Bethel University

Spark

2018

Measuring Student Engagement in Online Secondary Education

Meagan A. Rathbun
Bethel University

Measuring Student Engagement in Secondary Online Education

By:
Meagan A. Rathbun

A dissertation submitted to the faculty of Bethel University in partial fulfillment of the
requirements for the degree of Doctor of Education

Saint Paul, MN

Approved by:

Advisor: Jennifer Hill, Ed. D.

Reader: Joni Burgin, Ed. D.

Reader: Peggy Kendall, Ph. D.

2

Abstract

The purpose of this quantitative study was to determine which factors in the modified National Survey of Student Engagement benchmark variables, demographic variables, and experience variables relate to student engagement in online secondary education. The survey collected data from online secondary schools in Minnesota on benchmark variables, as well as demographic variables in grade level and employment, and experience variables of previous online education and length of time with the current online program. As a result of the study, it was found that NSSE benchmark variables had a measured positive relationship with student engagement. Demographic and experience variables had no statistically significant relationship to student engagement in an online secondary school. The results of the study provide information to drive curriculum-based decisions and policies in an online secondary educational environment to best engage and serve online learners.

Acknowledgements

This dissertation journey would not have been possible without the guidance and support from the following:

My advisor, Dr. Jennifer Hill—Your guidance has been a blessing. Thank you for your continued support by keeping me on track and reassured of my path.

My readers, Dr. Joni Burgin and Dr. Peggy Kendall—The knowledge and experience you brought shaped my research into a dissertation surpassing my expectations. Thank you for your time and support during this process.

My husband, Matthew Rathbun—Thank you for your patience and support during the difficult journey of researching and writing. Your love through this process has been unconditional and has helped me to grow.

To the directors of Minnesota Online Secondary Programs— Thank you for your participation and willingness to help with this project. I sincerely hope you will find value in the results that can shape your leadership and continue to improve on the amazing work that you each already do!

Table of Contents

List of Tables

Chapter I: Introduction

Introduction to the Problem

Technology has had a positive impact on education for decades with making it more accessible to all students. Additionally, the importance of availability for online courses has become 70.8% of the reason students select a particular online institution (Allen & Seaman, 2015). Online education is a commonality at the undergraduate and graduate levels with many colleges offering online courses, or degrees completely available online. In a society that demands instant gratification, online education is fitting the niche of school choice. The rise in popularity for online opportunities has impacted the K-12 field of education with 33 institutions reported to serve the state of Minnesota alone (Minnesota Department of Education, 2017). As online opportunities continue to grow in popularity, it is important to evaluate the programs for effectiveness to further promote student choice in obtaining a quality education. These evaluations should focus primarily on student engagement and the impacts it can have on student achievement when students are working at a distance from the teacher.

Online education at the secondary level is not without criticism regarding student achievement. Commonly, schools that participate in distance learning, where students interact face-to-face with teachers less than 80% of the time, are less likely to see high graduation rates for their students (Allen & Seaman 2015; Gray & DiLoreto, 2016; Paquette 2016; Pazzaglia et al., 2016). Shelton (2010) states that demands for school accountability are on the rise. Particularly, online programs commonly struggle to engage students. This is in part due to an absence of traditional education through physical attendance, and instruction delivered face-to-face.

9

Student engagement is a large proponent to student achievement and, when measured, can effectively guide curriculum development and teacher training opportunities (Suttle, 2010). Student engagement is the active participation and interaction of a student with course material. Placing a focus on student engagement measurements will ensure students are actively engaging in their coursework from a distance. Ultimately, student engagement levels can lead to higher student success, if measured appropriately and acted upon using best practices.

Student engagement measurements have primarily been conducted using checklists from teacher observations or surveys with student feedback. The National Survey of Student Engagement was developed by the University of Indiana and is used in multiple states to gauge college student engagement for those enrolled in a four-year degree program (Indiana University, 2017). Similarly, the Online Student Engagement Scale was developed for colleges that offered online courses and programs to gauge effectiveness of online curriculum in engaging students at a distance (Dixson, 2015). While student engagement surveys are ideal for collecting information from a student's perspective, Wagetti, Johnston, and Jones (2017) recently developed a checklist tool for teachers to use in measuring perceived engagement while participating in flipped classroom, where the majority of student learning is occurring outside of traditional instructional hours. The flipped classroom checklist provides a method of assessment that teachers can use formatively to gauge the level of participation and engagement for students, while learning on the student's own time (Wagetti, Johnston, & Jones, 2017). Embracing technology and distance learning provides flexibility to both teachers and students, however the key component to success continues to exist in monitoring and measuring student engagement.

Multiple methods of measuring engagement exist for schools to validate their own students' level of active involvement in educational programs. By identifying variables that can

predict student engagement, online educational programs can focus on establishing a plan to address their students' needs. Once a school is able to predict the influences on student engagement, a collective response to promoting future engagement can lead to student achievement increases, and overall student success.

Background of the Study

Distance education holds origins in the 1920s when countries such as Canada and Australia were frequently using radio communication for education (Buck, 2016). During early ages of technology, radio was one of the only means of communication via radio waves that could reach short distances. In remote areas of the Australian Outback and the Canadian mountainous regions, students who were unable to attend school physically were still offered an alternative education through radio broadcast (Buck, 2016). This early adaptation focused on providing student flexibility and equal opportunities to receive a fair education; a practice continued throughout education's long history in the United States.

The origination of the Internet in 1969 introduced a new way of life—one of convenience and connection. However, online education did not occur until many years later. The first alternative, or distance, program in education was at the post-secondary level and was through mail correspondence (Perry & Pilati, 2011). Learning from a distance, or distance education, refers to students who are physically separated from their class or instructor and, therefore are facilitating their own learning. Distance education originally focused on assisting students who struggled to, or were unable to, physically attend a campus setting for instruction. Instead, these students needed to have self-motivation to teach themselves topics with provided supplemental materials. Meanwhile, a teacher would grade and serve as a facilitator with mail correspondence or phone conversations to distance learners. Students who participate in distance education are

primarily accountable for their own engagement; however, teacher support, interaction, and content development can promote interest and encourage learning much as it does in a traditional classroom setting.

Technology assisted in early distance courses by adding instructional videos to the curriculum recorded on tape for view via television and VCR. Teachers could record their instruction and mail it to their students to replace the traditional classroom setting, with only the absence of interaction and collaboration (Perry & Pilati, 2011). This method of learning was referred to as Interactive TV (ITV) Distance Learning consortiums, which are still used in education today to serve rural areas. The correspondence courses were an important milestone in promoting student flexibility and school choice. With technology rapidly advancing, the use of Internet and other telecommunication further enhanced the distance education experience.

The twentieth century birthed cell phones and wireless Internet with a large boom in technology during the mid-1990s and early 2000s. College institutions were embracing the flexibility of online education and meeting the demand of students, with over 1.6 million postsecondary students enrolled in an online course—a number that increased 25% by 2008 (Allen & Seaman, 2010; Perry & Pilati, 2011). While colleges were the first to embrace the flexible nature of online learning, K-12 institutions followed suit in the early 2000s with their own distance programs. These programs were offered online in hybrid situations, with students spending half of their time in school with formal instruction. Shortly after, online high schools and online K-12 programs were completely asynchronous, or available without time constraints, and students could experience flexibility to fit their daily lives. The demand for education anytime and anywhere was rising.

Currently, online education at the K-12 level exists in two different delivery methods to suit student needs. Hybrid, or blended, programs have options for students to attend campus sessions and often include lecture or instruction on a face-to-face basis for up to 50% of total class time. These programs are often host to synchronous sessions with set meeting times for students, either traditionally or virtually. Completely online programs are a minimum of 80% delivery through online, static curriculum with teachers serving as moderators. These programs are also known as asynchronous (Allen & Seaman, 2015; Gray & DiLoreto, 2016; Paquette 2016; Pazzaglia et al., 2016). While courses and programs are modeled after the same general frameworks, no two are alike. Delivery methods of online curriculum can vary across multiple Learning Management Systems (LMS) and include additional programs for supplemental materials, such as online textbooks or lab simulations. Collecting data and comparing school-wide achievement for students can be difficult with the wide range of variables in program structure and delivery, as well as smaller population sizes due to fluid enrollment.

Learning from a distance is a difficult transition for both student and teacher. Students need to adapt to an online curriculum where expectations are higher for their own self-motivation and accountability. Teachers are expected to write curriculum that can function at a distance without immediate teacher interaction, while remaining engaging. Online courses require teachers to look towards alternative methods of communication, either through the LMS with feedback, or using technology to virtually meet and assist students synchronously (Perry & Pilati, 2011). However, online education also holds benefits for both student and teacher in flexibility. Students are able to work at their own pace and on their own schedule, while the clock and other classroom disturbances no longer restrict teachers. This can provide an

individualized approach for students where they receive curriculum suited to their needs and lifestyle.

Colleges were among the first to accept online education as an option for flexibility with their students (Perry & Pilati, 2011). Now that the popularity of online has expanded to multiple levels of education, the need to provide quality opportunities to students and promote student success is pertinent. Multiple studies have been conducted on college level courses for student success when measured against retention rates and graduation (Indiana University, 2017; Wagetti, Johnston, & Jones, 2017). Measuring student success according to graduation rates for secondary students is plausible, but lacks consistent research to determine effectiveness when applied towards online programs. This absence in literature is likely due to the newness of online programs in K-12 education.

Statement of the Problem

Perry and Pilati (2011) provide a brief history of telecommunications for classroom use, with the first distance learning occurring via radio, or mail and television with recorded lessons. As technology has expanded and enhanced education, the need for online learning programs has risen due to the flexible and individualized nature of online learning (Borup, 2016; Guojonsdottir et al., 2016; Holley & Oliver, 2009; McBrien, Jones, & Cheng, 2009). Online education is in demand and on the rise as an option for students, as previously noted with Minnesota as a standing example. Allen and Seaman (2015) further indicate that flexible and individualized learning is the reason for students selecting an online program; a number that has grown from 48.8% in 2013 to 70.8% reported in 2015 across the United States. This statistical increase and a demand for online learning promote the need to measure the effectiveness of online programs to ensure students are given a quality education.

14

The concept of engagement as an indicator of student success has extensive research promoting a positive relationship (Czerkawski & Lyman III, 2016; Gray & DiLoreto, 2016; Suttle, 2010; Yen & Abdous, 2011). Students who are not passive in their learning, and who take an active role in the ownership of their education, will find higher levels of success (Suttle, 2010). While these studies focus on traditional, post-secondary educational institutions, the relationship between student engagement and student success is consistent regardless of the method of delivery. Yen and Abdous (2011) similarly discovered that engagement stems from a student's level of interest and investment, but also on teacher practices. Andrade's (2015) study further promoted developing teacher trainings aimed at assessing and reviewing student engagement levels present in an online environment. The heightened focus on engagement due to the positive impacts on student success make this a critical need for online education. This is due in part to difficulty for online programs in matching success levels to that of students enrolled in traditional education (Borup, 2016; Dixson, 2015). This is among the most common criticism faced by online programs across the United States.

The problem identified by prior research is that student success in online educational programs is significantly lower than traditional school programs, when measuring success by graduation rates and standardized testing (Allen & Seaman 2015; Gray & DiLoreto, 2016; Paquette 2016; Pazzaglia et al., 2016). Additionally, students are often behind in their basic skill levels for reading and math. Online education is scrutinized for its lack of engagement, and challenges in offering students a similar experience to traditional learning without face-to-face interactions (Guojonsdottir et al., 2016; Jaggars et al., 2013; Paquette, 2016). While students crave the flexibility and individualized learning that online presents, they often desire interaction amongst peers or teachers (Jaggars et al., 2013; McBrien, Jones, & Cheng, 2009). Student

15

engagement can be present in quality online programs, however variables such as student personal accountability and willingness to engage can cause a lack of success (Pazzaglia et al., 2016). Teachers can find it increasingly difficult to reach students from a distance, and likely are not certain how they are failing in engagement. Measurements for student engagement exist currently at the postsecondary and graduate levels of education, with high validity of results due to numerous research and case studies promoting their use.

Researchers (Gray & DiLoreto, 2016; Suttle, 2010) show relationships in higher education between student engagement and three variables: course structure, teacher presence, and collaboration. These benchmarks are based in part on researched indicators of student engagement through historical research and collaborative data (Gray & DiLoreto, 2016; Indiana University, 2017). Measuring student engagement is universally accepted as aligning to Indiana University's established benchmark variables of effective educational practice. The National Survey of Student Engagement's established benchmark variables are: level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environments (Indiana University, 2008). Measurements for student engagement at the college level are numerous with surveys like the National Survey of Student Engagement (NSSE), or the Online Student Engagement Scale (OSE) available to higher education (Indiana University, 2017; Shelton, 2010). The NSSE is used by multiple universities alongside support of graduation rates and retention percentages to validate statistical significance of reported student engagement (Indiana University, 2008). Alternatively, the OSE scale focuses more on measuring teacher perception of student engagement, and relies upon validity from teacher created curriculum and course completion percentages (Shelton, 2010).

Studies focused on measuring student engagement through student-focused research in an online educational program are limited for lower levels of education.

Methods of measuring student engagement in an online educational program are few in current research, however tools previously mentioned have been adapted to fulfill research needs (Louwrens & Hartnett, 2015; Shelton, 2010; Suttle, 2010). Modification of valid, existing methods of measuring student engagement for use in an online educational program can be assumed as an effective and reliable tool. This is due to the nature of education being a similar experience on engagement regardless of the medium for delivery. Suttle (2010) demonstrated this technique in adapting the NSSE for an online college program. Much like online education has evolved, the future of measuring student engagement to promote student success is in need of evolution. Currently there exists limited research on methods of measuring student engagement in an online program. Additionally, limited research exists on methods of measuring student engagement in an online program that serves K-12 students.

Purpose of the Study

Online education continues to grow in popularity at the K-12 level, but more specifically at the secondary level of education. In order to ensure quality educational options, it is critical to develop a method of measuring student engagement due to the positive relationship between engagement and student success. In order to measure engagement effectively, there is a need to determine factors that influence engagement in online education. The purpose of this study is to determine which factors in the modified NSSE benchmark variables, demographic variables, and experience variables relate to student engagement in online secondary education.

Research Questions

Based on the credibility of the NSSE survey for measuring student engagement, three research questions were developed for this study:

Q1.) What relationship exists between student-reported engagement in secondary online education, and the NSSE benchmark variables?

Q1a.) What relationship exists between student-reported engagement in online education, and the NSSE benchmark variable of academic challenge?

Q1b.) What relationship exists between student-reported engagement in online education, and the NSSE benchmark variable of active and collaborative learning?

Q1c.) What relationship exists between student-reported engagement in online education, and the NSSE benchmark variable of student-faculty interaction?

Q1d.) What relationship exists between student-reported engagement in online education, and the NSSE benchmark variable of enriching educational experiences?

Q2.) What relationship exists between student-reported engagement in online secondary education, and the demographic variables?

Q2a.) What relationship exists between student-reported engagement in online secondary education, and the demographic of age?

Q2b.) What relationship exists between student-reported engagement in online secondary education, and the demographic of employment?

Q3.) What relationship exists between student-reported engagement in online secondary education, and the experience variables?

Q3a.) What relationship exists between student-reported engagement in online secondary education, and the experience variable of length at current institution?

Q3b.) What relationship exists between student-reported engagement in online secondary education, and the experience variable of previous online learning experience?

Hypotheses

Eight hypotheses and eight alternative hypotheses were proposed:

1st Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

1st Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

2nd Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

2nd Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

3rd Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

3rd Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

4th Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

4th Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

5th Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the demographic variable of age.

5th Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the demographic variable of age.

6th Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the demographic variable of employment.

6th Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the demographic variable of employment.

