

3-1-2020

Teachers' Perceptions of Factors Influencing Students' Academic Performance in Online Courses: A Case Study

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Concordia University–Portland

College of Education

Doctor of Education Program

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Teachers' Perceptions of Factors Influencing Students' Academic Performance in Online
Courses: A Case Study

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Concordia University–Portland
College of Education

Dissertation submitted to the Faculty of the College of Education
in partial fulfillment of the requirements for the degree of
Doctor of Education in
Instructional Leadership

Libi Shen, Ph.D., Faculty Chair Dissertation Committee
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2020

Abstract

The problem at the center of this study was the fact that full-time virtual students often showed less learning gains than their traditional counterparts. The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. The central research question was: what factors do teachers perceive as a significant impact on online students' success? A qualitative method with a case study design was adopted. Data were collected through individual teacher interviews and a focus group discussion in southeastern region of the United States. The results showed five significant themes: student motivation/drive in academics, teacher support for online students, communication between stakeholders for student success, parent support of the student, and home life of the student. The implication of this study highlights the need for all stakeholders to evaluate the effectiveness of virtual coursework and redesign course framework to meet the needs of students. The recommendation for further research includes expanding the scope of the study to understand online learning's impact on other student populations, including student populations across the United States, along with countries around the world.

Keywords: virtual education, academic achievement, online coursework, teacher perception, internal factors, external factors, distance learning

Dedication

This dissertation is dedicated to my husband and my son.

Acknowledgements

I would first like to thank my Faculty Chair, Dr. Libi Shen, for her guidance and encouragement throughout each stage of the process. I want to acknowledge Dr. John D'Aguanno and Dr. Anastasia D'Angelo, who provided insightful advice for refining my dissertation. I especially want to thank my sister Amber Reyes who provided constant support during the entire process. I want to thank my participants, who spent hours volunteering to answer my interview questions. Without all of you, I would not have been able to complete my research.

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Chapter 1: Introduction

Student achievement in virtual courses has become a paramount concern in recent years. This concern is due to the increase in the number of students partaking in courses in online learning environments. Students are regularly encouraged to take additional virtual courses to complement their traditional brick and mortar coursework (Caranikas-Walker, Maloney, Shapley, & Sheehan, 2011). Across the nation, many public school districts have implemented graduation policies that require students to take one or more virtual courses during their educational careers along with their traditional coursework. The conduction of the study occurs in one such public school district, which has increased the requirement of one virtual course to two as part of the graduation requirements.

The educational panorama is changing rapidly, and distance education is one such transformation (Friedman & Weiser, 2004). With the evolution of virtual learning, the need to evaluate the overall effectiveness of online courses becomes a principal focus for educators and other stakeholders (Conway, Hachey, & Wladis, 2015). Virtual education is progressing at a rapid rate (Friedman & Weiser, 2004) as public school districts continue to increase the number of online courses required for graduation. Technology use in public schools reflect this trend with implementation of technology in high school, followed by middle school, and trending towards an increase in technology in elementary school. District and statewide testing have phased out paper and pencil assessments in favor of computer-based testing.

With the increase in students taking online courses, conduction of research should occur to determine the effectiveness of such coursework. Research conducted includes statistics that examine the effects of online courses on learner comprehension and performance in online classes (Artino & Jones, 2012). The long-term effect of virtual education on students is not yet

determined. Information presently collected provides a plethora of informative and noteworthy data that provide insights into future research (Lin & Songtao, 2012). Contemporary data suggested there is a unique nature to virtual education. In previous research on online instruction, features (internal influences such as student characteristics) and factors (external influences such as parent support) showed an effect on students' achievement in the virtual environment (Boyer, Brunner, Charles, & Coleman, 2006).

Introduction to the Problem

Online education is rapidly growing in popularity, and it is assumed to be as effective as traditional schooling. To understand virtual education's impact and to ensure equality in online learning, research should focus on the differences amongst students in these environments and barriers to their learning to design appropriate courses. Bobeva, Clarida, Hutchings, and Taylor (2015) observed that the creation of online courses mirrors traditional teaching methods that may be outdated to meet the needs of students. Berge and Muilenbrug (2005) stressed the need to comprehend barriers that impacted learners in online environments and how we could use this understanding to meet students' needs better to increase achievement. Online education is one-dimensional in the sense that virtual courses have generic course layouts. The creation and design of online coursework do not consider the different ways in which students learn and interact with knowledge (Friedman & Weiser, 2004). This one-dimensional design could have dire long-term outcomes concerning student success.

Background, Context, History, and Conceptual Framework for the Problem

The Background

The conduction of this case study was at a virtual school in southeastern region of the United States. The study explored the teacher perceptions of the internal and external features

that impacted their virtual students. Virtual education is in high demand due to the accessibility, user-friendliness, and the overall convenience it provides (Phillips, 2005). Many advocates of education call for the need to evaluate online learning effects on student success and comprehension while finding the best practices that would enhance the learning of online students (Cheung & Slavin, 2013).

The need to collect information and understand virtual education's impact on students becomes of vital importance to future virtual learning. Research conducted will help determine the overall effect on student success. Comprehension will organize and encourage planning for future implementation of best practices within online courses (Friedman & Weiser, 2004). Best practices can enhance the interaction of learners within online courses, which will further promote the allocation of resources to meet the needs of all types of online learners (Bobeva et al., 2015).

Once data are collected from a variety of studies, then educators, administrators, and stakeholders can determine what methods to use to reach all students in the virtual classroom. Once the implementation of established methods occurs, the impacts of virtual education on student success become apparent. These methods can then be reviewed and altered to better meet the needs of online learners (Bobeva et al., 2015). There is potential for virtual education, and options will continue to grow; therefore, warranted is a long-term study of its overall effectiveness and student comprehension.

The Context and History

Through different K–12 district assessments, data gathered detected internal and external factors that impacted student achievement in online courses (Abrami, Bauer, & Surkes, 2004). Researchers specifically identified internal factors based on student characteristics. These

students' characteristics include but are not limited to, age, ethnicity, gender, and so forth. Even with the identification of these student characteristics, data did not determine the significance such internal factors played within the achievement and comprehension of the student while in their virtual classes (Bobeva et al., 2015). Other research suggested the impact of external factors on student comprehension.

The significance of online education has suggested an increased need for and awareness of best practices that help reach online student learners in a meaningful way. The virtual learning environment is a continuously up and coming field, where understanding the impact it has on students through a collection of various data are essential. The research questions of this study connected to several different themes within the literature; specifically, the themes were distance learning, digital exclusion/inclusion, digital literacy, and educational equality. These themes impacted student success and comprehension within the virtual environment in different ways and highlighted how virtual instruction is altering the educational environment.

The Conceptual Framework

Within research conducted on distance education, several themes stemmed from different educational theories. One of the leading themes focused on the importance of student-centered learning within the virtual educational sphere (Ismail & Siti, 2012). These student-centered internal influences included age, gender, and ethnicity. Other previous research conducted highlighted the nature of student interaction and its impact on their online coursework (Friedman & Weiser, 2004). These included external influences such as course design, support systems, and access to technology.

Within the research of distance learning, theories that emerged that corresponded with the study involved: learning theory, behaviorist philosophy of learning, informational processing

theory, and social cognitive theory. Common themes seen in the literature and included in the measurement of the study consisted of internal and external influences. Internal influences were student characteristics of age, gender, and so forth, and external influences included external factors like parent support. The emphasis was on distance learning, digital exclusion/inclusion, digital literacy, and educational equality, which all focused on the concept of student-driven models in online courses (Boyer et al., 2008).

Statement of the Problem

The problem was that full-time virtual students showed less learning gains than their traditional counterparts (Layton, 2015). There were high levels of failure rate for students who took online courses (Kerr, 2015). Jaggars and Xu (2013) claimed that the online format had significant negative impacts on students' course grades. On average, the impact showed that students taking online courses had final grades that decreased by more than 0.3 points on a 4-point scale (Jaggars & Xu, 2013). The study compared students' grades in their traditional courses versus their online courses, which showed the negative impact of online learning in terms of both course persistence and course grade (Jaggars & Xu, 2013).

These problems impacted a variety of populations (Gatchair, 2013), and several characteristics may have impacted academic achievement (Alonso, González-Gómez, Guardiola, & Rodríguez, 2012). Through research, we can detect internal and external factors that led to achievement gaps in online classes (Githens, Jost, & Rude-Parkins, 2012). Researchers can determine if there are negative or positive influences of online education on student academic achievement. With the rise of distance learning, the need for educational equality will increase, meeting the various needs of online student learners (Githens et al., 2012). Once the identification of external and internal characteristics occurs that influence learners in virtual

classes, the implementation of best practices to close the achievement gap present in virtual learning can occur (Bobeva et al., 2015).

Additionally, Kerr (2015) also pointed out that factors lead to students' low academic performance in virtual classes. It becomes essential to understand why this negative trend in student achievement arises in online courses. In other words, current research should focus on internal and external factors that impact online student achievement. These different internal and external factors could lead to achievement gaps within the online course.

Beck and Milligan's (2014) study sought to discover what factors, whether external or internal, impacted students' course completion in the online environment. A significant finding was that student interaction within the course was of importance for overall success, while student demographics were not a significant predictor of success in the online environment (Beck & Milligan, 2014). Ke and Kwak (2013a) noted that an internal student characteristic, such as age, negatively influenced student achievement within the online course. The data presented in these studies allude to the impact of external and internal factors within the virtual environment.

Purpose of the Study

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. Within the research conducted on distance education, educational theories came to light. Of significance was student-centered learning in the virtual sphere. The researcher attempted to identify internal characteristics and external influences that impacted online student learning. Internal characteristics included gender, age, and ethnicity. External influences included support systems, access to technology, and course design. Common themes seen in the literature drove variables

used in the measurement of the study, which consisted of internal and external influences. These had an emphasis on distance learning, digital exclusion/inclusion, digital literacy, and educational equality. With these frameworks, an examination of the concept of student-driven models highlighted external factors and internal characteristics that impact student interaction within their online courses including the role of the virtual teacher (Boyer et al., 2008).

Research Questions

The central research question was created and highlighted the research pursuit to discover teachers' perceptions of internal and external factors that impact students' achievement in online schooling. The researcher composed the central research question to elicit teacher perceptions on internal and external factors that may cause barriers for their online students. The following research subquestions formed the center of the research in order to identify if there were external factors or internal student characteristics that influenced student achievement within the virtual environment. The subquestions looked to expand upon the responses given from the central question and delve into specific factors that impact online academic achievement.

Central Research Question

RQ. What factors do teachers perceive as a significant impact on online students' success?

Research Subquestions

SQ1. What external factors do teachers perceive impacting students' academic performance in online courses?

SQ2. What internal factors do teachers perceive impacting students' academic performance in online courses?

SQ3. How do teachers perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?

SQ4. What suggestions do teachers have for improving students' academic performance in online courses?

Rationale, Relevance, and Significance of the Study

The focus of the research was to discern teachers' perceptions of the influence of factors that distance education had on student academic success. Outlined below were the rationale, relevance, and significance of the study. The increasing trend of online education, in conjunction with traditional schooling, drove the need for such a study. The study could provide relevant data for stakeholders to determine the impact of virtual courses on students. The significance of the study could lead to the implementation of improved course design to increase student success.

Rationale

The demand for distance education is due to accessibility (Phillips, 2005). Due to accessibility, more students are taking online courses (Cheung & Slavin, 2013). Along with accessibility, the practice of school districts to implement graduation policies that include student's enrollment in online courses has increased the population of online learners. The area of focus was essential to the future of online learning and its long-term impact on student success. Since there is high dropout rate for online students, it is of importance to explore the major factors leading to their failure or dropout. Such research could help administrators, educators, and other stakeholders to collect research to determine the impact of these new graduation requirements. Organized findings would help to implement best practices in course design to reach all types of online learners (Friedman & Weiser, 2004).

Relevance

Teacher's perceptions of internal and external factors that impact online student learners are of great importance as they are in constant contact with these learners. Their interaction with students helps with their understanding of best practices that genuinely reaches all online learners. Implementation of best practices in online learning could increase academic success (Bobeva et al., 2015). With increasing awareness of online course structure and practices, overall student achievement will lead to significant impacts. Assessing the influence online learning has on students in various areas can help shed light on the creation of future courses as the trend for online education increases (Yu, 2016).

Significance

The significance of the study is that this study might help a variety of stakeholders to reconsider students' challenges in online education. With the rise of virtual education, the population of learners is ever-increasing (Githens et al., 2012). Hopefully, the study provides some insights into the external factors or internal characteristics that might bolster or hinder student success in the online environment. The study might also lead to an increase in understanding achievement gaps in online courses.

The research could benefit students, parents, administrators, and any stakeholders involved in virtual learning. The study might benefit future researchers to explore further the relationship between student achievement and internal and external factors in the online environment. Through research, students and stakeholders will have a better understanding of the online requirements resulting in higher student achievement.

Definition of Terms

Accessibility: This term is defined as the degree in which a product or service is available to a large population of individuals. In education this accessibility deals with academic resources such as textbooks, computers, and tutoring services (Bobeva et al., 2015).

Achievement gap: This term is defined as the observed differences in educational performance based on demographics such as economics, race, ethnicity, gender, and so on. (Yu, 2016).

Assessments: This term is defined as the evaluation (especially in education) of student learning and comprehension usually through district or state-wide testing (Loftus, 2013).

Behaviorist: This term is defined as the individuals who study the behaviorist philosophy (Artino & Jones, 2012).

Behaviorist philosophy of learning: This term is defined as the educational theory in which learning centers around a system of rewards to increase desired behaviors (Artino & Jones, 2012).

Best practices: This term is defined as the effective practices implemented to produce the best results. Regarding education, the methods in which proves efficient in student comprehension of material (Yu, 2016).

Brick and mortar: This term is defined as the traditional design of schools in which students attend classes regularly with teacher led instruction (Yu, 2016).

Course design: This term is defined as the process of creating courses including the process of forming a framework (Loftus, 2013).

Developmental approach: This term is defined as the study that looks at how individuals progress socially and emotionally throughout their lifetime (Friedman & Weiser, 2004).

Distance learning: This term is defined as the type of education in which the instruction of students is through a variety of technologies and instructors, who facilitate communication via these technologies (Berge & Muilenburg, 2005).

