass cut score of 64. Of the 315 students who took the test,

76.2% passed and the mean score was 71.9% (see Table 5.7—CFL Financial Literacy

Test). Out of the 342 participants in the blended learning Economics and Personal

Finance course, 27 students did not take the test. The percent of students passing the CFL

test mirrors that of students earning a C or better in the course.

Table 5.7

CFL Financial Literacy Test

	Percent	N
Pass	76.2%	240
Fail	23.8%	75

Notes: N = 315
Source: District's School Guidance Program

Survey Question Results

In this section, the data from the student survey are presented. Survey questions

were divided into categories related to technology, student self-efficacy, course

organization, quality of instruction, and student satisfaction.

Technology

On the survey, participants were asked four (questions 13a-13d) technology

related questions ranging from technology skill level to expectations for technology

usage within the Economics and Personal Finance course. Participants responded to these

questions with answers ranging from strongly agree to strongly disagree. Responses were

converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or

disagree, 2 disagree, and 1 strongly disagree. Questions from this section of the survey

are provided in Table 5.8 along with the data representing participants' responses to

questions 13a-13d (see Table 5.8—Technology).

The data indicated that a majority of participants believed their computer skills

were proficient (79.7%) and that they were able to obtain assistance with technology, if

needed, during the Economics and Personal Finance course (68.8%). However, only half

of the participants believed expectations for the use of technology within the Economics

and Personal Finance course were clearly communicated (52.8%). Additionally, only

60.5% of participants believed the technology where they completed most of their course

was sufficient.

Conclusions drawn from the results of the technology related questions suggested

that a majority of participants were well equipped with the necessary technology skills

required for this course; however, expectations regarding technology skills were not

communicated effectively. Moreover, the technology utilized by participants was not as

sufficient as it needed to be.

Table 5.8

Technology	
Q13a	My computer skills are proficient.
Q13b	The expectations for the use of technology within the Economics and Personal Finance course were clearly communicated.
Q13c	The technology where I completed most of my Economics and Personal Finance course was sufficient.
Q13d	I was able to obtain assistance with technology, if needed, during the Economics and Personal Finance course.

Survey Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	N	Mean	% Agreement
Q13a	120	151	47	12	10	340	4.06	79.7%
Q13b	43	137	103	34	24	341	3.41	52.8%
Q13c	54	151	71	38	25	339	3.50	60.5%
Q13d	82	152	67	17	22	340	3.75	68.8%

Source: Student Survey Questions 13a-13d

Student Self-Efficacy

Self-efficacy, or the belief one has in his own ability, potentially could affect the

completion of a task. Within the self-efficacy section of the survey participants

responded to questions regarding their motivation, self-discipline, problem-solving,

communication and reading skills, and their ability to complete assigned tasks. In this

section of questions participants were asked to respond to six questions (questions 14a-

14f) based on their agreement with the statement. Participants responded to these

questions with answers ranging from strongly agree to strongly disagree. Responses were

converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or

disagree, 2 disagree, and 1 strongly disagree. Questions from this section of the survey

are provided in Table 5.9 along with the data representing participants' responses to

questions 14a-14f (see Table 5.9—Student Self-Efficacy).

Participants were evenly split on their responses to whether they enjoyed school

with just over one-third in agreement that they enjoyed school (36.5%). Approximately

another third were neutral regarding their enjoyment of school stating that they neither

agreed or disagreed with the statement (35.0%). A majority of the participants believed

that they were highly motivated and self-disciplined with 64.8% either strongly agreeing

or agreeing with the statement that, "I am highly motivated and self-disciplined." In

regards to communication skills, a majority of the participants believed that their writing

and communication skills were better than average (65.4%). Additionally, more than

three-fourths of participants believed that they tried to solve problems and worked

through difficulties independently before seeking assistance (78.9%). An overwhelming

number of participants (86.9%) believed that they could read and follow detailed

instructions on their own. However, only 60.8% of participants believed they could set a

personal schedule and complete assigned work by the required dates.

    In general, these data indicated that a third of the participants were in agreement

that they enjoyed school and another third were neutral regarding this statement. A

majority of the participants believed that they were highly motivated and had

communication skills that were better than average. A large percentage of participants

believed that they could solve problems independently and had the ability follow detailed

instructions; however, completing assigned work by the required deadline was a

challenge.

Table 5.9

Student Self-Efficacy

Q14a	I enjoy school.
Q14b	I am highly motivated and self-disciplined.
Q14c	I can set a personal schedule and complete assigned work by the required dates.
Q14d	My writing and communication skills are better than average.
Q14e	I try to solve problems and work through difficulties independently before seeking assistance.
Q14f	I can read and follow detailed instructions on my own.

Survey Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	N	Mean	% Agreement
Q14a	33	91	119	44	53	340	3.02	36.5%
Q14b	73	148	90	18	12	341	3.74	64.8%
Q14c	61	145	95	25	13	339	3.64	60.8%
Q14d	72	150	93	15	9	339	3.77	65.4%
Q14e	98	171	52	12	8	341	3.99	78.9%
Q14f	121	172	36	4	4	337	4.19	86.9%

Source: Student Survey Questions 14a-14f

Course Organization

Eight of the survey questions (questions 15a-15h) asked participants to reflect on the organization of the Economics and Personal Finance course. Participants were asked questions that dealt with the general organization and format of the course; the clarity of course procedures and instructions; the user-friendliness of the online navigation; whether course activities, assignments, and assessments reflected course goals; and if feedback was provided in a timely manner. Participants responded to these questions with answers ranging from strongly agree to strongly disagree. Responses were converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or disagree, 2 disagree, and 1 strongly disagree. Questions from this section of the survey are provided in Table 5.10 along with the data representing participants' responses to questions 15a-15h (see Table 5.10—Course Organization).

Only 40.9% were in an agreement with the statement that the Economics and Personal Finance course was well organized, whereas approximately one-third (29.4%) of participants responded that they neither agreed nor disagreed and approximately another third (29.7%) disagreed or strongly disagreed. Nearly half of the survey participants indicated that they believed the course procedures were clearly outlined (48.2%) and that the course activities reflected course goals (47.4%). Regarding the online navigation for the Economics and Personal Finance course, over half of the participants believed it to be user-friendly (56.5%). Additionally, 56.5% of participants believed that the course assessments e.g., quizzes, tests, etc. reflected course content, 53.2% believed that the instructions were clear for all materials and course activities, and 68.6% believed assignment and test grades were provided in a timely manner. Despite the overall

agreement in the other course organization categories, only a quarter (26.0%) of

participants liked the format of the Economics and Personal Finance course when

compared to other courses—other courses referring to those in a non-blended learning

environment. Moreover, nearly half (47.9%) of participants responding to this question

disagreed or strongly disagreed with the statement, "I like the format of the Economics

and Personal Finance course when comparing it to other courses" with 106 participants,

almost a third (31.4%), strongly disagreeing.

Conclusions drawn indicated that participants in this study did not prefer a

blended learning format to a traditional learning environment. Additionally, those in this

study believed that this course was not well organized. However, just over half of the

participants believed that the online navigation was user-friendly, the instructions were

clear for all materials and course activities, and the course assessments reflected the

course content. Just under half of the participants believed that the course procedures

were clearly outlined and course activities reflected course goals.

Table 5.10

Course Organization	
Q15a	The Economics and Personal Finance course was well organized
Q15b	Course procedures were clearly outlined.
Q15c	The online navigation in the Economics and Personal Finance course was user-friendly.
Q15d	Instructions were clear for all materials and course activities.
Q15e	Course activities reflected course goals.
Q15f	Course assessments (e.g. quizzes, tests, etc.) reflected course content.
Q15g	Assignment and test grades were provided in a timely manner.
Q15h	I like the format of the Economics and Personal Finance course when comparing it to other courses (other meaning those not online).

Survey Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	N	Mean	% Agreement
Q15a	24	115	100	47	54	340	3.02	40.9%
Q15b	25	139	101	41	34	340	3.24	48.2%
Q15c	34	158	81	32	35	340	3.36	56.5%
Q15d	30	151	88	38	33	340	3.31	53.2%
Q15e	34	127	105	35	39	340	3.24	47.4%
Q15f	36	155	81	29	37	338	3.37	56.5%
Q15g	70	162	58	21	27	338	3.67	68.6%
Q15h	30	58	88	56	106	338	2.56	26.0%

Source: Student Survey Questions 15a-15h

Quality of Instruction

Participants were asked six questions (16a-16f) on the survey concerning the

quality of instruction in the blended learning Economics and Personal Finance course.

Questions on this section of the survey asked participants to reflect about the

management of the learning environment, the timeliness of the teacher's response to

questions, the opportunities to interact with other students, the use of teaching methods

and activities that reinforced course concepts, and the feedback the teacher provided on

assignments along with any additional assignments the teacher provided. Participants

responded to these questions with answers ranging from strongly agree to strongly

disagree. Responses were converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither agree or disagree, 2 disagree, and 1 strongly disagree. Questions from this section of the survey are provided in Table 5.11 along with the data representing participants' responses to questions 16a-16f (see Table 5.11—Quality of Instruction).

A majority of the participants were in agreement that the teacher managed the learning environment well (66.5%), and nearly three-fourths of the participants believed that the teacher responded to student questions in a timely manner (73.3%). However, only approximately half of the participants believed that the teacher used learning activities that provided opportunities for interaction among students (48.8%) and that the teacher used teaching methods and activities that reinforced concepts taught online (50.2%). Respondents were more favorable regarding the feedback the teacher provided on assignments (57.3%), and additional assignments the teacher provided enhanced concepts taught online (55.9%).

These findings indicated that a majority of the participants believed that the learning environment was managed well, the teacher responded to questions in a timely manner, feedback on assignments was provided, and the additional assignments were consistent with the content taught online. However, respondents were less favorable with the opportunity to interact with other students in the course. Moreover, only half of the participants believed that the teaching methods and activities reinforced concepts that were taught online.

Table 5.11

Quality of Instruction
Q16a	The teacher managed the learning environment well in the Economics and Personal Finance course.
Q16b	The teacher responded to student questions in a timely manner.
Q16c	The teacher used learning activities that provided opportunities for interaction among students.
Q16d	The teacher used teaching methods and activities that reinforced concepts that were taught online.
Q16e	The teacher provided helpful feedback on assignments.
Q16f	The teacher provided additional assignments, etc. consistent with concepts taught online.

Survey Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	N	Mean	% Agreement
Q16a	82	144	70	23	21	340	3.71	66.5%
Q16b	88	162	53	23	15	341	3.84	73.3%
Q16c	59	106	88	47	38	338	3.30	48.8%
Q16d	59	112	94	40	35	340	3.35	50.2%
Q16e	74	119	83	36	25	337	3.54	57.3%
Q16f	66	123	80	40	29	338	3.46	55.9%

Source: Student Survey Questions 16a-16f

Student Satisfaction

The student survey contained seven questions (questions 17a-17g) that addressed

student satisfaction. Participants were asked to reflect on their the level of enjoyment

regarding the course, whether their expectations were met, whether the course was

engaging and interesting, whether their knowledge in the area increased, whether they

found the course to be challenging, whether they liked the ability to work at their own

pace, and to reflect on their overall satisfaction with the course. Participants responded to

these questions with answers ranging from strongly agree to strongly disagree. Responses

were converted to a Likert Scale with 5 representing strongly agree, 4 agree, 3 neither

agree or disagree, 2 disagree, and 1 strongly disagree. Questions from this section of the

survey are provided in Table 5.12 along with the data representing participants' responses to questions 17a-17g (see Table 5.12—Student Satisfaction).

Over one-third of all participants (35.7%) strongly disagreed with the statement that they enjoyed the Economics and Personal Finance course with only 16.1% in agreement regarding this statement. This course met the expectations of 21.1% surveyed participants, and only 12.3% believed the course to be engaging and interesting. Less than half (45.3%) of the participants believed that the Economics and Personal Finance course increased their knowledge in this subject area, while 40.8% responded in agreement that the course was very challenging. However, a majority of the participants (56.6%) agreed that they liked the ability to work at their own pace. Significant to this study was the overall participant satisfaction with the Economics and Personal Finance course. Only 23.5% of participants were in agreement regarding their overall satisfaction, nearly half of the participants (45.1%) disagreed with the statement that "Overall, I was satisfied with the Economics and Personal Finance blended learning environment," and approximately one-third were neutral (31.3%).

Survey results from this section of questions indicated that participants were not in agreement with the statement "I enjoyed the Economics and Personal Finance course," nor did they find the course to be engaging and interesting. Participants were more in agreement regarding the statements "the Economics and Personal Finance course increased my knowledge in this subject area" and "I found the Economics and Personal Finance course to be very challenging;" however, these participants were in the minority. Respondents were more favorable regarding the ability to work at their own pace while in this course. In response to overall satisfaction in the Economics and Personal Finance

course, a majority of participants did not agree with the statement that "Overall, I was

satisfied with the Economics and Personal Finance blended learning environment."

Table 5.12

Student Satisfaction

Q17a	I enjoyed the Economics and Personal Finance course.
Q17b	The Economics and Personal Finance course met my expectations.
Q17c	I found the Economics and Personal Finance course to be engaging and interesting.
Q17d	The Economics and Personal Finance course increased my knowledge in this subject area.
Q17e	I found the Economics and Personal Finance course to be very challenging.
Q17f	I liked the ability to work at my own pace in the Economics and Personal Finance course.
Q17g	Overall, I was satisfied with the Economics and Personal Finance blended learning environment.

Survey Question	Strongly Agree	Agree	Neither Agree or Disagree	Disagree	Strongly Disagree	N	Mean	% Agreement
Q17a	11	44	86	78	122	341	2.25	16.1%
Q17b	14	58	109	57	101	339	2.49	21.2%
Q17c	8	34	84	89	127	342	2.14	12.3%
Q17d	28	127	92	30	65	342	3.07	45.3%
Q17e	55	83	105	52	43	338	3.16	40.8%
Q17f	69	124	78	23	47	341	3.43	56.6%
Q17g	13	67	107	39	115	341	2.48	23.5%

Source: Student Survey Questions 17a-17g

Emerging Themes

The student survey contained three open-ended questions allowing participants to

provide an unstructured response regarding the Economic and Personal Finance course.

According to Johnson and Christensen (2012), responses to open-ended questions should

be coded through the examination of survey responses, and meaningful responses should

be sorted into inductive categories. Categories or themes for this study were generated

through the frequency of concepts in participant responses and the three most frequent responses for each question were reported.

All responses to these questions were exported from the online student survey (SurveyMonkey) and then imported into IBM SPSS Text Analytics for Surveys (Version 4.0.1) and Microsoft Excel (2013) for analysis. SPSS Text Analytics was used to extract concepts and create categories from the data imported from the open-ended questions. Microsoft Excel was used to further refine results of emerging themes that were not captured in SPSS Text Analytics. For example, the word "pace" emerged in SPSS Text Analytics 70 times; however, misspellings such as "pase" and "place" were not captured, nor were related concepts such as "work on at my own speed," "in my own time," or "work as slow or fast as you want."

Question 19: What did you like best about the Economics and Personal Finance course?

Survey question 19 asked participants to respond to the following: "What did you like best about the Economics and Personal Finance course?" Of the 342 participants, 303 responded to this question (88.6%). Categories that emerged from SPSS Text Analytics included the following: Ability to work at own pace, ability to review for and retake tests/quizzes, and the teacher in the classroom. Out of those responding to this question, 24.8% stated that they liked "nothing" best about the course.

Theme 1. Participants indicated that the ability to work at their own pace or "on your own time and at your own speed" as something they liked about the course (31.4%). "Being able to work at my own pace" or "I could work at my own pace" were statements made by several participants. The ability to work at one's own pace was also supported

by participant responses to question 17f in which a majority of the participants (56.6%) agreed that they liked the ability to work at their own pace. Additionally, participant responses to this question were consistent with the idea that a blended learning environment supports student learning allowing them to learn at the own pace (Black, 2002; De George-Walker & Keeffe, 2010; Ocak, 2010).

Other participants extended the idea by stating that they were able to work ahead or catch up if they fell behind. One participant stated they liked "the ability to get ahead if I work on my own time, or if I'm behind to catch up. It's nice to not have to be on track with the rest of my class at that same time." Still others focused on the fact that they could continue working on their coursework from home, stating that they liked "the ability to be able to work on my own from my house or at school was very nice considering that I could work at my own pace and even get ahead if I wanted to."

***Theme 2*.** Several participants indicated that they liked having the teacher in the classroom as the best part of the Economics and Personal Finance course (6.6%). Many of those responding to this question simply stated "the teacher." Participants reported that they liked to have the teacher available when they had questions or did not understand a concept. One participant stated, "I really like how our teachers will help us if we don't understand something." Another reported "how helpful, useful, and well knowledged the teacher was at explaining information." The support of the teacher in a blended learning environment is critical (Evergreen Education Groups, 2010). According to Kenney and Newcombe (2011), using a blended approach changes the role of the teacher from a "bank of knowledge from which students withdraw information" to a coach. As the teacher's role changes and students take more control over their own learning, the ability

to personalize learning and address diverse learning styles is greatly enhanced. (Picciano, 2006; Rapp, 2011).