7th Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

7th Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

8th Null Hypothesis: There is no relationship between student-reported engagement using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

8th Alternative Hypothesis: There is a relationship between student-reported engagement using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

Significance of the Study

Dixson (2015) and Shelton (2010) focused on measuring student engagement through student feedback surveys, or teacher feedback on perceptions of student engagement within a course. While each method shows a positive relationship between student engagement and student success, teacher perceptions of student engagement may not take into consideration outlying factors impacting student engagement. In other words, student engagement that is a direct relation to a lack of time to commit to coursework would not be reflected in teacher perception feedback if the teacher were unaware of this information. Regardless of the method, the positive relationship exists between student engagement with coursework and overall student success. Both Dixson (2015) and Shelton (2010) acknowledge a gap in literature for measuring student engagement when focused on the secondary level of education. Additionally, there are no current studies focused on measuring student engagement specifically at the secondary level in an online setting. However, research does exist which addresses measuring student

engagement based on student-reported data, which is a step in the right direction towards filling the gap.

The trend among current research is a focus on teacher perception of student engagement. These studies react to the popular rise in education with enrollment numbers and demand for online programs, or courses on the rise in education (Allen & Seaman, 2015; Holley & Oliver, 2009). Pazzaglia et al. (2016) note an increase in popularity for online education with secondary schools, particularly in Wisconsin. However, this particular study focused on primarily identifying if students engaged in their courses or not, rather than identifying particular variables that predicted this engagement. Louwrens and Hartnett (2015) also study engagement, however in an online middle school setting. This particular study has limited scope with a low population size and focuses primarily on teacher perceptions of student engagement, rather than variables to predict engagement online. While the studies listed focus on drawing light to the popularity of online education at various levels, the study results do little to benefit the literature for predicting engagement variables in online student engagement.

The National Survey of Student Engagement (NSSE) is widely accepted as an accurate indicator of engagement for students enrolled in a college program. The survey focuses on measuring established benchmark variables, tested through theory, to show engagement in courses: level of academic challenge, active and collaborative learning, student-faculty interaction, enriching educational experiences, and supportive campus environments (Indiana University, 2017). The survey has been implemented by multiple universities across the United States, and has led administration to making critical decisions to improve retention rates and graduation rates (Indiana University, 2008). The survey has previously been adapted from 2006 research of validity around measuring student engagement.

The five NSSE variables are established from 10 engagement indicators tested for validity. Indiana University tested freshman students after completion of their first year (n=32,374) and senior students prior to graduating from college (n=46,259) in multiple universities across the United States (Miller et al., 2013). The comparison of results was then measured against graduation rates for senior students of the year tested, as well as graduation and dropout rates of the freshman surveyed upon reaching their graduation rate three years later. The results of this survey validated that the NSSE engagement indicators accurately measured student engagement based on graduation rates. Miller et al. (2013) developed their engagement indicators further by grouping them into five benchmark variables for easier data analysis when administering the survey to future universities. While credible in measuring student engagement, this survey, though recognized by accredited universities across the United States, is focused on measuring engagement for students in traditional education. This survey has limitations in regards to its usage, as it is primarily aimed at college level institutions and has not been adapted for online programs, or secondary education.

Suttle (2010) focused on adapting the NSSE with her dissertation study for online college programs. This study investigated the benchmark indicators in the NSSE survey and used only those applicable to an online learning environment by eliminating the benchmark measures of a supportive campus environment. The research focused on establishing identifying indicators of engagement in online learning by relying on the validity of the NSSE measurements and adding demographic variables to determine outlying factors (Suttle, 2010). While the study showed high indicators of engagement present in each benchmark, the goal of the study focused on identifying which benchmarks had a higher correlation to student engagement and could, therefore, predict engagement for online learners. This valuable information for distance

learning can help to guide administrative decisions regarding course structure, collaboration opportunities, academic rigor, and even levels of teacher interaction with students (Suttle, 2010). The study shows effective results, but has limitations in the smaller scope of population size for those involved with the study – the correlational data pool shows only minor statistical significance. The study is also limited through focusing attentions to postsecondary and graduate level education with online programs.

Dixson's (2015) study takes an alternate approach to measuring student engagement through the use of a developed Online Student Engagement Scale (OSE). This scale takes student feedback to determine student engagement with online courses at the postsecondary level, with the goal of determining relationships between course structure and student success (Dixson, 2015). The limitation to this study falls in the restrictive nature of focus for course structure. This study is based on the assumption that course structure is the sole influence on student engagement in online learning, rather than a component. The study is also limited in scope to online postsecondary courses with a small sample size of one course. However, the study sees success in measuring student engagement through student-reported results, allowing for a clear measurement as perceived by the student.

Limited research exists for measuring student engagement in an online educational program at the secondary level without modification of existing tools currently used to measure postsecondary engagement (Czerkawski & Lyman III, 2016; Shelton, 2010; Suttle, 2010). Additionally, limited research focuses on measuring student engagement at the secondary level of education, and even less so when focusing on online programs at the secondary level. Allen and Seaman's (2015) statistical scorecard indicates a rise in online educational programs as a choice for students. The purpose of this study was to partially fill this gap in literature by

24

modifying the NSSE survey based on its successful measurement of student engagement for use in an online secondary educational setting.

With an increasing demand for individualized and flexible programs that online has to offer, it is critical for programs to offer quality educational opportunities to serve student success. Student engagement is a positive indicator of student success. Students who are more actively engaged in their coursework will pass courses and ultimately graduate without dropping out (Czerkawski & Lyman III, 2016; Gray & DiLoreto, 2016; Suttle, 2010; Yen & Abdous, 2011). Measuring student engagement is critical for online programs that hope to increase their level of student success. By partially filling the gap in literature around online secondary student engagement, this study serves as an indicator for online programs to better aid in their curriculum structure, student engagement, and overall success.

Rationale

Due to the limited research in measuring student engagement at the secondary level for online programs, a gap in the literature exists. To promote student success in the growing popularity of online programs, it is critical for programs to measure engagement of their student population and determine variables impacting this engagement. Online programs face multiple criticisms for performing below traditional education regarding student success when measured by graduation rates and standardized testing scores (Allen & Seaman, 2015; Gray & DiLoretto, 2016; Paquette, 2016; Pazzagliaet al., 2016). Through measurements of engagement, administration in online secondary programs can better adapt their program goals, and focus on areas of needed improvement to increase student success.

Definition of Terms

Asynchronous – Refers to courses that are available online through static curriculum. No time constraints exist for students or teachers as learning can occur at any time. Teachers in this format function as course moderators (Allen & Seaman, 2015).

Distance Learning – Students who receive education at a distance from the classroom with less than 80% of face-to-face interaction with teachers (Gray & DiLoreto, 2016).

Hybrid Learning – Education where students spend half of their time in formal, classroom settings. Learning is typically delivered both online and traditionally (Perry & Pilati, 2011).

Learning Management System (LMS) – A technology system, or platform used to house and deliver curriculum content to students. Multiple platforms, such as Moodle, Blackboard, and Schoology are currently used in online education.

Online Courses – Individual classes offered digitally within the realm of online education.

Online Education – Learning systems established to deliver education to students where curriculum is housed digitally.

Static Curriculum – Curriculum that is built to function without teacher intervention outside of the role of moderator. This curriculum is typically housed on a Learning Management System for online education.

Student Engagement – Students actively participating and interacting with course materials (Dixson, 2015).

Student Success – Students who are actively engaged in their coursework and pass their courses.

Synchronous – Learning where content is delivered through scheduled meeting times, either virtually, or traditionally through face-to-face methods of instruction (Allen & Seaman, 2015).

Assumptions and Limitations

Data was gathered by surveying students who are currently enrolled in an online secondary education program approved through the Minnesota Department of Education (MDE). While conducting the surveys, the following assumptions were made: students accurately reported their perceived engagement in their collective online courses, and honestly measured their own motivational levels. It is assumed that the National Survey of Student Engagement accurately measures student-perceived engagement based on the survey's established credibility. Finally, it is assumed that selected students comprise a representative group of online learners in the state of Minnesota.

The study holds limitations in scope due to all student participants being enrolled in an online secondary school within the state of Minnesota. While student engagement is a universal benefit to student success, the standards of Minnesota may yield different measurements regarding content and student demographics. Additionally, this study determines relationships using benchmark variables from the National Survey of Student Engagement. This survey was used for online secondary programs, causing a limitation to exist in the assumption of the survey's validity. Finally, the study focused on student-reported engagement using an electronic survey delivery. This method relies on a student's valid and honest response, which can itself be a limitation to the study.

Nature of Study

The study used a quantitative electronic survey using Qualtrics software. The survey used questions adapted, with permission, from the National Student Survey of Engagement to fit an online secondary educational setting by excluding the benchmark of a supportive campus environment. Additionally, the researcher added survey questions to measure variables in

27

demographic data and online experience indicators to address each of the identified research questions.

Organization of the Remainder of the Study

This chapter provided an overview of the history of online education, from telecommunications to the Internet. Distance learning has grown from the humble beginnings of mailed correspondence and telephone calls, to supplemented materials recorded on videotape. Today, distance education focuses on providing alternative learning environments through the use of Internet and Learning Management Systems, providing students with the ultimate freedom of flexible learning. The continued growth in online education shows no signs of stopping.

With growing popularity in online education, there exists a need to determine whether these alternative programs are effective for educating. Student engagement is a clear indicator of student success when measured in traditional school settings; the same should apply towards online programs (Gray & DiLoreto, 2016; Suttle, 2010). While a measure of student engagement exists with Indiana University's (2017) development of the National Survey of Student Engagement, there is a defined gap in studies focused on secondary online education. In order to measure student engagement, a study focused on determining relationships towards what may cause engagement at the online secondary level was needed.

The chapters to follow will provide additional research on this topic, as well as components of this study. Chapter II focuses on an extensive review of the literature available for measuring student engagement and methods of improving engagement in an online environment. Chapter III includes the methodology of the study along with the procedures to survey Minnesota secondary online students. The results of the study are provided in detail in

Chapter IV. Finally, Chapter V draws a conclusion to the study and provides recommendations

for further study.

Chapter II: Review of Literature

Introduction

Online education continues to grow at a rapid pace. A database search using *online* and *education* reveals extensive studies on population, satisfaction, and best practices in forming online programs. Allen and Seaman (2015) note an increasing rise in enrollment for online education, particularly at the secondary level. It is becoming increasingly more common for students to enter their post-secondary education with previous experience working in an online environment (Shelton, 2010; Suttle, 2010). With this rise in popularity comes an equal need for establishing effective online curriculum at the secondary level. Online secondary programs are notably performing at a lower level than their traditional counterparts (Holley & Oliver, 2009). Additionally, research in online education reveals a positive relationship between student active engagement in learning and their ultimate academic success (Suttle, 2010). Yet, a notable absence of studies focused on measuring student engagement in a secondary online educational program exists.

This noted gap in the literature of student engagement in online secondary courses leaves many schools at a loss for how to develop and improve curriculum. A database search for *online education* and *student engagement* reveals multiple studies related to post-secondary methods of measuring engagement in an online world; however none of these acceptable methods of measurement have been modified for secondary education. Indiana University (2017) established four benchmark variables for measuring student engagement in their National Survey of Student Engagement (NSSE), a widely accepted post-secondary survey used by thousands of schools across the United States. Suttle (2010) has adapted this survey for use in an online college program, creating a similar bridge to fill the needed gap in education. An applied study

of the NSSE to students in an online secondary educational program would measure levels of engagement, and note areas of needed improvement, to drive administrative change in creating quality curriculum.

The aim of this literature review is to explore each benchmark of the NSSE in order to establish best practices for creating or modifying secondary online programs. This information will prove valuable to the proposed study by providing resources for improvement on null relationships in benchmark variables. Additionally, the literature review will include a discussion on the conceptual framework and theory driving the benchmark variables and the proposed study.

Evolution of Online Learning

Online education holds common roots at the post-secondary level with only a few recorded K-12 institutions reported in the early twenty-first century (Shelton, 2010). The concept of online learning is still relatively new to education and, therefore, has limitless possibilities to grow. The primary purpose and appeal to online education was to provide a flexible option for students in need. This is primarily aimed at post-secondary students who were working to fund their educations, or adult learners (Shelton, 2010; Suttle, 2010). As societal norms began to change, the desire for flexible education grew and expanded to students at the K-12 level.

Czerkawski and Lyman (2016) note an increasing student desire to learn on a schedule more suited to their needs. Students often focus on interests, passions, and talents that require time unfitting to a traditional school setting. Additionally, the twenty-first century is one of rapid technology growth and exploration that makes an online education suitably adaptable for a technology savvy generation (Suttle, 2010). As technology continues to offer endless

possibilities, the delivery of educational content through the medium of technology is arguably

comparable to students sitting in a physical school setting. Similarly, education itself is growing

and adapting to fit the needs of each student. The concept of personalized learning is one that

focused on individualizing instruction and allowing students to develop choice, or interest (Gray

& DiLoreto, 2016; Pazzaglia, 2016; Suttle, 2010; Yen & Abdous, 2011). While online programs

can meet or exceed the enrollment numbers of a traditional classroom, personalized learning can

be accomplished through the simple option of flexibility.

Conceptual Framework and Theory

Student learning can be measured based on the Constructivist Learner Theory that

focuses on student-centered learning, rather than teacher aid in imparting knowledge. This

theory is applied to students in an online setting where they are expected to construct their own

learning. The learning-centered approach of this theory places the student in charge of their

education and promotes self-sufficiency with the teacher serving as a moderator. In online

education, constructivist learning promotes higher levels of student engagement with static

curriculum and teacher moderation (Bradford, Mowder, & Bohte, 2016; Juvova et al., 2015; Lin,

Szu, & Lai, 2016; Sosulski & Chernoff, 2015; Suttle, 2010). Online educational programs are

suited for student ownership in learning from the highly flexible opportunities presented within

online environments.

Online curriculum should be designed to grow from simple ideas to more complex, and

higher order thinking when designing assignments and sequence (Juvova et al., 2015; Suttle,

2010). Student engagement works in collaboration with student learning, in that students who

lack engagement are unable to actively learn. While online educational programs are suited for

Constructivist Learner Theory, student engagement is critical to the interpersonal exchange of

32

ideas, and goals, between student and teacher. Constructivist Learner Theory relates to the NSSE benchmark variable of Academic Challenge in measuring the rigorous standards to which students are held. Academic Challenge includes the high level of rigor and expectations posed by an institution, as well as the opportunity for students to demonstrate mastery creatively, thus engaging their interest (Indiana University, 2017). Institutions lacking in student engagement should consider analyzing their course structure and delivery for academic challenge and opportunities for creativity.

Students who are actively engaging in learning independently in an online environment will benefit from a structure that moves from simple ideas to those that are more complex. The Constructivist Learner Theory model not only requires interpersonal exchanges between student and teacher, but also a course layout that supports the student learning building model (Juvova et al., 2015). E-Learning Engagement Design (ELED) is an instructional design framework, which focuses on designing curriculum for an online classroom that engages students (Czerkawski & Lyman III, 2016). Instructional design needs to be adapted from traditional classroom settings in order to promote success for students. Czerkawski and Lyman III (2016) focus on building an instructional framework that embraces the Constructivist Learner Theory model through consistent teacher and student feedback. This constant flow of feedback aligns to the NSSE benchmark variable of Active and Collaborative Learning, which stresses the value to engagement of student interaction and sharing of ideas (Indiana University, 2017). These skills are beneficial to build into an online curriculum in order to alleviate the common misconception of anonymity with online learning, as well as to establish a community feel with a sense of belonging for the student.

Building a foundation of student-to-teacher relationships makes up one of two methods to fostering a community in an online environment—a technique that increases student engagement (Dixson, 2015). The Online Student Engagement Scale (OSE) measures student engagement based on teacher perception of student provided feedback on course design (Dixson, 2015). This can be used alongside student success rates measured in course completion to validate the truthfulness of student feedback on the scale provided. Student feedback can be measured, and assessed, in connections with multiple variables, such as teacher relationship, when following Constructivist Learning Theory. Measuring student engagement can provide a baseline data when comparing variables of influence to promote student success. Dixson's (2015) OSE promoted Social Constructivist Theory with a focus on student engagement based on opportunities for student-to-student collaboration built within an online educational program. This theory aligns to the NSSE benchmark variable of Student-Faculty Interaction, which demonstrates the positive effects of modeling in engaging student learning (Indiana University, 2017). This variable enhances a focus on teacher-student relationships, and fosters a sense of community in an online environment where there is threat of anonymity and solitude.