Digital inclusion/exclusion: This term is defined as the ability of disadvantaged groups to have access to skills, IT, and other technology in order to participate in distance education (Bobeva et al., 2015).

Digital literacy: This term is defined as a student's skill to use technology in a variety of mediums and platforms (Loftus, 2013).

Educational equality: This term is defined as the fairness and opportunity for all students within education (Hew & Tan, 2017).

Evaluation systems: This term is defined as the outlined structure to access the effectiveness of course design in education to meet the growing needs of students (Yu, 2016).

External factors: This term is defined as outside influences of an individual or practice. In education this could include home life and parent support. (Friedman & Weiser, 2004).

Extrinsic: This term is defined as the anything that comes from outside the person's body or mind (Friedman & Weiser, 2004).

Framework: This term is defined as the structure of course design that provides the map of the progression of content (Yu, 2016).

Homogeneous: This term is defined as, in terms of population, having one set of characteristics (Bobeva et al., 2015).

Heterogeneous: This term is defined as, in terms of population, having more than one set of characteristics (Bobeva et al., 2015).

Implementation: This term is defined as the execution of a plan. Within education, the process of putting into place a new standard of learning or teaching (Yu, 2016).

Information processing theory: This term is defined as the theory that centers on student's individual ability to process new information, which impacts overall learning abilities (Yu, 2016).

Intrinsic: This term is defined as the anything that comes from inside the person's body or mind, behaviorally (Friedman & Weiser, 2004).

Internal Factors: This term is defined as the inside influence of the individual or practice. In education this includes student characteristics (Friedman & Weiser, 2004).

IT: This term is defined as the use of technology for information. Within education, the use of computers, tablets, and laptops for learning (Loftus, 2013).

Learning gaps- This term is defined as the predetermined set of academic norms that students are expected to know at each academic level of education (Yu, 2016).

Learning theory: This term is defined as the theory that explains the different ways individuals learn (Yu, 2016).

Navigation: This term is defined as the way in which individuals can access course content and steer through the course content and materials (Loftus, 2013).

Online education: This term is defined as the type of learning in which students use technology to facilitate education and learning (Berge & Muilenburg, 2005).

Perceptions: This term is defined as the way an individual identifies situations, events, information using one's senses (Friedman & Weiser, 2004).

Social cognitive theory: This term is defined as the theory that significant learning occurs due to the interaction of individuals within their social environment (Friedman & Weiser, 2004).

Social environments: This term is defined as the social surroundings of an individual including their social interactions (Friedman & Weiser, 2004).

Socioeconomic status: This term is defined as the social and economic demographics of an individual (Friedman & Weiser, 2004).

Stakeholders: This term is defined as an individual or group with an interest in something. In education, any person who has an interest in the academics of schools (Friedman & Weiser, 2004).

Student centered learning: This term is defined as the method of teaching that focuses on student-driven accountability and teacher facilitation (Yu, 2016).

Student Characteristics: This term is defined as the defined attributes of an individual. In education, the attributes that impact a student's academics (Friedman & Weiser, 2004).

Traditional instruction: This term is defined as the teaching method where the instructor directs learning and students are housed in a brick and mortar classroom (Yu, 2016).

Virtual learning: This term is defined as education based on the use of technology to facilitate learning and student comprehension (Berge & Muilenburg, 2005).

Assumptions, Delimitations and Limitations

The focus of this qualitative case study research design was to investigate teacher's perceptions of internal/external factors that impacted academic achievement in online courses. As with any research, there were certain assumptions, delimitations, and limitations that occurred. The researcher began the study with specific assumptions regarding the sample population. The researcher was aware of the limitations of the study, including the specific population size. A major delimitation, including the fact that the study was only a snapshot in time.

Assumptions

The assumption was that for this study, all teachers were aware and able to identify internal and external factors that impacted student learning within the online environment. With this assumption, information collected showcased the perceptions of teachers on the different factors that impacted student achievement in online courses. The information could then be used to highlight best practices in the virtual environment. Best practices could then be implemented to increase student online academic success.

Limitations

Within the research design, there were several limitations. One was the small sample size of the study, which limited the amount of information gained. The collection of data came from a sample from an online school from the teacher population. Therefore, the study could not be generalized to a larger population. It could be applied only to the online school. Another limitation was the truthfulness of teacher responses to the interview questions. The assumption was that for this study, all answers provided through the interview were both honest and truthful. With this assumption, information collected presented the perceptions of teachers of the different internal and external factors that impact student achievement in online courses.

The proficiency of the English language of the teachers partaking in the interview was a limitation. Though most of the teachers who participated spoke English at an idiomatic language because teacher job requirements included a solid English understanding background, the wording in the interview questions still needed straightforward interpretation. Carefully wording the interview and having other individuals proofread the interpretive nature of the interview questions was at the forefront to help limit results being misinterpreted or skewed.

Delimitation

One delimitation included the fact that the study was only a snapshot in the given timeframe and thus did not reflect the long-term impact or changes that occur in the target population over time. The one-time interview was due to time restraints of the study and cost. The researcher recommends further research to ensure consistency of results.

Summary

Virtual education and online learner achievement have moved towards the forefront of educational research (Shapley et al., 2011). The need to understand the impact on student learning increases as the population of online learners grows at a rapid rate (Friedman & Weiser, 2004). Accessibility and the rise of district-wide policies regarding online courses as part of graduation requirements have only added to this increase. Through previous investigations, researchers determined that specific student characteristics might designate learner achievement within virtual classes (Cook-Wallace, 2012). Further investigators concentrated on obstacles impeding learner's performance. These correlate to internal and external factors that might play a role in online student success.

The increase in technology has led to an ever-larger population of online learners (Friedman & Weiser, 2004). The new technology and the rise of virtual education become of concern for educators (Conway et al., 2015). Since educational institutions are pushing for the continued implementation of technology to complement traditional education, distance learning continues to impact student learning (Coy, 2014). This push for virtual education increases the need to understand further implications it has on students (Cheung & Slavin, 2013). Research should focus on the effectiveness of such educational methods. Teachers' perceptions of the internal and external factors that impact online learning will be of importance as they will

be at the forefront of implementation. Teachers' constant contact with students allows a firm understanding of internal and external factors that influence student success.

Previous research has alluded to the role internal and external factors play in online student success. Some research showed that student interaction in their online coursework was of considerable importance (Ismail & Siti, 2012). This research would lend to the understanding of internal factors that influence student academic achievement. Research also highlighted the various features and factors that influenced students' achievement in the virtual environment (Boyer et al., 2008). This research would help determine the effect external factors have on academic success in virtual courses. Chapter 2 includes relevant contemporary literature on the topic. Chapter 2 covers an introduction, conceptual framework, review of research and methodological literature, synthesis of research findings, and critique of previous research studies.

Chapter 2: Literature Review

Students' educational achievement in online courses has recently become a prime concern within the educational sphere. This focus is primarily due to the increase in the demand for such classes, which is directly related to the growing norm of students taking virtual academic courses reflecting district-wide graduation policies (Shapley et al., 2011). With the high-tech advancements and greater access to a wide range of technologies, the educational panorama is changing, creating a virtually different world regarding the traditional educational model (Friedman & Weiser, 2004). With the evolution of virtual education, the need to evaluate the overall impact of online courses becomes a paramount focus for educators and those involved (Conway et al., 2015).

Introduction to the Literature Review

Virtual education is a rather new field, and therefore there is no determination on the long-term effects it has on students. Data from previous research highlighted some interesting information that can impact future online courses (Lin & Songtao, 2012). The wave of online education has shed light on the fact that student interaction within their course plays a significant role in student comprehension (Ismail & Siti, 2012). In some cases, students taking online courses felt more connected to their instructors and virtual materials; however, these courses lacked academic challenges (Friedman & Weiser, 2004). Whether this will impact the model used in traditional courses is still yet to be known. What these studies display are the many internal and external factors at play that influence student academic success online.

The Opening

The literature review was conducted on the research studies and analyzed to assess what influences virtual education has had on academic success and performance. One fundamental

consensus in the literature suggested that online education has become a focal theme of research with its rise in popularity amongst traditional schools. It has become a common practice for educational institutions to regularly require students to partake in virtual schooling, along with their traditional education (Coy, 2014). The benefits of virtual education led to its increase in popularity (Friedman & Weiser, 2004). Research studies on online learning have gathered statistics to inspect the effect of online courses on learner understanding and performance (Artino & Jones, 2012).

The Study Topic

The study topic was on teachers' perceptions of internal and external factors influencing student academic performance in online courses. Stakeholders in online education warrant the need to evaluate virtual learning to enhance the comprehension of online students (Cheung & Slavin, 2013) through the implementation of best practices (Friedman & Weiser, 2004). Schools support the vital importance in which online courses have on the future for student education. Requiring students to partake in online classes has been widely maintained by school districts across the nation as part of graduation requirements (Reynolds, 2011). This idea is mainly due to the notion that technology already plays a significant role in a student's daily life (Mahboub, 2011).

The high demand for virtual education corresponds to the need to understand its future implications on student success (Cheung & Slavin, 2013). Since teachers are the main force for implementation, their perceptions of internal and external factors that impact online students are essential. Teachers' perceptions and viewpoints will play a vital role in which best practices to implement in online courses. Best practices can enhance the interaction of learners within online courses that promotes the needs of all types of learners (Bobeva et al., 2015).

The online learning environment brings its own set of practices (Ye, 2004). Such practices may be abnormal for students unfamiliar with the online environment and could lead to student failure as a result (Shapley et al., 2011). Investigating the online educational sphere can help schools and students make practical decisions when registering for online coursework (Abrami et al., 2004). With increasing awareness of online course structure and practices, an increase in student achievement may occur. Exploring the impact online learning has had on students will help in the construction of future courses (Yu, 2016).

The Context

Assessment data from various studies highlighted internal factors that influenced student comprehension in the online environment (Abrami et al., 2004). Online learning is a relatively new field, and there is limited data when compared to brick and mortar counterparts. One study identified that age and ethnicity were internal factors that might hinder or promote academic achievement in online courses (Ke & Kwak, 2013a). These were but some of the many characteristics that might play a role in student success in online courses (Githens et al., 2012). However, researchers have only identified specific characteristics among students in online courses. Even with the identification of these student characteristics, data did not yet determine the significance such characteristics play within the achievement of the student in their virtual classes (Bobeva et al., 2015). There is a need to examine more factors leading to students' online success or challenges. Along with internal factors, researchers should focus on external factors that impact online student success.

The Significance

Since the goal of this study was to identify the perceptions of teachers on the internal and external factors that influence online learning and student academic achievement, this research is

beneficial to not only students, but also parents, administrators, and any stakeholders involved in the virtual learning world. The population of virtual learners encompasses a broader audience than before, increasing the population from homogenous to heterogeneous qualities (Githens et al., 2012). The literature illustrated the external factors and internal characteristics displayed by students that might influence learner achievement in virtual classes. The information collected might help investigate if achievement gaps occur in the virtual environment. This study can further research on online learning and student achievement. The study can also lend to the construction of future virtual classes to reach a multitude of learners taking such classes as well as educate stakeholders on the pros and cons of virtual learning.

The area of focus is essential in the future of online learning and its long-term impact on student success (Cheung & Slavin, 2013). Further research could help in the creation of online courses to meet all student needs (Friedman & Weiser, 2004) and increase the academic success of student learners (Bobeva et al., 2015). The virtual educational sphere adheres to its own set of practices that may bolster or create barriers for student learners (Ye, 2004). Online learners must not only become familiar with course content but navigation of course materials for success (Shapley et al., 2011). Research helps to outline online learner requirements to prepare students for such courses, thus allowing stakeholders to develop a deep understanding of online participation (Abrami et al., 2004).

The Problem Statement

The problem was that students had higher failure rates in online courses (Jaggars & Xu, 2013). As Layton (2015) described, full-time online students were scoring lower in courses than those in traditional brick in mortar classes. Kerr (2015) found that there were high numbers of

students who failed online courses. Therefore, Kerr tried to identify factors that lead to low performance in online coursework (Kerr, 2015).

Many schools support online education due to the assumption that it is equal to traditional schooling. More research is needed to determine the barriers that students face while learning online. Some researchers have uncovered the internal factors that influenced students' completion of their online coursework (Beck & Milligan, 2014). Of note from the study was the essential role that student interaction played with course achievement (Beck & Milligan, 2014). The concept of defining internal factors that impact online learners, such as age, played a role where data showed a negative influence on age and student achievement within the online course (Ke & Kwak, 2013a). Age was but one of the identified internal factors.

Clarida, Bobeva, Hutchings, and Taylor (2015) researched the impact online course creation had on students due to trends to maintain the status quo on content. In their study, Muilenburg and Berge (2005) emphasized the importance of understanding how virtual learning and online learners interacted with course material in order to identify barriers or factors that determined success. Online education requires constant individual interaction with coursework. Coursework and set-up of online classes focus on a one-dimensional design (Friedman & Weiser, 2004).

This one-dimensional approach has wide-reaching impacts. Personalization of coursework does not occur to meet student needs. Educational equality can increase (Githens et al., 2012) with research conducted on potential learning gaps in online courses. Identification of factors that influence learners will close the achievement gap present in virtual learning (Bobeva et al., 2015). Course design can, therefore, focus on personalizing course content to meet the growing population of online learners.

The Organization

The chapter begins with an introduction to contemporary research conducted on the virtual learning realm. The Conceptual Framework follows this introduction. Examination of distance learning through specific research studies helped shed light on the current conversation on virtual education. This chapter concludes with an assessment of research and a summary of findings. The contemporary literature (see Appendix A) on virtual education highlighted the importance of learner interaction or student-centered learning within online courses (Ismail & Siti, 2012).

Case studies reflect a consensus amongst online learners that interaction in online classes with instructors occurred more frequently than in the brick and mortar setting (Friedman & Weiser, 2004). However, surveys conducted also suggested a lack of academic challenges for learners (Friedman & Weiser, 2004). The literature review examined these student-driven research models and highlighted factors and characteristics that impacted student interaction within their online courses. Chapter 2 examined research on virtual education and its influence on the learner. Emphasized was the relationship between online learning and students' academic success in virtual classes.