The theme of having the teacher in the classroom was also reported by several participants in question 21. This question asked participants to identify anything else about their experience with the Economics and Personal Finance course they would like to express. Information regarding the teacher (9.3%) both positive and negative experiences were shared. One participant reported, "I have learned more when the actual teacher taught us." Others stated that having a teacher in the classroom was helpful, "The teacher I have was very helpful." Another participant responded, "There is no substitute for a teacher giving lessons and assignments theirself. [O]nline lessons do not provide the level of understanding of a topic a teacher can. [T]he online lessons serve as useless busy work and do not reinforce the knowledge provided by the online lessons." One participant had a different experience stating, "It would be nice to just take the whole personal finance class online and not have to have a teacher holding you up." Still another participant had this to say regarding their blended learning experience, "It was very hard to keep motivated to continue with keeping up with [t]he lessons, I feel it would be better taught just all online or all from the te[a]cher."

Theme 3. Additionally, participants reported that they liked the ability to review for and retake quizzes and tests (5.9%). Those participants responding to this question believed that the online assessments were structured in a way that allowed them to review important material prior to taking the assessment and to retake the assessment if necessary. One participant stated, "I liked that you could review before a test in order to get a passing grade." Another expressed, "You can work individually on your own. When

you do not do well on the quizzes or tests, you can retake them and do better." The ability

to allow students to retake assessments and personalize instruction is a powerful

component of the blended learning environment (Picciano, 2006; Rapp, 2011). If a

student is performing poorly, the teacher can require the student to go back through a

lesson or retake an assessment.

Question 20: What suggestions would you make for improving the

Economics and Personal Finance course?

Question 20 allowed participants to offer suggestions regarding the improvement

of the course. There were 312 participants out of the 342 who responded to this question

(91.2%). Several themes emerged as to what participants believed needed to be changed

in order to improve upon the course. Among those suggestions were as follows: the

videos, especially related to the length; quizzes/tests; and activities. Of those responding

to this question, 8.3% stated that nothing needed to be improved and 12.2% reported that

the course should not be required. Many of those participants simply stated that the

school needed to "get rid of it" referring to the course or "get rid of the online portion."

Theme 1. The videos within the Economics and Personal Finance course sparked

many participants to comment. Those responding to this question referenced the lecture

videos as an area of improvement (19.6%). Most of the participants who cited the videos

as an area of improvement reported that the length of the videos were too long. One

participant stated, "The videos need to be shorter because they are too long and drawn out

which make me start to drift off and not pay attention." Another participant reported, "It

would be nice if the videos weren't so long." Not only did participants report that the

videos were too long, they also stated that they were boring. "The videos are very long

and boring. Also the videos were to[o] confusing and I did not learn anything." Several

simply stated that the "videos are very boring." One participant expressed, "the videos

could be more entertaining." Additionally, several participants reported that videos

should not be used: "No videos!" "Make no video," and "Get rid of the videos," were just

a few of the statements that referenced videos. This theme was also reported in question

21. Participants expressed that the online videos lessons were boring (5.4%), with several

expressing that "It was boring" (5.0%) referencing the course in general. One

participants reported, "[I] think that the videos on[line] are extremely too long and it's

hard to keep at the pace which is expected of you when you have to watch twenty plus

minute videos." Another stated, "Videos are too long and drawn out." Concerning the

online teachers, one participant stated, "The online teachers were boring." Another

reported, "The online teaching was often rather boring. There is no level of engagement

in this format." It is through the use different mediums that a blended learning

environment supports different learning styles and differentiation (Gedik et al., 2012;

Picciani, 2006; O'Connor et al., 2011).

  Theme 2. Another area that participants reported as needing improvement was in

reference to assessments, specifically quizzes and tests (15.1%). Many participants

believed that the assessments did not reflect what was being taught. One such participant

reported that "the quizzes and tests have questions that aren't always on the direct

instruction, which makes it difficult." Another stated that what needed improving was to

provide "tests/quizzes that reflect the things we've learned better." Still another

participant, "The quizzes also need to be more related to the subject matter." The difficult

level of the assessments was another area participants believed needed improvement.

Some believed the assessments were too challenging. One reported, "To make the quizzes and test not so challenging." Additionally, a few participants believed that it would be helpful to see what questions were incorrect and what the correct answer was. "It would also be helpful if you could see what question you got wrong on tests," stated one participant. Moreover, a few participants believed that the assessment should not prevent them from moving onto the next lesson. Several participants expressed frustration in the fact that they could not move on to the next lesson until they received a passing test score and that the teacher in the classroom had to review their work. One participant stated, "Make it so you can go on if you don't pass a test." Another expressed, "I would say that the teacher shouldn't have to review our quizzes and test because that wastes a bunch of time."

Course grading was a topic that sparked many responses to question 21 (6.4%). Several students believed that the way grades were calculated was not fair, specifically the split between online graded assessments and those given in the face-to-face environment. One participant reported that they did not like that the online assignments were 60% of their course grade. Others expressed that "The online grading system doesn't grade accurately," referencing that many of the short answers and journals would be graded as incorrect because they did not match exactly the terminology within the online system. Another participant expressed frustration with the lack of time needed to complete assignments, "[W]ith having class work and computer work combined, it makes it extremely dif[f]icult to keep up my grade. [T]here are to[o] many assignments in a short period of time." Additionally, 6.1% of participants responding to this question made reference to the quizzes and tests. Participants reported that they believed some of the

questions on quizzes and tests were not taught in the lesson. They also expressed that

they believed there were too many assessments. Moreover, they reported that an

assessment should not be given by the face-to-face teacher covering the same information

as the online assessment.

Theme 3. Participants responding to this question also cited that the activities in

the Economics and Personal Finance course needed improving (7.4%). Those who

commented on the activities were split as to what needed improving. Several participants

stated that more activities were needed; however, other reported that there should be

fewer activities. Other participants commented that the activities needed to be "more fun

and engaging." One participant stated, "Make the activities more relatable to the tests and

quizzes."

Question 21: Is there anything else about your experience with the

Economics and Personal Finance course that you would like for us to know?

The nature of question 21 provided participants with the opportunity to share any

additional information regarding their blended learning experience. Of the 342

participants, 280 responded to this question (81.9%) with 112 of those responding that

they had nothing additional to share (40.0%). Other answers to this question varied.

Participants reported information regarding the teacher, both negative and positive; others

expressed concerns about the grading and quizzes/tests; and still others mentioned that

the videos were boring. These themes were consistent with themes reported in the other

two open-ended questions (questions 19 and 20).

Research Questions

The purpose of this study is to evaluate a single course offered in a blended learning environment in a Central Virginia public school district—specifically analyzing the blended learning model in a general education Economics and Personal Finance course. The evaluation of this district's blended learning program will need to answer the following questions:

- How satisfied are students with a blended learning environment in a general education Economics and Personal Finance course?

    - H_1: Students in a blended learning environment will be satisfied with their experience in a general education Economics and Personal Finance course.

- Is a student's course grade affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

    - H_{2a}: A student's course grade will not be affected by the technology in a blended learning course.

    - H_{2b}: A student's course grade will not be affected by self-efficacy in a blended learning course.

    - H_{2c}: A student's course grade will not be affected by the course organization in a blended learning course.

    - H_{2d}: A student's course grade will not be affected by the quality of instruction in a blended learning course.

    - H_{2e}: A student's course grade will not be affected by student satisfaction in a blended learning course.

- - H_{2f}: Students with a high GPA will have a higher final course grade in a blended learning course.

- Is a student's grade on a credential test affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

  - - H_{3a}: A student's grade on a credential test will not be affected by the technology in a blended learning course.

    - H_{3b}: A student's grade on a credential test will not be affected by self-efficacy in a blended learning course.

    - H_{3c}: A student's grade on a credential test will not be affected by the course organization in a blended learning course.

    - H_{3d}: A student's grade on a credential test will not be affected by the quality of instruction in a blended learning course.

    - H_{3e}: A student's grade on a credential test will not be affected by student satisfaction in a blended learning course.

    - H_{3f}: Students with a high GPA will have a higher grade on a credential test in a blended learning course.

    - H_{3g}: A student's grade on a credential test will be positively affected by the student's final grade in a blended learning course.

Student Satisfaction.

This section addresses the following research hypothesis.

- H_1: Students in a blended learning environment will be satisfied with their experience in a general education Economics and Personal Finance course. **(Not Supported)**

Overall, participants were not satisfied with their blended learning experience in the Economics and Personal Finance course. Only 23.5% of participants responded to question 17g with any level of agreement to the statement "Overall, I was satisfied with the Economics and Personal Finance blended learning environment," nearly half of the participants (45.1%) disagreed or strongly disagreed with this statement, and approximately one-third were neutral (31.3%) (see Table 5.12—Student Satisfaction). An analysis of variance was conducted to further examine data related to participant satisfaction reported in survey questions 17a-17g. These data were examined to determine the level of satisfaction between groups specifically between the three high schools.

As shown in Table 5.13, a one-way analysis of variance (ANOVA) was calculated on question 17a regarding the enjoyment level of participants in the Economics and Personal Finance course by school. The analysis was significant at the $p < 0.05$ level, $F(2, 338) = 2.94$, $p = 0.054$, $r^2 = 0.017$. Post hoc comparison using the Tukey HSD test indicated that a significant difference did exist between High School 1 ($M = 2.39$, $SD = 1.12$) and High School 3 ($M = 2.00$, $SD = 1.20$), $p = 0.043$. There was no significant difference between High School 1 ($M = 2.39$, $SD = 1.12$) and High School 2 ($M = 2.23$,

$SD = 1.18$), $p = 0.475$ in the level of enjoyment with regard to the Economics and

Personal Finance course, nor did a significance exist between High School 2 ($M = 2.23$,

$SD = 1.18$) and High School 3 ($M = 2.00$, $SD = 1.20$), $p = 0.385$. These results suggested

that students at all three high schools disagreed with the statement "I enjoyed the

Economics and Personal Finance course," with High School 1 slightly more neutral and

High School 3 more in disagreement.

Question 17b asked participants to rate their level of expectations met in the

Economics and Personal Finance course. The analysis was significant at the $p < 0.05$

level, $F(2, 336) = 9.11$, $p = 0.000$, $r^2 = 0.051$. Post hoc comparison using the Tukey HSD

test indicated that a significant difference did exist between High School 1 ($M = 2.75$, SD

$= 1.10$) and High School 3 ($M = 2.05$, $SD = 1.18$), $p = 0.000$. There was no significance

in participant course expectation between High School 1 ($M = 2.75$, $SD = 1.10$) and High

School 2 ($M = 2.44$, $SD = 1.26$), $p = 0.082$, nor did a significance exist between High

School 2 ($M = 2.44$, $SD = 1.26$) and High School 3 ($M = 2.05$, $SD = 1.18$), $p = 0.069$ with

regard to participant course expectation. These results suggested that High School 1 and

High School 2 were more neutral regarding course expectations than High School 3 in

that they disagreed with the statement "The Economics and Personal Finance course met

my expectations" (see Table 5.13—ANOVA Survey Questions 17a – 17g).

Participants were asked in question 17c if they found the Economics and Personal

Finance course to be engaging and interesting. Results for this question suggested that

there was a significance at the $p < 0.05$ level, $F(2, 339) = 4.41$, $p = 0.013$, $r^2 = 0.025$. Post

hoc comparison using the Tukey HSD test indicated that a significant difference did exist

between High School 1($M = 2.34$, $SD = 1.07$) and both High School 2 ($M = 2.01$, $SD =$

1.07), $p = 0.039$ and High School 3 ($M = 1.96$, $SD = 1.15$), $p = 0.036$. There was no

significance between High School 2 ($M = 2.01$, $SD = 1.07$) and High School 3 ($M = 1.96$,

$SD = 1.15$), $p = 0.952$ regarding participant engagement and interest. These data

suggested that participants at all three high schools were in disagreement with the

statement "I found the Economics and Personal Finance course to be engaging and

interesting." High School 1 was somewhat more neutral regarding their satisfaction as it

pertained to course engagement and interest, whereas High School 2 and High School 3

were more dissatisfied (see Table 5.13—ANOVA Survey Questions 17a – 17g).

An analysis of question 17d suggested that there was a significance at the $p < 0.05$

level when participants considered their level of satisfaction regarding whether the

Economics and Personal Finance course increased their knowledge in this subject area,

$F(2, 339) = 13.54$, $p = 0.000$, $r^2 = 0.074$. Post hoc comparison using the Tukey HSD test

indicated that a significant difference did exist between High School 1 ($M = 3.38$, $SD =$

1.12) and High School 3 ($M = 2.51$, $SD = 1.37$), $p = 0.000$. There was a significant

difference between High School 2 ($M = 3.08$, $SD = 1.18$) and High School 3 ($M = 2.51$,

$SD = 1.37$), $p = 0.008$, regarding participant satisfaction as it pertained to increased

subject area knowledge. No significant difference existed between High School 1 ($M =$

3.38, $SD = 1.12$) and High School 2 ($M = 3.08$, $SD = 1.18$), $p = 0.054$. These results

suggested that High Schools 1 and 2 were more neutral regarding their level of

satisfaction in terms of increased subject area knowledge, whereas High School 3

gravitated more toward disagreement with the statement presented in question 17d (see

Table 5.13—ANOVA Survey Questions 17a – 17g).

Question 17e asked participants to rate their agreement with the statement, "I found the Economics and Personal Finance course to be very challenging." The analysis was not significant at the $p < 0.05$ level, $F(2, 335) = 1.21$, $p = 0.301$, $r^2 = 0.007$. These data suggested that participants responding to this question at all three high schools, High School 1 ($M = 3.24$, $SD = 1.15$), High School 2 ($M = 3.19$, $SD = 1.13$), and High School 3 ($M = 2.97$, $SD = 1.53$) reported similar agreement regarding this question in that all three high schools were more neutral (see Table 5.13—ANOVA Survey Questions 17a – 17g).

Participants were asked in question 17f to rate their level of agreement with the statement, "I liked the ability to work at my own pace in the Economics and Personal Finance course." Results for this question suggested that there was a significance at the $p < 0.05$ level, $F(2, 338) = 8.59$, $p = 0.000$, $r^2 = 0.048$. Post hoc comparison using the Tukey HSD test indicated that a significant difference did exist between High School 1 ($M = 3.64$, $SD = 1.17$) and High School 3 ($M = 2.92$, $SD = 1.38$), $p = 0.000$. Additionally, a significant difference existed between High School 2 ($M = 3.48$, $SD = 1.25$) and High School 3 ($M = 2.92$, $SD = 1.38$), $p = 0.007$. However, there was no significance between High School 1 ($M = 3.64$, $SD = 1.17$) and High School 2 ($M = 3.48$, $SD = 1.25$), $p = 0.546$. These data suggested that High Schools 1 and 2 were more in agreement with the statement presented in this question, whereas High School 3 was more neutral (see Table 5.13—ANOVA Survey Questions 17a – 17g).

Question 17g asked participants to rate their overall satisfaction with the Economics and Personal Finance course. The analysis was significant at the $p < 0.05$ level, $F(2, 338) = 5.42$, $p = 0.005$, $r^2 = 0.031$. Post hoc comparison using the Tukey HSD test indicated that a significant difference did exist between High School 1 ($M = 2.69$, SD

= 1.18) and High School 3 ($M = 2.12$, $SD = 1.28$), $p = 0.003$. There was no significant

difference between High School 1 ($M = 2.69$, $SD = 1.18$) and High School 2 ($M = 2.46$,

$SD = 1.27$), $p = 0.301$, nor did a significance exist between High School 2 ($M = 2.46$, SD

= 1.27) and High School 3 ($M = 2.12$, $SD = 1.28$), $p = 0.145$. These data suggested that

High Schools 1 and 2 were more neutral regarding their overall satisfaction with the

Economics and Personal Finance course, whereas High School 3 was more in

disagreement with the statement, "Overall, I was satisfied with the Economics and

Personal Finance blended learning environment" (see Table 5.13—ANOVA Survey

Questions 17a – 17g).