Where Dixson's (2015) engagement scale focused on teacher perception through feedback, Gray and DiLoretto (2016) similarly questioned perceptions of engagement. This study, however, centered the focus on interviewing students and relying on self-reporting for engagement measurements. Student-centered research aligns to the idea of student-centered education within the Social Constructivist Leaner Theory. Rooted in Vygotsky's Social Cognitive Theory, this theory is the foundation for the Constructivist Learner Theory and focuses on the benefits of student collaboration for social aspects of learning (Bradford, Mowder, & Bohte, 2016; Juvova et al., 2015; Suttle, 2010). These are often missing in online learning with a

lack of daily interaction; however the theory is important to consider in structuring courses and facilitating learning for teachers.

National Survey of Student Engagement Benchmarks

The NSSE benchmark variables focus on identifying aspects of student learning and experiences in their educational program (Indiana University, 2017). Each benchmark is grounded in conceptual theories of Constructivist Learning, Social Constructivist Learning, and Social Cognitive theory to establish a framework survey. Indiana University's (2017) identified benchmark variables form the basis of their survey questions in order to obtain valuable information from student-reported feedback in order to aid an institution in structuring curriculum, experiences, and relationships. The remainder of this literature review deals with the four applicable benchmark variables, removing the non-applicable benchmark of Supportive Campus Environment, including best practices in modifying or creating quality curriculum in each area.

Level of Academic Challenge

Level of academic challenge refers to intellectually challenging coursework that is student-centered and learner-focused (Indiana University, 2017). Online programs are, by nature, static curriculum, meaning that all course materials are available at the beginning of the school year with little to no changes occurring during the instructional period. For this reason, determining a level of academic challenge in an online setting is focused on course structure and how courses are built. The literature in this section will focus primarily on theory and studies that investigate relationships between student engagement and clear course structure as it applies to measuring Academic Challenge. The included research is beneficial to schools that present an

absent, or null, relationship between student engagement and the Academic Challenge benchmark, as it provides theory on adapting curriculum to an online world.

Technology Enabled Learning (TEL) can exist in exclusively online or hybrid options with hybrid programs being those that focus on synchronous sessions, or in-person meeting times. TEL was a method used by Clarida et al. (2016), which focused on pedagogies in online educational programs. These programs were examined in comparison to a diverse learning population to gain understanding of best practices in online structure. This approach to the research problem focused on identifying students that expressed preference to learning, while immersed in technology. The results of this study conclude that students primarily note digital exclusion negatively impacted their engagement due to a lack of understanding on how to do their work (Clarida et al., 2016). The study further reported that students provided feedback for the specific University's online educational program under analysis, stating it was unclear in directions and guidelines. While this study provided insight into understanding student engagement from student provided feedback, the limitation in scope does not allow for building a consistent framework that combats these deficits. The study did, however, successfully identify key areas that were further researched by the NSSE, as well as provided methods of determining a population of students identified as capable online learners. The NSSE benchmark for Academic Challenge stresses a high level of importance on setting clear expectations for students (Indiana University, 2017). This study modeled the advantages of engaging students with technology in an online setting, but also demonstrated the value in setting clear guidelines when structuring the course itself.

Gray and DiLoreto (2016) also focused on course structure as it impacted student engagement in an online environment. This study used student feedback through a survey

36

analysis on student satisfaction with course layout and design, and compared results to student success measured in course completion. While this study was limited in not providing potential solutions to low satisfaction that leads to poor student success, it did aid in developing a connection between these two variables (Gray & DiLoreto, 2016).

Course layout and design in Gray and DiLoreto's (2016) study referred to sequence and difficulty of lessons, as well as readily available resources to promote self-sufficient learning. Casey and Kroth (2013) also focused on course structure in regards to student engagement. However, unlike Gray and DiLoreto (2016), the focus for promoting student engagement was based on setting clear expectations by sharing lesson outcomes and learning goals with students prior to engaging with the assignment. This method of outlining lessons and sharing learning goals holds validity through Wiliam's (2011) extensive work in formative assessment, as it was adapted for online use. Much like the study by Clarida et al. (2016), student engagement was tied to digital learning, but a clear divide existed when the course structure was unclear.

Throughout the studies outlined above, the consistent theoretical framework referenced in structuring and designing online courses is Constructivist Learner Theory, which holds foundation in Vygotsky's Social Cognitive Theory (Casey & Kroth, 2016; Clarida et al., 2016; Gray & DiLoreto, 2016; Suttle, 2010). Constructivist Learner Theory focuses on student-centered learning where the teacher operates as a facilitator, and the student is accountable for primarily independent learning (Jaggars et al., 2013; Suttle, 2010). When considering a course structural design, or framework, teachers need to adapt material from the traditional classroom setting in order to effectively deliver instruction, but also promote student engagement. Oftentimes, students fail to engage in course materials due to a lack of understanding from an unclear structure, or from assignments that promote passive engagement where students simply

37

read and respond (Clarida et al., 2016; Paquette, 2016). Jaggars et al. (2013) noted in a case study focused on embracing technology integrated learning, that students benefited from assignments where they were actively engaged – meaning the student experienced interactive assignments through teacher videos, collaborative discussions, or engaging technology.

Active engagement can be obtained through interactive learning experiences built into the course and delivered at a distance. Suttle (2010) stressed the importance of active engagement with online courses through her dissertation study that discovered a strong relationship between quality-structured courses and active engagement in students. While collaborative learning will be discussed further in the literature review, it is important to note the relevance to structuring a course that supports collaborative learning. Learning structured into a course that promotes active participation engages student learning, and fosters a community feel often lost to those without face-to-face interaction (Guojonsdottir et al., 2015; Isserles, 2015; Ladner et al., 2003). Effective use of collaborative elements must be built into the class to prove effective for engaging students. The results of each earlier case study indicated a need to not only measure student engagement in online learning, but also to reflect on the NSSE variable of Academic Challenge as it applies to course structure. Online institutions researched in this study that report a low, or null relationship between student engagement and Academic Challenge will benefit from tangible resources on clearly structuring their courses to fit an online environment.

Universal Design Theory and Framework

Limited research speaks to establishing a framework for online learning that models the NSSE benchmark variable of Academic Challenge; however, existing frameworks that show engagement in traditional settings can be modified for online environments. The Universal Design Learning Theory has an established framework slowly being accepted for online

adaptation at the secondary level of education. Universal Design Learning Theory promotes student engagement through structured lessons that are accessible for all learning styles (Dell, Dell, & Blackwell, 2015; Louwrens & Hartnett, 2016; Rao, Edelen-Smith, & Wailehua, 2015; Rao, Tanners, & Maona, 2011). An established framework focuses on building discussions and collaborative opportunities around modeling behaviors, as well as sharing learning targets with students—both techniques commonplace in formative assessment strategies for teaching (Dell, Dell, & Blackwell, 2015; Rao, Edelen-Smith, & Wailehua, 2015; Wiliam, 2011). Universal Design Theory itself is embedded in Constructivist Learning Theory with a student-centered learning approach, which compliments the benchmarks of NSSE standards for academic challenge to promote student engagement (Casey & Kroth, 2016; Clarida et al., 2016; Gray & DiLoreto, 2016; Rao, Edelen-Smith, & Wailehua, 2015; Suttle, 2010).

Rao, Tanners, and Manoa (2011) further enforced the engaging principles of Universal Design in a case study conducted on a secondary traditional classroom with students who possessed a learning disability. The positive relationship of student engagement among students who found success in the framework's accessibility of learning shows the potential of the theory itself. Dell, Dell, and Blackwell (2015) expanded on this study by adapting the framework for online delivery in their instructional research guide. While research is limited in applying Universal Design Theory and framework to online classrooms, the benefits of the theory in a traditional educational setting, alongside the alignment to NSSE benchmarks for promoting challenging and accessible academics, make this framework a viable option for online institutions with a absent, or null relationship between engagement and the Academic Challenge benchmark variable.

ELED Framework

The E-Learning Engagement Design (ELED) Framework was researched by Czerkawski and Lyman III (2016) and focused on establishing a solid platform model for engaging online learners. The framework developed through this research relied heavily on the NSSE benchmarks for student engagement, as well as promoted feedback. Wiliam (2011) stressed the value of feedback in education, not only for the student to receive, but to also provide to the teacher. The constant flow of feedback aids in successful assessment and engagement for the student. The ELED framework research and design holds validity in measurements following NSSE's credible scale, however the study holds limitations in scope by aiming at the postsecondary level of education. This study still served as an example that could be adapted for secondary use, assuming student engagement measurements using NSSE techniques show a positive relationship between academic challenge and engagement.

Active and Collaborative Learning

Active and collaborative learning is the second measured benchmark for the NSSE and references student participation with other students, as well as with the teacher (Indiana University, 2017). At the online level, collaborative learning is made more difficult as students are typically working at their own pace; an appealing quality to online, individualized learning. Collaborative learning should be structured into the course, as was previously noted in studies on course structure, with well-developed discussion boards that invoke thought for students, but also require sharing with peers (Wiliam, 2011). The literature reviewed in this section will focus on building collaborative opportunities for students into an online setting, but also on the goal of fostering a community presence for students learning at a distance.

Fostering a sense of community is in the control of the teacher through establishing clear communication, and a presence in an otherwise anonymous, online classroom (Gray & DiLoreto, 2016). Gray and DiLoreto (2016), as well as Zhang et al. (2016), note that teacher presence fostered a community in an online environment that promoted interaction between student to student, or teacher to student. While teacher social presence and interaction with students will be further covered in this literature review, it is pertinent to address their relationship in regards to collaborative learning. Collaboration can promote student self-awareness and self-regulation to remain on task, as well as engaged, in online learning. Social Awareness Theory addresses a student's self-reflection and sense of accountability, whether online or in a traditional setting. This theory is the foundation for the Constructivist Learner Theory and focuses on the benefits of student collaboration for social aspects of learning (Lin, Szu, & Lai, 2016; Paquette, 2016; Louwrens & Hartnett, 2016). Collaborative opportunities are often missing in online learning with a lack of daily interaction, however the theory is important to consider in structuring courses and facilitating learning for teachers.

Lin, Szu, and Lai (2016) focused on measuring students' peer awareness and group awareness when working in an online educational program. The researchers focused on a control group for comparison and allowed student-to-student interaction to collaborate on an individual assignment. Both groups received teacher feedback at the end of the assignment. A positive relationship between student success and engagement in community interaction was indicated through this study's methodology, with recommendations for future trials on sustaining this engagement, rather than limiting the analysis to one assignment (Lin, Szu, & Lai, 2016). Community interaction and self-regulation report positive student engagement and success in an online educational program. This study directly supports the NSSE benchmark variable of

Active and Collaborative Learning, and serves as a tangible example for online institutions with a low, or null relationship with student engagement.

Collaboration has often been met with leniency and limited adoption into online courses due to the difficulty in teacher facilitation and grading of online, collaborative activities. Teachers report that determining student input and, therefore, mastery over a select topic can be a barrier to embracing online learning (Alden, 2011; Gikandi et al., 2011; Jaggars et al., 2013). Considering the evidence identified by the NSSE benchmark of Active and Collaborative Learning, the struggle in student success among online programs seems inevitable, with the barriers of time and space in order to promote flexible learning. In response to difficulties in collaborative grading, Alden's (2011) case study focused on developing grading methods accessible to teachers in order to facilitate collaborative projects. The case study presented research and techniques regarding shared grading efforts, as well as technology-integrated tools that could monitor student participation. Alden (2011) also suggested students provide feedback to the teacher for each group member to expand on accountability efforts and social awareness.

Gikandi et al.'s (2011) research embraced the student feedback model through the use of student portfolios and grading. This method allowed for extensive peer review processes that minimized teacher grading, but allowed for collaborative efforts with individual grading methods. This online adaptation of a portfolio relies heavily on Wiliam's (2011) formative assessment strategies of student mentorship to promote accountability and engagement. More commonly, Google Education (2017) tools and capabilities allow for tracking, monitoring, and use of collaboration through documents. Google documents allow students to work simultaneously with an added feature of tracking changes for easy teacher grading. With the NSSE benchmark variable of Active and Collaborative Learning promoting student engagement,

42

it is critical to assess tangible methods of adapting existing models of collaborative success for online educational use.

A student collaborating with other students in an online environment fosters a student mentorship that models Constructivist Learner Theory of student led learning. Wiliam (2011) further stresses the importance of feedback from student to teacher in regards to student mentorship as it presents an opportunity for students to demonstrate their mastery. As a measurable benchmark for the NSSE, the implications of this mentorship model to an online environment are valuable. In a study conducted by Borup (2016), student mentorship and student-student interaction was further analyzed for its relationship with student engagement in an online educational program. This study focused on direct interaction between students through discussion forums and peer review. Borup (2016) collected teacher surveys and interviews in order to determine a relationship with students who were expected to collaborate in an online course, and those who were not. This study reported positive findings from teacher feedback, however limitations exist in the narrow scope with one online institution as the population of study. However, the variation in data collection from the perspective of the teacher is beneficial to understanding the true relationship of student engagement via interaction. When considering the NSSE measured benchmark variable of Active and Collaborative Learning, it is important to recognize that prompt and timely teacher feedback is critical to engaging students (Indiana University, 2017). In an online institution where this relationship to engagement is low, or null, teacher feedback should be considered for the collaborative benefits of teacher to student.

While student engagement has a positive relationship with collaborative opportunities, it is also important to foster a community feel in an online educational program. Establishing a

community through promoting a sense of social awareness will give students a sense of trust, which is critical to promoting participation in collaborative activities (Glassmeyer et al., 2011; Paquette, 2016; Suttle, 2010). In addition to establishing trust, Suttle (2010) also found that students reported higher engagement when given the opportunity to interact with classmates and felt a connection that is often missing in distance education. Borup (2016) expanded on this by reporting an 86% increase in overall engagement when students worked with one another. Teachers can work to facilitate collaborative interactions and structure discussions into an online course to build a community, while also participating in a strong teacher presence to gain trust from students. If an online institution finds a low, or null relationship between the Active and Collaborative Learning variable and student engagement, discussions adapted for online use can be analyzed and considered in structuring a course.

A common collaborative tool for online programs that is built into most Learning Management Systems (LMS) is a discussion board. The discussion board provides an online alternative to a classroom discussion and gives students the opportunity to connect with one another, as well as beneficial feedback to the teacher (Wiliam, 2011). When creating a discussion, Wiliam (2011) recommends focusing on open-ended questions that stimulate critical thinking. Online discussions require teacher facilitation and monitoring with stimulation for student engagement through teacher posts, but also clear guidelines and expectations (Andrade, 2015; Dixson, 2015; Isserles, 2015; Wiliam, 2011). Discussion guidelines should model appropriate posts and responses in order to promote active engagement. Paquette (2016) reported a need for community in order to build trust for student interaction. This is important for discussion boards where a teacher cannot call on a student, but must rely on student accountability for participation. Due to the nature of discussion boards being structured into

44

curriculum, they are not time dependent and allow for the flexibility that makes online programs appealing. As student engagement measurements rely on collaborative learning, it is important to keep options in mind to build effective online programs. Effective use of collaborative tools in an online environment will promote a relationship between student engagement and the NSSE benchmark variable of Active and Collaborative Learning.

Student-Faculty Interaction

Faculty to student interaction is a key component to learning and a primary benchmark for the NSSE measurement for student engagement (Indiana University, 2017). For online learning, interaction is key to student success as students learn from a distance and rarely experience traditional teaching. Online learning defines faculty to student interaction as teacher social presence in the classroom; teachers promote their personality and overall social presence to a course, and bring a humanized approach to distance learning (Gray & DiLoreto, 2016; Jaggars et al., 2013; Paquette, 2016). Social presence in an online classroom is often depicted through the use of forums and communication from teacher to student in order to ensure that a teacher is present in the course (Paquette, 2016). The literature reviewed in this section will focus on the benefits to establishing teacher social presence in an online program, as well as the importance of communicating timely feedback to student engagement. The evidence presented will provide tangible resources that support and develop methods for improving student engagement as it relates to the NSSE benchmark of Student-Faculty Interactions.