Conceptual Framework

The conceptual framework for this study is based on different learning theories found in education, including learning theory in distance education, behaviorist philosophy of learning, information processing theory, and social cognitive theory. With each theory, common themes emerged, including the concept of distance learning and the conversation surrounding virtual education. One of the significant underlying emphases was the need for student-centered learning within the virtual world (Ismail & Siti, 2012). Unlike the teacher-driven model, student-

centered learning focuses on the personalized needs of each learner, which could be aided by online learning. After reviewing the literature, the identification of other specific themes occurred. These themes were distance education, digital literacy, digital inclusion/exclusion, and educational equality (Boyer et al., 2008).

Learning Theory in Distance Education

Learning theory is a theory which explains the different ways individuals learn (Yu, 2016). Learning theory closely relates to behaviorism. Within education, researchers are using learning theory to understand how individuals learn in the virtual environment. Previous literature identified how students are enrolling in virtual courses at a faster rate than university courses (Conway et al., 2015). Data showed how online education is the new trend in education (Githens et al., 2012). Thus, understanding how students learn virtually is of importance.

Virtual education is the newest tool in education to help students succeed beyond the classroom (Kim, 2015). The change in technology is creating a work environment that demands its workers to meet specific skills to be successful within their chosen careers. Distance learning may play a more significant role in preparing students to enter the workforce (Gatchair, 2013). As we focus on the need for virtual learning, we must also grasp the reality of creating not only educational equality but equality in the workforce through distance learning (Loftus, 2013). Distance learning must be of the central focus on learner requirements beyond their academic careers. Researchers are using learning theory in distance education. Learning theory is found not only in education but also in psychology, neuroscience, and sociology. By using learning theory, studies are evaluating the virtual impact coursework has had on student learners.

Enrollments in such courses are increasing at a more rapid rate than traditional brick and mortar courses. Data showed that 50% of students enrolled in online classes to supplement

traditional coursework (Conway et al., 2015). Data highlighted the lack of minority enrollment in such courses and correlation to career readiness (Conway et al., 2015). Minority groups include race and gender (Bazarova, Mcleod, & Walther, 2011). The connection between online education and career preparedness is also of concern as underrepresentation of these same minority groups occur in technology-related careers (Boyer et al., 2006). As more and more colleges are relying on online coursework as a core part of degree requirements, students who do not participate in these courses may fall behind and be unsuccessful in career areas that require a solid understanding of technology (Gatchair, 2013).

Behaviorist Philosophy of Learning Regarding Digital Exclusion/Inclusion

The behaviorist philosophy of learning, termed by John Watson, or the idea of behaviorism (Artino & Jones, 2012), focuses on the result of human learning based on a set of behaviors prodded by a rewards system. Over time, other behaviorists highlighted the use of the theory to determine individual behaviors resulting from the social learning of conditioning (Artino & Jones, 2012). With regards to online learning, the behaviorist philosophy of learning stresses the importance of learned behaviors of students from instructors conditioning.

Using the behaviorist philosophy of learning, stakeholders can ensure digital inclusion within the virtual sphere. Digital exclusion/inclusion is just as much a focus in the virtual sphere as it is in the brick and mortar sphere. The population of online learning has grown passed a homogenous audience (Bobeva et al., 2015). With this, research must now shift to focus on the various characteristics of students within online courses (Wang, 2017). Just as in the brick and mortar schools, online education must meet the needs of various learners ranging from different backgrounds (Horowitz, Oltmann, & Shachaf, 2008).

Immediate data suggested that digital inclusion had no set determining factors (Bobeva et al., 2015). That means that students' success in online courses did not occur due to apparent characteristics of set factors (Berge & Muilenburg, 2005). Therefore, the success of the student was not directly correlated based on their demographics (Bobeva et al., 2015). Through different observations, researchers determined that though student characteristics were not the defining source of success in the online environment, prior knowledge and understanding of technology did provide a benefit (Wang, 2017). This research showed that students were not merely born with the knowledge to perform within an online course (Balaban, Kermek, & Zlatović, 2015).

With digital exclusion/inclusion in mind, researchers had looked to the behaviorist philosophy of learning to answer the issues occurring within distance education. With this philosophy, there is an emphasis on teaching to increase desired behaviors that will lead to an increase in academic achievement. In recent studies, findings suggested that student characteristics of factors did not determine digital exclusion. That means that student features such as gender, ethnicity, age, socioeconomic status, and education could not determine digital literacy and online success. What different research implied is that extrinsic elements such as course content and developmental issues impact digital literacy and, therefore, student achievement (Mcbride & Napiertibere, 2004).

Data must focus on different influences on the student to accomplish digital inclusions/exclusion (Berge & Muilenburg, 2005). Research must take a thorough look at the creation of online courses and the education institutions behind the creations of these courses (Hew & Tan, 2017). Research would also include teaching to increase desired behaviors. In this way, research can determine what aspects of online classes help and hinder student success. These courses can be tailor to meet the many needs of online learners (Ye, 2014).

Information Processing Theory Using Digital Literacy

Information processing theory is a theory that focuses on student's individual ability to process new information leading to attain new knowledge (Yu, 2016). The theory itself was born out of psychology with a focus on individual cognitive development. The theory centers on how individuals process information and how the information is analyzed to create new understanding (Yu, 2016). Over time, the theory explained children's mental maturation and cognitive growth.

This theory relates to the increase in student use of technology. With this technology, educational institutions are looking to use distance learning to evolve old practices (Kim, 2015). With more students taking online courses, the question of digital literacy comes to the forefront. Many educators are trying to determine what prior knowledge students need to be successful in virtual classes (Hew & Tan, 2017). Digital literacy is part of the larger piece of the puzzle in the success of students academically. One theory to provide the needed digital literacy for students in online courses is to further the research of best practices (Shapley et al., 2011). Identification of best practices can lead to implementation within courses for students to master before participating in online courses (Wang, 2017). Students can only start to succeed in the virtual world if provided with the tools needed to succeed. These tools relate to the information processing theory. This theory states that students process information differently and retain content in various ways. Best practices are needed to meet these different needs of students.

The research suggested that digital literacy is essential to student success in online courses (Bobeva et al., 2015). Digital literacy would mean that students' success rate in online courses would increase through awareness of other extrinsic factors (Berge & Muilenburg, 2005). Considerations would include the concept of digital literacy and preparing the student to navigate their online coursework. Digital literacy is part of the equation when it comes to student

preparedness in their online courses (Bobeva et al., 2015). Students need to have a thorough understanding of their online tools to navigate and participate in the coursework. Prior knowledge and understanding of technology benefit students within the virtual world (Wang, 2017). Schools must begin to realize that student characteristics cannot solely determine success, but digital literacy plays a role as well (Balaban et al., 2015). Digital literacy should become a focal point of online educational research as the increase of students taking online courses becomes the norm (Nam, 2016).

With the concept of digital literacy, student characteristics cannot determine how prepared a student will be. Digital literacy must be part of the virtual experience to help students enter the world of online education. In terms of education, this means that no matter the student's gender, ethnicity, age, socioeconomic status, and education, digital training must be offered to allow educational equity. Developmentally, digital literacy must be tied within instructional practices to coincide with developmental approaches for students (Mcbride & Napiertibere, 2004). With the current move towards schools, including higher educational institutions, for students to partake in online courses, the population of students taking such classes has increased. With this push for online education, student characteristics must not be the only focus of education practices to prepare students for online courses (Yu, 2016). The information must target all types of students (Berge & Muilenburg, 2005) and influence the creation of online courses (Hew & Tan, 2017).

Social Cognitive Theory and Educational Equality

Social cognitive theory is a theory that emphasizes that learning occurs due to the interaction of humans in their environment (Friedman & Weiser, 2004). Thus, one can observe the process of learning and personal knowledge. Observation of students and their social

interaction can highlight the individual's primary learning. Using this theory, stakeholders can help create educational equality based on different environments.

Educational equality has been at the center of the educational world, starting with the brick and mortar. Educational equality is an attempt to provide students with the same educational opportunities and tools as their counterparts (Ke & Kwak, 2013a). Educational equality is the idea to provide access to all types of students (Hew & Tan, 2017). Regarding distance learning, educational equality would mean students would have access to equipment and support for their online education (Hew & Tan, 2017). As the trend in virtual learning increases, the need to provide educational equality for these online students is essential. Digital equality, combined with the other topics of focus (distance learning, digital inclusion/exclusion, and digital literacy), will allow researchers to begin to understand the long-term impact online courses have on student learning and success (Shapley et al., 2011).

The social cognitive theory promotes technology as a solution. The theory focuses on the concept that learning is stimulated through social environments. These social environments are now expanding due to the increase in technology. The evolution of research and the push to study the effectiveness of online programs to promote educational equality relates to increasing student academic success (Wang, 2017) and improve educational quality (Balaban et al., 2015). Student academic success was at the center of all this research and related directly to the need for educational equality (Arendtsz, Bempechat, Holloway, Li, & Park, 2011). Examination of best practices (Nam, 2016) regarding technology leads to a higher chance for educational equality in the online sphere (Shapley et al., 2011). Due to this large population, research has shifted to identify different student characteristics to meet their needs (Wang, 2017). It is a central

foundation that online education must reach all learners and their learning to help with student success (Horowitz et al., 2008).

In summary, the conceptual framework focused on student-centered frameworks and best practices. The theories that drive virtual education included distance learning, digital exclusion/inclusion, digital literacy, and educational equality. These frameworks impacted student success within the virtual environment (Cook-Wallace, 2012). The Conceptual Framework outlined the ideas surrounding distance learning and the conversation surrounding virtual education (Ismail & Siti, 2012). Research across the board displayed the importance of student interaction with their online courses (Friedman & Weiser, 2004). The frameworks highlighted the concepts of student-driven research models (Boyer et al., 2008).

Review of Research Literature and Methodological Literature

Led by the research questions, this literature review helps to determine if certain internal and external factors impact students and their overall achievement in the virtual world. The contemporary literature on virtual education revolved around the concept of student-centered learning within their online courses (Ismail & Siti, 2012). There was a consensus amongst researchers that student interaction with their online coursework was essential to student's success (Friedman & Weiser, 2004). However, research also suggested that students are not solely responsible for their success or failure within online courses (Friedman & Weiser, 2004).

Studies on Virtual/Online Learning

Research on virtual education has increased in the last decade (Field & Gartland, 2004). The population of online learners has also increased as the technology is now obtainable to a broader group of individuals (Boyer et al., 2006). Due to this, the impact of online education is

of interest than ever before (Cheung & Slavin, 2013). Below are different studies conducted on virtual/online learning.

Ke and Kwak (2013b) focused on characteristics that students possess that tend to lead to achievement in the virtual world. Using mixed-method research, they highlighted the importance of ethnicity and how it impacted the perception of their virtual learning experience. The study also looked at the impact age, and education had on student interaction with the virtual class. Ke and Kwak (2013b) noted that age nor educational background had any apparent impact on overall student success. The research did not conclude any evident connections between the characteristics of students and achievement in the online course but did suggest that ethnicity may impact how students perceive their online learning experience.

Ke and Kwak (2013b) had the central question of whether age and ethnicity impacted the virtual learning of the student. The study reflects other current research conducted on student characteristics and if such features can determine success in the virtual environment. Their study, like many others, was essential to identify such characteristics to implement best practices to prepare future online students for success in their virtual courses.

Another study by Ke and Kwak (2013a) focused on learner satisfaction in online courses. They wanted to determine if student perception influenced their overall success and if such attitudes were in place if alteration could occur to increase learner success in the virtual environment. Their study ties in with the educational theory of student-centered learning and presents a need to further research such methods to help students succeed. The research conducted helped highlight major concepts that influence the online learners' experience.

The literature reflects that students are enrolling in online classes more frequently than before (Conway et al., 2015). Data showed how online learning is a new trend in education

(Githens et al., 2012). Due to this trend, distance learning's impact on student success in education is a serious concern (Ke & Kwak, 2013b). Schools are using the online class to bolster the traditional coursework of students (Kim, 2015).

Due to the improvement of technology and its impact on not only the educational sphere but the workforce, technology has become a part of career readiness. Virtual education may be the deciding factor for students to be career-ready (Gatchair, 2013). Companies may require students to have the skills used in virtual courses to qualify for positions (Gatchair, 2013). With the changes occurring in education, research must center on the new field of online learning and determine how to meet the needs of all online learners who vary in demographics (Loftus, 2013). Distance learning must be of the central focus on learner requirements beyond their academic careers. Research showed that in higher education alone, 50% of students enrolled in some form of online coursework (Conway et al., 2015).

What we can determine from this data are the continuing trend of online education for students in not only the primary and secondary school but in higher. If students who are college-bound are not exposed to technology-based courses at an early age, academic success in such a course may be significantly impacted. Analyzation of data reflect the ultimate reality that virtual learning may impact student career readiness (Conway et al., 2015) as students who struggle with online classes may fall behind specific careers (Gatchair, 2013).

Distance (Online/Virtual) Learning Impact on Student Learning

Distance learning is one of the revolving trends in updating the sphere of education (Cheung & Slavin, 2011). The increase in virtual education has raised concerns as to the overall effectiveness. Several studies focused on the impact technology has had on student learning. Significant conclusions included the need for schools to implement evaluation systems to help

see how useful technology was for student comprehension. Through evaluation systems, schools can determine if online courses are positively impacting students. Researchers Cheung and Slavin (2011) noted the importance of further research of methods that can be put into place to analyze the technology in the online environment.

More research focused on the ever-evolving world of online education and how these changes have impacted students. Through research, there was a consensus that research should focus on online course materials that are successful for student retention. Friedman and Weiser (2014) studied the rise of the online classroom. They again focused on the learners' interaction in the online educational world (Friedman & Weiser, 2014). They looked to not only understand the impact of technologies on students but which technologies were most useful for educating students (Friedman & Weiser, 2014). They highlighted that social media within education may be a tool for student success as students are familiar with the technology (Friedman & Weiser, 2004). This study was part of a handful of other studies that called on educational institutions to invest in further research to determine technologies that promote educational success.

Distance learning also raises the question of education equity and exclusion. Because educational equity and exclusion is a current issue in the traditional education setting, it holds sway within the virtual environment as well. Tan and Hew (2017) tackled this concept in their study about IT home access for students. Through their research, they concluded that student access to home IT resources had positive impacts (Hew & Tan, 2017). If students have access to IT at home, this will lead to educational equity in the virtual sphere (Hew & Tan, 2017). With studies such as these, researchers were attempting to identify ways to provide equity for students, even in online classes.