Table 5.13

ANOVA Survey Questions 17a – 17g

		Sum of Squares	df	Mean Square	F	Sig.
I enjoyed the Economics and Personal Finance course. (Q17a)	Between Groups	7.897	2	3.949	2.940	.054
	Within Groups	453.915	338	1.343		
	Total	461.812	340			
The Economics and Personal Finance course met my expectations. (Q17b)	Between Groups	25.042	2	12.521	9.113	.000
	Within Groups	461.672	336	1.374		
	Total	486.714	338			
I found the Economics and Personal Finance course to be engaging and interesting. (Q17c)	Between Groups	10.445	2	5.223	4.409	.013
	Within Groups	401.534	339	1.184		
	Total	411.980	341			
The Economics and Personal Finance course increased my knowledge in this subject area. (Q17d)	Between Groups	39.006	2	19.503	13.536	.000
	Within Groups	488.448	339	1.441		
	Total	527.453	341			
I found the Economics and Personal Finance course to be very challenging. (Q17e)	Between Groups	3.704	2	1.852	1.206	.301
	Within Groups	514.347	335	1.535		
	Total	518.050	337			
I liked the ability to work at my own pace in the Economics and Personal Finance course. (Q17f)	Between Groups	26.561	2	13.281	8.586	.000
	Within Groups	522.782	338	1.547		
	Total	549.343	340			
Overall, I was satisfied with the Economics and Personal Finance blended learning environment. (Q17g)	Between Groups	16.380	2	8.190	5.420	.005
	Within Groups	510.781	338	1.511		
	Total	527.161	340			

Summary.

A summary of this section indicates that students in the Economics and Personal Finance course were overall dissatisfied with their experience. The most significant difference when comparing the three high schools regarding student satisfaction was between High School 1 and High School 3(see Table 5.14—Student Satisfaction

Comparison of Means). The participants at High School 1 were more neutral regarding their satisfaction, whereas participants at High School 3 were more dissatisfied with their experience in the blended learning course. This was evident in their responses to questions 17a-17g. Of the seven questions presented, a significant difference existed between these two schools in six of the questions.

Participant responses from High School 2 were between those of High School 1 and High School 3. A significant difference existed between High School 1 and High School 2 on question Q17c regarding the level of engagement and interest with the Economic and Personal Finance course with High School 1 more neutral and High School 2 dissatisfied. Significant differences were reported between High School 2 and High School 3 on questions Q17d and Q17f. Participants at High School 2 were more neutral in their belief that this course increased their knowledge in the subject, whereas participants at High School 3 believed this course did not increase their knowledge in this subject.

On question Q17f, participants at both High Schools 1 and 2 were more in agreement with the ability to work at their own pace; with High School 1 trending more toward strongly agreeing with the statement, and High School 3 was more neutral. This theme also emerged from the open-end questions in the student survey. 31.4% of participants expressed that the ability to work at their own pace was something they liked about the course. The ability to work at one's own pace is an important benefit of a blended learning environment as it has been shown to support student learning (Black, 2002; De George-Walker & Keeffe, 2010; Ocak, 2010). Additionally, previous research indicates that a blended learning environment enabled students to complete work at any

time according to their schedule and at any place (Brooks et al., 2010; Gedik et al. 2012; Leh, 2002; Singh, 2003). Two sections of the blended learning Economic and Personal Finance course were offered during High School 1's zero period in which students were able to work more independently than students in other sections of this course. This could explain why High School 1 tended more toward strongly agreeing with the statement "I liked the ability to work at my own pace in the Economic and Personal Finance course."

As indicated in question 17g, overall participants were not satisfied with the blended learning Economic and Personal Finance course. High School 1 and High School 2 were more neutral in their response, whereas High School 3 was more dissatisfied with their overall experience. These data did not support H_1: *Students in a blended learning environment will be satisfied with their experience in a general education Economics and Personal Finance course*.

Table 5.14

Student Satisfaction Comparison of Means

Q17a	I enjoyed the Economics and Personal Finance course.
Q17b	The Economics and Personal Finance course met my expectations.
Q17c	I found the Economics and Personal Finance course to be engaging and interesting.
Q17d	The Economics and Personal Finance course increased my knowledge in this subject area.
Q17e	I found the Economics and Personal Finance course to be very challenging.
Q17f	I liked the ability to work at my own pace in the Economics and Personal Finance course.
Q17g	Overall, I was satisfied with the Economics and Personal Finance blended learning environment.

Survey Question	High School 1	High School 2	High School 3
Q17a	2.39	2.23	2.00
Q17b	2.75	2.44	2.05
Q17c	2.34	2.01	1.96
Q17d	3.38	3.08	2.51
Q17e	3.24	3.19	2.97
Q17f	3.64	3.48	2.92
Q17g	2.69	2.46	2.12

Source: Student Survey Questions 17a-17g

Student Course Grades.

This section addresses the following research hypotheses:

- H_{2a}: A student's course grade will not be affected by the technology in a blended learning course. **(Supported)**

- H_{2b}: A student's course grade will not be affected by self-efficacy in a blended learning course. **(Supported)**

- H_{2c}: A student's course grade will not be affected by the course organization in a blended learning course. **(Supported)**

- H$_{2d}$: A student's course grade will not be affected by the quality of instruction in a blended learning course. **(Not Supported)**

- H$_{2e}$: A student's course grade will not be affected by student satisfaction in a blended learning course. **(Supported)**

- H$_{2f}$: Students with a high GPA will have a higher final course grade in a blended learning course. **(Supported)**

The data utilized to analyze the effect technology, self-efficacy, course organization, quality of instruction, student satisfaction, and GPA have on student course grades are derived from the student survey and the district's SIS. Questions in the student survey (see Appendix C—Student Survey) were grouped into the following categories as they may influence student achievement: Technology, Self-Efficacy, Course Organization, Quality of Instruction, and Student Satisfaction. Coefficient alpha (Cronbach's alpha) indicated to what degree items are interrelated and according to Johnson and Christensen (2012), "The size of coefficient alpha should generally be, at a minimum, greater than or equal to 0.70 for research purposes" (p. 142). The reliability coefficient supported combining participant responses in each of these questions into an overall construct for each category; therefore, new variables were created for each category from the student survey. See Appendix F—Survey Questions Mapped to Indices and Descriptive Statistics for reliability coefficient for each category.

A multiple regression analysis was conducted to determine if the indices of technology, self-efficacy, course organization, quality of instruction, and student satisfaction significantly impacted participants' final grade percent in a blended learning Economics and Personal Finance course. The results of the regression indicated that

60.0% of the variance of the participants' final grade were explained by technology, self-

efficacy, course organization, quality of instruction, student satisfaction, and GPA.

Student perceptions of the quality of instruction and GPA were significant predictors of

final course grade. GPA was the strongest predictor of final course grade (see Table

5.15—Predicting Final Grade in a Blended Learning Course). A one point increase in

GPA was associated with a 10 point increase in final grade.

Table 5.15

Predicting Final Grade in a Blended Learning Course

	Unstandardized Coefficients	Standardized Coefficients
	B	Beta
(Constant)	51.968***	
tech	-.388	-.028
self_eff	-.384	-.025
course_org	.472	.042
qual_inst	1.151***	.106
stu_sat	.166	.014
GPA	10.237***	.779

Notes: N = 342

$R^2 = .60$; Adjusted $R^2 = 0.59$; F value = 74.92

*Significant at 0.10; **Significant at 0.05; ***Significant at 0.01

Summary.

In summary, data in this section indicate that five of the six hypotheses were

supported. This study predicted that quality of instruction would not be related to the

final grade in a blended learning Economics and Personal Finance course but the results

indicated that it was. Therefore, the data did not support *H_{2d}: A student's course grade

will not be affected by the quality of instruction in a blended learning course*. GPA was

the strongest predictor of the final course grade supporting *H_{2f}: Students with a high

GPA will have a higher final course grade in a blended learning course*. All other

hypotheses were supported by the research. As predicted, none of the other factors were

significantly related to the final course grade (see Figure 5.1—Final Grade and Credential

Test Significance).

Student Grade on a Credential Test.

This section specifically addresses the following research hypotheses:

- H_{3a}: A student's grade on a credential test will not be affected by the technology in a blended learning course. **(Supported)**

- H_{3b}: A student's grade on a credential test will not be affected by self-efficacy in a blended learning course. **(Not Supported)**

- H_{3c}: A student's grade on a credential test will not be affected by the course organization in a blended learning course. **(Supported)**

- H_{3d}: A student's grade on a credential test will not be affected by the quality of instruction in a blended learning course. **(Not Supported)**

- H_{3e}: A student's grade on a credential test will not be affected by student satisfaction in a blended learning course. **(Supported)**

- H_{3f}: Students with a high GPA will have a higher grade on a credential test in a blended learning course. **(Supported)**

- H_{3g}: A student's grade on a credential test will be positively affected by the student's final grade in a blended learning course. **(Supported)**

The data utilized to analyze the influence of technology, self-efficacy, course

organization, quality of instruction, student satisfaction, GPA, and final course grade on

the student's grade on a credential test are presented in Table 5.16—Predicting Credential

Test Grade in a Blended Learning Course.

A multiple regression analysis was conducted to determine if the indices of

technology, self-efficacy, course organization, quality of instruction, and student

satisfaction significantly impacted participants' grade on a credential test in a blended

learning Economics and Personal Finance course. Additionally, the multiple regression

analysis included student GPA and final course grade. The results of the regression

indicated that 32.8% of the variance of the participants' grade on a CTE credential test

was explained by technology, self-efficacy, course organization, quality of instruction,

student satisfaction, GPA, and final course grade. Four of the variables were significant.

Student perceptions of the quality of instruction and final course grade were the strongest

predictors of student success on the CTE credential test, with the quality of instruction

negatively associated with the test and final course grade positively related to the CTE

credential test. Self-efficacy and GPA were also significant predictors of how a student

performed on the credential test with both positively related to the CTE credential test

(see Table 5.16—Predicting Credential Test Grade in a Blended Learning Course).

Table 5.16

Predicting Credential Test Grade in a Blended Learning Course

	Unstandardized Coefficients	Standardized Coefficients
	B	Beta
(Constant)	17.206***	
tech	2.029	.093
self_eff	3.466***	.146
course_org	-1.168	-.064
qual_inst	-3.302***	-.192
stu_sat	.276	.015
Final Course Grade	.429***	.256
GPA	5.053***	.243

Notes: N = 342

R^2 = .328; Adjusted R^2 = 0.311; F value = 19.19

*Significant at 0.10; **Significant at 0.05; ***Significant at 0.01

Summary.

The results of this section indicates that five of the seven hypotheses were supported by these data. The technology in a blended learning Economic and Personal Finance course did not affect students' grade on a CTE credential test, therefore supporting *H₃ₐ: A student's grade on a credential test will not be affected by the technology in a blended learning course*. Additionally, the data indicated that the organization of the blended learning course did not affect student grades on the CTE credential test supporting *H₃c: A student's grade on a credential test will not be affected by the course organization in a blended learning course*. Furthermore, the data indicated that student satisfaction in the course had no bearing on the CTE credential test grade supporting *H₃e: A student's grade on a credential test will not be affected by student satisfaction in a blended learning course*. The indices of technology, course organization, and student satisfaction did not significantly impact grades on the CTE credential test.

It was predicted that student self-efficacy would not affect the CTE credential test grade; however, the data indicated that self-efficacy did affect the grade on this test; therefore, *H$_{3b}$: A student's grade on a credential test will not be affected by self-efficacy in a blended learning course* was not supported in this study. Student self-efficacy was a significant predictor of student success on the CTE credential test as indicated by the data. A student's GPA prior to taking the blended learning Economics and Personal Finance course was significantly related to and a strong predictor of how successful a student did on the CTE credential test thus supporting *H$_{3f}$: Students with a high GPA will have a higher grade on a credential test in a blended learning course*.

The two most important predictors of student performance on the CTE credential test were student perceptions of the quality of instruction and final course grade. Students who rated the quality of instruction higher performed worse on the CTE credential test, which did not support *H$_{3d}$: A student's grade on a credential test will not be affected by the quality of instruction in a blended learning course*. On the other hand, students who performed better in the Economics and Personal Finance course performed better on the CTE credential test, which supported *H$_{3g}$: A student's grade on a credential test will be positively affected by the student's final grade in a blended learning course*. The negative relationship between the quality of instruction and student grades on the CTE credential test could be the result of students indicating they liked their instructor and rated them higher when they received better grades; however, when final course grade was controlled, the negative relationship between quality of instruction and CTE credential test grade was created (see Figure 5.1—Final Grade and Credential Test Significance).

Figure 5.1

Final Grade and Credential Test Significance

	Final Course Grade	Credential Test
tech		
self_eff		Sig.+
course_org		
qual_inst	Sig.+	Sig.-
stu_sat		
Final Course Grade	NA	Sig.+
GPA	Sig.+	Sig.+

Conclusion

This study set out to answer the following questions:

How satisfied are students with a blended learning environment in a general education

Economics and Personal Finance course?

The results of this study indicate that overall students were not satisfied with their

blended learning experience in an Economics and Personal Finance course. Nearly half

(45.1%) of the participants in this study indicated that they disagreed or strong disagreed

with the statement presented in question Q17g, and approximately one-third (31.3%)

stated they were neutral. When the three high schools were examined for their overall

satisfaction, it was determined that High School 1 and 2 were more neutral regarding

their satisfaction level and High School 3 was more dissatisfied. Interestingly,

participants at all three high schools were more satisfied with their ability to work at their

own pace in the blended learning Economics and Personal Finance course. High Schools

1 and 2 were more in agreement with this benefit, with High School 1 trending more

toward strong agreement. High School 3 was more neutral on this matter. The idea of

working at one's own pace was also a theme that emerged from the open-ended

questions. Nearly one-third (31.4%) of all participants expressed that the ability to work at their own pace was something they liked about the course.

Is a student's course grade affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

According to the data in this study, student course grades were not affected by the technology skills or expectations for the use of technology in this blended learning course. The technology utilized in this course was sufficient, and students believed they received adequate technology support when needed. Additionally, a student's level of self-efficacy did not affect course grades in this study, nor did the course organization. Furthermore, student satisfaction in the blended learning Economics and Personal Finance course did not affect student course grades.

The quality of instruction not predicted to have a relationship to the final grade in a blended learning Economics and Personal Finance course did have a significant relationship to student grades in this course. A student's GPA prior to completion of this blended learning course was the strongest predictor of a student's final course grade.

Is a student's grade on a credential test affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

The results of this study indicated that student grades on a credential test were not affected by technology, course organization, or student satisfaction in a blended learning Economics and Personal Finance course. Factors that were most significant to how well a student performed on the credential test were attributed to the student's GPA prior to

completion of the blended learning course, the quality of instruction, and the final course

grade. Student perceptions of the quality of instruction and the final course grades were

the strongest predictors of student success on the CTE credential test. Interestingly, the

quality of instruction was negatively related to student success on the credential test. One

explanation could be that students liked their instructors, and therefore rated them higher

when they received a better grade in the course; however, when the final course grade

was controlled, a negative relationship between quality of instruction and grades on the

CTE credential test was created.

CHAPTER 6: DISCUSSION AND CONCLUSION

This final chapter discusses the results and conclusion of this study. This chapter

also presents a summary of the study, which includes the research problem and purpose

along with a review of the methodology. In addition, the research findings, discussion,

and recommendation for action are presented. The chapter concludes with implications

for future policies and recommendations for further study.

Research Problem and Purpose

The purpose of this study is to evaluate a single course offered in a blended

learning environment in a Central Virginia public school district—specifically analyzing

the blended learning model in a general education Economics and Personal Finance

course.

Research Questions and Hypotheses.

- How satisfied are students with a blended learning environment in a general

   education Economics and Personal Finance course?

   H_1: Students in a blended learning environment will be satisfied with their

   experience in a general education Economics and Personal Finance course.

   (Not Supported)

- Is a student's course grade affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

     H_{2a}: A student's course grade will not be affected by the technology in a blended learning course. **(Supported)**

     H_{2b}: A student's course grade will not be affected by self-efficacy in a blended learning course. **(Supported)**

     H_{2c}: A student's course grade will not be affected by the course organization in a blended learning course. **(Supported)**

     H_{2d}: A student's course grade will not be affected by the quality of instruction in a blended learning course. **(Not Supported)**

     H_{2e}: A student's course grade will not be affected by student satisfaction in a blended learning course. **(Supported)**

     H_{2f}: Students with a high GPA will have a higher final course grade in a blended learning course. **(Supported)**

- Is a student's grade on a credential test affected by the following: Technology, self-efficacy, course organization, quality of instruction, and student satisfaction in a blended learning course?