Teacher presence in the classroom promotes student accountability and promotes engagement, as identified by the NSSE benchmark variable of Student-Faculty Interactions (Indiana University, 2017). Curriculum should be designed around implementing teacher engagement (Gray & DiLoreto, 2016; Zhang et al., 2016). The association between teacher

45

presence and its effect on student engagement was the focus of Zhang et al.'s (2016) study. The study measured student interactive and constructive engagement through student-reported surveys, noting a positive relationship with teachers fully engaged in the course. The limitations of this study fall on the researcher's chosen scope on adult learners (Zhang et al., 2016). Regardless of the use of adult learners as opposed to K-12-aged learners, the study indicated a relationship between the two variables of student-faculty interactions and student engagement. Suttle (2010) also stressed the importance of teacher interaction, as it presented a significantly positive relationship to student engagement when measured amongst postsecondary students. Students who struggle with accountability and self-motivation in online learning can benefit from teacher interaction, thus increasing overall engagement (Casey & Kroth 2013; Holley & Oliver, 2009; Pazzaglia et al., 2016). Teacher social presence serves engagement, making it a vital component for an online program, as identified by the NSSE (Indiana University, 2017). Online institutions that report a low, or null relationship between student engagement and the NSSE benchmark variable of Student-Faculty Interaction likely may be a result of poor teacher engagement, or adaptation to the online environment.

Teacher engagement in establishing a social presence can easily be obtained through the use of clear, prompt feedback. Feedback that clearly outlines student expectations is beneficial to promote student mastery; however promptly timed feedback is essential, particularly in an online program (Suttle, 2010; Wiliam, 2013). Teachers can establish a social presence and also foster a sense of community and trust through effective feedback, as previously discussed. The benefit to feedback is in the interaction between student and teacher where mastery level can be gauged, in order to assist student-centered learning by facilitation and guidance (Casey & Kroth, 2013; Louwrens & Hartnett, 2016; Wiliam, 2013). While feedback should work alongside other

methods of establishing teacher social presence, the benefits to this method regarding student engagement are clear. The NSSE benchmark variable of Student-Faculty Interaction relies heavily on teacher feedback as it works to guide student learning (Indiana University, 2017). When presented with an online learning environment where students work at a distance from their teacher, feedback is critical to the teaching process (Yen & Abdous, 2011). Online institutions reporting a low, or null relationship in this variable measurement may need to assess their teacher feedback quality as a means of guiding student learning.

Enriching Educational Experiences

The final NSSE benchmark applicable to online education is an enriching educational experience. The definition of this benchmark, according to NSSE, is learning opportunities presented to students that engage with content outside of the classroom (Indiana University, 2017). Online learning by nature occurs outside of the classroom to allow for a flexible learning schedule. The focus of this section of the literature review will be on aspects of technology integration and enriching tools for academic learning as it closely aligns with academic challenge and collaboration. The purpose behind this review is to provide tangible methods to implement for institutions showing a low, or null relationship, but also to solidify the reliability of NSSE's research.

Suttle (2010) promoted the idea of interaction with course material in her study. Courses structured around interactive elements, such as collaborative discussion boards, or forums as previously discussed, promoted student engagement (Indiana University, 2017; Suttle, 2010). Additionally, interactive experiences such as videos promoting teacher social presence were also necessary to stimulate engagement and enrich the learning experience (Suttle, 2010). Technology provides the opportunity to simulate a classroom setting, however it also helpful to

bring real world experiences into the virtual classroom. Sosulski and Chernoff (2015) explain in their research on video immersion how real-life job shadowing can benefit students at the postsecondary level. This experience brings to life what a student is studying and is useful to those who are unable to physically attend internship opportunities. While this is not geared for the secondary level, the push for college and career readiness can benefit from this experience. Likewise, Indiana University's (2017) NSSE benchmark variable of Enriching Education Experiences promotes the effective use of college and career exploration with applicable assignments to real-world experiences.

Beckem (2012) developed Immersive Learning Simulations (ILS) in a case study. The focus of these simulations was to bring real-life experiences and immerse online learners. The overall effect was of a virtual field trip without a needed synchronous environment for easily accessibility to all students. Beckem (2012) reported that students received a kinesthetic and hands-on feel to the immersive learning environment, increasing engagement. This example of an enriching educational experience is appealing to students with varied learning styles, promoting accessibility and engagement to various learners. This tangible solution to the distance gap presented in online learning allows for the offering of Enriching Educational Experiences as identified by NSSE (Indiana University, 2017). The adaptation of virtual field trips, or ILS, into curriculum online would benefit an institution struggling with a low, or null relationship in this variable compared to student engagement.

Universal Design Learner Theory, as previously discussed, is grounded in enriching educational experiences that have adaptability embedded into the curriculum for easy access amongst various learning styles (Dell, Dell, & Blackwell, 2015; Rao, Edelen-Smith, and Wailehua, 2015; Rao, Tanners, & Manoa, 2011). This theory focuses on establishing

accessibility based on the various learning styles identified by Howard-Gardner, but also on disabilities (Dell, Dell, & Blackwell, 2015). Enriching education experiences are beneficial to engaging students in active learning and participation—the concept of active engagement being previously identified as critical to student success. By actively engaging students in culturally rich and real-world lessons, institutions should see a positive correlation to the relationship between the NSSE benchmark of Enriching Educational Experiences and student engagement.

Demographic Variables

Demographic variables will be measured in this study to get a full picture of student engagement in an online learning environment. The variables that will be measured are in grade level and employment status. The measurement of a student's age through grade level will help to determine the motivation level and educational history for the student. Student age can determine the student's level of maturity in order to self-motivate in an independent learning environment (Baturay & Yukselturk, 2015). When students elect to enroll in an online flexible program, they are accepting a role that requires self-advocacy and technical skill. By determining an age level in this study, the NSSE benchmark variable measurements can be validated for effectiveness in measuring student engagement. Baturay and Yukselturk (2015) note in their study that students in the lower levels of education often have not developed the capacity to manage self-motivation effectively during this stage of their cognitive development. Students are often unable to conceptualize time and are often incapable of gauging how long it will take to complete work (Baturay & Yukselturk, 2015). In regard to this study, it would not be uncommon for 9th and 10th grade students to report low levels of engagement without a positive student-faculty interaction as a guiding mentor.

Alongside the demographic variable for age, secondary education also requires the measurement of student employment status to determine a student's feasible time to commit to school. Baturay and Yukselturk (2015) note the flexible benefits of an online learning program, however they also warn that students can frequently require this flexibility due to employment. When measuring the NSSE variables, a student who is employed full-time will likely see little to no success, even if they report a high level of engagement. Suttle (2010) also noted that post-secondary age students additionally see struggle with balancing employment with their selected class workload. Considering the developmental stage of adolescents in these grade levels, it can be expected that multitasking would further prevent them from successfully managing time and seeing success (Baturay & Yukselturk, 2015). When considering data within the study, this variable can help identify irregularities.

Experience Variables

Experience variables will be measured in this study to also encompass a full vision of student engagement in online learning. The variables that will be measured in are in length at current institution and previous online learning experience. The measurement of length at current institution can be important in considering the accuracy of student-reported engagement when considering student success. Harrell (2008) promotes the idea of schools building an orientation course for students to adapt them to the online learning experience. When students are experiencing online learning for the first time, there can be an adjustment period where students see low success even if they feel engaged. This experience variable can identify areas of discrepancies when considering a student's active engagement.

The other experience variable that will be measured is previous online learning experience. Similar to the previous variable, a student who is new to a program, or who has

50

frequently jumped programs, will often face confusion in the variety of Learning Management

Systems (Harrell, 2008). However, a student with a strong background of online learning can

also possess self-motivation skills that promote a high level of success. As with demographics,

these variables in experience assist in identifying any irregularities in relationships and provide a

larger picture view on student engagement in online secondary education.

Conclusion

Measuring student engagement can benefit any school administrator in a secondary

online program. Students who are actively engaged in their learning will see academic success,

which benefits all stakeholders in an online program (Czerkawski & Lyman III, 2016; Gray &

DiLoreto, 2016; Suttle, 2010; Yen & Abdous, 2011). The NSSE measures student active

engagement through student feedback with results that inform programs on where they can

improve curriculum, resources, and educational experiences (Indiana University, 2008).

Adapting this reliable survey tool for use in a secondary online educational program would

benefit institutions and allow for applicable modification in null relationships for benchmark

variables of Academic Challenge, Active and Collaborative Learning, Student-Faculty

Interactions, and Enriching Educational Experiences.

This literature review has provided valuable best practices grounded in theory and

aligned to each benchmark variable. These methods can enhance a student's experience outside

of a traditional classroom and provide flexible learning as desired from an online program.

Additionally, the theoretical framework of each benchmark variable holds validity in Vygotsky's

Social Cognitive Theory, which has been a guide for educational practices (Bradford, Mowder,

& Bohte, 2016; Juvova et al., 2015; Suttle, 2010). Online education continues to grow at a rapid

pace making the development of quality measurements in student engagement critical to success.

Chapter III: Methodology

Introduction

Measuring student engagement through a student-reported survey is a complex but beneficial task for all online secondary programs to promote student success. Modifying Indiana University's (2008) NSSE benchmark variables by eliminating the fifth variable focused on campus environment, and also adapting the language to fit an online program, was a crucial step to this study. The NSSE benchmark variables provide strategic information regarding the structure and delivery of the curriculum, as well as the student experience in the online program. In order to gain a larger picture of student engagement, demographic information and previous online learning experience was also gathered.

As Creswell (2014) noted, quantitative studies are best suited for the social sciences. Additionally, the use of quantitative data allowed for a clear distinction in relationships between each variable and student-reported engagement. Outlying factors, such as demographic information and previous online experience, assisted in online programs as they worked to acclimate students, or accommodate their flexibility to suit student lifestyles.

Philosophy and Justification

The philosophical assumption of determinism is a post-positivist approach to research design that focuses on causes resulting in effects (Creswell, 2014). This theory of thought focuses on determining relationships through the use of a quantitative data analysis. The identified research questions of relationships were compared to determine which variable accurately predicted student engagement in online secondary education.

The NSSE survey has reliably predicted levels of engagement for post-secondary institutions with adaptations for use online (Suttle, 2010). For adaptation to the online secondary

level of education, additional measurements in demographic variables and experience variables were needed in order to see the whole picture. These variables enhanced the NSSE survey by identifying outlying factors that may prohibit student success online, such as employment or lack of online learning experience. The research effectively identified for online secondary educational programs what engages their students, but also what is preventing their students from success.

Research Design Strategy

Using the National Survey of Student Engagement by Indiana University (2013), with modifications to align questions with an online secondary educational program, a quantitative cross-sectional survey design study was conducted. The study employed the use of a Qualtrics Survey to ask students currently enrolled in an online secondary institution of their reported engagement levels. A survey of 22 Likert-like questions focused on the NSSE benchmark variables to gauge student engagement in areas of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, and Enriching Educational Experiences. Of those questions, one was focused on determining student success through student-reported grades. Additionally, questions gathered demographic data with age and current employment status through hours worked. Variables in experience, such as length at current institution and previous online experience, were also asked in the survey. The additional demographic and experience variables were used alongside the NSSE survey model in order to gain perspective on influential factors on student engagement outside of the online setting. Additionally, a final qualitative question was posed to participants in order to gauge overall student engagement.

The quantitative data gathered from the Qualtrics Survey was analyzed using statistical tests available through Statistical Package for the Social Sciences (SPSS). All quantitative data

was uniformly coded for analysis. The survey itself was distributed to online program directors after obtaining permission for participation in the study. The director was then asked to distribute the survey to students in order to protect student information and maintain anonymity. Each participating online program was evaluated for an existing survey policy due to the survey aimed at minor age students. Any program that lacked a survey policy was provided with a parental consent for director use prior to distributing the survey.

Distribution of the survey included a window of 14 days for participation. The director of each program was advised to send a reminder email after seven days had elapsed in order to elicit the most responses possible. All survey data remained anonymous. The dissertation results and modification of the NSSE questions was provided to Indiana University's NSSE *The College Report* per the agreement to use materials for this study.

Theoretical Framework

The framework of this study is focused around the theories embedded in Indiana University's (2008) NSSE with established benchmarks that align to Social Cognitive Theory, and Constructivist Learner Theory. These theories in education work to establish a framework that aligns to student-reported engagement with their academic coursework, educational experiences, and relationships within their educational program. The framework builds into a survey that aligns to each benchmark and was used in this study.

Vygotsky's (1978) Social Cognitive Theory focuses on students actively engaging in their academics through collaboration and socially establishing relationships. This cognitive awareness can hold students accountable for their work, making them more likely to engage in order to showcase a positive social presence (Bradford, Mowder, & Bohte, 2016; Juvova et al., 2015; Suttle, 2010). The NSSE benchmarks of Active and Collaborative Learning, as well as

Student-Faculty Interaction, align to this theoretical framework (Indiana University, 2008). In a secondary online program, these benchmarks can foster a community feeling and provide students with a sense of belonging in education that can lack personal connection due to distance.

Additionally, Constructivist Learner Theory focuses on student-centered learning where students are the focus of leading learning, rather than teacher-focused lecturing (Bradford, Mowder, & Bohte, 2016; Juvova et al., 2015; Lin, Szu, & Lai, 2016; Sosulski & Chernoff, 2015; Suttle, 2010). This aligns to the NSSE benchmark variables of Academic Challenge and Enriching Educational Experiences where the student is actively engaged and immersed in real-world experiences (Indiana University, 2008). In a secondary online program, these benchmarks can actively interest students and provide accountability for the student to engage with self-motivation; a technique necessary to success in an independent learning program.

Research Questions

The purpose of this study was to determine which factors in the NSSE benchmark variables, demographic variables, and experience variables relate to student engagement in online secondary education. The developed research questions were as follows:

Q1.) What relationship exists between student-reported grades in secondary online education, and the NSSE benchmark variables?

Q1a.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of academic challenge?

Q1b.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of active and collaborative learning?

Q1c.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of student-faculty interaction?

Q1d.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of enriching educational experiences?

Q2.) What relationship exists between student-reported grades in online secondary education, and the demographic variables?

Q2a.) What relationship exists between student-reported grades in online secondary education, and the demographic of age?

Q2b.) What relationship exists between student-reported grades in online secondary education, and the demographic of employment?

Q3.) What relationship exists between student-reported grades in online secondary education, and the experience variables?

Q3a.) What relationship exists between student-reported grades in online secondary education, and the experience variable of length at current institution?

Q3b.) What relationship exists between student-reported grades in online secondary education, and the experience variable of previous online learning experience?

Hypotheses

There were eight hypotheses and eight alternative hypotheses proposed:

1st Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

1st Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

2nd Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

2nd Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

3rd Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

3rd Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

4th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

4th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

5th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of age.

5th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of age.

6th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of employment.

6th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of employment.

7th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

7th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

8th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

8th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

Variables

There were three proposed variables in this study in addition to student-reported grades:

- NSSE Benchmark Variables: Academic Challenge, Active and Collaborative Learning, Student-Faculty Interaction, and Enriching Educational Experiences

58

- Demographic Variables: Grade Level, Employment

- Experience Variables: Length at current institution, previous online educational experience

Measures

Survey questions were based on Indiana University's (2013) National Survey of Student Engagement's model with modifications of questions as they apply to online and secondary programs. Permission to modify questions within this survey had been obtained prior to research from the NSSE branch, *The College Report*. The NSSE benchmark variable related to campus life was removed due to an inapplicable relationship to online education, which occurs at a distance. Additionally, the survey questions on Academic Challenge were modified to analyze challenge comparable to a secondary level of education. For example, survey questions focused on larger papers were scaled down in page size. Demographic and experience variables were added into the survey for a larger picture of outside factors that may influence student engagement.

Use of the NSSE questions was based on the validity of results and current participation of 725 colleges and universities in 2017 (Indiana University, 2017). The survey itself has been an effective measurement of student engagement at the postsecondary level since the year 2000 with over 1,600 institutions participating (Indiana University, 2017). Tendhar, Culver, and Burge (2013) conducted a study on one institution's senior level students to further validate engagement measurements based on graduation success; a study that validated the NSSE benchmarks. Additionally, Suttle (2010) focused on modification of the NSSE for use in an online postsecondary environment by removing the benchmark on Campus Experiences. The results of this study showed an effective measurement of relationships aligning to reported

student success in student grades and graduation rates (Suttle, 2010). Further modifications were made in this study in question selection. Only questions applicable to a secondary educational level were used with others omitted, such as those that focused on working with advisors or faculty on career activities. These modifications were minor and did not remove from the effectiveness of the survey itself.