Researchers have further studied the impact of distance learning and digital inclusion/exclusion. Clarida, Bobeva, Hutchings, and Taylor (2015) focused their study with concepts on digital inclusion and exclusion. They noted that student characteristics do not determine digital exclusion. Digital exclusion occurred due to extrinsic factors (Bobeva et al., 2015). Through their study, they questioned the idea that student achievement was only due to student characteristics but impacted by other determining causes (Bobeva et al., 2015). Their research brought to light the need for more research to eliminate barriers that might impede student success in their online classes. Just like in the traditional setting, students hold characteristics that may determine how successful they are. Also, like the traditional setting, students are faced with a variety of barriers known to limit their accomplishment with classes, especially in the virtual environment with little conducted research.

Much of the research conducted previously studied the influence that online schooling had on student success. The demand for virtual education is mainly due to the accessibility and convenience of this type of education for its learners (Phillips, 2005). The research highlighted the impact of virtual learning on students as well as questioned its overall effectiveness (Cheung & Slavin, 2013). The future of virtual learning will be determined by the research conducted. Through research, best practices are determined (Friedman & Weiser, 2004). Best practices can enhance the interaction of learners within online courses that promotes the needs of all types of learners (Bobeva et al., 2015).

Researchers evaluating distance learning currently agreed on determining long-term effects on student success. Data are being analyzed by educators, administrators, and stakeholders to determine how to implement best practices. Best practices are exhibited and added to the current movement for online education (Bobeva et al., 2015). Research must also

focus on practices that will lead to student success (Ye, 2004). Online learning can impact student learning by the differing policies present in the virtual sphere and thus could lead to failure (Shapley et al., 2011). Creating clear outlines of online requirements could help with future registrations within virtual courses (Abrami et al., 2004).

Characteristics That Impact Student Achievement

Yu (2016) helped further the conversation on distance learning. Yu used data from learning management systems (LMS) and determined the critical features of students (Yu, 2016). Yu noted that student interaction with their online course usually predicted future success in the class (Yu, 2016). Yu argued that self-regulation was essential in the ultimate success of the student (Yu, 2016). Yu was joined by other researchers, who also claimed that student's behaviors were critical to their success in their online courses (Yu, 2016).

Cigdem and Yildirim (2014) added to the concept of learner online behaviors. They noted that even though virtual education has gained popularity, data have not shown the success of such methods in educating students (Cigdem & Yildirim 2014). Unlike Yu (2016), however, Cigdem and Yildirim (2014) realized that student behaviors may not always be inherited but learned. Through their study, they noted the importance of digital literacy.

Along with their research, others joined in with the conversation about factors that predict virtual achievement. Muilenburg and Berge (2005) attempted to detect such characteristics. Muilenburg and Berge (2005) took another point of view by focusing on the obstacles leading to the ultimate failure of learners in online courses. Through their research, they determined that there were eight significant barriers (Berge & Muilenburg, 2005). They outline obstacles faced by students to share information with educators and implement new methods to meet the needs

of online learners (Berge & Muilenburg, 2005). The rise of online education sets the stage to increase the research on the effectiveness of such educational methods.

Also apparent is the growth of technology-based careers. Gatchair (2013) spoke on race and ethnicity regarding technology-based careers. In the study, Gatchair (2013) focused on the correlation between education and career success. The research showed the need to understand how education can impact students beyond their academic careers. Educational differences can perhaps link to the output of students for the workforce and, therefore, should be studied further.

The research correlated with the study by Wladis, Hachey, and Conway (2015). Their focus was on the influence of virtual education within the college sector (Conway et al., 2015). They identified certain minority groups, including ethnic, gender, and other nontraditional students. Their research detected that minority learners enrolled in online classes in less frequency, which could have dire consequences in their career pathway (Conway et al., 2015). Their study could help in determining methods for best practices to help these minority groups succeed in the virtual environment.

Review of Methodological Issues

While all research will have its limitations, and there is no “perfect” research method, the review of the current literature on distance learning provided an outline for research methods currently used. In general, most researchers adopted either quantitative or qualitative methods. Quantitative research deals with numeric based data, while qualitative research uses exploratory data.

Quantitative Research and Distance Learning

Studies conducted on the impact virtual education has had on learner comprehension is trending towards understanding the long-term effects of online coursework (Field & Gartland,

2004). To determine this, researchers used quantitative methods such as the analysis of data (Atchison, Carabajal, & Marshall, 2017). Quantitative methods analyze numerical data to determine information. A relatively common and useful data source used was the Learning Management Systems or LMS (Wang, 2017). The LMS can provide researchers with a wide variety of student data ranging from ethnicity, age, gender, and online behaviors of learners within their virtual courses (Githens et al., 2012).

The use of the LMS provides researchers with data that can help show if there are apparent trends that may influence students' success in online academics (Bobeva et al., 2015). LMS provides more bio facts of students; researchers have since sought to analyze the behaviors of students within the virtual sphere (Wang, 2017). These trends may show patterns and assist researchers in determining student behaviors that can predict success in online classes (Yu, 2016). The LMS can be used in future research and provide the information to not only detect patterns of student behavior but help implement best practices to help students succeed (Balaban et al., 2015) and help educators form future courses (Alonso et al., 2012).

Assessment tests were analyzed to help determine online education's impact on students learning (Balaban et al., 2015). The assessment data first identified which types of courses students were comprehending, as well as highlighted the construction of courses that reached a multitude of learners, including the social aspects of students (Hew & Tan, 2017). Analyzation of records lends to the implementation of best practices and future construction of virtual instruction.

Qualitative Research and Distance Learning

Researchers also used qualitative methods to evaluate the virtual impact instruction has had on learner comprehension. Unlike quantitative methods, qualitative methods do not use

numerical data. Qualitative research is exploratory and collects data based on perceptions and observations. Qualitative methods include any form of research that seeks to explore the phenomenon. Such methods include surveys, interviews, and case studies (Field & Gartland, 2004). Through these different approaches, information about student learning and online courses were collected and helped shed light on the influence of the virtual educational environment (Ke & Kwak, 2013a).

Surveys were at the forefront of the research conducted on virtual learning. One such study that used surveys analyzed the learner's opinions with their virtual course (Berge & Muilenburg, 2005). The surveys collected provided the researchers with valuable information on student perception of their online classes (Dupeyrat, Escribe, Huet & Sakdavong, 2011). Surveys showed the interaction of learner characteristics in virtual courses (Gyamfi & Sukseemuang, 2018). Such features include gender, age, ethnicity, and so on. Testing on differences between online learners such as male versus female occurred (Alonso et al., 2012) to determine if any noticeable differences were apparent. There was also an examination of ethnicity in such surveys that looked at English Language Learners (Gyamfi & Sukseemuang, 2018). The surveys highlighted any noticeable characteristics of students that might lead to learner comprehension in virtual classes. Along with surveys, researchers also used case studies to identify student features (Ke & Kwak, 2013a).

Synthesis of Research Findings

Conversations about virtual instruction showed many differing ideas and observations on factors that influence student success. Yu (2016) noted that the success of students within virtual classes was, in part, due to distinct learner features. Yu (2016) concluded that individual learner conduct indicated student success in an online course. Cigdem and Yildirim (2014) added to the

conversation with Yu (2016). They agreed that student behaviors could influence overall success in the online environment (Cigdem & Yildirim, 2014). However, they also noted that the need for implementation of digital literacy in impacting student achievement in online courses (Cigdem & Yildirim, 2014). They believed that a large part of the success was due to the level of digital literacy (Cigdem & Yildirim, 2014).

Some researchers focused on different aspects of the virtual world. Muilenburg and Berge (2005) sought to help increase student success by identifying barriers that might exist in online education. By determining the main obstacles encountered by learners in virtual programs, Berge and Muilenburg (2005) moved away from the importance of student characteristics and instead on the creation of the course and course materials. Research agreed there was a need to continue research on the long-term impacts that distance learning has had on student academic achievement (Balaban et al., 2015). Data collected is not only used by educators but by administrators and other stakeholders to determine how alteration of online coursework can meet the needs of the ever-growing population of virtual learners (Bobeva et al., 2015).

The unique environment of distance education leads many researchers to determine the impact online learning has had on student success across the board. The differences that occur in online education from the traditional brick and mortar school could be the difference between student success and failure (Shapley et al., 2011). Investigating the online educational sphere can help schools and students make practical decisions when registering for online coursework (Abrami et al., 2004). Awareness of the virtual educational coursework can help streamline best practices to allow student achievement. Long-term evaluation of virtual learning in various subjects can promote the formation of future online courses (Yu, 2016).

Critique of Previous Research

With the upward trend of online learning, researchers have directed focus on the impact such courses have on student success (Field & Gartland, 2004). Researchers used quantitative and qualitative research methods in these different studies. Quantitative research analyzed the assortment of information and the examination of said data (Atchison et al., 2017). Through data, researchers sought to determine the characteristics and factors that might impact the success of learners within virtual courses (Wang, 2017). The use of Learning Management Systems or LMS (Yu, 2016) helped researchers understand the online environment (Hew & Tan, 2017). As online classes increase and grow, data taken from assessments will be more helpful in determining achievement gaps. With these studies, the focus shifted to the importance of learner comprehension on their success in online courses (Field & Gartland, 2004). The LMS systems provided researchers with student data ranging from ethnicity, age, gender, and online behaviors of learners with their virtual courses (Githens et al., 2012). The LMS helped track trends within the virtual sphere (Bobeva et al., 2015).

Along with the use of LMS data, assessment data taken from school district testing were collected and analyzed for patterns (Balaban et al., 2015). The assessment data identified the social demographics aspects of students concerning online academic achievement (Hew & Tan, 2017). Analyzation of records lends to the implementation of best practices and future construction of virtual instruction.

There has also been conduction of qualitative research to understand the online environment (Berge & Muilenburg, 2005). Surveys identified characteristics of online learners such as age, gender (Alonso et al., 2012) and ethnicity (Gyamfi & Sukseemuang, 2018). Along with surveys, researchers conducted case studies to understand student interaction in the online

environment further (Ke & Kwak, 2013a). Surveys were at the forefront of the research conducted on virtual learning (Berge & Muilenburg, 2005). Surveys were useful in providing insight into the perception of students taking online courses (Dupeyrat et al., 2011). Surveys also allowed patterns to emerge, showing the interaction of learner characteristics in virtual courses (Gyamfi & Sukseemuang, 2018).

Summary

Virtual education and learner achievement within such courses have moved towards the forefront in educational research (Shapley et al., 2011). The chapter first identified and analyzed the contemporary literature conducted on distance learning. Through this evaluation, the impact virtual learning has had on students was discussed (Artino & Jones, 2012). The literature review attempted to categorize the different literature that presented research on the virtual educational world. After sifting through the literature, various theories were presented and studied. The need to understand the impact on student learning increases as the population of online learners grows at a rapid rate (Friedman & Weiser, 2004). The concept of student-centered learning within the virtual sphere was such a theory presented in the literature.

The presented literature represented the research on virtual learning and how students interacted with online classes. Through studies, researchers determined that specific student characteristics might designate learner achievement within virtual classes (Cook-Wallace, 2012). Further investigators concentrated on obstacles impeding learner's performance. Through the literature review, the complicated relationship between student and online courses was better understood and determined. The literature highlighted the fact that there have been no identified external nor internal factors as the core source of success or failure for online students.

The increase in technology has led to an ever-larger population of online learners (Friedman & Weiser, 2004). The new technology and the rise of virtual education has become of concern for educators (Conway et al., 2015). As educational institutions are pushing for the continued implementation of technology alongside traditional coursework (Coy, 2014), research on online education must occur to determine the long-term impact (Cheung & Slavin, 2013). The online learning environment is ever-evolving, and data are collected continually (Artino & Jones, 2012). Teacher's perception and understanding of student interaction with regards to online courses will help in the implementation of best practices.

The relatively new field of virtual education reflects the lack of long-term data to determine impact. Previous research has shed light on internal and external factors that can be beneficial to further studies. As the trend of online education continues, and school districts across the nation adopt some form of online learning for students, how students interact with online content should be of prime focus. It becomes apparent that student interaction within their online course correlates to their overall understanding. This does not mean that students are the sole reason for their online success or failure. Research presented in the literature review alluded to the fact that many factors could impact student academic achievement in virtual courses. The first step in reaching all online learners is through a thorough understanding of such factors. Chapter 3 provides an overview of the procedures of the research study in the pursuit of further understanding the impact of virtual education.

Chapter 3: Methodology

In the last decade, the impact of virtual schooling on students' academic success has been a focus of interest. The increase in technology and its interaction with student learners has brought significant attention to the impact such technology has on student success. With the push of virtual education, research has focused on the long-term implications of such schooling on students. A study by Layton (2015) emphasized that compared to traditional student scores, full-time virtual students scored lower in coursework.

Introduction to Chapter 3

Chapter 3 outlines and explains the qualitative analysis study, including justifying the research, discussing the chosen design choice, as well as specifying the collection of data. The research evaluated teacher's perceptions of the impact of internal and external factors of virtual education on student success. The study focused on how teachers perceived the factors that influence online learners. Internal factors included things such as gender, age, and ethnicity. External factors included things like teacher support and course navigation. Genuinely understanding the factors that impede or bolster online learning was of primary concern for this study. The research can help determine best practices within virtual classes that will have positive impacts on student academic achievement. Investigating virtual education can help schools and students make proper decisions when registering for online coursework.

Information from the study furthers research on virtual education and may help stakeholders construct future online courses. As the demand for online education increases, providing accessibility to a wide variety of learners will be of great importance (Phillips, 2005). The research conducted here helps understand the long-term implications of virtual learning for the different student populations (Friedman & Weiser, 2004) and implement best practices

(Bobeva et al., 2015). Contemporary conversation dictated no significant differences existed between virtual and traditional schooling. Unfortunately, there has been a lack of specific research to determine this. Xu and Jaggars (2013) questioned the statement of equality between online courses and traditional schooling in their study. Their data showed a significant negative impact on students' course grades (Jaggars & Xu, 2013). Xu and Jaggars (2013) compared data they collected from students in their traditional courses to their online courses (Jaggars & Xu, 2013). With studies like this one, it becomes crucial to understand why this negative decrease in grade occurs.

Research Questions

One central research question and four research subquestions drove the study. The central question and subquestions directed the interview questions for conducting the study. The questions highlighted the research quest to discover teacher's perceptions of the factors impacting students' online schooling and their academic achievement. The central question and subquestions were as follows.