H_{3a}: A student's grade on a credential test will not be affected by the

technology in a blended learning course. **(Supported)**

H_{3b}: A student's grade on a credential test will not be affected by self-efficacy

in a blended learning course. **(Not Supported)**

H_{3c}: A student's grade on a credential test will not be affected by the course

organization in a blended learning course. **(Supported)**

H_{3d}: A student's grade on a credential test will not be affected by the quality

of instruction in a blended learning course. **(Not Supported)**

H_{3e}: A student's grade on a credential test will not be affected by student

satisfaction in a blended learning course. **(Supported)**

H_{3f}: Students with a high GPA will have a higher grade on a credential test in

a blended learning course. **(Supported)**

H_{3g}: A student's grade on a credential test will be positively affected by the

student's final grade in a blended learning course. **(Supported)**

Researchers in the field believe that increased student engagement and interest are

primary reasons for the recent increased interest in blended learning (Kenney &

Newcombe, 2011; Korkmaz & Karakus, 2009). Students today are digital natives, a term

used to refer to those who have grown up with access technology (Prensky, 2001). This

generation of students approaches learning differently. They are constantly engaged in

some form of technology, using cell phones, iPods, iPads, tablets, etc. to access

information. Most students today are comfortable with the idea of blending traditional

instruction with an online learning platform. It is for this reason that Picciano (2006) and

Kenney and Newcombe (2011) state that utilizing a blended learning environment will

provide students with greater access to the learning environment. With greater access,

students have greater flexibility to engage in learning anywhere at any time there is

Internet access (George-Walker & Keeffe, 2010; Kenney & Newcombe, 2011; Picciano

et al., 2010; Rapp, 2011; Xu et al., 2008).

For the purpose of this study, blended learning has been defined as "any time a

student learns at least in part at a supervised brick-and-mortar location away from home

and at least in part through online delivery with some element of student control over

time, place, path, and/or pace" (Horn & Staker, 2011, p. 3). This definition was published

in *The Rise of K-12 Blended Learning* by Michael B. Horn and Heather Staker (2011).

This definition addresses the flexibility, time, place, and pace nature of blended learning.

There are several benefits as well as challenges to a blended learning

environment. Several researchers have noted that a blended learning environment can

extend learning and offers students flexibility to participate in their learning during a time

that best fits their schedule (Calderon, et al., 2012; Black, 2002; Bonk & Graham, 2006;

De George-Walker & Keeffe, 2010; Gedik et al., 2012; Leh, 2002; Picciano, 2009; Ocak,

2010; Singh, 2003). Blended learning has also been shown to support student learning,

allowing students to learn at their own pace (Black, 2002; De George-Walker & Keeffe,

2010; Ocak, 2010). In a blended learning environment, learning is reinforced through the

usage of different mediums; the blending of online learning with traditional face-to-face

instruction supports different learning styles and differentiation (Gedik et al., 2012;

Picciani, 2006; O'Connor et al., 2011). Moreover, a blended learning environment has

been shown to have an impact on communication. One researcher noted that teachers

perceived that a blended learning environment increased the opportunity for continuous

student feedback (Ocak, 2010). Leh (2002) indicated that a blended learning environment

provided students with more access to the instructor and other students in the class.

Researchers have found many barriers or challenges to blending an online

component into a traditional face-to-face course. One challenge, noted by O'Connor et al.

(2011), speculated that face-to-face class sizes would be reduced due to a portion of the

class being moved to an online format. This was not the case in their study as class sizes

were not reduced by moving a portion of the face-to-face time online. According to

O'Connor et al. (2011), students in this study reported that there was a disconnection

between the online portion of the course and the face-to-face instruction, creating a

challenge for them. However, Gedik et al. (2012) found that students viewed the

interdependence of the online and face-to-face environments to be a barrier. Students in

this study felt that success in one environment was dependent on the other. They noted

that online activities bound to face-to-face activities, and vice versa, were very

challenging.

Another challenge noted in the Gedik et al. (2012) study was that students

specifically complained about the number of assignments and large amount of reading to

be completed in the blended environment. Students perceived that the workload was

heavier in a blended environment than in a traditional face-to-face course. The amount of

the workload had a negative impact on time, which meant more time was spent in the

blended course. Brooks et al. (2010) state that "good online learning is not attained by

just adding technology; thoughtful course design and tool selection and employment are

paramount for effective learning experiences" (p. 16). In order to fully reap the rewards

or benefits of a blended learning environment, a close analysis of the curriculum will

need to be conducted. Course designers cannot simply insert online activities into a

course without close scrutiny; otherwise, the benefits of the online aspect become a

barrier to learning (O'Connor et al., 2011).

Methodology

The methodology design was driven by the purpose of the study. This study was a

program evaluation of a blended learning environment in an Economics and Personal

Finance course in a Central Virginia public school district. A cross-sectional research

design was utilized given that data were collected at specific time. Data for this study was

collected in the spring of 2013. Consistent with a cross-sectional research design, this

study collected both quantitative and qualitative data from multiple groups and types of

participants (Johnson & Christensen, 2012). First, this study examined student data as it

related to student grade point averages in the blended learning Economics and Personal

Finance course. Grade point averages without the blended learning course and grade

point averages with the blended learning course were collected from the district's SIS.

Second, this study examined student data as it related to student final grades in this

blended learning course and student scores on a CTE credential test. Additionally, this

study collected data from students regarding their opinion of the blended learning course.

These data were collected through an online survey that consisted of closed and open-

ended questionnaire items (see Appendix C—Student Survey).

The research sample consisted of secondary students in grades 9-12 enrolled in a blended learning Economics and Personal Finance course from three high schools in a Central Virginia school district. A total 390 students were enrolled in the Economics and Personal Finance blended learning course of whom 342 students participated in this study. Non-participants were not in attendance when surveys were conducted; therefore, the response rate for completed student surveys was 87.7%.

Findings and Discussion

The overall findings from the student survey revealed that students were not satisfied with their blended learning Economics and Personal Finance course, nor did their satisfaction in the course affect their final course grade or their performance on the CTE credential test. Nearly half of the participants (45.1%) disagreed or strongly disagreed with the statement "Overall, I was satisfied with the Economics and Personal Finance blended learning environment," and approximately one-third expressed that they were neutral (31.3%). Calderon et al. (2012) reported that university students in a blended learning course were moderately satisfied, with students in a fall semester reporting their experiences in blended courses were somewhat worse than in traditional face-to-face courses. Significant to this study was the difference between the three high schools. High School 1 was more neutral when compared to High School 3. Participants at High School 3 were more dissatisfied with their experience. Participant responses from High School 2 were between those of the High School 1 and High School 3.

Interestingly, participants were more in agreement with the ability to work at their own pace. A significant difference existed between High School 1 and High School 3, with High School 1 trending more toward strongly agreeing that working at their own

pace was a benefit of the blended learning environment. High School 3 was more neutral. This was also a theme that emerged from the open-end questions in the student survey. 31.4% of participants expressed that the ability to work at their own pace was something they liked about the course. The ability to work at one's own pace is an important benefit of a blended learning environment as it has been shown to support student learning (Black, 2002; De George-Walker & Keeffe, 2010; Ocak, 2010). Additionally, previous research indicated that a blended learning environment enabled students to complete work at any time according to their schedule and at any place (Brooks et al., 2010; Gedik et al. 2012; Leh, 2002; Singh, 2003). One explanation as to why High School 1 responded more toward strongly agreeing that working at their own pace was a benefit could be explained by the school's schedule. High School 1 offered two sections of the blended learning Economics and Personal Finance class during a zero period. These two sections were more asynchronous, granting students the ability to work more independently than students in other sections of this course. Furthermore, students in these two sections had the additional benefit of being able to finish the course early, and once they finished the course they did not have to report to school during this period.

The findings in this study regarding student satisfaction in a blended learning Economics and Personal Finance course suggest that students prefer to work at their own pace. This is supported by other researchers in the field. A blended learning environment not only extends learning but offers students the flexibility to participate in their learning during a time that best fits the schedule (Calderon, et al., 2012; Black, 2002; Bonk & Graham, 2006; De George-Walker & Keeffe, 2010; Gedik et al., 2012; Leh, 2002; Picciano, 2009; Ocak, 2010; Singh, 2003). Allowing students to work at their own pace

supports their learning and contributes to the overall student satisfaction in a blended learning course.

This study found that student perceptions of the quality of instruction and the student's GPA were significantly related to a student's course grade in a blended learning Economic and Personal Finance course. Not surprising, a student's GPA was the strongest predictor of their final course grade. A student's GPA was also found to be significant to how well a student performed on the CTE credential test. Generally, students who do well in face-to-face traditional learning environment do well in online as well as in blended learning environments. Hattie (2009) in a synthesis of over 800 meta-analyses related to student achievement stated that "What a child brings to the classroom each year is very much related to their achievement in previous years—bright children tend to achieve more and not so bright children achieve less" (p. 41). According to Hattie and Hansford (1982), the correlation between ability and achievement is very high. Prior achievement is the best predictor of future academic success (Schuler, Funke, & Baron-Boldt, 1990).

Student perceptions of the quality of instruction was found to be significant to both the student's final course grade and their performance on the CTE credential test. There was a positive relationship between how students rated the quality of instruction and their final course grade. Students who rated the quality of instruction higher performed worse on the CTE credential test; however, students who performed better in the course performed better on the CTE credential test. The negative relationship between the quality of instruction and student grades on the CTE credential test could be the result of students indicating they liked their instructor and rated them higher when they

received better grades; however, when final course grade was controlled, the negative

relationship between quality of instruction and CTE credential test grade was created.

Neither student course grades nor their performance on the CTE credential test

were affected by student self-perceptions of technology skills or expectations for the use

of technology in this blended learning course. The technology utilized in this course was

sufficient, and students believed they received adequate technology support when needed.

Even though this study did not find that technology skills were significantly related to

student course grades or CTE credential test scores, other researchers report that a

student's familiarity with technology usage did influence student satisfaction in an online

course in higher education (Changchit, 2007; Liu, et al., 2009). Mitchell et al. (2005)

reported that students having a higher level of computer experience were more likely to

display greater satisfaction in an online learning environment.

Additionally, a student's level of self-efficacy did not affect course grades in this

study; however, it was significant to student performance on the CTE credential test.

Research regarding the relationship between self-efficacy in an online learning

environment and performance has produced mixed results. Joo et al. (2000) reported that

academic self-efficacy did not predict performance on a web-based test; however,

performance on a written test was predicted. Lee and Witta (2001) and DeTura (2004)

found that self-efficacy was not a predictor of performance in an online course or final

exam. In an asynchronous online math course, Hodges (2005) reported that self-efficacy

was a weak predictor of achievement.

Moreover, this study concluded that course organization did not affect a student's

final grade nor did it affect their performance on the CTE credential test. Participants in

this study did not prefer the blended learning format to a traditional educational learning

environment. Furthermore, they did not believe the course was well organized; however,

they believed that the online navigation was user-friendly, the instructions were clear for

all materials and course activities, and the course activities and assessments reflected the

course content. Despite the findings in this study, researchers found that a well-designed

course increased learning outcomes when compared to a traditional learning environment

(Brooks et al., 2010; Singh, 2003). Hodges and Cowan (2012) found that undergraduate

students enrolled in an online education course believed that course design must be

usable and realistic.

Recommendations for the School District

This study revealed that students were not satisfied with their blended learning

Economics and Personal Finance course, nor did their satisfaction in the course affect

their final course grade or their performance on the CTE credential test. There are several

recommendations for the school district in this study that when implemented could

improve student satisfaction in a blended learning course.

First, the school district in this study should develop a virtual learning policy that

addresses the issues outlined by the Virginia School Board Association Virtual Learning

Task Force and addressed in the previous section. The current distance learning policy

(see Appendix G—Distance Learning Policy) does not adequately address the following:

student eligibility for enrolling in a virtual learning program, instructor requirements for

teaching in a virtual learning environment, content correlation to state standards, the type

of virtual programs offered by the school district, student assessment requirements,

accountability measurements, program funding issues, infrastructure and device needs, or related educational service provisions.

Second, results of this study showed that students liked working at their own pace and research supported this finding (Black, 2002; De George-Walker & Keeffe, 2010; Ocak, 2010). The Economics and Personal Finance course at the heart of this study should be more self-paced. Students in the zero period at High School 1 were more satisfied with their asynchronous blended learning experience than those in other sections that were more synchronous. Today's educational system holds time as the constant and learning as the variable (Schwahn & McGarvey, 2012). This school district should develop more courses that are asynchronous and self-paced. This would mean a move toward a personalizing learning—instruction that is paced to learning needs, matched to learning preferences, and tailored to the specific interests of different learners (U.S. Department of Education, 2010, p. 12). Establishing asynchronous, self-paced courses will require this school district to make changes to its program of studies and course offering select. Master schedules and school calendars will need to be changed to accommodate this approach to learning.

Third, the school district in this study should require students to take a technology orientation module or a technology diagnostic assessment prior to taking an online or blended learning course. Even though student perceptions of their technology skills did not significantly affect their final course grade or their score on the CTE credential test in this study, Kuo et al., (2013) found that technology training orientation given prior to an online course increased students' confidence in performing Internet-based tasks. Additionally, this school district should provide more teacher training and professional

development regarding online and blended learning instruction. In a blended learning environment particularly, the role of the teacher changes from that of the provider of knowledge to a learning coach (Kenney & NewCombe, 2011). It will imperative for teachers to understand their new role and receive the necessary training and support in order to be successful in that new role.

Fourth, the school district in this study will need to fully examine the infrastructure of the district's network capabilities and increase connectivity within the wide area network (WAN) and to the Internet as needed to accommodate the nature of an online and blended learning environment. Digital content requires high-speed broadband connectivity. Even if this school district installs a media server within the WAN, high-speed connectivity will be required. Additionally, this school district will need to investigate providing students with their own devices in a 1:1 program. Technical support cannot be overlooked. As this school district expands its online and blended learning options, it will need to expand its technical support staff and establish on-site technology support help desks. Instructional technology support will also be vital in order to support the pedagogy changes teachers will be required to make.

Finally, this school district will need to promote the need for high-speed broadband access to all students throughout the county this school district serves. According to the Virginia Center for Innovation (2014), 70-80% of this county's households have access to high-speed broadband. In order for an online or blended learning program to be successful, students must have access to the Internet in their homes. This school district will need to work alongside local and state government

leaders as well as Internet Service Providers (ISP) to promote this area's need for high-speed broadband access for those communities that are under- or unserved.

Implications for Virtual or Blended Learning Policies

The scope of this study was limited to a single course, Economics and Personal Finance, in a blended learning environment in its first year; however, the implications have the potential to impact both local and state policy. As an effective approach to learning in the K-12 public education system, blended learning has the capacity to change instruction from a traditional face-to-face learning environment to one that is more personalized to meet the individual student needs. A blended learning approach is different from a virtual school, which provides students with a full-time online educational experience. The distinctions in a blended approach will need to be noted in policy. For this section, virtual learning will be used to encompass online and blended learning.

The Virginia General Assembly requires that local school divisions establish online learning policies, Code of Virginia *§ 22.1-212.26.*

§ 22.1-212.26. Local School division policies on online learning required.

A. By July 1, 2011, all school divisions shall develop policies and procedures regarding student access to online courses and online learning programs. The policies and procedures shall include but not be limited to: the types of online courses available to students through the school division; when the school division will and will not pay course fees and other costs; and the granting of high school credit. School divisions shall not implement any policies that limit student access to available online programs full-time in their school division or any other school division around the state. The policies and procedures shall take effect beginning with the 2011-2012 school year (Virginia General Assembly Legislative Information System, 2014).

Local and state school leaders will need to consider a variety of factors when implementing a virtual learning program. The school district in this study has a distance learning policy that is based on the state Virginia School Board Association policy IFDE (see Appendix G—Distance Learning Policy). David Teeter (n.d.), Director of Policy with the International Association for K-12 Online Learning (iNACOL), published *Online Learning: Top 5 Federal Policy Issues Brief*, which provides five federal policy issues that need to be addressed in order to improve online learning. Teeter's policy brief provides background and recommendations for the following issues:

- Accountability should be based on individual student growth models to support student-centered, competency-based learning

- Support performance-based systems of assessments

- Support Federal Research for High Quality Online Learning

- Support human capital development through redesigned pre-service/in-service training for online and blended learning

- Ensure reliable and ubiquitous student access to the Internet and quality learning materials

In addition to the policy issues presented by iNACOL, The Alliance for Excellent Education drafted suggested legislation, the Each Child Learns Act (Slaven, 2012), wherein a structured framework could be utilized by any school district crafting an online and blended learning policy. The working draft of the Each Child Learns Act contains many of the elements suggested by Teeter: the need for guiding principles for high quality digital learning, personalized learning for each child, the transformation to 21st

century digital learning, developing infrastructure and shifting to digital content. A policy

framework has also been suggested by the Virginia School Board Association's (VSBA)

Virtual Learning Task Force, which published a document providing language for local

schools boards in the following context: student, instructor requirements, content, select,

assessment, quality accountability measures, funding, infrastructure and delivery

considerations, and related educational services (VSBA Virtual Learning Task Force,

2012)(see Appendix H—Suggested Framework and Language for Local School Board

Virtual Learning Policy). The following policy framework suggestions are based on the

VSBA Virtual Learning Task Force recommendations.