Sampling Design

The entire population (N) for the study consisted of students currently enrolled in an online secondary educational program approved by the State of Minnesota. An online secondary educational program is defined as an online or hybrid learning environment where 80% of the instruction is conducted online, either synchronously, or asynchronously, and serving Grades 9-12 (Dixson, 2010). A population selection was random using a research randomizer in order to allow for generalized results to the entire population (N) of students enrolled in an online program within the State of Minnesota.

The sample population (n) for the study was students currently enrolled in an online program in Minnesota. The sample for this study was selected using a random sampling from the Minnesota Department of Education's (2017) list of approved online providers for secondary education. The random sampling of programs focused on identifying 20 institutions for participation. Of these 20 programs, 3 agreed to participate, yielding a population (n) of 1,263 students to which the survey was sent.

Data Collection Procedures

A link to the Qualtrics Survey was sent to students currently enrolled in an online secondary educational program through a formatted email provided to the program director for disbursement. The Qualtrics Survey questions and formatted emails can be found in Appendix

A. The survey window was open for two weeks, or 14 days. A reminder email was sent to the program director to then send to students after one week, or 7 days, had elapsed in order to obtain as many responses as possible. All survey responses were anonymous and confidential.

Data Analysis

Data collected using the Qualtrics survey was analyzed with the SPSS program for quantitative data. The NSSE benchmark variables are typically measured on multiple scales of measurement. In order to create a standardized method of scoring data, all rating scales were Likert based. Additionally, the open-ended question in the survey was reviewed for responses, however the poor participation in this question rendered it unusable for the survey data analysis. Questions related to each benchmark variable were added together for analysis: questions 1-7 for Academic Challenges, questions 8-10 for Active and Collaborative Learning, questions 11-14 for Enriching Educational Experiences, and questions 15-17 for Student-Faculty Interactions.

The data in this study was analyzed using a Pearson's *r* correlation coefficient analysis to compare continuous variables: the variable of student-reported grades and other variables in NSSE benchmarks, demographics, and experience. These analyses determined if a statistically significant relationship exists to better understand student engagement and if any variables relate to one another. Based on the quantitative nature of this study and the continuous nature of these variables, a correlation coefficient analysis is a fitting test to demonstrate relationships (Creswell, 2013).

Field Test

A field test was conducted on three professionals to validate the survey structure. The survey structure and formatting was the primary focus on this field test, as all question content and wording was not modified from NSSE. Maintaining questions used in the NSSE helps

maintain validity, however question ordering, structure, and presentation were modified for a better overall electronic flow for secondary students. The survey structure was modified using valuable feedback to engage students and create a clear, concise presentation of information.

Pilot Test

A pilot test was conducted to determine the effectiveness of the NSSE survey questions in addition to measuring the readability of the survey's language for appropriate grade levels. The Qualtrics survey in Appendix A was modified from 23 questions to 46 in order to include open-ended follow-up questions testing the readability. Participants were asked, "Do you understand what this question is asking of you? If not, please explain what option and what you do not understand" following each of the 23 survey questions. This method of electronic delivery kept the integrity of the survey, but also allowed for a measure of understanding for the survey's language.

The survey questions were sent to 10 individuals in grades 9 through 12 who were not potential participants in the dissertation study. Of the 10 individuals invited to participate, 5 individuals responded completely. The survey was sent out through email to participants in April of 2018, as well as a reminder email after 7 days had passed to promote maximum participation. The survey window was open for 14 days before closure and data analysis. Data was exported and analyzed using SPSS.

Findings

The purpose of the field study was to determine readability and test the survey instrument as a tool. Data analyses using Pearson's r correlations were not conducted based on 5 total participants being too small to yield significant relationships. The survey tool itself was able to effectively collect data using Qualtrics.

Following each survey question in this field test, participants were asked their understanding regarding readability. Of the 5 total participants in this study, no participant identified areas of confusion or lack of understanding in the questions posed. The question itself was open-ended for feedback, but no participant indicated confusion through submission of information. The survey itself is therefore appropriate for the identified age group of the proposed study.

Recommendations

The pilot test was a valuable study to allow for validation regarding the language used in the survey. The NSSE readability is suitable for participants in grade levels 9-12 based on the validity testing, reducing the possibility of invalid data with the proposed study. Additionally, the field test was a valuable experience for the researcher in analyzing data using Pearson Correlations. These analyses were run through SPSS with the assistance of Muijs' (2011) guide for quantitative research.

Limitations of Methodology

Creswell (2013) notes inherent limitations as those that are unintentional, but unavoidable in a quantitative study. The inherent limitations in this study derive from the randomized population and anticipated generalization of data. Randomized sampling as a general representation can still focus on a specific population without intention. The time constraint on the survey itself is also an inherent limitation, as students may have forgotten and failed to participate in the survey in time.

Additional limitations to the study are in participation. It was important to send the survey link via email to all selected directors, but to also send a follow-up reminder email 7 days prior to the window closing to ensure maximum participation. Responsibility fell on the

shoulders of the director for each school, meaning it was important for the researcher to gain

their buy in through sharing results on student engagement. This survey also holds limitations

with sample students being chosen at a state level, meaning all respondents resided in the state of

Minnesota. While this does not have a direct impact on the study results, it does hold limitations

in not being representative of the educational population as a whole. Due to the narrowed focus

on this sample, a limitation additionally exists in the smaller size.

Limitations also exist in the skill level of students participating in the study. While the

pilot test determined readability for a select group of students, those who are lower level for

reading skills may still struggle with the language of the survey. Additionally, limitations may

exist in the barrier of students accessing the survey itself. While Qualtrics is an electronic survey

distribution tool that can allow for students to use tools such as screen readers, students may still

struggle to complete the survey based on a lack of skill with technology.

Regarding participants, there exists a limitation in student honesty when responding to

the electronic survey. Students may not accurately report their grades, demographics, or

experience data in their responses. Based on confidentiality, the researcher is not able to validate

survey data with a program's reported accountability measures. Additionally, the nature of a

Likert-scale presents a limitation in student response based on a student's perception of the

choices presented. It is possible that students may differ in their ideas of what is 'fair' and

'good' when considering the survey questions. Furthermore, limitations exist in the deliver of

content to participants. This survey is focused on online learning, however students may receive

synchronous support, or additional interventions in their curriculum delivery. The nature of

online programs is that they are varied in scope, leaving a limitation to the researcher's

knowledge of the curriculum offered with each program.

Delimitations in this study include participation of a random convenience sampling of Minnesota online secondary providers. This narrowed focus is intentional to allow for manageable data collection. The narrowed focus on the State of Minnesota is based on available resources for the study conduction.

Ethical Considerations

To ensure all ethical considerations were taken, permission was gained from the Bethel University's Institutional Review Board (IRB) prior to conducting research. All school directors received an email to forward onto their students with an included informed consent form indicating the student's understanding of risks and benefits prior to completing the survey. Due to the minor age of students, communication was routed through the director of each institution to avoid student contact information being revealed. Student information was at no time provided or requested within the survey. Additionally, school survey policies were investigated for authorization for the student to participate in third-party surveys. For institutions lacking a survey policy, work was conducted with the director to gain parental consent. Parental consent forms were provided to the director, as well as a method of tracking potential participants to ensure data privacy for parents and students to the researcher. Finally, no identifying information was collected from participants aside from necessary demographic information.

Survey results were analyzed using SPSS and shared within the dissertation. Individual participant responses were only viewed through data analysis of the researcher conducting the study. Cumulative data results of the proposed study were shared through the dissertation publication. Additionally, directors of each participating institution were provided with cumulative survey results, however no individual responses were provided. *The College Report* NSSE team was provided with cumulative data without access to individual responses, as well as

a transcript of the modified NSSE. All responses were kept anonymous and confidential to

protect participants and adhere to the Belmont Report principles.

Chapter IV: Results

Introduction

The purpose of this study was to identify relationships between variables that can better understand student engagement as it relates to student success. This study was conducted using a Qualtrics survey sent to students currently enrolled in an online secondary program within the state of Minnesota. The survey was quantitative in nature.

Data from this survey were analyzed by the researcher using SPSS software and Pearson's *r* correlations to determine the existence of relationships between variables in NSSE benchmark variables, demographic variables, and experience variables, as well as with student-reported success through grades. Additionally, an open-ended question was added to the survey to better understand student perceptions of engagement.

This chapter will focus on a discussion of the Pearson's *r* correlations for each measured variable. Additionally, conclusions are drawn for each of the variable measurements in order to address each of the 8 hypotheses posed within the study.

Descriptive Statistics

Demographics

The demographic results from the survey are shown in Tables 9 and 10 below. Tables represent data including sample size and student grade level.

Table 1

Demographic Data: Sample Size

Minnesota Online Secondary Students	
Sample (n)	112
Population (N)	1,263

There were 20 secondary online programs emailed to participate in the study. A total of 3 program directors agreed to participate. From this sampling, a total population of 1,263 students was sent the survey during a 2-week timeframe. Exactly 112 students chose to respond. This resulted in a response rate of 8.6%. The lower response rate percentage was likely caused by multiple mediums used to communicate with students. Contacting program directors in order deliver the electronic survey to students presented a barrier to direct communication with participants. However, the 8.6% response rate is still positive considering the ethical need to protect student confidential data.

Table 2

Demographic Data: Grade Level

What is your current Grade Level	
9th	7
10th	23
11th	40
12th	39
Beyond 12th	3

Participants' grade level ranged from 9th grade to above 12th grade, meaning 5th or 6th year seniors. All grade levels were represented with at least one student from that grade level. The primary grade level for participants was in 11th and 12th grade with a smaller sampling for 9th graders and those beyond 12th grade. The median participant grade level for this study was 11th grade. 112 responses were collected regarding demographics meaning no participant elected to not respond.

The range of participants for grade level ensured results across multiple levels for measuring student engagement. Of the participants, 72% in this survey reported enrollment in 11th and 12th grade, leaving 25.5% of the participants in 9th and 10th grade levels. The lower response rate of 2.5% students beyond 12th grade was expected due to students ideally graduating within a four-year timespan.

Student Engagement

An open-ended question asked, "What engages you most in your online classes?" Participants were not prevented from completing the survey by not responding to this question. Of the 112 participants, only 5 elected to respond to this question. The researcher analyzed the 5 responses, however the responses did not yield information applicable to the benchmark, demographic, or experience variables. All 5 responses discussed flexibility in their schedule, which is a general benefit to online learning. For this reason, this question was not included in the data analysis.

Pearson's *r* Correlation Analysis

A Pearson's *r* correlation was used to test the significance of the relationship between student engagement measured by student-reported grades, and the NSSE benchmark variables, demographics variables, and experience variables. Table 3 includes data that addresses each of the hypotheses. Significant relationships are noted with a * and shown in the following table.

Table 3

Hypotheses

Pearson r Correlations

Variable	Correlation with Student-reported grades	*p*-value
Academic Challenge	.277*	.004
Collaborative Learning	.046	.634
Student-Faculty Interaction	.208*	.028
Educational Experiences	.258*	.007
Grade Level	-.091	.346
Employment	.034	.725
Length at Current Institution	.100	.296
Previous Online Experience	.027	.780

* Denotes statistically significant correlations

Based on the correlations, a statistically significant relationship was suggested to exist only in the NSSE benchmark variables. This was interesting as a relationship was expected for demographic variables of age due to student developmental state and inability to multitask, or self-motivate, leading to their lack of expected success with student-reported grades. Additionally, a relationship was suggested for experience variables due to a period of transition and adaptation to student learning. Among the NSSE benchmark variables, Active and Collaborative Learning was the only variable that did not show a statistically significant relationship.

The NSSE benchmark variables of Academic Challenge, Active and Collaborative Learning, Student-Faculty Interactions, and Enriching Educational Experiences have statistically

significant, positive relationships suggested to exist. Based on the correlations with student-reported grades, the highest positive relationship suggested to exist was in Academic Challenge. The lowest positive relationship was in Student-Faculty Interactions, which is interesting given the distance of online learning.

Additional correlations were conducted to gain further knowledge of the relationships between NSSE variables based on the relationships suggested to exist with student-reported grades. Table 4 includes data that addresses these correlations. Significant relationships are noted with a * and shown in the following table.

Table 4

NSSE Benchmark Variables

Pearson r Correlations

Variable	Correlation with Academic Challenge	Correlation with Collaborative Learning	Correlation with Student-Faculty Interaction	Correlation with Educational Experiences
Academic Challenge	1.00	.474*	.609*	.628*
Collaborative Learning	.474*	1.00	.357*	.466*
Student-Faculty Interaction	.609*	.357*	1.00	.574*
Educational Experiences	.628*	.466*	.574*	1.00

*Denotes statistically significant correlations
**All p values were .000 in these correlations

Each NSSE benchmark variable has a statistically significant, positive relationship that exists between them. These correlations are expected based on the validity of the survey tool

71

and statistical significance in relationships for each variable with student-reported grades. It is surprising that Active and Collaborative Learning suggests a statistically significant, positive relationship among other NSSE benchmark variables when this variable itself has no existing relationship with student-reported grades. Additional correlations were conducted between NSSE benchmark variables to determine if a relationship exists with student demographic variables, as well as experience variables. These correlations did not suggest a statistically significant relationship exists.

Chapter V: Summary

Introduction

Online education continues to see a rise in the 21st century, specifically in K-12 education with an emphasis on secondary level education. Allen and Seamen (2015) note that 1 in every 4 secondary level students will be enrolled in an online class prior to graduation. The drive towards increasing participation in online classes at the secondary level comes from an increase in online post-secondary options (Suttle, 2010). In an age of technological advancements and instant gratification, technology driven curriculum will continue to find a place in education. For this particular reason, it is increasingly important to analyze and review online educational programs for effectiveness in engaging students. Students who elect to take online courses should continue to receive and expect the same level of quality as traditional schooling. Despite the popularity of online education, there are few academic studies that focus on measuring student engagement to determine a program's success. With student engagement reported as a strong indicator of student success, an accurate tool to determine relationships in student engagement for online learning is critical (Suttle, 2010). This study was driven by a need to fill the apparent gap in literature for online secondary educational programs.

Overview of the Study

The purpose of this study was to determine which factors in measurable variables from the NSSE, demographics, and experience related to student-reported success in online secondary education within the state of Minnesota. The research modified the NSSE benchmark variables to fit an online educational program at a secondary level and added variables in demographics and experience for a wider focus of influences. By understanding all aspects of what may be impacting student engagement, the study could more accurately determine effective relationships

for each variable. The research questions posed in this study examined the variables that could impact student engagement in order to determine where online programs could actively spend their time in order to see improvement. Chapter V provides a review of the study, research questions and hypotheses, implications, and conclusions from the results. Additionally, recommendations are made for future studies in the area of online secondary education.

Research Questions

Three main research questions were developed for this study:

Q1.) What relationship exists between student-reported grades in secondary online education, and the NSSE benchmark variables?

Q1a.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of academic challenge?

Q1b.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of active and collaborative learning?

Q1c.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of student-faculty interaction?

Q1d.) What relationship exists between student-reported grades in online education, and the NSSE benchmark variable of enriching educational experiences?

Q2.) What relationship exists between student-reported grades in online secondary education, and the demographic variables?

Q2a.) What relationship exists between student-reported grades in online secondary education, and the demographic of age?

Q2b.) What relationship exists between student-reported grades in online secondary education, and the demographic of employment?

Q3.) What relationship exists between student-reported grades in online secondary education, and the experience variables?

Q3a.) What relationship exists between student-reported grades in online secondary education, and the experience variable of length at current institution?

Q3b.) What relationship exists between student-reported grades in online secondary education, and the experience variable of previous online learning experience?

Hypotheses

There were eight hypotheses and eight alternative hypotheses proposed:

1st Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

1st Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Academic Challenge.

2nd Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

2nd Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Active and Collaborative Learning.

3rd Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

3rd Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the NSSE benchmark variable of Student-Faculty Interaction.

4th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

4th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the benchmark variable of Enriching Educational Experiences.