Central Research Question

RQ. What factors do teachers perceive as a significant impact on online students' success?

Research Subquestions

SQ1. What external factors do teachers perceive impacting students' academic performance in online courses?

SQ2. What internal factors do teachers perceive impacting students' academic performance in online courses?

SQ3. How do teachers perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?

SQ4. What suggestions do teachers have for improving students' academic performance in online courses?

Purpose and Design of the Study

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. The research suggested the need to explore the significant role that virtual education has had on students. Through the study, the focus was to determine teachers' perceptions of if internal and external factors such as gender, age, socioeconomic status, and so forth, played a role in online educational success. Through a qualitative case study approach, the study helped shed light on teacher's perceptions of factors impacting student achievement in the virtual world.

Specifically, through a qualitative case study design, the study attempted to highlight ways in which to increase students' performance in online courses. The research used a qualitative research approach compared to a quantitative research approach due to its correlation with the purpose of the study. Qualitative research is an exploratory approach to research. It seeks to understand, based on perceptions, opinions, and reasoning. The qualitative research approach helps gain insight into the problem. Through the approach, the researcher can find common trends that occur. The quantitative approach was not appropriate because this approach looks to quantify a problem through the collection of statistics. The quantitative research approach uses measurable data to generalize results for the broader population. Regarding teacher perceptions on the internal and external factors that impact online learners, the

quantitative research approach would not be able to measure such information; thus, qualitative research was necessary.

There are plenty of qualitative research methods, including action research, case study, ethnography research, narrative research, and phenomenology research. The selected research design was that of a case study. The selection of the case study design was due to the purpose of the study. Addressed is a brief overview of the other qualitative methods. In an action research approach, the researcher is looking to diagnose a problem or weakness and help develop a solution to address it. For this study, the researcher was not looking to access a problem or provide a solution. Another research approach is ethnography, which focuses on understanding cultural beliefs, behaviors, and so forth. The researcher of this study was not interested in the singular culture of the targeted population. Narrative and phenomenology research approaches are similar in the fact that they seek to study and understand the experience of individuals. Again, for this study, the purpose of the research did not seek to understand individual experiences rather focused on individual perceptions. Overall, the case study design was selected as it best related to the needs of the research.

Case studies explore a phenomenon in real-world situations. Within the case study design, there are several types to choose from. They include explanatory, exploratory, descriptive, multiple-case, intrinsic, instrumental, and collective. Explanatory seeks to answer a central question while exploratory looks to explore situations and descriptive focuses on describing. The multiple-case study compares different cases, much like collective case studies. An intrinsic case study is used for understanding, while instrumental provides insight. Within this case study, the researcher used the exploratory case study design as the research was looking to explore internal and external factors that impact students in their online courses based on teacher perceptions

(Yin, 2017). The selected design allowed associations between variables and illuminated them to describe a larger population. Through an interview and focus group discussion, answers showed information on the population. The information was especially useful for the study as it helped to show different perceptions of factors that impact student academic achievement in the online course. The research illustrated the teacher's perceptions of the factors that influence learners' achievement in virtual classes.

The information collected may help to show if achievement gaps occur in the virtual environment and to identify such characteristics. Through this, best practices may be put into place to close the achievement gaps present in virtual courses. Data collection was taken directly from the responses from the teacher interview and focus group discussion. The interview questions obtained information ranging from the teacher perspective of their online courses, student behaviors within their online courses, necessary demographic information, online satisfaction, and so forth.

Conduction of the interview and focus group discussion occurred to the population of an online school in which teachers served both full-time and part-time students with online courses. The teachers served students who range in age from 6th grade to 12th grade across the school district. Through the conduction of teacher interviews and a focus group discussion, the researcher inferred factors that may impact student academic success in their online coursework.

Research Population and Sampling Method

Choosing the participants was an essential step in the research as the chosen population needed to reflect the research questions. The population chosen was based on a thorough understanding of teacher relationships within their population that carry various characteristics. The sampling method used refers to the interview used to conduct teacher interviews and the

focus group discussion. The following section depicts the target population and sampling method for the study. The population and sampling method were essential in conducting research that correlated with the research questions presented (Creswell, 2017). The chosen population and selection of participants was on the basis that they reflected the purpose of the study (McMillan, 2012).

Research Population

The population in which the study revolved around was a virtual school, referred to in this study as Coral County Virtual School (CCVS), which employed approximately 100 teachers who served from the population of roughly 215,000 students. The school was accredited and registered with the Department of Education as part of the Coral County Public School District. The online school employed full-time teachers and accepted full-time students from K–12 as well as part-time students ranging from 6th–12th grade. Teachers were required to have attained a bachelor’s degree in the subject area taught as well as a Professional Teacher Certificate issued from the Department of Education. Full-time students can attain their high school diplomas through the credits earned. CCVS offered a standard high school diploma that meets state and school board requirements. Due to the large enrollment of the school, CCVS reflected a diverse teacher and student population. The school met the requirements of high-quality education through the hiring of instructors who met the Department of Education certification requirements.

Coral County Virtual School (pseudonym) was part of the Coral County Public School District (pseudonym; CCPS). Therefore, the research encompassed full-time employed teachers within its population. CCPS was one of the 10 largest school districts in the southeastern region of the United States. The school district was made up of almost 200 schools with more than

200,000 students. The demographics of the CCPS student body were as follows: roughly 40% Hispanic, 25% White, 25% Black, 5% Asian and, 5% Multi-Cultural. This diverse student population helped show if specific student demographic characteristics impact the success within online courses.

Sampling Method

To acquire the participants, the researcher sought and obtained permission from the school administrator at CCVS to conduct teacher interviews within the school. The researcher attained both verbal and written consent from the school administration, making sure to outline the study's purpose clearly. After receiving approval from the Concordia University–Portland Institutional Review Board (IRB), the researcher sent an invitation email letter to potential participants (see Appendix B). The letter outlined the purpose of the study as well as the criteria needed for participants. The email was sent to all CCVS teachers employed at the school. Criteria for teacher participation included current employment status at CCVS, 3 years of online teaching experience at the school, and 3 years of overall teaching experience online or in the traditional brick and mortar sphere. The letter included correspondence describing the study and invitation to teachers. Informed consent was sent to the participants if they responded (see Appendix C).

The researcher used voluntary participation and convenience sampling to get participants from the teachers at CCVS. Convenience sampling is a nonprobability sampling that the researcher used because it was a convenience to solicit teachers from the nearby school and invite them to participate in the study. Of the 90 teachers within CCVS, 20 interviews were needed to allow for data saturation. Data saturation means no new discoverable information in

data analysis during the research process (Creswell, 2017), and the researcher reported the achievement of data saturation.

Instrumentation

There were two instruments for this study: interviews with open-ended questions and focus group discussion questions. The individual teacher interviews were conducted before the focus group discussion. The responses provided from the interviews drove the focus group discussion questions. The two sources of data ensure the reliability of data collection.

Individual Interview

The first round of data collection was the conduction of face-to-face teacher interviews, which included nine total questions (see Appendix D). The interview questions were associated with the research questions and study purpose. The interview questions were based upon the central research question and subquestions of the study. The interview questions were focused on teacher perceptions. Table 1 showed the association between the interview questions and the research questions.

Table 1

Research Questions/ Interview Questions Association Table

Research Questions	Interview Questions
(SQ1) What external factors do teachers perceive impacting students’ academic performance in online courses?	(1) What do you perceive as external factors, such as course design, that impact students’ academic performance in online courses?

Table 1 (continued)

Research Questions	Interview Questions
(SQ1) What external factors do teachers perceive impacting students' academic performance in online courses?	(2) What impact do external factors, such as technology proficiency/literacy, course design/curriculum, parent support, teacher support/teaching strategies and motivation have on students' online achievement?
(SQ2) What internal factors do teachers perceive impacting students' academic performance in online courses?	(3) What do you perceive as the internal factors, such as student characteristics, that impact students' academic performance in online courses? (4) What impact do internal characteristics, such as ethnicity/language, gender and age, have on students' online achievement?
(RQ): What factors do teachers perceive as a significant impact on online students' success?	(5) What do you think are the most significant internal/external factors that impact online students' success? (6) Why do you think they are the most significant internal and/or external factors that impact online students' success?
(SQ3) How do teachers perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?	(7) How do you perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?

Table 1 (continued)

Research Questions	Interview Questions
(SQ4) What suggestions do teachers have for improving students' academic performance in online courses?	(8) If achievement gaps exist in online courses, what would you suggest as ways to implement best practice? (9) What suggestions do you have to improve students' online performance based on those factors?

Conduction of a field-test of interview questions occurred for the validity and reliability of the interview questions before initial interviews. The field-test was used to determine the interpretive nature of the interview questions to make sure they would produce answers that would relate to the study. The instrument for this case study included interviews and focus group discussion; both was used to explore the perceptions of internal and external factors influencing students' academic achievement in online courses. In research, reliability relates to the consistency of the overall interview, which was determined by the field-test. After conduction of the field-test, the interview questions were considered valid as teacher responses reflected the purpose of the study. The wording was a significant concern for the interview questions. Validity concerns the accuracy of the interview, and therefore the interview questions had to reflect what the researcher sought to explain.

The teacher population was invited to participate in the study through an email that outlined the purpose of the study and the criteria for participation. Participation in the research was entirely voluntary. Participants must have fit into the following criteria. The teachers were currently employed at CCVS, had taught online for 3 years, and had been a teacher for at least 3 years. Voluntary participation also maintained proper ethical assurances toward study

participants. The conduction of the individual teacher interview lasted between 30–40 minutes. Responses were held in strictest confidence using participant numbers in order to ensure participant privacy.

Focus Group Discussion

The second form of data collection came from a focus group discussion. After the completion of initial teacher interviews, the researcher synthesized information to identify common themes that emerged. Then the focus group discussions occurred. In the focus group discussion, five participants from the original 20 teacher volunteers were solicited to discuss and answer the focus group discussion questions. Participation in the focus group was voluntary. Four major questions and topics guided the group (see Appendix D). The use of focus group discussions allowed for cross-examination of information and clarification of form analysis of individual interviews. The focus group also allowed for open discussion on the topic of study based on shared perceptions teachers had on internal/external factors that impacted student online achievement. The researcher recorded the individual face-to-face interviews and the focus group discussions using a digital voice recorder. The focus group discussion questions were based again on teacher perceptions within the online environment.

Data Collection

Before the collection of data, the researcher obtained IRB Approval. Before conducting individual interviews, the researcher used a field-test of the interview questions to ensure validity. The field-test had three total participants. The field-test was used to determine if the interview questions interpretive nature reflected the purpose of the study. The collection of data were through interviewing teachers to find out their perceptions of the factors influencing students' online success.

The participants were solicited voluntarily. The initial face-to-face interviews occurred within a 30–40 minute timeframe (determined by participant schedule), and the participants were asked nine interview questions. These questions were based on the research questions and the purpose of the study. There was a total of 20 individual teacher interviews. All interviewees were given a participant number to ensure privacy.

A focus group discussion was the secondary source of data collection. Focus group discussions occurred after the individual teacher interviews and consisted of five teachers as participants. Again, the involvement was based on the willingness of participants to volunteer. The researcher guided the discussions with four major questions. The four questions were determined based on data collected from the individual teacher interviews and the commonalities that emerged. Focus group discussions lead to an open conversation about factors that impact student online success. The researcher recorded the individual face-to-face teacher interviews, and the focus group discussion using a digital voice recorder.

Interview responses and the focus group discussion identified common teacher perceptions on internal student characteristics and external factors that impact academic achievement. When patterns emerged, the researcher saw which student characteristics and factors influenced academic success in the online course based on teacher perception.

The teacher interview results and focus group discussion were evaluated and compared to understand the factors influencing students' online performance. The examination of data highlighted similarities and shared internal/external factors. Through this process, data helped determine patterns within answers from the teacher interviews and highlighted factors of importance. The patterns that emerged explained a meaningful relationship between what teachers perceived as individual factors that may impact student success in online courses. The

focus group discussion data were studied for patterns to offer clarification and the cross-reference of findings.

Identification of Attributes

To understand the impact that distance learning had on student academic success, and to answer the research questions posed in the study, the following attributes led the research design: age, gender, ethnicity/language, technology proficiency/literacy, course design/curriculum, parental support, teacher support/teaching strategies, and motivation. These attributes were common elements of concern within distance learning based on contemporary literature. These attributes were measured through the questions posed during the individual teacher interviews and the focus group discussion. The questions focused on identifying the impact of the following attributes on online student success.

Age

The increase in the diverse population in online learning raises the question of different factors that may impact student academic achievement. One such factor is the age of the student participant. The age of an online learner may be a potential predictor of their success within online courses (Ke & Kwak, 2013). Age impacts learner's previous knowledge and interaction with course material. Age also plays a role in distance learning when focusing on student perception (Ke & Kwak, 2013). Studies have shown that student perception and satisfaction within their online course trends downward with age, which may again impact student academic achievement.

Gender

Gender is also a variable that plays a role in the online environment. In recent studies, gender was a significant predictor of online enrollment in online courses (Conway et al., 2015).

Gender also relates to student satisfaction with their online course and interaction within the online course.

Ethnicity and Language

Ethnicity is also an important variable (Gyamfi & Sukseemuang, 2018). Studies highlighted noticeable characteristics of students that might lead to learner comprehension in virtual classes such as language proficiency. They identified certain minority groups, including ethnic groups. Their research detected that minority learners enrolled in online classes in less frequency, which could have dire consequences in their career pathway (Gyamfi & Sukseemuang, 2018).

Technology Proficiency/Literacy

Technology literacy is part of the larger piece of the puzzle in the success of students academically (Caranikas-Walker et al., 2011). Data showed that technology literacy is essential to student success in online courses (Bobeva et al., 2015). Prior knowledge and understanding of technology benefited students within the virtual world (Wang, 2017). Schools must begin to realize that student characteristics cannot solely determine success, but technology literacy plays a role as well (Balaban et al., 2015). If schools are determined to continue the practice of having students take supplemental online coursework, the schools must also be prepared to provide the necessary training for students to understand their virtual classes (Nam, 2016). Technology literacy should become a focal point of online educational research as the increase of students taking online courses becomes the norm (Nam, 2016).