Any local policy regarding virtual learning will need to address the learning needs

of the students. Careful consideration will be necessary for crafting policy that establishes

eligibility criteria for students. Specific requirements for entry into a blended learning

program will need to be outlined. Districts will need to determine what grade levels are

appropriate for student entry into a virtual program or establish prerequisites specific to

the virtual learning course. Additionally, districts will need to address students with

special needs. The Individuals with Disabilities Education Act provides students with

special needs the right to a free and appropriate public education. School districts will

need to adhere to students' Individual Education Plans (IEP) to ensure that a blended

learning environment is appropriate in meeting the needs of these students. Furthermore,

any blended learning policy will need to consider the reason for enrollment whether it is

for advancement, credit recovery, homebound, or the result of disciplinary action. The

reason for enrollment will dictate what blended learning model is utilized to meet the

needs of the student. School divisions may also want to identify in policy the characteristics of what it means to be a successful blended learning student.

The instructor must approach teaching and learning differently in a blended learning environment. A blended learning policy will need to leverage the support of those instructors already in the school district, providing in-service or professional development opportunities essential to the transformation of a traditional face-to-face learning environment to a blended approach. According to Virginia Department of Education's *Vision for Virtual School Programs in Virginia* (n.d.) "teachers should be highly qualified, licensed by the Virginia Board of Education, and endorsed in their course content area and have specific, ongoing training in online learning and teaching." Teacher licensure in Virginia requires individuals seeking an initial license and license renewal to demonstrate the effective use of technology to enhance instruction and improve student learning. This licensure requirement is referred to Technical Standards for Instructional Personnel (TSIP). In order to address the needs of a blended learning environment, school district policy regarding teacher licensure will need to expand the TSIP program to include online and blended learning standards. The Virginia Department of Education will need to modify current teacher licensure requirements to include online and blended learning competencies and offer the opportunity for teachers to add an online and blended learning endorsement to their license. Higher education teacher education programs will need to incorporate online and blended learning methodologies into their coursework and provide pre-service teachers with adequate experience in online and blended learning environments.

Any online and blended learning policy will need to address content alignment to state standards or the common core. In Virginia, course content will need to be correlated to the Virginia Standards of Learning (SOL), which will ensure "high quality digital learning" as outlined in *Vision for Virtual School Programs in Virginia* (Virginia Department of Education, n.d.), addressed in *Article 1. Part 2. Legislative Intent of the Each Child Learns §1.201—Guiding Principles of the Each Child Learns Act* (Slaven, 2012) and in Teeter's policy brief (n.d.). In 2010, the General Assembly approved legislation, Code of Virginia *§ 22.1-212.24.A*, establishing a new framework for virtual schools and online instruction with the intent to expand options for students while ensuring quality and alignment with the state SOLs; therefore, the Virginia Department of Education requires that digital content, online, and blended courses be aligned to state standards (Virginia Department of Education, 2014; Virginia General Assembly Legislative Information System, 2014).

The selection of the right virtual or blended learning model will need to be addressed in any policy. The Virginia Department of Education allows school divisions to offer online courses and/or online programs that best meet the learning needs of their students and community (Virginia Department of Education, n.d.). A division's virtual learning program "must meet the criteria and processes approved by the Virginia Board of Education to provide flexibility for diverse learners and ensure that instruction provided by online providers is aligned with state standards and provided by highly qualified teachers" (Virginia School Board Association Virtual Learning Task Force, 2012). Virtual learning options for school divisions include courses offered through Virtual Virginia, division-created online courses or programs, online courses or programs

from a content provider of the division's choice, or a Multi-division Online Program

(MOP) (see Description of Terms for a definition of Multi-division Online Program).

Those divisions entering into a MOP must use the Virginia Department of Education

"Approved Provider" list when selecting a content provider.

      Assessment and accountability measurements must be clearly stated within

policy. All stakeholders must be informed as to any federal, state, or local assessments

that will be required and how these assessments will be administered. In Virginia,

students will be required to take the end-of-course SOL test in any course considered to

be an SOL course. Students in a virtual program will need to demonstrate meaningful

progress in a controlled environment to ensure the work is their own. Policy should state

whether students will be expected to sit for such assessment on a school district campus

or testing center. Academic measures will need to follow grading policies established for

a traditional education environment, or new grading procedures for virtual learning will

need to written.

      Additionally, accountability measurements will need to be clearly stated regarding

attendance. According the Virginia Administrative Code *8VAC20-131-110*, the standard

unit of credit for graduation is based on a minimum of 140 clock hours of instruction and

successful completion of the requirements of the course (Virginia General Assembly

Legislative Information System, 2014). However, in 2012 *§ 22.1-253.13:3.A* of the *Code

of Virginia* was amended to state, "The Board of Education shall promulgate regulations

establishing standards for accreditation of public virtual schools under the authority of the

local school board that enroll students full time." Therefore, local school boards will need

to address the issue of attendance and time spent online in a virtual environment. In a

blended learning environment, online attendance will be dependent of the model as some

blended learning models require students to be in a face-to-face environment more than

others. To further complicate attendance accountability, section *22.1-98* of the *Code of*

Virginia requires the school term to be not less than 180 teaching days or 990 teaching

hours in any school year unless there are severe weather conditions or other emergencies

resulting in the closing of the school. Should a school term be less than 180 teaching days

or 990 teaching hours in any school year, the amount paid to the school division from the

Basic School Aid Fund could be reduced. In Virginia, local school boards will need to

develop in policy accommodations to request waivers for individuals or classes that do

not meet the attendance requirements.

The funding matrix for any virtual learning program will need to be addressed

through local policy. Virginia public schools are funded through a combination of local,

state, and federal funds. State and federal funds are provided to local school divisions

through the Direct Aid to Public Education budget in the Appropriation Act. These funds

are appropriated by the Virginia General Assembly and administered by the Virginia

Department of Education. State funding is based on the Standards of Quality (SOQ)

mostly on a per pupil basis with a local match minimum known as the "required local

effort" and based on the locality's composite index. A virtual program may be funded

through local, state, and federal education funds, and local school boards may seek grant

funds to offset costs. A virtual learning policy will need to define the funding formula

for any virtual program. Funding for Multi-division Online Providers (MOP) for students

within a district offering an approved MOP will remain in that school division. According

to *§ 22.1-212.25:*1 of the *Code of Virginia* effective in the school year 2014-2015,

students who reside in a school district that does not offer an approved MOP may choose

to enroll in any virtual school program served by an approved MOP in the

Commonwealth with state and local funding going to the enrolling school division as

follows:

1. *The state share per pupil funding provided shall be based on the resident division composite index and shall include the resident division's per child share of state sales tax funding in basic aid.*
2. *The local share per pupil funding transferred from the resident division to the enrolling division shall be 76 percent of the local share per pupil based on the resident division composite index.*
3. *In no case shall the total state and local share per pupil funding provided to the enrolling division exceed the actual per pupil cost of the virtual school program. If the total state and local share per pupil funding provided to the enrolling division exceeds the actual cost, the local share per pupil amount shall be reduced first. If the actual per pupil cost of the virtual program is less than the state share, the state per pupil share transferred to the enrolling school division shall be reduced to the actual per pupil cost* (Virginia General Assembly Legislative Information System, 2014)

Additionally, school divisions may not charge tuition for students residing in their district

for enrolling in any online course or virtual program offered, pursuant to *Code of*

Virginia § 22.1-3; for students who do not reside within the district of the virtual

program, tuition may be charged, pursuant to *Code of Virginia § 22.1-5*.

In the *Educational Technology Plan for Virginia: 2010-15,* Strategy 1.2.3 states

"facilitate the implementation of fiber and 100 Mbps to 1 Gbps Ethernet to every school"

(Virginia Department of Education, 2010). Consideration must be given to infrastructure

and digital content delivery in a virtual learning policy. Any virtual program, whether

blended or fully virtual, will require high-speed broadband Internet connectivity.

ConnectED, President Obama's Plan for connecting all schools to the digital age, and the

Federal Communications Commission's E-Rate program both call for schools to have

access to high-speed Internet connectivity, connecting 99 percent of America's students

to high-speed broadband within five years (Office of the Press Secretary, 2014; Wheeler,

2014). School districts need to address network infrastructure and Internet connectivity in

policy ensuring that both are scalable and affordable. The nature of a virtual learning

environment requires a robust infrastructure as much of the digital media is delivered

through audio, video, and/or simulation. Additionally, a virtual learning policy will need

to tackle student access to devices whether the school district provides each student with

a device in a 1:1 program or students have the ability to bring their own device to school

in a "Bring Your Own Device" (BYOD) initiative. Furthermore, any virtual learning

program will have technical support needs. School districts embracing a virtual learning

program will need to provide adequate technical support in order to maintain the

infrastructure, support the device needs of both teachers and students, and provide help

desk support for online needs. All technical support aspects must be addressed in policy.

Related educational services will need to be addressed as well through a virtual

learning policy. The responsibility of related educational services resides with the school

district of enrollment. School districts creating a MOP will need to address support

services for student access to guidance counseling, library media services, physical

education, career and technical education, and science labs. Student services such as

special education, 504 plans, gifted education, remediation, and English Language

Learner (ELL) will need to be part of the virtual learning policy. Additionally, school

districts will need to address the social needs of students, such as athletics and

extracurricular activities, through a district virtual learning policy (VSBA Virtual

Learning Task Force, 2012). School districts establishing a virtual learning program for

students residing outside of their boundaries, not considered to be a MOP, will need to address all aforementioned related educational services through policy. Students residing within the attendance boundaries of a school district offering a virtual learning program will naturally fall under the umbrella of the educational services of that school district.

Limitations of the Study

This study has several limitations. There are a variety of threats to validity among which will be the online student survey. The researcher relied on honest feedback from students. If students perceived that survey results affected their grade or if students rushed through the survey, this could have influence and skewed the results. Quality of instruction was based on student perceptions, not measureable objectives of instruction; therefore, it should be considered a limitation. Another limitation will be with the matching of the data—matching student grade point averages to a single course grade or matching course grades prior to the blended learning program to one after. Additionally, this was the first year for this blended learning Economics and Personal Finance course in this school district, and as with any new endeavor, there were unexpected issues that may have affected results such as teacher training, technology glitches, and curriculum challenges. Furthermore, the results of this study will not be generalizable to other school districts as this study evaluates a specific blended learning program of a Central Virginia public school district.

Recommendations for Further Research

As already stated, this study is limited in its scope to one general education course in a single school district. It was the original intent of this research to complete a full program evaluation of all blended learning programs in this school district; however, the

complexity of variables across blended learning models prevented a full study. Therefore, there are several study recommendations that could further the body of research in this area of study.

It is recommended that this study be expanded to include the teachers' perspective of the blended learning Economic and Personal Finance course. This study focused on the student perspective; however, the teachers of these courses could offer valuable insight into the overall program and provide suggestions for improvement. Additionally, student focus groups should be included in any future study in order to further expand what students thought about their experience in a blended learning environment or to gain further insight as to what improvements need to be made in the program.

In order to completely evaluate the various blended learning models within this school district it is recommended that those blended programs eliminated from this study be examined. This school district offers blended courses to students in an alternative school environment as well as in an independent study program. These two educational settings need to be evaluated to see if they are meeting the student needs and determine if students are satisfied with their experience and experiencing successful learning outcomes.

It is also recommended that this study be expanded outside this school district. The Economics and Personal Finance course is a required course for graduation in the state of Virginia. Additionally, the state requires students to receive one credit in a virtual course prior to high school graduation. Many school districts have combined these two requirements as did the school district in this study. Future research should closely examine student performance and satisfaction in this educational environment.

Finally, it is recommended that further research should cover a variety of subjects in different K-12 educational settings and include various blended learning models. The literature from a K-12 blended learning educational environment is very limited. Further research is required to expand the literature base and provide a greater understanding to the learning process in an online, virtual, and/or blended learning environment.

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Appendix A

Strategic plan from a Central Virginia K-12 School District—Approved October 18, 2012

Mission (what we do)

To prepare our students to be productive and responsible citizens in our community and the world

Vision (where we want to be)

A community dedicated to our students and their future

Goals (what we want to accomplish)

One: Prepare students to be successful in college and career fields

Strategies (how we will achieve our goals)

- Transform primary instructional delivery model to a "blended learning environment" that includes a continuum of traditional and technology-based methods and individualized time-independent student pacing/progress (Key strategy for success)
- Strengthen Advanced Placement programs
- Revise Career and Technical Education programs to include current/future career fields and expanded student career internship opportunities
- Strengthen alternative education programs for all students
- Develop and implement a comprehensive student academic/career planning system
  for students
- Improve student readiness to learn when entering Kindergarten
- Develop and implement a comprehensive student wellness program
- Improve individual student behavior
- Promote student collaboration and teamwork

Measurable Objectives (the ways we will check progress toward our goals)

- Increase percent of students graduating with Advanced Studies Diplomas
- Increase On-Time Graduation Rates
- Increase number of students who complete at least one Advanced Placement or Dual Enrollment course
- Increase number of CTE credentials achieved
- Increase the yearly number of qualifying scores (3 or higher) on Advanced Placement tests

- Increase number of students earning Algebra I credit prior to entering Grade 9
- Increase number of students scoring Advanced Proficient in Grade 5 English: Writing SOL test
- Increase number of students scoring Advanced Proficient in Grade 5 English: Reading SOL test
- Increase number of students scoring Advanced Proficient in Grade 5 Mathematics SOL test
- Improve performance on Fall Kindergarten PALS assessment

Two: Enhance community support for student learning

Strategies (how we will achieve our goals)

- Solicit investments for the school division from government and private sources
- Encourage and equip parents to support individual student learning
- Form partnerships with local businesses in support of student learning

Measurable Objectives (the ways we will check progress toward our goals)

- Increase local investment in our schools/school division
- Increase total amount of competitive grants

Three: Manage resources responsibly, efficiently, and effectively

Strategies (how we will achieve our goals)

- Review, revise, and streamline business and budget processes
- Develop and implement a comprehensive long-range facility plan
- Implement a comprehensive energy efficiency plan

Four: Employ highly effective teachers and support staff

Strategies (how we will achieve our goals)

- Develop and implement comprehensive evaluation systems for teachers and administrators
- Enhance hiring practices to improve quality of workforce
- Develop and implement a comprehensive employee wellness program

Appendix B

Diagram depicting blended learning in relationship to other education practices (Staker & Horn; 2012)

Appendix C

STUDENT SURVEY—Economics and Personal Finance

1. **Please enter your <u>seven digit</u> Student ID number. _____**

2. **Please indicate your gender.**
   - ❑ Female
   - ❑ Male

3. **What grade level were you enrolled in while taking Economics and Personal Finance?**
   - ❑ 9
   - ❑ 10
   - ❑ 11
   - ❑ 12

4. **What school were you enrolled in while Economics and Personal Finance?**
   - ❑ High School 1
   - ❑ High School 2
   - ❑ High School 3

5. **In the past, have you ever taken a blended/online learning course for the purpose of earning a grade/credit, or for your own personal interest (not for a grade or credit)?**
   - ❑ Yes
   - ❑ No

6. **How many blended/online learning courses have you <u>previously</u> completed?**
   - ❑ 1
   - ❑ 2
   - ❑ 3
   - ❑ 4
   - ❑ 5 or more
   - ❑ Not Applicable

7. **How would you rate your overall satisfaction with the blended/online learning course experience that you <u>previously</u> had?**
   - ❑ Positive – I liked the blended/online course environment very much
   - ❑ Neutral - I have no strong feelings either way. I may or may not take another blended/online course
   - ❑ Poor - I did not like the blended/online course experience
   - ❑ Not Applicable

8. How many courses are you currently taking that are <u>not</u> online?
- ❑ 1
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6 or more

9. For what purpose(s) did you take Economics and Personal Finance? (Please choose all that apply.)
- ❑ Course was taken as an elective.
- ❑ Course was required for graduation.
- ❑ Other (please specify)_____

10. Where did you typically complete the Economics and Personal Finance? (Please choose all that apply.)
- ❑ Classroom
- ❑ Computer lab
- ❑ Home
- ❑ Library
- ❑ Other (please specify)_____

11. How many hours did you typically spend on the computer per day while taking Economics and Personal Finance?
- ❑ Less than an hour
- ❑ 1-2 hours
- ❑ 2-3 hours
- ❑ 3-4 hours
- ❑ More than 4 hours
- ❑ Other (please specify)_____

12. Do you think the time spent on Economics and Personal Finance was:
- ❑ Too much time for me
- ❑ Too little time for me
- ❑ Just the right amount of time for me
- ❑ Not sure

Questions 13: Technology—Please indicate your level of agreement with the following statements:

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
A. My computer skills are proficient.	○	○	○	○	○
B. The expectations for the use of technology within the Economics and Personal Finance course were clearly communicated.	○	○	○	○	○
C. The technology where I completed most of my Economics and Personal Finance course was sufficient.	○	○	○	○	○
D. I was able to obtain assistance with technology, if needed, during the Economics and Personal Finance course.	○	○	○	○	○