5th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of age.

5th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of age.

6th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of employment.

6th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the demographic variable of employment.

7th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

7th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of length at current institution.

8th Null Hypothesis: There is no relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

8th Alternative Hypothesis: There is a relationship between student-reported grades using the NSSE survey in secondary online courses, and the experience variable of previous online learning experiences.

Conclusions

Overall, demographic variables had no impact on student engagement when it came to online secondary programs. The demographic variable of age was expected to be negatively related to student engagement, based on maturity levels. However, the Pearson's r correlation analysis ($r(112)= -.091$, $p=.346$) suggests no significant relationship exists. Similarly, the demographic variable of student employment status through hours worked was also expected to be negatively related to student engagement, based on time commitment being taken from academic work. The Pearson's r correlation analysis ($r(112)= -.034$, $p=.725$) suggests no statistically significant relationship exists. The measured demographics appear to have no impact on student engagement in secondary online programs. The absence of a relationship between student-reported grades and the demographic variable of age suggest that a student's

grade level does not correlate to their academic success in an online program. Instead, a

student's individual skill level for mastering content could be more reliable to determining their

overall engagement. The absence of a relationship between student-reported grades and the

demographic variable of employment suggest that a student's option to work, in addition to their

educational role, does not correlate to their academic success in an online program. A student's

ability to manage their education while also being employed could be a reflection of their ability,

or inability, to manage time effectively, rather than their academic success.

Additionally, correlations between demographic variables and the NSSE benchmark

variables suggest no statistically significant relationships. This further suggests the measured

demographics have no relationship with the curriculum of online programs. This indicates that

student age or student employment status should not impact how online curriculum is developed

or delivered. It is possible that students performing at a lower skill level can see a negative

impact on their success in an online program. This skill level is not always dependent on the age

of the student, or the student's individual ability to self-motivate. Students who learn at a lower

skill level than their anticipated grade level would benefit from differentiation in their online

learning. Similarly, students whose skill level is lower than their anticipated grade may not have

the skillset to motivate themselves, requiring guidance and support from staff in an independent,

online program. The absence of a relationship between demographic variables and the NSSE

benchmark variables does not reflect on student skill level.

Experience variables were also investigated in this study to determine if a relationship

with student engagement existed. The experience variable of length at student's current

institution was expected to have a negative relationship with student engagement, based on

adjusting to a new learning environment. The Pearson's *r* correlation analysis ($r(112)=.100$,

p=.296) suggests no significant relationship exists. Similarly, the experience variable of previous online learning experience was expected to have a negative relationship with student engagement for reasons of student adjustment to learning. However, the Pearson's *r* correlation analysis (*r*(112)=.027, *p*=.780) suggests no significant relationship exists. The measured experience variables appear to have no impact on student engagement in secondary online programs. The absence of a relationship between student-reported grades and the experience variable of length at the current institution suggest that a student's longevity at one online program does not correlate to their overall academic success. While a student may adjust and understand how the particular online program functions academically, the student may continue to be disengaged, or continue to be engaged based on initial experiences. Similarly, the absences of a relationship between student-reported grades and the experience variable of previous online learning experiences suggest that student knowledge of online learning does not correlate to their overall success. The student's ability to adapt to online learning and engage in curriculum could instead be a factor of their skill and ability to self-motivate, rather than a reflection of their online experiences.

Additionally, correlations between experience variables and the NSSE benchmark variables suggest no statistically significant relationships. This further suggests the measured experience variables have no relationship with the curriculum of online programs. This indicates that student's length of time spent at an online institution, or previous experiences with online learning, should not impact how curriculum is developed or delivered in an online secondary setting. It is possible, much like with demographic variables, that student skill level can be a factor in their ability to learn independently and adapt to online learning. The absence of a

relationship between experience variables and the NSSE benchmark variables does not reflect on student experiences and skillset for independent learning.

The study focused on measuring student engagement through student-reported success in grades against the NSSE benchmark variables. Positive relationships were expected to exist for each benchmark variable to suggest that curriculum is the driving force in online programs for student engagement and, therefore, student success. Overall, positive relationships were identified in each of the NSSE benchmarks aside from active and collaborative learning. This indicates that online secondary curriculum impacts the degree to which students are engaged and, therefore, successful. The Pearson's *r* correlation analysis for Academic Challenge ($r(112)=.277$, $p=.004$) suggests a positive relationship exists. This indicates that students who feel adequately challenged by their curriculum are engaged and reporting this success with passing grades. The Pearson's *r* correlation analysis for Student-Faculty Interactions ($r(112)=.208$, $p=.028$) suggests a positive relationship exists. This indicates that students who feel a connection when interacting with all staff at an online program are reporting higher levels of engagement through measured success. The Pearson's *r* correlation analysis for Enriching Educational Experiences ($r(112)= .258$, $p=.007$) suggests a positive relationship exists. This indicates that students who experience enriching education through curriculum related to real life experiences report higher engagement through their academic success.

Surprisingly, the Pearson's *r* correlation analysis for Active and Collaborative Learning ($r(112)= .046$, $p=.634$) suggests no relationship exists. The absence of a relationship for this NSSE benchmark variable could be attributed to the nature of online learners. The appeal of online learning comes from independent and flexible scheduling. Often students seek online education as an alternative to traditional education. It is possible that collaborating with peers is

not an experience that engages online learners. Additionally, it is possible that the students

surveyed in this study have little or no opportunities to collaborate with their peers in their

existing online program.

Additional correlations were conducted between NSSE benchmark variables to determine

relationships between factors of student engagement. Each variable when measured using a

Pearson's r correlation was noted to have a statistically significant, positive relationship. This

suggests that NSSE benchmark variables have positive relationships with one another and can all

be effectively considered when constructing engaging online curriculum. Importantly, the

Pearson's r correlation analysis between Active and Collaborative Learning, and the variables of

Academic Challenge ($r(112)= .474$, $p=.000$), Student-Faculty Interactions ($r(112)= .357$,

$p=.000$), and Enriching Educational Experiences ($r(112)= .466$, $p=.000$), suggests that

collaboration online can be effective for student engagement. When combining collaborative

efforts between peers with challenging academics or real world, enriching experiences, students

can see a positive correlation for working with one another online. Additionally, collaborating

with staff members on academics can also provide a positive correlation for working together,

which is further reflected in the positive correlation between Student-Faculty Interactions and

overall student success.

Implications

Recommendations for Practitioners

Since the Demographic and Experience variables did not yield relationships, it is

important for secondary online programs to focus improvement on curriculum and instruction to

increase student success. Additionally, the absence of relationships with Experience or

Demographics does not consider student skill level, which should be a consideration when

measuring student success in a program. The NSSE variables are strong guiding points to where focus and change should be implemented in educational programs. Additionally, the correlations between variables validated the survey's use at the secondary level of education, as well as in an online environment. This survey, if administered at the secondary program's individual level can yield specific results to influence decision at the administrative level regarding professional development or curriculum revisions.

The positive relationships indicated in Academic Challenge and Enriching Educational Experiences indicates that programs with challenging, interactive courses typically have more student success. Secondary online programs could investigate a new curriculum framework to ensure that all students have accessibility and are challenged appropriately by the materials. These frameworks, such as Universal Design, can be a strong professional development focus to develop quality curriculum. Additionally, program directors can invest time into technology that enhances education through simulations and experiences appropriate to the student's interest. Enriching Educational Experiences refer to those experiences that occur outside of the classroom and focus on engaging students with interactive opportunities. Online programs thrive in flexibility, and the results of this study show a positive relationship between engaging students and challenging, enriching curriculum.

Outside of curriculum, the study noted a positive relationship in Student-Faculty Interactions, which speaks volumes for a distance-learning environment. Program directors should focus on developing a sense of community in an online program. While challenging in an online program, the value of communication cannot be overlooked. Methods in which a secondary online program can foster a sense of community involve using technical tools, such as Google products for video chatting, as well as hosting synchronous lessons. Synchronous

lessons can limit the flexibility in time of an online program by requiring specific meeting times, however they still maintain flexibility in distance.

Unlike the other tested variables, the benchmark of Active and Collaborative Learning indicated no statistically significant relationship. Additional research and study analyzing student response to collaborative projects may be needed, as the scope of this study was limited. However, the results of no relationship indicated could be an indication of the student population that selects online education, or a lack of success in current collaborative efforts. Programs looking to engage students in collaborative initiatives should research best practices using Google programs and synchronous sessions. However, Active and Collaborative Learning had positive relationships with the other NSSE benchmark variables, indicating that a cohesive curriculum model around the NSSE benchmarks can show success.

The overall results of this study indicate an importance on curriculum as a method to support and see student success. A teacher looking to adopt NSSE benchmark methods within their online program should note that the benchmarks suggest a cohesive curriculum framework. Each variable should be incorporated into the curriculum model to see overall success when engaging students. Specific examples for methods to enhance or demonstrate each NSSE benchmark can be found in the literature review of this study.

Recommendations of Academics

There still exists a lack of academic research in the area of student engagement in an online secondary program. This study explored online secondary programs within the state of Minnesota. Further research could be conducted at a larger national level for participants in order to determine trends in data and to determine similarities or differences across educational programs. Additionally, research could be conducted using different survey tools. The National

Survey of Student Engagement is widely accepted at the post secondary level, however it had not been used at the secondary level at the time of writing. Additionally, the survey itself was modified to fit an online program, which has only previously been done one at the post secondary level. While this tool was effective in determining relationships, additional research could be conducted to test similar tools in measuring student engagement.

This study focused on determining the relationships between NSSE variables at student-reported levels of engagement based on reported success. Additional research could explore multiple variables including those that may prohibit student engagement based on a program's specific curriculum. For example, the secondary online programs in this study did not participate in project-based learning during the time of the survey. Future studies could focus on program specific studies for more conclusive results in measured engagement. Similarly, additional variables could be analyzed to determine relationships with student engagement.

Concluding Comments

Online learning continues to see an increase in popularity at all levels of education. As technology continues to change within our society, education will find a need to adapt to maintain student interest. This applies to all types of educational programs, however online programs should be the pioneers. In order to provide students with a quality education, there are measures in place to determine the effectiveness of traditional schools. Similarly, there should be a reliable tool to measure student engagement in an online program. While online learning may still be new in education, it is certainly an innovation that will continue to become more commonplace. As students continue to choose flexible education, they will require programs structured to provide enriching experiences, a sense of belonging, and a desire to learn.

References

Alden, J. (2011). Assessment of individual student performance in online team

projects. *Journal of Asynchronous Learning Networks 15(3),* 5-20. Retrieved from

http://sloanconsortium.org/jaln/v15n3/assessment-individual-student-performance-online-

team-projects

Allen, I. E., Seaman, J., Babson Survey Research, G., & Quahog Research Group, L. (2015).

Grade level: Tracking online education in the United States. A research report for Pearson

Education. Retrieved from http://www.babson.edu/Academics/centers/blank-center/global-

research/Pages/babson-survey-research-group.aspx

Andrade, M. S. (2015). Teaching online: A theory-based approach to student success. *Journal of*

Education and Training Studies, *3*(5), 1-9. Retrieved from http://jets.redfame.com

Baturay, M. H., & Yukselturk, E. (2015). The role of online education preferences on student's

achievement. *Turkish Online Journal Of Distance Education*, *16*(3), 3-12. Retrieved from

http://tojde.anadolu.edu.tr/

Beckem, J. (2012). Bringing life to learning: Immersive experiential learning simulations for

online and blended courses. *Journal of Asynchronous Learning Networks 16(5),* 61-71.

Retrieved from http://sloanconsortium.org/publications/jaln_main

Borup, J. (2016). Teacher perceptions of learner-learner engagement at a cyber high

school. *International Review of Research in Open and Distributed Learning, 17*(3), 231-

250. Retrieved from http://www.irrodl.org

Bradford, J., Mowder, D., & Bohte, J. (2016). You can lead students to water, but you can't make them think: An assessment of student engagement and learning through student-centered teaching. *Journal of the Scholarship of Teaching and Learning*, *16*(4), 33-43. Retrieved from http://www.iupui.edu/~josotl

Buck, G. H. (2006). The first wave: The beginnings of radio in Canadian distance education. *Journal of Distance Education*, *21*(1), 75-88. Retrieved from http://www.jofde.ca/index.php/jde/article/view/67

Casey, R. L., & Kroth, M. (2013). Learning to develop presence online: Experienced faculty perspectives. *Journal Of Adult Education*, *42*(2), 104-110. Retrieved from https://www.mpaea.org/?page=publications

Clarida, B. H., Bobeva, M., Hutchings, M., & Taylor, J. (2016). Strategies for digital inclusion: Towards a pedagogy for embracing and sustaining student diversity and engagement with online learning. *IAFOR Journal of Education.* Retrieved from http://iafor.org

Creswell, J.W. (2014). *Research design: Qualitative, quantitative, and mixed-methods approaches* (4th ed.). Los Angeles, CA: Sage.

Czerkawski, B. C., & Lyman, E. W. III (2016). An instructional design framework for fostering student engagement in online learning environments. *TechTrends, 60*(6), 532-539. doi:10.1007/s11528-016-0110-z

Dell, C. A., Dell, T. F., & Blackwell, T. L. (2015). Applying universal design for learning in online courses: Pedagogical and practical considerations. *Journal of Educators Online, 12*(2), 166-192. Retrieved from http://www.thejeo.com

Dixson, M. D. (2015). Measuring student engagement in the online course: The online student

    engagement scale (OSE). *Online Learning, 19*(4). Retrieved from

    http://onlinelearningconsortium.org/read/online-learning-journal/

Gikandi, J.W., Morrow, D. & Davis, N.E. (2011). Online formative assessment in higher

    education : A review of the literature. *Computers & Education 57*(4), 2333-2351. Retrieved

    from http://www.elsevier.com

Glassmeyer, D.M., Dibbs, R. A. & Jensen, T.R. (2011). Determining utility of formative

    assessment through virtual community: Perspectives of online graduate students. *The*

    Quarterly Review of Distances Education 12(1), 23-35.

Google Education. (2017). *Google for education*. Retrieved from http://edu.google.com

Gray, J. A., & DiLoreto, M. (2016). The effects of student engagement, student satisfaction, and

    perceived learning in online learning environments. *International Journal of Educational*

    Leadership Preparation, 11(1). Retrieved from http://www.ncpeapublications.org

Gudjonsdottir, H., Jonsdottir, S.R., & Gisladottir, K.R. (2015). Creating meaningful

    learning opportunities online. *Constructivists Online: Reimagining Progressive*

    Practice. Occasional Paper Series 34. Bank Street College of Education. Retrieved from

    http://www.bankstreet.edu

Harrell, I. (2008). Increasing the success of online students. *Inquiry*, *13*(1), 36-44. Retrieved

    from http://www.vccaedu.org/inquiry

Holley, D., & Oliver, M. (2009). Student engagement and blended learning: Portraits

    of risk. *Computers & Education*, *54*(3), 693-700. Retrieved from

    http://dx.doi.org.ezproxy.bethel.edu/10.1016/j.compedu.2009.08.035

Indiana University Center for Postsecondary Research. (2017). *The college student*

>*report: National survey of student engagement.* Retrieved from http://www.nsse.iub.edu

Indiana University Center for Postsecondary Research. (2008). *Working with NSSE*

>*data: A facilitator's guide* (3rd ed). Retrieved from http://www.nsse.iub.edu/institute

Isserles, R. (2015). Fostering student engagement: Creating a culture of learning

>online. *Constructivists Online: Reimagining Progressive Practice. Occasional Paper Series*

>*34.* Bank Street College of Education. Retrieved from http://www.bankstreet.edu

Jaggars, S. S., Edgecombe, N., Stacey, G. W., & Columbia University, C. C. (2013). *Creating an*

>*effective online instructor presence.* Community College Research Center, Columbia

>University. Retrieved from http://www.tc.columbia.edu/ccrc

Juvova, A., Chudy, S., Neumeister, P., Plischke, J., & Kvintova, J. (2015). Reflection

>of constructivist theories in current educational practice. *Universal Journal of Educational*

>*Research, 3*(5), 345-349. Retrieved from http://www.hrpub.org

Ladner, B., Beagle, D., Steele, J., & Steele, L. (2003). Rethinking online instruction:

>From content transmission to cognitive immersion. *Reference & User Services Quarterly*

>43(4), 329-337.