Course Design/Curriculum

Researchers evaluating distance learning currently agree on determining long-term effects on student success. Data were being analyzed by educators, administrators, and

stakeholders to determine the future of course design. The design of online courses may play a vital role in the success of students in their online classes (Bobeva et al., 2015). The virtual educational world must look to see how course design impacts the student's comprehension of the material.

Parent Support

Within education, the need for students to have additional support can be a crucial component to their overall success. One such form of support is parent or family support. Students that have a support system at home will have additional resources in which to use and go to for help with educational topics. Parental support can help build student confidence and, thus, confidence within their educational experiences. Having parental support can also build confidence in the online environment. Parent support can lend a hand in allowing students who participate in online courses to have additional help with the use of digital tools.

Teacher Support/Teaching Strategies

Along with parent support, students also rely on a support system beyond that of their home life. Teacher support can allow students to use what they have learned at home and extend it into the classroom and create meaningful learning experiences. Teacher's support also relates to teaching strategies as the tactics used by teachers must promote student achievement. Best practices can reach all types of student learners and again lead to student confidence in their knowledge and understanding. Technology offers a plethora of tools, and therefore teaching strategies in the online environment can lead to an increase in student achievement.

Motivation

Of the student characteristics that may impact student success in the online environment, motivation may be the most important. Student's motivation to interact with the content and

make their learning experience meaningful is vital in any educational sphere and perhaps more so in the virtual sphere. Online coursework requires the student to be in charge of their learning. Without motivation, the student will have no foundation to succeed in their online coursework.

Data Analysis Procedures

From the collected material, the organization of data led to categorization to manage information. This process allows the researcher to determine patterns or common characteristics and factors that may emerge (Creswell, 2013). The interview data and focus group discussion data were transcribed and organized. Data analysis was conducted manually. The researcher did not use any software to analyze data. The patterns that emerged explained a meaningful relationship between individual factors that may impact student success in online courses. The process consisted of five steps outlined in this section (Yin, 2014). The 5-step manual analysis was as follows:

1. Compiling of data from the transcriptions of teacher interviews and the focus group discussion
2. Close readings and citations
3. Create interview categories, classify themes based on participants' responses, and use participants' codes
4. Identify the top frequency to serve as significant emergent themes and revise conclusion
5. Determine the significance of findings

Once individual face-to-face teacher interviews occurred, and the focus group discussion was complete, the researcher compiled the transcriptions and organized them. This step included the compilation of any notes or other documents from the individual teacher interviews and the

focus group discussion. The researcher made a note of any additional information attained during the study. Examining data occurred through the close reading of transcription material using annotations to organize thoughts. This step included the coding of data. There were two rounds of coding. The first round identified frequent patterns and common categories in data. The second round of coding determined recurring themes present in data based on teacher perception. Identifying themes demonstrated the in-depth analysis of data. Once done, the researcher identified patterns, recurring themes, perceptions, and so forth. From the commonalities, the researcher determined the significance of recurrent information about the research study and research questions.

Limitations of the Research Design

The focus of this qualitative study was a look into teacher perceptions on what student characteristics and other internal/external factors impact academic achievement in online courses. Within the research design, there were limitations. The small sample size reduced the responses and thus the limited information gained was a limitation. The sample was of the teacher population from an online school. The results of the study could not make assumptions on a larger population outside of the school. Teacher honesty with answering interview questions was also a limitation. Teacher responses that were honest and truthful helped highlight internal and external factors that impact students in online courses.

Another limitation would include the proficiency of the English language of the teachers participating in the interview. Though most of the teachers who participated spoke English and an idiomatic level, the wording of the interview questions needed to be easily interpreted. Carefully wording the interview and having other individuals proof the interpretive nature of the survey was at the forefront to help limit the skewed results. The researcher also conducted a

field-test of the interview questions prior to the start of individual teacher interviews. Some delimitations included the fact that the interview was only a snapshot in the given timeframe and thus did not reflect long-term impacts or changes that occur in the target population over time.

Validation

Validity within research means that the study's findings represented what its researcher was trying to measure. The use of a qualitative case study design was because the design helps to highlight relationships in a logical way. The design uses data collection to identify specific behaviors and perceptions of factors. This study had validity through a carefully constructed interview, which is known as a successful tool to measure perceptions in previous studies. The interview questions came from the central question of the research. Once the interview questions were composed, the researcher received approval from the Faculty Chair and Committee. Then the researcher conducted a field-test before the initial interview to ensure the validity of the interview questions. The field-test had three volunteer teacher participants to determine the interpretive nature of the interview questions.

Credibility

Credibility relates to the concept that there was truth to the findings of the study. The chosen design for the study was a qualitative case study design. The design focuses on gathering data using an interview to provide information. The interview questions used were carefully worded and constructed. The interview was a cross-sectional design where interview data were collected only once per teacher based on the sample of the broader population (Creswell, 2017). The use of the interview helped to highlight teacher perceptions (Githens et al., 2012). Conduction of the research occurred using carefully worded interview questions created by the

researcher adapted from the central question of the research. Participation in the research was entirely voluntary. Since it was voluntary, the results had reliability and validity.

In the qualitative case study, the researcher tested the theory and research questions (Creswell, 2017). Specifically, through a case study design, the study attempted to highlight ways in which teachers perceive student's performance in online courses (Yu, 2016). The use of a case study research design helps show patterns within a larger population (Creswell, 2017). Through an interview and a focus group discussion, data collected highlighted the perception of the characteristics of a population. Interview and focus group discussion data were especially useful for the study as they helped show different teacher perceptions on factors that impact student academic achievement in the online course (Balaban et al., 2015). The research design collected all data through the answers provided by teachers within the interview (Gyamfi & Sukseemuang, 2018) as well as the focus group discussion.

Dependability

The dependability of a study relates to the idea that the research findings were reliable and consistent and, therefore, should be repeated in future studies. For the study to be dependable, the researcher documented processes in detail so that other studies can replicate the research concisely. With detailed documentation of the study, the research was dependable and allowed for future investigations within similar study topics. The study will be able to expand upon the research findings.

Expected Findings

Through the study, the expectation was that the results would determine teacher perceptions of internal/external factors that impact student academic achievement in online courses. Expected findings included observation on perceptions of factors including things such

as course design, interaction within the course, and additional resources. Another expected result was that teachers' perceptions identified a relationship between student characteristics and online course achievement. Such characteristics included age, gender, and technology literacy. Through the study, the interview showed teacher perceptions of what student aspects lead to online course achievement. Data highlighted teacher perceptions of the different factors that may impact student academic achievement within the online environment (Hew & Tan, 2017). The conversation on distance learning suggests the need to explore the significant role that virtual education has had on students. The study helped determine if factors such as gender, age, socioeconomic status, and so forth, play a role in the online educational success through examining teacher perceptions (Githens et al., 2012). Through the collection of data, the study can identify best practices through the perception of factors highlighted by teachers' perceptions (Creswell, 2017). Specifically, through the study, it was expected that determination of factors that crucially impact student's performance in online courses would be identified, and thus teachers will implement best practices to meet these various needs (Yu, 2016).

Ethical Issues

Research ethics is concerned with the protection of study participants, the legitimacy of published research presented through the study as well as the safety of subjects concerned. This research included teacher participation, and there was a close adherence to ethical procedures. To ensure the privacy of the participants, each participant was given a participant number in place of their name. IRB approval was the first step before data were collected.

Conflict of Interest Assessment

There was no conflict of interest for this study. The researcher had no supervisory role with the participants and that their participation was voluntary. The participants' privacy was protected using numbers in lieu of names during the analysis procedures.

Researcher's Position

The research intends to add to the conversation on the impact of distance education on student learning. In this case, the study pertained to teacher perceptions of students from Grades 6–12. The study was of importance due to the increasing trend of students participating in online courses and the need to study its long-term impact on learners. The researcher made sure to observe the code of ethics outlined. The researcher was aware that as with any research, ethical issues might arise, and risks to its participants might occur. Due to such, the study adhered to the ethical code of research.

Ethical Issues in the Study

The study emphasized ethical methods since participants were employees of the school. One step to ensure ethical issues were met was through the adherence to the privacy of participants. Approval from IRB was the first step before data collection. Approval was received from the administrators at the targeted school, including the principal and assistant principal of CCVS. The interview questions helped to ensure that honest teacher perceptions were collected, and the personal teacher's information asked in the interview was in the strictest confidentiality. The interviews were conducted in a one-on-one environment to ensure privacy. Personal information beyond necessary demographic information and consent was not collected, and participants had to sign a formed consent before the interview. The same was true for the focus group discussion. Any information, electronic data, such as recorded interviews and physical

transcriptions, were securely stored in an USB and was stored in a lockbox where the researcher was the only one with access to the key. The information will be destroyed 3 years after the study is concluded.

Chapter Summary

Virtual learning is becoming the newest trend in student academics. Schools around the nation are turning to online courses to connect with a growing number of students through a variety of classes. This increase in virtual education has led to the need to evaluate the overall impact online coursework has on academic achievement. Through the study, the researcher outlined and explained the qualitative study, including justifying the research, discussing the chosen design choice, as well as specifying the collection of data. Through the conduction of face-to-face teacher interviews and the focus group discussion, the research can help discern the various teacher perceptions on factors influencing students' achievement in virtual courses. Through the qualitative research method, the study determined teachers' perceptions of the factors that impact differing populations of online students.

By examining teachers' perceptions and viewpoints, the research adds to the previous literature on the impact of virtual schooling on students' academic success (Eriksson, 2012). The study touched on the impact of virtual courses on students due to the growing requirement of educational institutions for students to take online classes (Caranikas-Walker et al., 2011). The increase in technology and its interaction with student learners has brought significant attention to the impact such technology has on student success (Hew & Tan, 2017). With the push of virtual education, research has focused on the long-term implications of such schooling on students. In this study, the researcher outlined and explained the use of an interview and the construction of the interview questions (Creswell, 2017) as well as the focus group discussion.

The researcher expected that through data collected through the teacher interviews and the focus group discussion, various teacher perceptions on factors influencing students' achievement in virtual courses were measured. Through the qualitative study, the researcher determined teacher perceptions of the consequences that virtual education has had on differing populations of students. Through the results of teacher interviews and the focus group discussion, teacher perceptions highlighted if factors such as gender, age, socioeconomic status, and so forth, played a role in determining student success in online education (Githens et al., 2012). The researcher also looked at teacher perceptions of the factors and barriers that impact student achievement in virtual courses.

Chapter 4: Data Analysis and Results

Introduction

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. The central research question was: what factors do teachers perceive as a significant impact on online students' success? There were four research subquestions for the study: (a) What external factors do teachers perceive impacting students' academic performance in online courses?, (b) What internal factors do teachers perceive impacting students' academic performance in online courses?, (c) How do teachers perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?, and (d) What suggestions do teachers have for improving students' academic performance in online courses?

Chapter 4 provides a detailed account of data collection and analysis as well as findings of teachers' perceptions of the internal and external factors that influence online student success. Chapter 4 consists of the description of the sample, research methodology, data analysis, summary of findings, and presentation of data and results. The researcher's role and motivation for the study was to discover teachers' perceptions of the internal and external factors that impact online student success. The researcher had background and knowledge of the virtual educational environment, including 7 years of teaching experience, with 4 years of online teaching experience. The researcher was the sole individual for data analysis, including coding of data and the formation of initial findings and results.

Description of the Sample

The participants were 20 teachers from Coral County Virtual School (pseudonym). Coral County Virtual School currently employs nearly 100 teachers who teach any number of students within the more than 200,000 students in the county. Convenience sampling method was used. The criteria for selecting the participants included teachers that were full-time online teachers who received a bachelor's degree in the subject area taught and had a Professional Teacher Certificate issued from the Department of Education.

After receiving IRB approval on January 7th, 2020, and site approval, an email invitation was sent to elicit potential teachers to participate in the study. All 20 volunteer teacher participants completed the "Informed Consent Form" before initial individual interviews and the focus group discussion. Of the 20 teacher volunteers who participated in the individual interviews, five teachers from the group volunteered to participate in the focus group discussion. To protect the identity of participants, each participant received a participant number in lieu of their name.

Table 2 showed an overview of participants' collected information from both the individual teacher interviews and the focus group discussion. Years of online teaching and grade levels taught were included. The participants granted permission for the researcher to document their demographic information without releasing their names. Out of the participants 60% had a master's degree while 35% of the participants had a bachelor's degree. Of the participants: 65% of the participants were Caucasians, 20% of the participants were African American, 10% of the participants were Hispanic and, 5% of the participants were Asian. The years of online teaching experience ranged from 3 years to 14 years. Of the participants, 20% of the participants had more than 10 years of experience teaching online.

Table 2

Participants Teaching Information and Professional Characteristics

Participants	Years of Online Teaching	Grade Levels Taught
Participant 1	6 years	6–12
Participant 2	4 years	6–12
Participant 3	3 years	6–12
Participant 4	5 years	6–12
Participant 5	10 years	6–12
Participant 6	3 years	6–12
Participant 7	10 years	6–12
Participant 8	10 years	6–12
Participant 9	3 years	6–12
Participant 10	3 years	6–12
Participant 11	3 years	6–12
Participant 12	4 years	6–12
Participant 13	9 years	6–12
Participant 14	8 years	6–12
Participant 15	5 years	6–12
Participant 16	3 years	6–12
Participant 17	14 years	6–12
Participant 18	4 years	6–12
Participant 19	5 years	6–12
Participant 20	3 years	6–12

Research Methodology and Analysis

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. A qualitative research method, with a single case study design was adopted. This case study design was one of exploratory case study design since the researcher sought to explore a phenomenon in a real-world situation. There are several types to choose from, which include explanatory, exploratory, descriptive, multiple-case, intrinsic, instrumental, and collective. Explanatory is used to answer a central question while exploratory looks at specific situations and descriptive is focused on describing. The multiple-case study compares different cases, which is like collective case studies. An intrinsic case study is used for understanding, while instrumental provides insight. The researcher used the exploratory case study design as the research was looking to explore internal and external factors that impact students in their online courses based on teacher perceptions (Yin, 2017).

Data Collection

After the researcher obtained IRB Approval and Site Approval, the researcher prepared for data collection. Before data collection occurred, the researcher conducted a field-test of the interview questions to ensure validity. To do this, the researcher had three teacher volunteers who answered the interview questions. After the initial field-test, it was determined that the interview questions were valid since answers reflected the question posed. The answers the researcher received from the volunteer participants related to the purpose of the study as well as the central research question.