Questions 14: Self-Efficacy—Please indicate your level of agreement with the following statements:

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
A. I enjoy school.	○	○	○	○	○
B. I am highly motivated and self-disciplined.	○	○	○	○	○
C. I can set a personal schedule and complete assigned work by the required dates.	○	○	○	○	○
D. My writing and communication skills are better than average.	○	○	○	○	○
E. I try to solve problems and work through difficulties independently before seeking assistance.	○	○	○	○	○
F. I can read and follow detailed instructions on my own.	○	○	○	○	○

Questions 15: Course Organization—Please indicate your level of agreement with the following statements:

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
A. The Economics and Personal Finance course was well organized.	○	○	○	○	○
B. Course procedures were clearly outlined.	○	○	○	○	○
C. The online navigation in the Economics and Personal Finance course was user-friendly.	○	○	○	○	○
D. Instructions were clear for all materials and course activities.	○	○	○	○	○
E. Course activities reflected course goals.	○	○	○	○	○
F. Course assessments (e.g. quizzes, tests, etc.) reflected course content.	○	○	○	○	○
G. Assignment and test grades were provided in a timely manner.	○	○	○	○	○
H. I like the format of the Economics and Personal Finance course when comparing it to other courses (other meaning those not online).	○	○	○	○	○

Questions 16: Quality of Instruction—Please indicate your level of agreement with the following statements:

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
A. The teacher managed the learning environment well in the Economics and Personal Finance course.	○	○	○	○	○
B. The teacher responded to student questions in a timely manner.	○	○	○	○	○
C. The teacher used learning activities that provided opportunities for interaction among students.	○	○	○	○	○
D. The teacher used teaching methods and activities that reinforce concepts that are taught online.	○	○	○	○	○
E. The teacher provided helpful feedback on assignments.	○	○	○	○	○
F. The teacher provided additional assignments, etc. consistent with concepts taught online.	○	○	○	○	○

Questions 17: Student Satisfaction—Please indicate your level of agreement with the following statements:

	Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
A. I enjoyed the Economics and Personal Finance course.	○	○	○	○	○
B. The Economics and Personal Finance course met my expectations.	○	○	○	○	○
C. I found the Economics and Personal Finance course to be engaging and interesting.	○	○	○	○	○
D. The Economics and Personal Finance course increased my knowledge in this subject area.	○	○	○	○	○
E. I found the Economics and Personal Finance course to be very challenging.	○	○	○	○	○
F. I liked the ability to work at my own pace in the Economics and Personal Finance course.	○	○	○	○	○
G. Overall, I was satisfied with the Economics and Personal Finance blended learning environment.	○	○	○	○	○

18. What grade do you expect to earn for the year in the Economics and Personal Finance course?

- ❑ A
- ❑ B
- ❑ C
- ❑ D
- ❑ F

19. What did you like best about the Economics and Personal Finance course?

20. What suggestions would you make for improving the Economics and Personal Finance course?

21. Is there anything else about your experience with the Economics and Personal Finance course that you would like for us to know?

Appendix D

IRB Request for Expedited Review

Researcher: **Edward A. Hoisington**
Title of Project: **Blended Learning: A Program Evaluation in a Central**
                 Virginia K-12 School District

Reasons for Expedited Review: Please identify the reason(s) that you are applying for
expedited review and specify which conditions that you believe are being met to qualify
this research for an expedited review (See Procedures for Review).

Research activities involving no more than minimal risk and in which the only
involvement of human subjects is with research on individual or group behavior or
characteristics of individuals, such as studies of perception, cognition, game theory, or
test development, where the investigator does not manipulate subjects' behavior and the
research will not involve stress to subjects.

*To the best of my knowledge, the proposed research complies with the conditions
described on the IRB for Human Subjects Research website.*

Principal Investigator (signature): _____
                                  Edward A. Hoisington
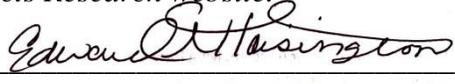
Date March 20, 2013

Faculty Research Sponsor (signature): _____

        (required if the principal investigator is a student)

Date_____

IRB Proposal for Expedited Review

Researcher: **Edward A. Hoisington**
Title of Project: **Blended Learning: A Program Evaluation in a Central Virginia K-12 School District**

1. Briefly describe the proposed project and explain the purpose(s) of the research.

> The purpose of this study is to evaluate the blended learning environment of a Central Virginia public school district. Specifically analyzing the blended learning models in an alternative education center, a general education course, and advanced coursework.

2. Please describe how participants will be obtained (e.g. local businesses, college classroom, etc.) and how human subject information will be collected (experiment, observation, telephone survey, questionnaire, etc...). Please attach a copy of any instrument(s) that will be used and describe the procedures that will be followed. If the information will be collected verbally, provide a list of all questions that will be used.

> The participants in this study will be secondary students grades 9-12 enrolled in a blended learning program. Three student groups will be the focus of this program evaluation: students attending an Alternative Education Center (Alt. Ed. Group) taking coursework in a blended learning environment, students taking a general education course in Economics and Personal Finance (Gen. Ed. Group) in a blended learning environment, and students enrolled in a self-blended course. All students enrolled in a blended learning course will be invited to participate in this study.

> Data for this study will be collected in spring 2013. This study will collect both quantitative and qualitative data from the three groups listed above. This study will examine student data as it relates to course pass rates. Specifically, data will be collected from the aforementioned blended learning groups regarding course pass rates or grade point averages prior to the blended learning program and data will be collected after students in these groups complete a blended learning course. This data will be obtained from the district's student information system. Data will also be collected from students regarding their satisfaction of the blended learning program. Student satisfaction will be captured as it relates to the following:

> - o Curriculum
> - o Organization of the course
> - o Quality of instruction\instructor
> - o Student expectation
> - o Student effort

- o Student prior experience with a blended learning program
- o Technology

The primary data collection instrument will be a student online survey (see Attachments A, B, and C for Student Surveys). The Online survey will consist of closed and open-ended questionnaire items. The closed-ended questions will be given a Likert Scale rating system.

3. Are there any foreseeable risks or discomforts to the subjects? ("Risk" means exposure to the possibility of physical or psychological harm; see Human Subject Research Statement, "Protection against harm"). If so, describe the nature and magnitude of these risks.

Participants in this study will be exposed to minimal to no risk. State issued student identification numbers will be requested as part of the survey therefore true anonymity will not be achieved. Student identification numbers will be used to ensure that students take the survey only one time and only students in a blended learning environment complete the survey. Additionally, student identification numbers will be used to match student grades in the blended learning course to student survey responses. Student identification numbers will be removed from data after matching course grades to survey responses has been complete.

4. What potential benefits justify the risks or discomfort, and what steps have been taken to minimize the risks or discomfort?

For this study, participants may be exposed to minimal to no risk; therefore, students may wish to speak to a school guidance counselor should they become distressed during this study.

5. What is the approximate number of subjects who will be involved in the research?

The number of participants for this study will not exceed 600 students.

6. What is the expected duration of an individual subject's participation?

Data collected through the district's student information system will not require the researcher to interact with participants; therefore, individual participants will not be directly involved in this part of the study. However, the online surveys will require participants to complete surveys at a computer with Internet access. This process should take approximately 45 minutes per participant. Since participants are under the age of 18, the Informed Assent Agreement will state the time commitment (See Attachment for Informed Assent Agreement).

7. Describe the extent to which confidentiality or anonymity of subjects will be maintained and how, both during the data collection and after the research is completed. What, if any, records may link the subject's identity to the research?

State issued student identification numbers will be requested as part of the survey therefore true anonymity will not be achieved; however, no other identifiable information will be collected. Student identification numbers will be used to ensure that students take the survey only one time and only students in a blended learning environment complete the survey.

Signed informed assent agreements, research data, and any codes linking research data with subject names will be kept for at least 3 years in a locked room located in the office of the Associate Dean for Academic Affairs in the Hall Campus Center building on the Lynchburg College campus.

8. State specifically what information will be provided to the subject about the research. (Provide copies of any and all written materials that will be provided to subjects.)

Instructions:

- Greet participants

- Introduce researcher [yourself] and explain the doctoral program

- Explain the purpose of the study

    o The purpose of this study is to evaluate the blended learning environment of a Central Virginia public school district

- Review the informed assent agreement and explain the anonymity of this study regarding student identification numbers

- Ask participants if they have questions or concerns

- Have participants logon to computers and enter the web address for the online survey

- Explain the online survey process

- Ask participants if they have questions regarding the online survey

- Have participants complete the survey and submit results

- Thank participants for their time and their willingness to take part in this research study

9. Will the research involve any deception of subjects? If so, describe and justify the deception.

No deception will be employed during this study.

10. State how the consent will be obtained from subjects. (Please attach consent and/or form(s).)

Survey opt-out forms will be sent home with students prior to the completion of this study's survey (See Attachment D for Student Opt-out Form). Opt-out forms are standard practice when requesting student participation in a survey or questionnaire in a K-12 learning environment. Both the Virginia Department of Education and "The School District" only require an opt-out form be provided to parents for students completing surveys. Please see Attachment F – Overview of Protection of Student Rights Amendment which is part of the Virginia Department of Education's *Guidelines for the Management of the Student's Scholastic Record in the Public Schools of Virginia*. Additionally, please see Attachments G and H. Attachment G – "The School District" Policy KFB: Administration of Surveys and Questionnaires. Attachment H – Notification of Rights under the Protection of Student Rights Amendment (PPRA), this document is sent home to parents annually.

Students informed assent agreements will be distributed prior to the completion of the survey (See Attachment E for Informed Assent Agreement). Students will be provided with a copy of the informed assent agreement; this is also stated on the informed assent agreement.

IRB Attachment A

STUDENT SURVEY—Alternative Education Center

1. **Please enter your <u>seven digit</u> Student ID number. _____**

2. **Please indicate your gender.**
    - ❑ Female
    - ❑ Male

3. **What grade level were you enrolled in while taking your blended/online course at the Alternative Education Center?**
    - ❑ 9
    - ❑ 10
    - ❑ 11
    - ❑ 12

4. **What base school were you enrolled in while taking the blended/online course at the Alternative Education Center?**
    - ❑ High School 1
    - ❑ High School 2
    - ❑ High School 3

5. **How many blended/online learning classes are you currently enrolled at the Alternative Education Center?**
    - ❑ 1
    - ❑ 2
    - ❑ 3
    - ❑ 4
    - ❑ 5 or more

6. **In the past, have you ever taken a blended/online learning course for the purpose of earning a grade/credit, or for your own personal interest (not for a grade or credit)?**
    - ❑ Yes
    - ❑ No

7. **How many blended/online learning courses have you <u>previously</u> completed?**
    - ❑ 1
    - ❑ 2
    - ❑ 3
    - ❑ 4
    - ❑ 5 or more
    - ❑ Not Applicable

8. **How would you rate your overall satisfaction with the blended/online learning course experience that you <u>previously</u> had?**
   - ❑ Positive – I liked the online course environment very much
   - ❑ Neutral - I have no strong feelings either way. I may or may not take another online course
   - ❑ Poor - I did not like the online course experience
   - ❑ Not Applicable

9. **How many courses are you currently taking that are <u>not</u> blended/online?**
   - ❑ 1
   - ❑ 2
   - ❑ 3
   - ❑ 4
   - ❑ 5
   - ❑ 6 or more

10. **Do you complete any of your blended/online coursework while at home?**
    - ❑ Yes
    - ❑ No

11. **How many hours did you typically spend on the computer per day while taking your blended/online course?**
    - ❑ Less than an hour
    - ❑ 1-2 hours
    - ❑ 2-3 hours
    - ❑ 3-4 hours
    - ❑ More than 4 hours
    - ❑ Other (please specify)_____

12. **Do you think the time spent on your blended/online course was:**
    - ❑ Too much time for me
    - ❑ Too little time for me
    - ❑ Just the right amount of time for me
    - ❑ Not sure

Questions 13 – 16: Technology

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
13.	My computer skills are proficient.	○	○	○	○	○
14.	The expectations for the use of technology within your current blended/online course were clearly communicated.	○	○	○	○	○
15.	The technology where I completed most of my blended/online course was sufficient.	○	○	○	○	○
16.	I was able to obtain assistance with technology, if needed, during my blended/online course.	○	○	○	○	○

Questions 17 – 22: Self-Efficacy

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
17.	I enjoy school.	○	○	○	○	○
18.	I am highly motivated and self-disciplined.	○	○	○	○	○
19.	I can set a personal schedule and complete assigned work by the required dates.	○	○	○	○	○
20.	My writing and communication skills are better than average.	○	○	○	○	○
21.	I try to solve problems and work through difficulties independently before seeking assistance.	○	○	○	○	○
22.	I can read and follow detailed instructions on my own.	○	○	○	○	○

Questions 23 – 31: Course Organization

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
23.	My blended/online course was well organized.	○	○	○	○	○
24.	Course procedures were clearly outlined.	○	○	○	○	○
25.	The online navigation in my blended/online course was user-friendly.	○	○	○	○	○
26.	Necessary information was received on time.	○	○	○	○	○
27.	Instructions were clear for all materials and course activities.	○	○	○	○	○
28.	Course activities reflected course goals.	○	○	○	○	○
29.	Course assessments (e.g. quizzes, tests, etc.) reflected course content.	○	○	○	○	○
30.	Assignment and test grades were provided in a timely manner.	○	○	○	○	○
31.	I like the format of my blended/online course when comparing it to other courses (other meaning those not online).	○	○	○	○	○

Questions 32 – 35: Quality of Instruction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
32.	The teacher managed the learning environment well in my blended/online learning course.	○	○	○	○	○
33.	The teacher responded to student questions in a timely manner.	○	○	○	○	○
34.	The teacher used teaching methods and activities that reinforce concepts that are taught online.	○	○	○	○	○
35.	The teacher provided helpful feedback on assignments.	○	○	○	○	○

Questions 36 – 42: Student Satisfaction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
36.	I enjoyed my blended/online course.	○	○	○	○	○
37.	My blended/online course at the Alternative Education Center met my expectations.	○	○	○	○	○
38.	I found my blended/online course at the Alternative Education Center to be engaging and interesting.	○	○	○	○	○
39.	My blended/online course increased my knowledge in this subject area.	○	○	○	○	○
40.	I found my blended/online course to be very challenging.	○	○	○	○	○
41.	I liked the ability to work at my own pace in my blended/online course.	○	○	○	○	○
42.	Overall, I was satisfied with my blended/online learning experience.	○	○	○	○	○

45. What grade do you expect to earn for the year in your blended/online course?
   - ❑ A
   - ❑ B
   - ❑ C
   - ❑ D
   - ❑ F

46. What did you like best about your blended/online course?

47. What suggestions would you make for improving the blended/online course you took?

48. Is there anything else about your experience with the blended/online course that you took that you would like for us to know?