Lin, J., Szu, Y., & Lai, C. (2016). Effects of group awareness and self-regulation level on online

>learning behaviors. *International Review of Research in Open and Distributed*

>*Learning, 17*(4), 224-241. Retrieved from http://www.irrodl.org

Louwrens, N., & Hartnett, M. (2015). Student and teacher perceptions of online

>student engagement in an online middle school. *Journal of Open, Flexible and Distance*

>*Learning, 19*(1), 27-44. Retrieved from http://journals.akoaotearoa.ac.nz/index.php/JOFDL

McBrien, J. L., Jones, P., & Cheng, R. (2009). Virtual spaces: Employing a

    synchronous online classroom to facilitate student engagement in online

    learning. *International Review of Research in Open and Distance Learning*, *10*(3), 1-17.

Miller, A. L., Sarraf, S. A., Dumford, A. D., & Rocconi, L. M. (2013). *Construct validity of*

    NSSE engagement indicators. National Survey of Student Engagement.

Minnesota Department of Education (2017). *Minnesota approved online learning providers*.

    Retrieved from http://education.state.mn.us/MDE/dse/online/004409

Muijs, D. (2011). *Doing quantitative research in education with SPSS.* (2nd ed.). Los Angeles,

    CA: Sage.

Paquette, P. (2016). Instructing the instructors: Training instructors to use social presence cues in

    online courses. *Journal of Educators Online, 13*(1), 80-108. Retrieved from

    http://www.thejeo.com

Pazzaglia, A. M., Clements, M., Lavigne, H. J., & Stafford, E. T. (2016). *An analysis of student*

    engagement patterns and online course outcomes in Wisconsin. 147. Regional Educational

    Laboratory Midwest.

Perry, E. H., & Pilati, M. L. (2011). Online learning. *New Directions For Teaching*

    And Learning, *12*(8), 95-104.

Rao, K., Edelen-Smith, P., & Wailehua, C. (2015). Universal design for online

    courses: Applying principles to pedagogy. *Open Learning*, *30*(1), 35-52. Retrieved from

    http://dx.doi.org.ezproxy.bethel.edu/10.1080/02680513.2014.991300

Rao, K., & Tanners, A. (2011). Curb cuts in cyberspace: Universal instructional design for online

    courses. *Journal of Postsecondary Education and Disability*, *24*(3), 211-229. Retrieved

    from http://www.ahead.org/publications/jped

Shelton, K. (2010). A quality scorecard for the administration of online education programs: A

    Delphi study. *Journal of Asynchronous Learning Networks*, *14*(4), 36-62. Retrieved from

    http://sloanconsortium.org/jaln/v14n4/quality-scorecard-administration-online-education-

    programs-delphi-study

Sosulski, K.A. & Chernoff, H.G. (2015). Operations management outside of the

    classroom: An experiential approach to teaching enabled by online learning. *Constructivists*

    Online: Reimagining Progressive Practice. Occasional Paper Series 34. Bank Street

    College of Education.

Suttle, C. M. (2010). Engagement in online courses. *ProQuest LLC*. Retrieved from

    http://www.proquest.com.ezproxy.bethel.edu/en-US/products/dissertations/individuals.shtml

Tendhar, C., Culver, S. M., & Burge, P. L. (2013). Validating the National Survey of

    Student Engagement (NSSE) at a research-intensive university. *Journal of Education and*

    Training Studies, *1*(1), 182-193. Retrieved from http://jets.redfame.com

Vygotsky, L. (1978). *Mind in society: The development of higher psychological processes.*

    Cambridge, MA: Harvard University Press.

Wagetti, R. J., Johnston, P., & Jones, L. B. (2017). Beyond simple participation: Providing a

    reliable informal assessment tool of student engagement for teachers. *Education*, *137*(4),

    393-397. Retrieved from http://www.projectinnovation.com/education.html

Wiliam, D. (2011). *Embedded formative assessment*. Bloomington, IN: Solution Tree.

Yen, C., & Abdous, M. (2011). A study of the predictive relationships between faculty

    engagement, learner satisfaction and outcomes in multiple learning delivery

    modes. *International Journal of Distance Education Technologies*, *9*(4), 57-70. Retrieved

    from http://www.igi-global.com/article/study-predictive-relationships-between-

    faculty/58987

Zhang, H., Lin, L., Zhan, Y., & Ren, Y. (2016). The impact of teaching presence on online

    engagement behaviors. *Journal of Educational Computing Research, 54*(7), 887-900.

    doi:10.1177/0735633116648171

Appendix A

National Survey of Student Engagement Questions

1. During the current school year, about how often have you done the following?
Response options: Very often, Often, Sometimes, Never
  a. Asked questions or contributed to course discussions in other ways
  b. Prepared two or more drafts of a paper or assignment before turning it in
  c. Come to class without completing readings or assignments
  d. Attended an art exhibit, play, or other arts performance (dance, music, etc.)
  e. Asked another student to help you understand course material
  f. Explained course material to one or more students
  g. Prepared for exams by discussing or working through course material with other students
  h. Worked with other students on course projects or assignments
  i. Given a course presentation

2. During the current school year, about how often have you done the following?
Response options: Very often, Often, Sometimes, Never
  a. Combined ideas from different courses when completing assignments
  b. Connected your learning to societal problems or issues
  c. Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments
  d. Examined the strengths and weaknesses of your own views on a topic or issue
  e. Tried to better understand someone else's views by imagining how an issue looks from their perspective
  f. Learned something that changed the way you understand an issue or concept
  g. Connected ideas from your courses to your prior experiences and knowledge

3. During the current school year, about how often have you done the following?
Response options: Very often, Often, Sometimes, Never
  a. Talked about career plans with a faculty member
  b. Worked with a faculty member on activities other than coursework (committees, student groups, etc.)
  c. Discussed course topics, ideas, or concepts with a faculty member outside of class
  d. Discussed your academic performance with a faculty member

4. During the current school year, how much has your coursework emphasized the following?
Response options: Very much, Quite a bit, Some, Very little
  a. Memorizing course material
  b. Applying facts, theories, or methods to practical problems or new situations
  c. Analyzing an idea, experience, or line of reasoning in depth by examining its parts
  d. Evaluating a point of view, decision, or information source
  e. Forming a new idea or understanding from various pieces of information

5. During the current school year, to what extent have your instructors done the following?
Response options: Very much, Quite a bit, Some, Very little

a. Clearly explained course goals and requirements
b. Taught course sessions in an organized way
c. Used examples or illustrations to explain difficult points
d. Provided feedback on a draft or work in progress
e. Provided prompt and detailed feedback on tests or completed assignments

6. During the current school year, about how often have you done the following?
Response options: Very often, Often, Sometimes, Never
a. Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)
b. Used numerical information to examine a real-world problem or issue (unemployment, climate change, public health, etc.)
c. Evaluated what others have concluded from numerical information

7. During the current school year, about how many papers, reports, or other writing tasks of the following lengths have you been assigned? (Include those not yet completed.)
Response options: None, 1-2, 3-5, 6-10, 11-15, 16-20, More than 20 papers
a. Up to 5 pages
b. Between 6 and 10 pages
c. 11 pages or more

8. During the current school year, about how often have you had discussions with people from the following groups?
Response options: Very often, Often, Sometimes, Never
a. People of a race or ethnicity other than your own
b. People from an economic background other than your own
c. People with religious beliefs other than your own
d. People with political views other than your own

9. During the current school year, about how often have you done the following?
Response options: Very often, Often, Sometimes, Never
a. Identified key information from reading assignments
b. Reviewed your notes after class
c. Summarized what you learned in class or from course materials

10. During the current school year, to what extent have your courses challenged you to do your best work?
Response options: 1=Not at all to 7=Very much

11. Which of the following have you done or do you plan to do before you graduate?
Response options: Done or in progress, Plan to do, Do not plan to do, Have not decided
a. Participate in an internship, co-op, field experience, student teaching, or clinical placement
b. Hold a formal leadership role in a student organization or group
c. Participate in a learning community or some other formal program where groups of students take two or more classes together
d. Participate in a study abroad program
e. Work with a faculty member on a research project

f. Complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.)

12. About how many of your courses at this institution have included a community-based project (service-learning)?
Response options: All, Most, Some, None

13. Indicate the quality of your interactions with the following people at your institution.
Response options: 1=Poor to 7=Excellent, Not Applicable
   a. Students
   b. Academic advisors
   c. Faculty
   d. Student services staff (career services, student activities, housing, etc.)
   e. Other administrative staff and offices (registrar, financial aid, etc.)

14. How much does your institution emphasize the following?
Response options: Very much, Quite a bit, Some, Very little
   a. Spending significant amounts of time studying and on academic work
   b. Providing support to help students succeed academically
   c. Using learning support services (tutoring services, writing center, etc.)
   d. Encouraging contact among students from different backgrounds (social, racial/ethnic, religious, etc.)
   e. Providing opportunities to be involved socially
   f. Providing support for your overall well-being (recreation, health care, counseling, etc.)
   g. Helping you manage your non-academic responsibilities (work, family, etc.)
   h. Attending campus activities and events (performing arts, athletic events, etc.)
   i. Attending events that address important social, economic, or political issues

15. About how many hours do you spend in a typical 7-day week doing the following?
Response options: 0, 1-5, 6-10, 11-15, 16-20, 21-25, 26-30, More than 30 (Hours per week)
   a. Preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)
   b. Participating in co-curricular activities (organizations, campus publications, student government, fraternity or sorority, intercollegiate or intramural sports, etc.)
   c. Working for pay **on campus**
   d. Working for pay **off campus**
   e. Doing community service or volunteer work
   f. Relaxing and socializing (time with friends, video games, TV or videos, keeping up with friends online, etc.)
   g. Providing care for dependents (children, parents, etc.)
   h. Commuting to campus (driving, walking, etc.)

16. Of the time you spend preparing for class in a typical 7-day week, about how much is on *assigned reading*?
Response options: Very little, Some, About half, Most, Almost all

17. How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

94

Response options: Very much, Quite a bit, Some, Very little
   a. Writing clearly and effectively
   b. Speaking clearly and effectively
   c. Thinking critically and analytically
   d. Analyzing numerical and statistical information
   e. Acquiring job- or work-related knowledge and skills
   f. Working effectively with others
   g. Developing or clarifying a personal code of values and ethics
   h. Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)
   i. Solving complex real-world problems
   j. Being an informed and active citizen

18. How would you evaluate your entire educational experience at this institution?
Response options: Excellent, Good, Fair, Poor

19. If you could start over again, would you go to the *same institution* you are now attending?
Response options: Definitely yes, Probably yes, Probably no, Definitely no

20. Do you intend to return to this institution next year? [Only non-seniors receive this question]
Response options: Yes, No, Not sure

21a. How many majors do you plan to complete? (Do not count minors.)
Response options: One, More than one

21b. [If answered "One"] **Please enter your major or expected major:** [Text box]
21c. [If answered "More than one"] **Please enter up to two majors or expected majors (do not enter minors):** [Text box]

22. What is your class level?
Response options: Freshman/first-year, Sophomore, Junior, Senior, Unclassified

23. Thinking about this current academic term, are you a full-time student?
Response options: Yes, No

24a. How many courses are you taking for credit this current academic term?
Response options: 0, 1, 2, 3, 4, 5, 6, 7 or more

24b. Of these, how many are *entirely online*?
Response options: 0, 1, 2, 3, 4, 5, 6, 7 or more

25. What have most of your grades been up to now at this institution?
Response options: A, A-, B+, B, B-, C+, C, C- or lower

26. Did you begin college at this institution or elsewhere?
Response options: Started here, Started elsewhere

27. Since graduating from high school, which of the following types of schools have you attended *other than* the one you are now attending? (Select all that apply.)
Response options: Vocational or technical school, Community or junior college, 4-year college or university other than this one, None, Other

28. What is the highest level of education you ever expect to complete?

Response options: Some college but less than a bachelor's degree, Bachelor's degree (B.A., B.S., etc.), Master's degree (M.A., M.S., etc.), Doctoral or professional degree (Ph.D., J.D., M.D., etc.)

29. What is the highest level of education completed by either of your parents (or those who raised you)?

Response options: Did not finish high school, High school diploma or G.E.D., Attended college but did not complete degree, Associate's degree (A.A., A.S., etc.), Bachelor's degree (B.A., B.S., etc.), Master's degree (M.A., M.S., etc.), Doctoral or professional degree (Ph.D., J.D., M.D., etc.)

30. What is your gender identity?

Response options: Man; Woman; Another gender identity, please specify: __ ; I prefer not to respond

31. Enter your year of birth (e.g., 1994):

32a. Are you an international student?

Response options: Yes, No

    32b. [If answered "yes"] **What is your country of citizenship?**

33. What is your racial or ethnic identification? (Select all that apply.)

Response options: American Indian or Alaska Native, Asian, Black or African American, Hispanic or Latino, Native Hawaiian or Other Pacific Islander, White, Other, I prefer not to respond

34. Are you a member of a social fraternity or sorority?

Response options: Yes, No

35. Which of the following best describes where you are living while attending college?

Response options: Campus housing (other than a fraternity or sorority house), Fraternity or sorority house, House, apartment, or other residence
or other residence

    within walking distance *to campus, House, apartment, or other residence* **farther than walking distance** *to campus, Not applicable: No*
    campus, entirely online program, etc., Not applicable: Homeless or in transition

36a. Are you a student-athlete on a team sponsored by your institution's athletics department?

Response options: Yes, No

    36b. [If answered "yes"] **On what team(s) sponsored by your institution's athletics department are you an athlete? (Select all that apply.)**

37. Are you a current or former member of the U.S. Armed Forces, Reserves, or National Guard?

Response options: Yes, No

38a. Have you been diagnosed with any disability or impairment?

Response options: Yes, No, I prefer not to respond

    38b. [If answered "yes"] **Which of the following has been diagnosed? (Select all that apply.)**

        Response options: A sensory impairment (vision or hearing), A mobility impairment, A learning disability (e.g., ADHD, dyslexia), A mental health disorder, A disability or impairment not listed above

39. Which of the following best describes your sexual orientation?

Response options: Straight (heterosexual); Bisexual; Gay; Lesbian; Queer; Questioning or unsure; Another sexual orientation, please specify: __; I prefer not to respond

40. Prompt for Open-Ended Comments (Institutions select one of four questions for the end of the NSSE questionnaire.)

If you have any additional comments or feedback that you'd like to share on the quality of your educational experience, please enter them

below.

What has been most satisfying about your experience so far at this institution, and what has been most disappointing? Please describe the most significant learning experience you have had so far at this institution.

What one change would you most like to see implemented that would improve the educational experience at this institution, and what one thing should not be changed?

Appendix B

Survey Questions

Consent to Participate

By clicking "YES", you are agreeing to be a participant in this online questionnaire. Furthermore, you are stating that you have received permission from your parent/guardian to participate in this survey, or are at least 18 years of age, and that you are or have been enrolled within the past year in at least one online or any hybrid, blended, or web-based class.

◯ NO - I do not wish to be a participant in this questionnaire

◯ YES - I agree to be a participant in this online questionnaire, that I have received permission from my parent/guardian, or that I am 18 years of age, and that I have been enrolled within the past year in at least one online or any hybrid, blended, or web-based class.

1. During the current school year, about how often have you done the following?
Please provide one answer for each statement.

	Never (1)	Sometimes (2)	Often (3)	Very Often (4)
Prepared two or more drafts of a paper or assignment before turning it in.	◯	◯	◯	◯
Failed to complete assignments by the deadline.	◯	◯	◯	◯
Combined ideas from different courses when completed assignments.	◯	◯	◯	◯

Connected your learning to societal problems or issues.	○	○	○	○
Examined the strengths and weaknesses of your own views on a topic or issues.	○	○	○	○
Tried to better understand someone else's views by imagining how an issue look from their perspective.	○	○	○	○
Learned something that changed the way you understand an issue or concept.	○	○	○	○
Connected ideas from your courses to your prior experiences and knowledge.	○	○	○	○

----

2. During the current school year, about how often have you done the following?

Please provide one answer for each statement

	Never (1)	Sometimes (2)	Often (3)	Very Often (4)
Reached conclusions based on your own analysis of numerical information (numbers, graphs, statistics, etc.)	○	○	○	○
Used numerical information to examine a real-world problem or issue	○	○	○	○

(unemployment, climate change, public health, etc.)				
Identified key information from reading assignments.	○	○	○	○
Summarized what you learned in class or from course materials.	○	○	○	○

---

3. During the current school year, how much has your coursework emphasized the following?

Please provide one answer for each statement.