To elicit teacher volunteers for the study, the researcher sent an email outlining the study's purpose to the teachers. The researcher used email addresses obtained from the school

due to the researcher's current employment at the school. Besides outlining the purpose of the study, the email addressed the criteria for volunteers to participate. The first 20 volunteers who met the following criteria were chosen for the study. CCVS must currently employ the participants, the teacher had taught at least 3 years, and had taught online for 3 years or more.

Volunteers were asked to schedule a time for the interview and signed the consent form before the interview was conducted. The interviews were conducted and recorded one-to-one within a timeframe of 30–40 minutes. The participants were asked nine total interview questions (see Appendix D) and were aware that they could withdraw from the study at any time.

Participant numbers were used instead of names to ensure privacy.

The second form of data collection was provided through focus group discussions. After initial interviews, five volunteer teacher participants from the 20 volunteers were asked to participate in a focus group discussion. The researcher guided the discussion at a set time decided by the participants with four open-ended questions (see Appendix E). The session was recorded, and participant codes were again used to ensure privacy.

Data Analysis

Once data were collected, the individual teacher interviews and the focus group discussion data were transcribed and organized. The researcher utilized manual analysis. The researcher did not use any software to analyze data. The researcher chose manual analysis due to data being that of teacher perceptions. The process consisted of five steps outlined in this section (Yin, 2014). The 5-step manual analysis was as follows:

1. Compiling of data from the transcriptions of teacher interviews and the focus group discussion
2. Close readings and citations

3. Create interview categories, classify themes based on participants' responses, and use participants' codes
4. Identify the top frequency to serve as significant emergent themes and revise conclusions
5. Determine the significance of findings

Using the 5-step manual process for data analysis, the researcher conducted several close readings of the transcriptions. With these close readings, the researcher added annotations. The study had two rounds of coding. The first round of coding identified common patterns throughout the different interviews and focus group discussions. This round of coding helped the researcher manage recurring ideas.

The researcher created interview categories, classified themes based on participants' responses, and used participants' codes. The second round of coding focused on determining themes that appeared in data. The examination of themes helped for significance and relevance to the study's central topic. The use of two sources of data were to ensure that data were not bias on the perceptions of the sample group. The two rounds of coding allowed for comparison of the results to ensure that identified themes were true.

Summary of the Findings

From the collection of data from both the individual teacher interviews and the focus group discussion, the data shed light on teachers' perceptions of internal and external factors that impact student success online. The data also highlighted teachers' perceptions and suggestions on administrative support in virtual classes that could improve student academic achievement. Data from the interviews and the focus group discussion were analyzed separately. They were compared to ensure the reliability of results. The two sources of data allowed for data saturation

to occur, meaning no new discoverable information once the data were analyzed (Creswell, 2017), and the researcher reported the achievement of data saturation.

Individual Teacher Interviews Summary

The summary of findings from the individual teacher interviews were based on themes that appeared after analyzation of data based on coding. The initial findings highlighted that teachers perceived that students with an internal drive or motivation were essential to the success of students in their online courses. Other themes that emerged showed that external factors, such as teacher support and parent support, played a significant role in online student success. These findings concluded that internal and external factors work in conjunction to bolster or impede online student success.

Data revealed general themes that reoccurred throughout the analysis of data. The general themes were determined due to the frequency in which participants identified such internal and external factors. General themes included the impact of student characteristics, student access to technology, student exposure to technology, and the outside environment of the student. From the general themes, significant themes emerged. The frequency of teacher perceptions highlighted significant themes. Significant themes included: student motivation/drive-in academics, teacher support for online students, communication between stakeholders for student success, parent support of the student, and home life of the student. Data also highlighted several subthemes, including the technology proficiency of students, organizational skills, learning styles, IT exposure, and extracurricular activities of students. These themes relate directly to the internal and external factors that teachers perceive influence online student success.

Student motivation/drive in academics. Student motivation/drive in academics was an internal factor that teachers perceived to impact the overall success of the online student.

Throughout data, teachers noted the significance of student motivation and drive as one of the significant factors determining online course completion. Teachers believed that without a student's drive and motivation to succeed in the course, the result would most likely be failure (P5, P6, P7, P10, P17, P20). "Motivation is the foundation on the road to online student success in their coursework" (P18). P18 noted that "motivation or self-drive accounted for the foundation for success." P1 stated that "if there is a desire to succeed, it will happen." P14 related it all to the inner "intrinsic drive."

Throughout the individual interviews and during the focus group discussions, drive within the online environment was perceived to play a significant role. P11 noted that "motivation tied to a student's perseverance which could also be linked to external factors." P8 explained the "motivation linked to the student's level of achievement." P13 stated, "drive in all things" leads to the success of the student. In their interview, P16 related it to "level of focus."

Teacher support for online success. Another theme that emerged in data analysis was the need for teacher support within the online environment. Teachers perceived the role of the teacher as an integral part of the support system for online student success. The "course teacher can have a profound impact on student success in their online class," P12 said. P19 noted the importance of the online teacher to be "relatable to students."

The teacher had to be an "additional system of support for the student" (P16, P17) for the student to feel confident in their learning. Thus, teacher support was necessary in terms of motivation and communication (P5). P1 highlighted the need for teachers to provide support by demonstrating skills for students. P2 felt that by demonstrating for students, we would be "preparing them for the real world." P4 stated that besides teacher demonstrations, "teachers

needed to provide additional help like tutoring.” P8 related teacher style as “essential to the success of an online student.”

Communication between stakeholders for student success. Along with teacher support, communication between student, parent, and teacher was observed as essential. Teachers needed to provide feedback and constant communication to meet the needs of the online learner (P16). The need for a relationship between teacher, student, and parent was of notice. P3, P10, and P14 stated the importance of building relationships and communication.

P5 and P13 agreed that communication was crucial for improving success. With this suggestion, P17 reiterated the essential importance of relationship regarding the online environment due to the lack of face-to-face interaction. In the online course, students need the teacher to support and communicate directions and information. P17 urged for the need to have teachers continue to build relationships with students and parents. P14 said that “along with intrinsic characteristics, the teacher plays a major role in student success online.”

Parent support of the student. In conjunction with teacher support, parent support and involvement were also common themes. Teachers mentioned that the more involved a parent was in the student’s academic journey, the more likely the student would be driven to succeed in the online environment (P1, P20). Along with internal drive, teachers emphasized the essential need for parent/guardian support for online student success. “Family life often dictates the success of a child,” P13 stated. Parent involvement in their child’s life builds the confidence of the student (P6). Since online courses require students to take charge of their education, parent support, and understanding could make a difference (P18). As mentioned by P11, “internal perseverance of drive could be shaped by parental support.” In agreement with the significant role parent support played in the success of the student in their course, P3 and P12 noted how parents form the basis

of student characteristics. P7 stated the “desire to succeed stems from the home life and the support the parent gives the student.” P20 concluded, “Parents shape the desire of the student to succeed and therefore impacts their success online.”

Homelife of the student. Parent support, especially regarding the student’s home life was mentioned of importance in creating a balanced support system for the student to succeed in the online environment (P1, P3, P7, P9). P7 took parent involvement a step further by highlighting the fact that “homelife shaped student motivation.” Thus, parent support with a balanced home life allows students to flourish in education.

Other important external/internal factors. Other internal and external factors of note provided subthemes. For internal factors, teachers explained the importance of student organizational skills, their learning style, and proficiency with technology. Students with specific skills were more prone to online success (P12). Skills could relate to IQ (P12) or organizational abilities (P6). Skills could also be in terms of “focus and time-management” (P16).

External factors mentioned were exposure to technology and extracurricular schedule of the student (P9). It was assumed that the earlier the student was exposed to technology, the more comfortable they were in the course (P16). Teachers also stated that the number of extracurricular activities often played a role in if students could balance the coursework. P11 suggested the role of economics in terms of online success. Students who were of lower economic status may not have access to necessary resources (P11). This concept ties in with P12’s belief that ethnicity was a factor that predicted success online. Other student characteristics were based on gender (P5) and age (P18). These subthemes correlated with the different experiences the teacher had within the online environment.

Focus Group Discussion Summary

As with the individual teacher interviews, the focus group discussion was based on teacher perceptions on internal and external factors that influence online academic success. The focus group discussion questions elicited the conversation further by asking teacher participants to elaborate on their initial identification of factors and to explain the reasoning for the significance. The focus group discussion also identified teachers' perceptions of the administrative support of teachers to improve students' academic achievement as well as suggest further ways for the administration to support the success of students in their online coursework.

Data from the focus group discussion yielded similar results to the initial individual teacher interviews. Teachers in the focus group discussion explored the internal and external factors that influenced student success in their online coursework with a detailed assessment of the most impactful factors. The focus group discussion also highlighted the perception of teachers on the administrative support provided to teachers to help students succeed in the online environment. With these perceptions, teachers also suggested ways to improve student success through administrative support.

Teacher perceived internal and external factors. The focus group discussion, which followed the initial individual teacher interviews, highlighted teachers' perceptions of the internal and external factors that influence virtual students. The unanimous agreement within the focus group discussion was that of motivation as an essential internal factor that determined online success. Beyond this internal factor, P7 focused on external factors of student homelife and parent support for the academic success of the student. P7 stated, "Homelife can heavily impact students' academic goals." P17 agreed that "support systems were necessary for student success."

However, P17 felt that the teacher was the most crucial member of the student support team as they have a thorough understanding of the student's "academic background." P14 added to the support system of students when describing the "communication" that was essential between parent, student, and teacher. An outlier was P8, who thought that student technology proficiency, along with their internal drive, was the right "recipe for success" of the online student.

Administrative support and suggestions for online student success. The focus group discussion also delved into the topic of administrative support of teachers to help online student success. The discussion yielded a relative agreement that, like most administrators, there was a primary support system put into place to help teachers. However, due to the unique environment of virtual education, teachers often felt a lack of understanding and necessary tools to help students be successful within their virtual classrooms. Of the suggestions presented in the focus group discussion was the concept of communication between not only the parent, student, and teacher but other stakeholders such as administration and the need for additional resources that would help the student succeed in their online classes.

Presentation of the Data and Results

Based on the perceptions of teachers, internal and external factors that impact online student success were brought to light. Of the provided responses, data yielded general themes. From these general themes stemmed significant themes, including student motivation/drive in academics, teacher support of student, communication of stakeholders for student success, parent support, and home life of the students. These themes developed the highest frequency results of the internal and external factors that teachers perceived influenced online student success.

Participants' Profiles

Internal factors included factors that dealt with student characteristics. External factors included outside factors that were outside the influence of the online student. Of note were the following. In terms of the overall teacher perceived factors that impacted student online success, of highest frequency, were internal factors of drive and motivation and the external factors of support systems for the student. Perceived external factors were parent and teacher support of the student, homelife, and course design. Internal factors identified included motivation and organizational skills of the student as well as experience with technology. The relationship between the internal characteristics and external factors indicated the fact that teachers perceived that internal and external factors work together to support online student success. Overall, the teachers suggested that in order to improve online student success, teachers should demonstrate learning to prepare students for the real world. Building relationships was also noted as essential for the success of online learners.

Participant 1 (P1). Participant 1 was a professionally certified teacher with a total of 6 years online teaching at online at CCVS. Participant 1 specifically taught Grades 6–12. The participant highlighted drive as an internal factor that leads to online student success. Participant 1 noted that “students need to have a want to accomplish things as an internal student characteristic.” Participant 1 suggested the “language of the student can impact the understanding of course but is not a main defining internal factor for success.”

The participant identified parent background and career as an external driving force on online student success. Participant 1 stated that in their experience, “parents who were college-educated had students who were more with it.” The participant also added that “parent involvement often leads to better student achievement.” External factors such as reward systems

also motivate students to succeed in the online course. Participant 1 believed “teacher support added another system of support that proved useful in student success.”

Of the external and internal factors that were listed, Participant 1 said the internal drive of the students and parent support were the most important. Participant 1 linked drive to the fact that “if the student wants something, they will work for it.” Working with parents who support the student, the student is more productive. Participant 1 noted, “That 75% of their students who have parent support succeed in the online course.” During the interview, Participant 1 highlighted the need to improve the writing skills of students. Some suggestions included one-on-one help and in course writing and reading practice throughout core curriculum courses.

Participant 2 (P2). Participant 2 was a professionally certified teacher with a total of 4 years online teaching at CCVS. Participant 2 specifically taught Grades 6–12. Participant 2 identified motivation as the most significant internal factor for online student success. Participant 2 related that the reason for the student taking the course had the most impact on their overall academic achievement. The participant also said, “Learning issues or social issues play a role in impacting student achievement.” Participant 2 stated, “Age worked in line with motivation.” The older the student, the more motivated they tend to be.

Another internal factor could be “language learners who tend to do better in the online course because there are more resources than the traditional course” (P2). For external factors, Participant 2 noted parent support and teacher support as two of the most important. The participant also highlighted the impact of student extracurricular activities, “which tend to play a negative role in online student success.” The participant also stated that course design could be an external factor due to not being user-friendly. Of the internal and external factors described, Participant 2 found that “motivation and parent support were the most essential for student

success as they work together for the best outcome.” To improve online success, Participant 2 suggested, “that teachers be more flexible and available to demonstrate knowledge for students so they can understand the material presented.”

Participant 3 (P3). Participant 3 was a professionally certified teacher with a total of 3 years online teaching at CCVS. Participant 3 specifically taught Grades 6–12. In the interview, Participant 3 acknowledged organization and students’ ability to balance as key internal factors that impact student online success. They noted that “if the students are not organized, they will have a hard time balancing and then shut down or stop working in the course.”

Participant 3 said that “language is a big internal factor that motivates females’ learners of different languages to try hard while it has the opposite effect on males.” Participant 3 noted the impact of age on online student success. For external factors, Participant 3 stated that “homelife impacts online achievement.” Also, teacher and parent communication are external factors that influence success for the student. “Thus, a support system is a major external factor that impacts academic achievement” (P3). Based on online learning, the participant felt that there were “major achievement gaps regarding higher-level thinking and student creativity with their online coursework.” In order to combat these gaps and improve online student success, Participant 3 highlighted the need to create an online school community for support.

Participant 4 (P4). Participant 4 was a professionally certified teacher with a total of 5 years teaching online at CCVS. Participant 4 specifically taught Grades 6–12. In the interview, Participant 4 stated that student intrinsic drive and self-motivation were the main internal characteristics that impact online achievement. Also, of importance was the “student’s ability to multitask and create a schedule to balance coursework” (P4).