IRB Attachment B

STUDENT SURVEY—Economics and Personal Finance

1. **Please enter your <u>seven digit</u> Student ID number. _____**

2. **Please indicate your gender.**
    a. Female
    b. Male

3. **What grade level were you enrolled in while taking Economics and Personal Finance?**
    - ❏ 9
    - ❏ 10
    - ❏ 11
    - ❏ 12

4. **What school were you enrolled in while Economics and Personal Finance?**
    - ❏ High School 1
    - ❏ High School 2
    - ❏ High School 3

5. **In the past, have you ever taken a blended/online learning course for the purpose of earning a grade/credit, or for your own personal interest (not for a grade or credit)?**
    - ❏ Yes
    - ❏ No

6. **How many blended/online learning courses have you <u>previously</u> completed?**
    - ❏ 1
    - ❏ 2
    - ❏ 3
    - ❏ 4
    - ❏ 5 or more
    - ❏ Not Applicable

7. **How would you rate your overall satisfaction with the blended/online learning course experience that you <u>previously</u> had?**
    - ❏ Positive – I liked the online course environment very much
    - ❏ Neutral - I have no strong feelings either way. I may or may not take another online course
    - ❏ Poor - I did not like the online course experience
    - ❏ Not Applicable

8. How many courses are you currently taking that are <u>not</u> online?
- ❑ 1
- ❑ 2
- ❑ 3
- ❑ 4
- ❑ 5
- ❑ 6 or more

9. For what purpose(s) did you take Economics and Personal Finance? (Please choose all that apply.)
- ❑ Course was taken as an elective.
- ❑ Course was required for graduation.
- ❑ Other (please specify)_____

10. Where did you typically complete the Economics and Personal Finance? (Please choose all that apply.)
- ❑ Classroom
- ❑ Computer lab
- ❑ Home
- ❑ Library
- ❑ Other (please specify)_____

11. How many hours did you typically spend on the computer per day while taking Economics and Personal Finance?
- ❑ Less than an hour
- ❑ 1-2 hours
- ❑ 2-3 hours
- ❑ 3-4 hours
- ❑ More than 4 hours
- ❑ Other (please specify)_____

12. Do you think the time spent on Economics and Personal Finance was:
- ❑ Too much time for me
- ❑ Too little time for me
- ❑ Just the right amount of time for me
- ❑ Not sure

Questions 13 – 16: Technology

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
13.	My computer skills are proficient.	○	○	○	○	○
14.	The expectations for the use of technology within the Economics and Personal Finance course were clearly communicated.	○	○	○	○	○
15.	The technology where I completed most of my Economics and Personal Finance course was sufficient.	○	○	○	○	○
16.	I was able to obtain assistance with technology, if needed, during the Economics and Personal Finance course?	○	○	○	○	○

Questions 17 – 22: Self-Efficacy

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
17.	I enjoy school.	○	○	○	○	○
18.	I am highly motivated and self-disciplined.	○	○	○	○	○
19.	I can set a personal schedule and complete assigned work by the required dates.	○	○	○	○	○
20.	My writing and communication skills are better than average.	○	○	○	○	○
21.	I try to solve problems and work through difficulties independently before seeking assistance.	○	○	○	○	○
22.	I can read and follow detailed instructions on my own.	○	○	○	○	○

Questions 23 – 30: Course Organization

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
23.	The Economics and Personal Finance course was well organized.	○	○	○	○	○
24.	Course procedures were clearly outlined.	○	○	○	○	○
25.	The online navigation in the Economics and Personal Finance course was user-friendly.	○	○	○	○	○
26.	Instructions were clear for all materials and course activities.	○	○	○	○	○
27.	Course activities reflected course goals.	○	○	○	○	○
28.	Course assessments (e.g. quizzes, tests, etc.) reflected course content.	○	○	○	○	○
29.	Assignment and test grades were provided in a timely manner.	○	○	○	○	○
30.	I like the format of the Economics and Personal Finance course when comparing it to other courses (other meaning those not online).	○	○	○	○	○

Questions 31 – 36: Quality of Instruction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
31.	The teacher managed the learning environment well in the Economics and Personal Finance course.	○	○	○	○	○
32.	The teacher responded to student questions in a timely manner.	○	○	○	○	○
33.	The teacher used learning activities that provided opportunities for interaction among students.	○	○	○	○	○
34.	The teacher used teaching methods and activities that reinforce concepts that are taught online	○	○	○	○	○
35.	The teacher provided helpful feedback on assignments.	○	○	○	○	○
36.	The teacher provided additional assignments, etc. consistent with concepts taught online	○	○	○	○	○

Questions 37 – 43: Student Satisfaction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
37.	I enjoyed the Economics and Personal Finance course.	○	○	○	○	○
38.	The Economics and Personal Finance course met my expectations.	○	○	○	○	○
39.	I found the Economics and Personal Finance course to be engaging and interesting.	○	○	○	○	○
40.	The Economics and Personal Finance course increased my knowledge in this subject area.	○	○	○	○	○
41.	I found the Economics and Personal Finance course to be very challenging.	○	○	○	○	○
42.	I liked the ability to work at my own pace in the Economics and Personal Finance course.	○	○	○	○	○
43.	Overall, I was satisfied with the Economics and Personal Finance blended learning environment.	○	○	○	○	○

44. **What grade do you expect to earn for the year in the Economics and Personal Finance course?**
   - ❑ A
   - ❑ B
   - ❑ C
   - ❑ D
   - ❑ F

49. What did you like best about the Economics and Personal Finance course?

50. What suggestions would you make for improving the Economics and Personal Finance course?

51. Is there anything else about your experience with the Economics and Personal Finance course that you would like for us to know?

IRB Attachment C

STUDENT SURVEY—Self-Blended

1. **Please enter your <u>seven digit</u> Student ID number. _____**

2. **Please indicate your gender.**
   a. Female
   b. Male

3. **What grade level were you enrolled in while taking your blended/online course?**
   - 9
   - 10
   - 11
   - 12

4. **What school were you enrolled in while taking the blended/online course?**
   - High School 1
   - High School 2
   - High School 3

5. **What blended/online learning program are you currently enrolled?**
   a. e2020 [Edgenuity]
   b. Virtual Virginia
   c. Central Virginia Community College
   d. Other

6. **In the past, have you ever taken a blended/online learning course for the purpose of earning a grade/credit, or for your own personal interest (not for a grade or credit)?**
   - Yes
   - No

7. **How many blended/online learning courses have you <u>previously</u> completed?**
   - 1
   - 2
   - 3
   - 4
   - 5 or more
   - Not Applicable

8. **How would you rate your overall satisfaction with the blended/online learning course experience that you <u>previously</u> had?**
   - ❑ Positive – I liked the online course environment very much
   - ❑ Neutral - I have no strong feelings either way. I may or may not take another online course
   - ❑ Poor - I did not like the online course experience
   - ❑ Not Applicable

9. **How many courses are you currently taking that are <u>not</u> online?**
   - ❑ 1
   - ❑ 2
   - ❑ 3
   - ❑ 4
   - ❑ 5
   - ❑ 6 or more

10. **For what purpose(s) did you take your blended/online course? (Please choose all that apply.)**
    - ❑ Course was taken as an elective.
    - ❑ Course was required for graduation.
    - ❑ Course was taken due to schedule conflicts.
    - ❑ Course was not offered at my school.
    - ❑ Course was taken as a repeat course.
    - ❑ Other (please specify)_____

11. **Where do you typically complete the blended/online course you are currently taking? (Please choose all that apply)**
    - ❑ Classroom
    - ❑ Computer lab
    - ❑ Home
    - ❑ Library
    - ❑ Other (please specify)_____

12. **How many hours did you typically spend on the computer per day while taking your blended/online course?**
    - ❑ Less than an hour
    - ❑ 1-2 hours
    - ❑ 2-3 hours
    - ❑ 3-4 hours
    - ❑ More than 4 hours
    - ❑ Other (please specify)_____

13. Do you think the time spent on your blended/online course was:
- ❏ Too much time for me
- ❏ Too little time for me
- ❏ Just the right amount of time for me
- ❏ Not sure

Questions 14 – 17: Technology

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
14.	**My computer skills are proficient.**	○	○	○	○	○
15.	**The expectations for the use of technology within your current blended/online course were clearly communicated.**	○	○	○	○	○
16.	**The technology where I completed most of my blended/online course was sufficient.**	○	○	○	○	○
17.	**I was able to obtain assistance with technology, if needed, during my blended/online course.**	○	○	○	○	○

Questions 18 – 23: Self-Efficacy

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
18.	I enjoy school.	○	○	○	○	○
19.	I am highly motivated and self-disciplined.	○	○	○	○	○
20.	I can set a personal schedule and complete assigned work by the required dates.	○	○	○	○	○
21.	My writing and communication skills are better than average.	○	○	○	○	○
22.	I try to solve problems and work through difficulties independently before seeking assistance.	○	○	○	○	○
23.	I can read and follow detailed instructions on my own.	○	○	○	○	○

Questions 24 – 32: Course Organization

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
24.	My blended/online course was well organized.	○	○	○	○	○
25.	Course procedures were clearly outlined.	○	○	○	○	○
26.	The online navigation in my blended/online course was user-friendly.	○	○	○	○	○
27.	Necessary information was received on time.	○	○	○	○	○
28.	Instructions were clear for all materials and course activities.	○	○	○	○	○
29.	Course activities reflected course goals.	○	○	○	○	○
30.	Course assessments (e.g. quizzes, tests, etc.) reflected course content.	○	○	○	○	○
31.	Assignment and test grades were provided in a timely manner.	○	○	○	○	○
32.	I like the format of my blended/online course when comparing it to other courses (other meaning those not online).	○	○	○	○	○

Questions 33 – 34: Quality of Instruction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
33.	The online instructor responded to student questions in a timely manner.	○	○	○	○	○
34.	The online instructor provided helpful feedback on assignments.	○	○	○	○	○

Questions 35 – 41: Student Satisfaction

		Strongly agree	Agree	Neither agree or disagree	Disagree	Strongly disagree
35.	I enjoyed my blended/online course.	○	○	○	○	○
36.	My blended/online course met my expectations.	○	○	○	○	○
37.	I found my blended/online course to be engaging and interesting.	○	○	○	○	○
38.	My blended/online course increased my knowledge in this subject area.	○	○	○	○	○
39.	I found my blended/online course to be very challenging.	○	○	○	○	○
40.	I liked the ability to work at my own pace in my blended/online course.	○	○	○	○	○
41.	Overall, I was satisfied with my blended/online learning experience.	○	○	○	○	○

42. What grade do you expect to earn for the year in your blended/online course?

- ❑ A
- ❑ B
- ❑ C
- ❑ D
- ❑ F

43. What did you like best about your blended/online course?

44. What suggestions would you make for improving the blended/online course you took?

45. Is there anything else about your experience with the blended/online course that you took that you would like for us to know?

IRB Attachment D

Student Survey Opt-out Form

Please sign and return this form to your child's school only if you <u>DO</u> <u>NOT</u> want your child to participate in an online survey regarding online or blended learning.

Project Title: <u>Blended Learning: A Program Evaluation in a Central Virginia K-12 School District</u>

Introduction: The researcher for this study is Mr. Edward Hoisington. He is the Director of Technology for "The School District" and is currently doctoral student at Lynchburg College in the Leadership Studies program. He is asking for high school students who are currently taking an online or blended learning course to participate in a research study survey regarding their experience.

Purpose: The focus of Mr. Hoisington's study is to learn more about student satisfaction with online or blended learning. Specifically, he wants to see if students are satisfied with their experience in an online or blended learning course.

Participation: This study will take place at school in the classroom in which students take their online or blended learning course.

Time Required: All of this should take about 45 minutes.

Risks & Benefits: There are no individual risks or benefits for participating in this research study; however, future online or blended learning students will benefit from any changes that may be made to the program based on survey results.

Payment: No compensation will be given for participating in this survey.

Voluntary Participation: Participation is voluntary. Only sign and return this form if you <u>DO</u> <u>NOT</u> want your child to participate in this survey. Student will be required to sign an informed assent agreement on the day the survey will be conducted. Copies of the student informed assent agreement will be provided to the student.

Questions: If you have questions regarding this study, please call Mr. Hoisington at XXX-XXX-XXXX or email him at ehoinsington@ (remainder of email address hidden to protect the school district).

Agreement: Please print and sign your name below only if you <u>DO</u> <u>NOT</u> want your child to participate   in this survey.

Thank you.

Student's Name_____

Parent/Guardian Name (Print) _____

Parent/Guardian Signature_____

Date_____

IRB Attachment E

<u>**Informed Assent Agreement**</u>

Please read this assent agreement carefully before you decide to participate in the research study.

Project Title: <u>Blended Learning: A Program Evaluation in a Central Virginia K-12 School District</u>

Introduction: The researcher for this study is Mr. Edward Hoisington. He is the Director of Technology for "The School District" and is currently a doctoral student at Lynchburg College in the Leadership Studies program. He is asking for high school students who are currently enrolled in an online or blended learning course to participate in a research study survey regarding their experience.

Purpose: The focus of Mr. Hoisington's study is to learn more about student satisfaction with online or blended learning. Specifically, he wants to see if students are satisfied with their experience in an online or blended learning course.

Participation: Participating students will sign this informed assent agreement and then take a computer survey in their online/blended learning classroom.

Time Required: All of this should take about 45 minutes.

Risks & Benefits: There are no individual risks or benefits for participating in this research study; however, future online or blended learning students will benefit from any changes that may be made to the program based on student input.

Payment: No compensation will be given for participating in this survey.

Voluntary Participation: Participation in this study is completely voluntary. Student Survey Opt-out forms have already been sent home to parents/guardians have already given permission for you to participate in this study, you may decide not to do so without penalty. You may want to talk with parents/guardians, and/or teachers (or other adults **<u>if appropriate</u>**) before deciding. You may skip any of the questions in the survey you do not want to answer. If you want to stop participating during the survey, just tell Mr. Hoisington.

Questions: If you have questions regarding this study, please call Mr. Hoisington at XXX-XXX-XXXX or email him at ehoinsington@ (remainder of email address hidden to protect the school district).

Agreement: If you agree to participate in this study please sign your name below. Mr. Hoisington will provide you with a copy of this form after you have signed it.

Thank you.

Signature of Participant_____

Date_____

Print Name _____

Signature of Researcher _____

Date_____

Survey: https://www.surveymonkey (remainder of the URL removed to protect the school district's identity.

IRB Attachment F

Virginia Department of Eduation. (2004). *Guidelines for the management of the student's*

  scholastic record in the public schools of Virginia. Retrieved from

  http://www.doe.virginia.gov/boe/regulations/secondary_sch_transcripts/managem

  ent_scholastic_records.pdf.

Overview of the Protection of Student Rights Amendment

The Protection of Pupil Rights Amendment (PPRA) of the Elementary and Secondary Education Act of 1965 is a federal law that affords certain rights to parents of minor students with regard to surveys that ask questions of a personal nature. PPRA applies to educational agencies or institutions that receive funding from any program of the U.S. Department of Education including local educational agencies in Virginia. This provision applies to surveys funded in whole or part by any program administered by the U.S. Department of Education. PPRA provides:

- Schools and contractors make instructional materials available for inspection by parents if those materials will be used in connection with any U.S. Department of Education funded survey, analysis, or evaluation in which their children participate;
- Schools and contractors obtain prior written parental consent before minor students are required to participate in any U.S. Department of Education funded survey, analysis, or evaluation that reveals information concerning:

  1. political affiliations or beliefs of a student or a student's parents;
  2. mental and psychological problems of the student or the student's family;
  3. sex behavior or attitudes;
  4. illegal, anti-social, self-incriminating, or demeaning behavior;
  5. critical appraisals of other individuals with whom respondents have close family relationships;
  6. legally recognized privileged or analogous relationships, such as those of lawyers, physicians, and ministers;
  7. religious practices, affiliations, or beliefs of the students or student's parents; or
  8. income (other than required by law to determine eligibility for participation in a program or that receiving financial assistance under such programs).

Schools are required to develop and adopt policies – in conjunction with parents-regarding the following:

1. The right of parents to inspect, upon request, a survey created by a third party before the survey is administered or distributed by a school to students;
2. Arrangements to protect student privacy in the event of the administration of a survey to students, including the right of parents to inspect, upon request, the survey, if the survey contains one or more of the same eight items as noted previously;
3. The right of parents to inspect, upon request, any instructional material used as part of the educational curriculum for students;
4. The administration of physical examinations or screenings that the school may administer to students;
5. The collection, disclosure, or use of personal information collected from students for the purpose of marketing or selling, or otherwise providing the information to others for that purpose;
6. The right of parents to inspect, upon request, any instrument used in the collection of information, as described in number 5.

Educational agencies must "directly" notify parents of these polices and, at a minimum, must provide the notice at least annually, at the beginning of the school year. The schools must also notify parents within a reasonable period of time if any substantive change is made to the policies.

In the notification, the educational agency shall offer an opportunity for parents to opt out of (remove their child) from participation in the following activities:

- Activities involving the collection, disclosure, or use of personal information collected from students for the purpose of marketing or for selling that information, or otherwise providing that information to others for that purpose;
- The administration of any third party (non-Department of Education funded) survey containing one or more of the above described eight items of information;
- Any nonemergency, invasive physical examination or screening that is: 1) required as a condition of attendance; 2) administered by the school and scheduled by the school in advance; and not necessary to protect the immediate health and safety of the student, or of other students;
- In the notification, the educational agency shall inform parents of the specific or approximate dates during the school year when these activities are scheduled.

PPRA requirements do not apply to the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing,

evaluating, or providing educational products or services for, or to, students or educational institutions, such as the following:

- College or other postsecondary education recruitment, or military recruitment;
- Book clubs, magazines, and programs providing access to low -cost literacy products;
- Curriculum and instructional materials used by elementary and secondary schools;
- Tests and assessments used by elementary and secondary schools to provide cognitive, evaluative, diagnostic, clinical, aptitude, or achievement information about students;
- The sale by students of products or services to raise funds for school-related or education-related activities;
- Student recognition programs.

PPRA does not apply to any physical examination or screening that is permitted or required by state law, including such examinations or screenings permitted without parental notification.

The rights provided to parents under PPRA transfer to the student when the student becomes 18 years old or is an emancipated minor under applicable state law.

IRB Attachment G

"The School District". (2006). *Administration of surveys and questionnaires—policy*

     KFB. Retrieved from https://www.boarddocs.com/vsba/ (the complete URL has

     been hidden to protect the school district's identity)

Book	"The School District" Policies
Section	K - School - Community Relations
Title	ADMINISTRATION OF SURVEYS AND QUESTIONNAIRES
Number	KFB
Status	Active
Legal	20 U.S.C. § 1232h
	Code of Virginia, 1950, as amended, § 22.1-79.3
Last Revised	May 1, 2006
Purpose:	Provides guidance for the administration of surveys and questionnaires to students.