	Very Little (1)	Some (2)	Quite a Bit (3)	Very Much (4)
Memorizing course material	○	○	○	○
Applying facts, theories, or methods to practical problems or new situations.	○	○	○	○
Analyzing an idea, experience, of line of reasoning in depth by examining its parts.	○	○	○	○
Evaluating a point of view, decision, or information source.	○	○	○	○
Forming a new idea or understanding from various pieces of information.	○	○	○	○

---

4. During the current school year, to what extent have your instructors done the following?

Please provide one answer to each statement.

	Very Little (1)	Some (2)	Quite a Bit (3)	Very Much (4)
Clearly explained course goals and requirements.	○	○	○	○
Taught course sessions in an organized way, either virtually or in the online course.	○	○	○	○
Used examples or illustrations to explain difficult points.	○	○	○	○

5. During the current school year, about how many papers, reports, or other writing tasks of the following lengths have you been assigned? (Include those not yet completed.)

○ 1-2 (1)

○ 3-5 (2)

○ 6-10 (3)

○ 10 or above (4)

6. During the current school year, to what extent have your courses challenged you to do your best work?

- ⚪ 7 = Very much

- ⚪ 6

- ⚪ 5

- ⚪ 4

- ⚪ 3

- ⚪ 2

- ⚪ 1 = Not at all

---

7. How much of your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

	Please provide one answer for each statement.			
	Very Little (1)	Some (2)	Quite a Bit (3)	Very Much (4)
Writing clearly and effectively.	⚪	⚪	⚪	⚪
Speaking clearly and effectively.	⚪	⚪	⚪	⚪
Thinking critically and analytically.	⚪	⚪	⚪	⚪
Analyzing numerical and statistical information.	⚪	⚪	⚪	⚪

8. During the current school year, about how often have you done the following?

	Please provide one answer for each statement.			
	Never (1)	Sometimes (2)	Often (3)	Very Often (4)

Asked questions or contributed to course discussing in other ways.	○	○	○	○
Asked another student to help you understand course material.	○	○	○	○
Explained course materials to one or more students.	○	○	○	○
Prepared for exams by discussing or working through course material with other students.	○	○	○	○
Worked with other students on course projects or assignments.	○	○	○	○
Given a course presentation.	○	○	○	○
Evaluated what others have concluded from numerical information.	○	○	○	○

9. Indicate the quality of your interactions with other students at your institution.

○ 7 = Excellent

○ 6

○ 5

○ 4

○ 3

○ 2

○ 1 = Poor

○ Not Applicable

---

10. How much has your experience at this institution contributed to your knowledge, skills, and personal development in working effectively with others?

○ Very much

○ Quite a bit

○ Some

○ Very little

11. During the current school year, about how often have you done the following?

	Please provide one answer for each statement.			
	Never (1)	Sometimes (2)	Often (3)	Very Often (4)

Attended an art exhibit, play, or other arts performance (dance, music, etc.) either in person, or virtually.	○	○	○	○
Included diverse perspectives (political, religious, racial/ethnic, gender, etc.) in course discussions or assignments.	○	○	○	○

----

12. During the current school year, about how often have you had discussions with people from the following groups?

Please provide one answer for each statement.

	Never (1)	Sometimes (2)	Often (3)	Very Often (4)
People of a race or ethnicity other than your own.	○	○	○	○
People from an economic background other than your own.	○	○	○	○
People with religious beliefs other than your own.	○	○	○	○
People with political views other than your own.	○	○	○	○

----

13. About how many of your courses at this institution have included a community-based project (service-learning)?

○ All

○ Most

○ Some

○ None

14. How much has your experience at this institution contributed to your knowledge, skills, and personal development in the following areas?

Please provide one answer for each statement.

	Very Little (1)	Some (2)	Quite a Bit (3)	Very Much (4)
Acquiring job or work-related knowledge and skills	○	○	○	○
Developing or clarifying a personal code of values and ethics	○	○	○	○
Understanding people of other backgrounds (economic, racial/ethnic, political, religious, nationality, etc.)	○	○	○	○
Solving complex real-world problems.	○	○	○	○
Being an informed and active citizen.	○	○	○	○

15. During the current school year, about how often have you done the following?

Please provide one answer for each statement.

	Never (1)	Sometimes (2)	Often (3)	Very Often (4)

Talked about career plans with a faculty member.	○	○	○	○
Worked with a faculty member on activities other than coursework (committees, student groups, etc.)	○	○	○	○
Discussed course topics, ideas, or concepts with a faculty member that does not teach the course.	○	○	○	○
Discussed your academic performance with a faculty member.	○	○	○	○

16. During the current school year, to what extent have your instructors done the following?

Please provide one answer for each statement.

	Never (1)	Sometimes (2)	Often (3)	Very Often (4)
Provided feedback on a draft or work in progress.	○	○	○	○
Provided prompt and detailed feedback on tests or completed assignments.	○	○	○	○

17. Indicate the quality of your interactions with the following people at your institution.

Please provide one answer for each statement or use 'Not Applicable'

	1 = Poor (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 = Excellent (7)	Not Applicable (8)

Academic Advisors	○	○	○	○	○	○	○	○
Faculty	○	○	○	○	○	○	○	○
Student services staff (mental health, guidance, etc.)	○	○	○	○	○	○	○	○
Other administrative staff (principal, dean, etc.)	○	○	○	○	○	○	○	○

18. What is your class level?

○ Freshman

○ Sophomore

○ Junior

○ Senior

○ Beyond Senior

19. What have most of your grades been up to now at this institution?

 ○ A

 ○ B

 ○ C

 ○ D

 ○ F

---

20. Did you begin high school at this institution, or elsewhere?

 ○ Started here

 ○ Started at a traditional high school (not online)

 ○ Started at another online high school

---

21. How long have you been at this current institution?

 ○ First year

 ○ Started last year (1 year)

 ○ 2 years

 ○ 3 years or higher

---

22. Are you currently employed? If yes, indicate your average weekly hours worked below. If no, select the appropriate response.

    ○ NO - I am not employed

    ○ 10 hours or less each week

    ○ 11-15 hours each week

    ○ 16-20 hours each week

    ○ 21-25 hours each week

    ○ 26-30 hours each week

    ○ 31-35 hours each week

    ○ 40 or higher hours each week

-----

23. What engages you the most in your online classes?

Appendix C

Survey Score Coding

Table 9. *Reference of Score Coding*

Question Number	Range	Description of Range
Questions 1-2; 8; 11-12; 15-16	4 Options	1 – Never 2 – Sometimes 3 – Often 4 – Very Often
Questions 3-4; 7; 10; 14	4 Options	1 – Very Little 2 – Some 3 – Quite a Bit 4 – Very Much
Question 5	4 Options	1 – Between 1-2 2 – Between 3-5 3 – Between 6-10 4 – 10 or above
Questions 6; 9	7 Options	1 – Not at all 2 3 4 5 6 7 – Very Much
Question 13	4 Options	1 – None 2 – Some 3 – Most 4 – All

Question 17	7 Options	1 – Poor
		2
		3
		4
		5
		6
		7 – Excellent
Question 18	5 Options	1 – Freshman
		2 – Sophomore
		3 – Junior
		4 – Senior
		5 – Beyond Senior
Question 19	5 Options	1 – F
		2 – D
		3 – C
		4 – B
		5 – A
Question 20	3 Options	1 – Started at a Traditional High School (not online)
		2 – Started at another online High School
		3 – Started here
Question 21	4 Options	1 – First Year
		2 – Started last year (1 year)
		3 – 2 Years
		4 – 3 Years or Higher

Question 22	8 Options	1 – 40 or higher hours each week
		2 – 31-35 hours each week
		3 – 26-30 hours each week
		4 – 21-25 hours each week
		5 – 16-20 hours each week
		6 – 11-15 hours each week
		7 – 10 hours or less each week
		8 – NO – I am not employed
Question 23	2 Options	1 – Poor
		2 – Excellent

Appendix D

Participation Agreement Email to Directors

Greetings,

Your school is being invited to participate in a research study among online secondary programs in the state of Minnesota. This study is being conducted by the doctoral candidate, Meagan Rathbun, as part of a doctoral dissertation with Bethel University.

There are no known risks if you decide to allow your students to participate in this research study. The information students provide will provide a better understanding of *student engagement* using validated measures created by The National Survey of Student Engagement. The survey takes approximately *10 minutes* to complete. The information learned in this study will provide general benefits to the study of student engagement in a secondary (9-12) online learning environment and may provide tools to establishing a uniform measurement tool of student engagement.

If you agree for your school to participate in this study, you will be provided with a copy of the cumulative results. Please note that individual results will not be made available and the survey does not include any identifying features to protect the identity of participants. Additionally, your agreement to participate in this study will request that you distribute the survey link to students in order to protect student information.

Your participation in this study is voluntary, but extremely appreciated! Please respond to this email **by March 31st, 2018** if you are interested along with your school's survey policy, if applicable.

If you have any questions regarding this survey, please contact Meagan Rathbun at mer29539@bethel.edu.

Your willingness to participate is greatly appreciated!

Sincerely,

Meagan Rathbun

Meagan Rathbun
Bethel University Doctoral Candidate

Appendix E

Survey Disbursement Email to Directors

Greetings,

Thank you for volunteering your school to participate in the research study on *student engagement*. Please distribute the following email including the survey link to your student participants in **grades 9-12 only**.

Sincerely,

Meagan Rathbun
Bethel University Doctoral Candidate

Greetings,

You are being invited to participate in a survey measuring your engagement as a student in a secondary online program. This study is being conducted by Meagan Rathbun, as part of a doctoral dissertation with Bethel University.

Survey Link: https://bethel.qualtrics.com/jfe/form/SV_9ufJ59HRfdRWGMZ

There are no known risks if you decide to participate in this research study. The information you provide will help to better understand what engages students in online schools. This survey will take approximately *10 minutes* to complete.

The survey is completely anonymous. No identifying information, including names, email addresses, or computer IP addresses will be collected. Your answers to the survey questions will not be able to identify you as an individual. Additionally, your participation or non-participation in this survey will not be identified. Individuals from the Institutional Review Board and participating school directors may view final data results, however all individual responses will remain confidential. Should this data be published, no individual responses will be included.

Please follow the above link to the survey in order to participate. Participation in this survey is voluntary and extremely appreciated.

Sincerely,

Meagan Rathbun

Meagan Rathbun
Bethel University Doctoral Candidate

Parental Consent and Tracking Email to Directors

Greetings,

Thank you for volunteering your school to participate in the research study on *student engagement*. Based on your absent survey policy, please distribute the following email to obtain parental consent for your student participants. Note that consent may be received through an emailed response, or may be printed and signed for parents lacking an email address.

Additionally, please retain these forms for your records and to monitor students permitted to participate in this survey. In order to track your participating students, you may log consent forms using a similar tracker:

Student Name	Student Email	Parental Consent Received?
John Smith	jsmith@schoolname.edu	Yes

Consent and tracking of participating students must be kept confidential. No information should be returned to the researcher to protect student data privacy.

All parental consent should be collected prior to distributing the survey link to students. Thank you once more for your participation in this study.

Sincerely,

Meagan Rathbun
Bethel University Doctoral Candidate

Greetings,

Your student's school is being invited to participate in a research study among online secondary programs in the state of Minnesota. This study is being conducted by the doctoral candidate, Meagan Rathbun, as part of a doctoral dissertation with Bethel University.

There are no known risks if you decide to allow your student to participate in this research study. The information students provide will provide a better understanding of *student engagement* using validated measures created by The National Survey of Student Engagement. The survey takes approximately *10 minutes* to complete and consists of 23 questions. The information learned in this study will provide general benefits to the study of student engagement in a secondary online learning environment and may provide tools to establishing a uniform measurement tool of student engagement.

There are no known risks if your student decides to participate in this research study. The survey is completely anonymous. No identifying information, including names, email addresses, or computer IP addresses will be collected. Your student's answers to the survey questions will not be able to identify them as an individual. Additionally, your student's participation or non-participation in this survey will not be identified. Individuals from the Institutional Review Board and participating school directors may view final data results, however all individual responses will remain confidential. Should this data be published, no individual responses will be included.

Your student's participation in this study is voluntary, but extremely appreciated! Please respond to this email if you are interested to provide your consent.

Please respond to this email to provide consent for your student's participation. If you have questions regarding the survey or its contents, please contact your school's director, or the researcher Meagan Rathbun at mer29539@bethel.edu.

Sincerely,

Meagan Rathbun

Meagan Rathbun
Bethel University Doctoral Candidate

Permission to Use National Survey for Student Engagement

The College Student Report
Item Usage Agreement

The National Survey of Student Engagement's (NSSE) survey instrument, *The College Student Report*, is copyrighted and the copyright is owned by The Trustees of Indiana University. Any use of survey items contained within *The College Student Report* is prohibited without prior written permission from Indiana University. When fully executed, this Agreement constitutes written permission from the University, on behalf of NSSE, for the party named below to use an item or items from *The College Student Report* in accordance with the terms of this Agreement.

In consideration of the mutual promises below, the parties hereby agree as follows:

1) The University hereby grants **Meagan Rathburn** ("Licensee") a nonexclusive, worldwide, irrevocable license to use, reproduce, distribute, publicly display and perform, and create derivatives from, in all media now known or hereafter developed, the item(s) listed in the proposal attached as Exhibit A, solely for the purpose of including such item(s) in the survey activity described in Exhibit A, which is incorporated by reference into this Agreement. This license does not include any right to sublicense others. This license only covers the survey instrument, time frame, population, and other terms described in Exhibit A. Any different or repeated use of the item(s) shall require an additional license.

2) "National Survey of Student Engagement", "NSSE", and the NSSE logo are registered with the U.S. Patent and Trademark Office. Except as provided in part 3c below, these elements may not be incorporated without permission in materials developed under this agreement, including but not limited to surveys, Web sites, reports, and promotional materials.

3) In exchange for the license granted in section 1, Licensee agrees:

   a) there will be no licensing fee to use NSSE items for the purposes described in Exhibit A;

   b) to provide to NSSE frequency distributions and means on the licensed item(s);

   c) on the survey form itself, and in all publications or presentations of data obtained through the licensed item(s), to include the following citation: "Items xx and xx used with permission from *The College Student Report*, National Survey of Student Engagement, Copyright 2001-18 The Trustees of Indiana University";

   d) to provide to NSSE a copy of any derivatives of, or alterations to, the item(s) that Licensee makes for the purpose of Licensee's survey ("modified items"), for NSSE's own nonprofit, educational purposes, which shall include the use of the modified items in *The College Student Report* or any other survey instruments, reports, or other educational or professional materials that NSSE may develop or use in the future. Licensee hereby grants the University a nonexclusive, worldwide, irrevocable, royalty-free license to use,

reproduce, distribute, create derivatives from, and publicly display and perform the modified items, in any media now known or hereafter developed; and

e) to provide to NSSE, for its own nonprofit, educational purposes, a copy of all reports, presentations, analyses, or other materials in which the item(s) licensed under this Agreement, or modified items, and any responses to licensed or modified items, are presented, discussed, or analyzed. NSSE shall not make public any data it obtains under this subsection in a manner that identifies specific institutions or individuals, except with the consent of the Licensee.

4) This Agreement expires on November 15, 2018.

The undersigned hereby consent to the terms of this Agreement and confirm that they have all necessary authority to enter into this Agreement.

For The Trustees of Indiana University:

_____   _____
Alexander C. McCormick   Date
Director
National Survey of Student Engagement

For Licensee:

_____   8/15/17
Meagan Rathbun   Date
Student
Bethel University

For Advisor:

_____   5/16/17
Tracy Reimer   Date
Ed.D. Program Director
Bethel University