I.   Instructional Materials and Surveys

    A. Inspection of Instructional Materials

       All instructional materials, including teacher's manuals, films, tapes, or other supplementary material which will be used as part of the educational curriculum for a student or which will be used in connection with any survey, analysis, or evaluation as part of any federally funded program shall be available for inspection by the parents or guardians of the student in accordance with Policy KBA.

    B. Participation in Surveys and Evaluations

       No student shall be required, as part of any federally funded program, to submit to a survey, analysis, or evaluation that reveals information concerning

       (1) political affiliations or beliefs of the student or the student's parent,

       (2) mental or psychological problems of the student or the student's family,

       (3) sex behavior or attitudes,

       (4) illegal, anti-social, self-incriminating, or demeaning behavior,

       (5) critical appraisals of other individuals with whom respondents have close family relationships,

(6) legally recognized privileged or analogous relationships, such as those of lawyers, physicians, and ministers,

(7) religious practices, affiliations, or beliefs of the student or student's parent, or

(8) income (other than that required by law to determine eligibility for participation in a program or for receiving financial assistance under such program), without the prior consent of the student (if the student is an adult or emancipated minor), or in the case of an unemancipated minor, without the prior written consent of the parent.

C. Additional Protections

A parent or emancipated student may, upon request, inspect any instructional material

Used as part of the educational curriculum of the student and any survey created by a third party before the survey is administered or distributed to a student. Any inspection shall be in accordance with Policy KBA.

In addition, in the event of the administration or distribution of a survey containing one or more of the subjects listed in subsection I.B. above, the privacy of students to whom the survey is administered will be protected by the following measures:

Completed questionnaires will be maintained with no identifying information. Completed questionnaires will be returned to the administrator of the survey immediately and placed in an envelope or other closed container.
No class discussion of the contents of the survey will be allowed.

II. Physical Examinations and Screenings

If the "the School District" administers any physical examinations or screenings other than those required by Virginia law, and surveys administered to a student in accordance with the Individuals with Disabilities Education Act, policies regarding those examinations or screenings will be developed and adopted in consultation with parents.

III. Commercial Use of Information

Questionnaires and surveys shall not be administered to public school students during the regular school day or at school-sponsored events without written, informed parental consent when participation in such questionnaire or survey may subsequently result in the sale for commercial purposes of personal information regarding the individual student.

This subsection does not apply to the collection, disclosure, or use of personal information collected from students for the exclusive purpose of developing, evaluating, or providing educational products or services for, or to, students or educational institutions, such as the following:

college or other postsecondary education recruitment, or military recruitment; book clubs, magazines, and programs providing access to low-cost literary products;
curriculum and instructional materials used by elementary schools and secondary schools;
tests and assessments used by elementary schools and secondary schools to provide cognitive, evaluative, diagnostic, clinical, aptitude, or achievement information about students (or to generate other statistically useful data for the purpose of securing such tests and assessments) and the subsequent analysis and public release of the aggregate data from such tests and assessments; the sale by students of products or services to raise funds for school-related or education-related activities; and student recognition programs.

IV. Notification

Notification of Policies
The Board shall provide notice of this policy directly to parents of students annually at the beginning of the school year and within a reasonable period of time after any substantive change in the policy. The Board will also offer an opportunity for the parent (or emancipated student) to opt the student out of participation in activities involving the collection, disclosure, or use of personal information collected from students for the purpose of marketing or for selling that information (or otherwise providing that information to others for that purpose); the administration of any survey containing one or more items listed in subsection I.B. above; or any nonemergency, invasive physical examination or screening that is required as a condition of attendance; administered by the school and scheduled by the school in advance; and not necessary to protect the immediate health and safety of the student, or of other students.

Notification of Specific Events
The Board will directly notify the parent of a student, at least annually at the beginning of the school year, of the specific or approximate dates during the school year when the following activities are scheduled, or expected to be scheduled:

activities involving the collection, disclosure, or use of personal information collected from students for the purpose of marketing or for selling that information (or otherwise providing that information to others for that purpose);
the administration of any survey containing one or more items listed in subsection I.B. above; any nonemergency, invasive physical examination or screening that is

required as a condition of attendance; administered by the school and scheduled by the school in advance; and not necessary to protect the immediate health and safety of the student, or of other students.

V. Definitions

Instructional material: the term "instructional material" means instructional content that is provided to a student, regardless of its format, including printed or representational materials, audio-visual materials, and materials in electronic or digital formats (such as materials accessible through the Internet). The term does not include academic tests or academic assessments.

Invasive physical examination: the term "invasive physical examination" means any medical examination that involves the exposure of private body parts, or any act during such examination that includes incision, insertion, or injection into the body, but does not include a hearing, vision, or scoliosis screening.

Parent: the term "parent" includes a legal guardian or other person standing in loco parentis (such as a grandparent or stepparent with whom the child lives, or a person who is legally responsible for the welfare of the child).

Personal information: the term "personal information" means individually identifiable information including

a student or parent's first and last name;
a home or other physical address (including street name and the name of the city or town);
a telephone number; or
a Social Security identification number.

Survey: the term "survey" includes an evaluation.

IRB Attachment H

NOTIFICATION OF RIGHTS UNDER THE PROTECTION OF STUDENT RIGHTS AMENDMENT (PPRA)

PPRA affords parents and students who are 18 or emancipated minors ("eligible students") certain rights regarding our conduct of surveys, collection and use of information for marketing purposes, and certain physical exams. These include the right to:

Consent before students are required to submit to a survey that concerns one or more of the following protected areas ("protected information survey") if the survey is funded in whole or in part by a program of the U.S. Department of Education –

1. Political affiliations or beliefs of the student or student's parent;
2. Mental or psychological problems of the student or student's family;
3. Sex behavior or attitudes;
4. Illegal, anti-social, self-incriminating, or demeaning behavior;
5. Critical appraisals of others with whom respondents have close family relationships;
6. Legally recognized privileged relationships, such as with lawyers, doctors, or ministers;
7. Religious practices, affiliations, or beliefs of the student or parents; or
8. Income, other than as required by law to determine program eligibility.

Receive notice and an opportunity to opt a student out of –

1. Any other protected information survey, regardless of funding;
2. Any non-emergency, invasive physical exam or screening required as a condition of attendance, administered by the school or its agent, and not necessary to protect the immediate health and safety of a student, except for hearing, vision, or scoliosis screenings, or any physical exam or screening permitted or required under State law; and
3. Activities involving collection, disclosure, or use of personal information obtained from students for marketing or to sell or otherwise distribute the information to others.

Inspect, upon request and before administration or use –

1. Protected information surveys of students;
2. Instruments used to collect personal information from students for any of the above marketing, sales, or other distribution purposes; and
3. Instructional material used as part of the educational curriculum.

"The School District" has adopted policies regarding these rights, as well as arrangements to protect student privacy in the administration of protected surveys and the collection, disclosure, or use of personal information for marketing, sales, or other distribution purposes (Reference: "The School District" Policy KFB, School – Community Relations). "The School District" will notify parents and eligible students of these policies at least annually at the start of each school year and after any substantive changes. "The School District" will also notify parents and eligible students, such as through U.S. mail or Email, at least annually at the start of each school year of the specific or approximate dates of the following activities and provide an opportunity to opt a student out of participating in:

- Collection, disclosure, or use of personal information for marketing, sales or other distribution;
- Administration of any protected information survey not funded in whole or in part by ED;
- Any nonemergency, invasive physical examination or screening as described above.

Parents/eligible students who believe their rights have been violated may file a complaint with:

<div align="center">

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-4605

</div>

Appendix E

Date: April 8, 2013

To: Ed Hoisington

Re: Approval of Research Proposal

Your request for an expedited review of your research project: "Blending Learning: A Program Evaluation in a Central Virginia K-12 School District" has been completed. The proposal and related study comply with the standards set by the U.S. Department of Health and Human Services, Code of Federal Regulations, Title 45 CFR Part 46, Protection of Human Subjects, effective as of July 14, 2009. The study is therefore approved.

Please remember that if any modifications are necessary, these changes need to be approved by this committee. Approval for this proposal is for one year. If necessary, re-approval must occur prior to April 7, 2014. Please feel free to give me a call at X8962 if you have any questions.

Sincerely,

Beth McKinney

Beth McKinney, PhD, MPH, CHES

Chair, Human Subject Research Committee (IRB)

Appendix F

Survey Questions Mapped to Indices and Descriptive Statistics

tech: Technology (Cronbach alpha = 0.74; mean = 3.68; std = 0.79) Technology—Please indicate your level of agreement with the following statements (1 strongly disagree to 5 strongly agree).

- My computer skills are proficient.
- The expectations for the use of technology within the Economics and Personal Finance course were clearly communicated.
- The technology where I completed most of my Economics and Personal Finance course was sufficient.
- I was able to obtain assistance with technology, if needed, during the Economics and Personal Finance course.

self_eff: Self-Efficacy (Cronbach alpha = 0.82; mean = 3.74; std = 0.69) Self-Efficacy—Please indicate your level of agreement with the following statements (1 strongly disagree to 5 strongly agree).

- I enjoy school.
- I am highly motivated and self-disciplined.
- I can set a personal schedule and complete assigned work by the required dates.
- My writing and communication skills are better than average.
- I try to solve problems and work through difficulties independently before seeking assistance.
- I can read and follow detailed instructions on my own.

course_org: Course Organization (Cronbach alpha = 0.93; mean = 3.22; std = 0.94) Course Organization—Please indicate your level of agreement with the following statements (1 strongly disagree to 5 strongly agree).

- The Economics and Personal Finance course was well organized.
- Course procedures were clearly outlined.
- The online navigation in the Economics and Personal Finance course was user-friendly.
- Instructions were clear for all materials and course activities.
- Course activities reflected course goals.
- Course assessments (e.g. quizzes, tests, etc.) reflected course content.
- Assignment and test grades were provided in a timely manner.
- I like the format of the Economics and Personal Finance course when comparing it to other courses (other meaning those not online).

qual_inst: Quality of Instruction (Cronbach alpha = 0.92; mean = 3.53; std = 0.97) Quality of Instruction—Please indicate your level of agreement with the following statements (1 strongly disagree to 5 strongly agree).

- The teacher managed the learning environment well in the Economics and Personal Finance course.
- The teacher responded to student questions in a timely manner.
- The teacher used learning activities that provided opportunities for interaction among students.
- The teacher used teaching methods and activities that reinforce concepts that are taught online.
- The teacher provided helpful feedback on assignments.
- The teacher provided additional assignments, etc. consistent with concepts taught online.

stu_sat: **Student Satisfaction** (Cronbach alpha = 0.86; mean = 2.71; std = 0.89) Student Satisfaction—Please indicate your level of agreement with the following statements (1 strongly disagree to 5 strongly agree).
- I enjoyed the Economics and Personal Finance course.
- The Economics and Personal Finance course met my expectations.
- I found the Economics and Personal Finance course to be engaging and interesting.
- The Economics and Personal Finance course increased my knowledge in this subject area.
- I found the Economics and Personal Finance course to be very challenging.
- I liked the ability to work at my own pace in the Economics and Personal Finance course.
- Overall, I was satisfied with the Economics and Personal Finance blended learning environment.

Appendix G

Distance Learning Policy

File: IFDE

Purpose: To utilize of online opportunities to enrich the educational offerings.

 "The School District" recognizes the potential educational benefits of appropriate learning opportunities available through the use of technology. The division shall seek and take advantage of such opportunities to enrich its educational offerings.

Students may enroll in and receive a standard or verified unit of credit for supervised distance-learning courses in subjects not available to them at their school, with prior approval of the principal. Credit shall be awarded for the successful completion of such courses when course content equals or exceeds that offered in the regular school program, and the work is done under the supervision of a licensed teacher, or person eligible to hold a Virginia license, approved by local school authorities. Verified credit may be earned when the student has passed the S.O.L. test associated with the completed course where applicable.

Cross Refs.:

IFD Curriculum Adoption
LEB Advanced/Alternative Courses for Credit
IKF Standards of Learning and Graduation Requirements

Legal Refs.: Code of Virginia, as amended, sections 22.1-199.1(B) and 22.1-212.2; 8

VAC 20-131-180(B).

Appendix H

Suggested Framework and Language for Local School Board

Virtual Learning Policy

1. Students
   a. Eligibility Criteria
      i. Requirements for entry into the program
      ii. Characteristics of successful online students
   b. Student Access
      i. Enrollment criteria with regards to residency
      ii. Parental permission
2. Instructor Requirements
   a. Meet standards as "Brick and Mortar" teachers. Expand Technical Standards for Instructional Personnel (TSIP) in current teacher certification requirements.
   b. Professional Development
      i. Information on pedagogy and instructional techniques specific to student success in online learning environment
3. Content
   a. Correlation to State Standards: Online content correlation for courses used
   b. Online courses correlated to the Virginia Standards of Learning will ensure "High Quality Digital Learning" per Part 2. Legislative Intent of the Each Child Learns § 1.201 ―Guiding Principles of the Each Child Learns Act.
   c. Digital content, instruction materials, and online and blended learning opportunities are of high quality.
   d. State requires that digital content and online and blended courses be aligned with state standards or common core state standards where applicable.
4. Selection
   a. Options for virtual learning include MOP, Locally Designed and Developed, Content Provider of Choice
   b. All Virginia School Divisions should have the choice in the selection of how virtual content (MOP, Locally Designed and Developed, or Content Provider of Choice) is provided to meet their community and student's learning needs. Per Governor Bob McDonnell's "Opportunity to Learn" education reform agenda, VDOE established criteria for the approval of providers authorized to provide virtual instruction to Virginia school divisions.
   c. MOPs, Locally Designed and Developed, and Content Providers of Choice must meet the criteria and processes approved by the Virginia Board of Education to provide flexibility for diverse learners and ensure that instruction provided by online providers is aligned with state standards and provided by highly qualified teachers. *(VDOE)*

      d. If divisions choose MOPs, than they must use the "Approved Providers" list on virtual school programs approved by the board to serve students in multiple school divisions. They must also adhere to the following guidelines per the *Alliance for Excellent Education Working Draft of Suggested Legislation (Section 3.411 Guidance and Assistance for Approved and Prospective Providers)* Example: Approved providers should be placed on the approved list for no more than 3 years, and are subject to approval renewal if they continue to meet the minimum state standards. (*p.53)*

5. Assessment
      a. Students must show meaningful progress and demonstrate competency in controlled settings to authenticate that the student's work is his/her own.
      b. SOL testing administration
      c. Other local testing requirements

6. Quality Accountability Measures
      a. Attendance accountability measures for online providers should include
          i. records of attendance that show log-on activity
          ii. time spent online
          iii. numbers of students who start and complete program\
      b. Academic accountability measures for online providers should include
          i. Formative assignments and assessments
          ii. Interim and final grades
          iii. Satisfaction surveys and other accountability measures comparable to those of existing schools

7. Funding
      a. Definition and use of Local education funds
      b. Because local funds are generated from residents of the locality, their use for education is based upon community priorities determined through the democratic process of local school board appointments or elections. Local funds should continue to support the collective will and expectation of local residents and the support for grassroots innovation and program determination.
      c. Collaboration between localities with shared priorities can leverage limited fiscal resources, increase opportunities, and foster the spread of local innovation.
          i. Leverage shared purchasing power to negotiate lower cost licenses/contracts for digital content and online courses.
          ii. See appendix for regional collaborative virtual learning RFP.
      d. Multi-division online provider content and local online programming are funded through traditional state, local, federal and grant-funded revenue streams to the local school division offering virtual learning.
      e. Stand-Alone Virtual schools (SAVS)
          i. State funding
          ii. Effective November 9, 2012, State Superintendent's memo clearly defines local responsibility for special education funding and services, with state funding (ADM) following the enrolled students

but other special education federal funds remaining with the school division of enrollment. Expense and special education service provision remains with the local school division where a student resides regardless of where a student is enrolled virtually.

    iii. Terms of local funding specified through agreement between local school district and the host school district.

8. Infrastructure and Delivery Considerations
   a. Content and materials – enhance availability and reduce costs through technology
   b. Infrastructure funding separate from existing state technology funds
   c. Equipment and connectivity
   d. Local standards and access to High-speed Broadband Internet (Current VDOE standards will not support online assessments and other high band-width applications)
   e. Access to devices for students and teacher
   f. Division Based Help Desk
      i. Divisions that use MOP, Locally Designed and Developed, or Content Providers of Choice must provide professional development to their technology staff on the technical aspects of the Virtual School program (software) to have an on-site Help Desk to troubleshoot online issues.
9. Related educational services
   a. Responsibility for ensuring provision of related educational services resides with the school division of enrollment.
   b. Services include:
      i. Support Services such as Counseling, Library Services, P.E., CTE, Lab Sciences
      ii. Special Education, 504 Plans, Gifted Education, Remediation, ELL
      iii. Athletics and Extracurricular