Other internal factors that play a role in student success include age as it relates to maturity. External factors that Participant 4 identified as impacting online success included “course design and instructor communication.” Participant 4 noted that “parent support could sometimes help or hinder depending on the type of support the parent is giving.” Participant 4 said that overall, intrinsic motivation and knowledge of the technology were the biggest factors for online student success. To combat this, teachers can provide additional support and help through tutorials, one-on-one instruction, and other resources.

Participant 5 (P5). Participant 5 was a professionally certified teacher with a total of 10 years teaching online at CCVS. Participant 5 specifically taught Grades 6–12. Participant 5 believed self-motivation, especially for online success, was an important internal factor for student success. Participant 5 noted that “students with different languages did well because they translated material and worked at their own pace.” The participant also stated that gender played a role, “as females were more motivated to complete the course, and age had a negative effect due to the maturity levels of the student.”

External factors that impacted student achievement included the student’s ability to access the online course, IT resources, and internet access. Participant 5 agreed that “students who are tech-savvy seem to do better, and students who have parent and teacher support do very well in their online course.” Participant 5 felt that the most important factor was “constant communication between parent, student, and teacher to create the ultimate support system.” Participant 5 stated to improve online student success, immediate and detailed feedback is necessary for achievement in the online course.

Participant 6 (P6). Participant 6 was a professionally certified teacher with a total of 3 of teaching online at CCVS. Participant 6 specifically taught Grades 6–12. In the interview,

Participant 6 stated that “motivation and organization were important internal factors.” External factors noted for importance included student’s ability to navigate the course as well as access to the internet. Of importance for external characteristics was the role of the teacher and parent involvement in student learning.

Participant 6 felt that overall, “student background or home life, as well as a support system, played the most important role in online student success.” Major achievement gaps noticed by Participant 6 included the “difference between students who take both online courses and traditional courses and students who only take online courses.” To help improve student success, Participant 6 suggested “extended learning time for assignments for better comprehension.”

Participant 7 (P7). Participant 7 was a professionally certified teacher with a total of 10 teaching online at CCVS. Participant 7 specifically taught Grades 6–12. During the interview, Participant 7 said the “intrinsic level of motivation, intellect, maturity, and personal interest were important internal characteristics in online student achievement.” Of importance was the difference in maturity levels between females and males, “as the latter tends to struggle with focus more” (P7). Age relates to the level of maturity.

External factors that impact student success include the home environment and exposure to academic conversations. Participant 7 felt besides homelife and parent support, “course design could lead to frustration and failure.” Participant 7 believed overall, students’ natural level or motivation and parental support were the most essential for student success. A significant achievement gap identified focused on the differences in the economics of students. “To improve online student success, programs should be created for early intervention for digital exposure” (P7).

Participant 8 (P8). Participant 8 was a professionally certified teacher with a total of 10 teaching online at CCVS. Participant 8 specifically taught Grades 6–12. Participant 8 identified culture as a major internal factor that impacted online student achievement. “Age was also important as younger students have more drive to do well, while older students tend to be lazier” (P8). Participant 8 said, “External factors like teaching style, course structure, and technology access impacted online success.” Participant 8 also noted the importance of parental and teacher support. Of the factors discussed, the participant felt that “motivated students who were proficient in technology were the most successful” (P8). Learning gaps were apparent in assignments that ask for student creativity. Suggestions to improve online success include preparing students to use technology by teaching them basic skills.

Participant 9 (P9). Participant 9 was a professionally certified teacher with a total of 3 of teaching online at CCVS. Participant 9 specifically taught Grades 6–12. Participant 9 identified the “personality of the student, personal goals, and organization skills as the main internal factors impacting online students’ success.” Participant 9 also noted that gender plays a role in success as “females tend to mature quicker than males.”

As far as external factors, Participant 9 felt that homelife and extracurricular activities influenced online success. Participant 9 stated that “parent support and teacher support were not defining external factors in a student’s success within the online environment.” Of prime focus in the interview was the essential need for the student to have a driven personality and the fact that internal factors play the main role in online student success. Achievement gaps listed dealt with grammar. Some suggestions for improvement in online courses included teacher-driven resources.

Participant 10 (P10). Participant 10 was a professionally certified teacher with a total of 3 years teaching online at CCVS. Participant 10 specifically taught Grades 6–12. Participant 10 stated that the “motivation of the student, along with student IQ,” were internal factors that lead to online success. Participant 10 also thought that organization, communication, and comprehension skills were important internal factors.

External factors that impact online student success were access to internet and Wi-Fi at home and peer pressure. Participant 10 agreed that teacher support, parent support, and technology proficiency were important external factors as well as course design. Learning gaps found in the online environment include gaps with different types of learners. To help raise achievement in the online course, Participant 10 suggested “building strong relationships between the teacher, student, parent, and staff.”

Participant 11 (P11). Participant 11 was a professionally certified teacher with a total of 3 years teaching online at CCVS. Participant 11 specifically taught Grades 6–12. Within the interview, Participant 11 highlighted internal factors of “motivation, self-drive, and perseverance as important to online student success.” Participant 11 felt age was a huge external factor as well.

External factors that can impact online achievement included the socioeconomic background of the student. Participant 11 described the need for parent involvement and teacher support as well as proficiency with reading comprehension. The participant believed “perseverance and parent involvement were essential factors for student success online.” Participant 11 felt there was a major achievement gap in reading comprehension, which could be solved through consistent directions and guides to help to learn.

Participant 12 (P12). Participant 12 was a professionally certified teacher with a total of 4 years teaching online at CCVS. Participant 12 specifically taught Grades 6–12. Participant 12

thought a student's "upbringing played a huge role in their specific characteristics and thus linked to academic performance." This means characteristics like organization, confidence, and level of self-motivation. Participant 12 believed that ethnicity and socioeconomic status played a role in online success as well as the primary language spoken by the student.

For external factors, course layout and teacher support were at the forefront. Parent involvement was also necessary for online student success. Participant 12 felt that overall, "ethnicity, socioeconomic standing, and parent involvement has the most influence on online student achievement." To improve the success of online students, teachers, parents, guidance, and administration must all support the students and meet their needs.

Participant 13 (P13). Participant 13 was a professionally certified teacher with a total of 9 years teaching online at CCVS. Participant 13 specifically taught Grades 6–12. Participant 13 began by stating that "internal factors that impact student online success include self-drive and motivation." "Ultimately, the desire to succeed and do well helps success" (P13).

External factors included family support and involvement as well as access to the internet, computer, and needed transportation. Participant 13 also stated that an "interactive curriculum could help student success as well as teacher involvement and communication." Of the most important, self-motivation and access to needed resources were of the most impactful on student success in the online course. Participant 13 felt there was a major curriculum gap in terms of the foundation of students with writing skills. To improve online success, "communication is the key."

Participant 14 (P14). Participant 14 was a professionally certified teacher with a total of 8 years teaching online at CCVS. Participant 14 specifically taught Grades 6–12. In the interview, the participant highlighted the importance of "intrinsic motivation for online student

success.” Participant 14 also found age to play a role in online success as “younger students seem more motivated than older students.”

External factors identified were course design and teacher support. Parent support can also be a great addition to online student success. Participant 14 noted that intrinsic motivation and teacher support were the most important factors influencing student success online.

Participant 14 believed there were no achievement gaps in the online environment but suggested the “continued need to use data to drive instruction online.”

Participant 15 (P15). Participant 15 was a professionally certified teacher with a total of 5 years teaching online at CCVS. Participant 15 specifically taught Grades 6–12. Participant 15 noted that the difference “between introverted and extroverted students was a major internal characteristic that could help or hinder online achievement.” Participant 15 felt “age and language could hinder a student if they were too young for the course content or did not speak English as the main language.”

Participant 15 labeled the ability of the student to self-teach as a defining external characteristic for online success. The student also needs both teacher and parent support in the online environment. The participant thought the student’s personality and student schedule played the main role in factors influencing online achievement. Participant 15 found that a major achievement gap is due to students failing the traditional course and having to take the online course, which is based on self-teaching. “These students already struggle with content, even with a teacher present” (P15). Suggestions to improve online success included tutoring, one-on-one help, and diagnostic text embedded in the course to tailor to student needs.

Participant 16 (P16). Participant 16 was a professionally certified teacher with a total of 4 years teaching online at CCVS. Participant 16 specifically taught Grades 6–12. During the

interview, Participant 16 thought, “level of focus, time management, and pride of performance were the main internal factors in online achievement.” Participant 16 also said, “age linked to maturity and understanding.”

Participant 16 believed that economic background and exposure to technology were important external factors. Along with these, teacher support was important too. Overall, early exposure to technology was noted as the most important factor in terms of online success. Significant gaps mentioned were related to access to technology like Wi-Fi at home. To help improve online student success, more face-to-face opportunities should be offered.

Participant 17 (P17). Participant 17 was a professionally certified teacher with a total of 14 years teaching online at CCVS. Participant 17 specifically taught Grades 6–12. Motivation was the main internal factor that Participant 17 identified. Participant 17 also noted that “organization and learning style played a role in online success.”

External factors that impacted online student achievement included teacher support and strategies. This relates to course design to meet all learner’s needs. Participant 17 felt that “relationship building was the most important factor in the online environment to overcome any barrier to student learning.” Strategies to help online achievement include a continuation of building relationships and incorporating various methods of instruction.

Participant 18 (P18). Participant 18 was a professionally certified teacher with a total of 4 teaching online at CCVS. Participant 18 specifically taught Grades 6–12. Participant 18 identified the internal factors of motivation, drive, organizational skills, and communication skills as the essential factors impacting online student success. Participant 18 felt that “age could impact learning due to maturity levels.”

External factors that influence online success include course design, student extracurricular, and outside pressure. Participant 18 also believed that students need technology proficiency and teacher support for online success. The most important external and internal factors included student motivation and drive. A significant learning gap identified included long-term retention of information learned in the online course. To improve online success, the design of the course needs to have different media forms.

Participant 19 (P19). Participant 19 was a professionally certified teacher with a total of 5 years teaching online at CCVS. Participant 19 specifically taught Grades 6-12. Participant 19 found that students learning styles were the main internal characteristic that impacted online success. Participant 19 also thought age regarding maturity helped in online coursework.

External factors that impacted online student success was a focus on course design. Participant 19 felt that “course design should be relatable to students.” A major gap is the teacher’s ability to meet all learners since there is both a high and low level of learners. Participant 19 suggested more “teacher-driven support to help online student achievement.”

Participant 20 (P20). Participant 20 was a professionally certified teacher with a total of 3 years teaching online at CCVS. Participant 20 specifically taught Grades 6–12. Participant 20 said that “intrinsic motivation and learning style were the major internal factors that impacted students to succeed in the online environment.” The language was also a factor as it may be hard to translate content or help the student.

External factors identified by Participant 20 included “distractions and no access to needed technology such as Wi-Fi in their home environment.” Another important external factor included parent support. “Students with a support system will do better with technology use” (P20). Participant 20 felt that the ability to self-pace within the online course was the most

significant factor to impact online student achievement. Both the internal and external factors work together to impede or bolster student success. Achievement gaps identified included the difference between student economic background regarding having the resources or not having access to resources for success. Suggestions included limiting distractions of students in the virtual environment.

Research Questions Findings

The central research question and subquestions drove the study. From the individual teacher interviews and the focus group discussion, data were used to answer these questions. Outlined below are the results of the analysis of data. General themes emerged, and higher frequency answers became significant themes.

Central Question: What factors do teachers perceive as significant impact on online student success? After the individual teacher interviews and focus group discussion, teachers highlighted several internal and external factors that impacted student success in the online environment. One of the most repeated internal characteristics that teachers believed impacted online achievement was the motivation or drive of the student. P18 noted that “motivation or self-drive accounted for the foundation for success.”

Without the intrinsic motivation to succeed, the ability to complete an online course successfully went relatively downward (P1, P2, P4, P8). P1 stated that “if there is a desire to succeed, it will happen.” P14 related it all to the inner “intrinsic drive.” Throughout the individual interviews and during the focus group discussion, drive within the online environment was perceived to play a significant role. P11 noted that “motivation tied to a student’s perseverance which could also be linked to external factors.”

Along with internal drive, teachers emphasized the essential need for parent/guardian support for online student success. As mentioned by P11, “internal perseverance of drive could be shaped by parental support.” In agreement with the significant role parent support played in the success of the student in their course, P3 and P12 noted how parents form the basis of student characteristics. P7 stated the “desire to succeed stems from the home life and the support the parent gives the student.”

Support from the parent also linked to teacher’s perception that students not only need parent support but teacher support. In the online course, students need the teacher to support and communicate directions and information. P17 urged for the need to have teachers continue to build relationships with students and parents. P14 said that “along with intrinsic characteristics, the teacher plays a major role in student success online.”

Within the individual interviews, other internal and external factors were of importance to online student achievement. Internal factors highlighted included the student’s ethnicity and personality. P12 said that “based on ethnicity, students are either set up for success or failure.” Both P9 and P15 felt that individual personalities, such as introverts, tended to struggle more in the online environment due to the lack of communication to describe their needs. Teachers perceived certain external factors as having the most impact on student success in the online class. P8 stated that students needed to be proficient in technology to be successful while P19 and P20 thought course design hindered or helped student achievement. Still, other teachers thought exposure to technology created the foundation for success, as determined by Participant 16.

Q1. What external factors do teachers perceive impacting students’ academic performance in online courses? Teachers perceived several external factors that impact

students' academic performance in online courses. A common factor that emerged was that of parent support. Parental support was the top external factor that teachers perceived as critical to student success. Parent support of the student links to how well a student does within their online coursework. The parent provides the foundation of the student to succeed.

Along with parent support was the idea of the partnership between the student, parent, and teacher. Thus, teacher support was necessary for terms of motivation and communication. P7 took parent involvement a step further by highlighting the fact that "homelife shaped student motivation." Therefore, parent support with a balanced home life allows students to flourish in education.

Another repeated external factor throughout interviews and within the focus group discussion was that of course design. P3 suggested the need to "mainstream courses for general understanding." P4 believed that course design was the main factor for success. P17 agreed and added that courses should be "engaging and relatable." Of note were also external factors of access to technology. P16 spoke about early exposure to technology while P5, P7, and P20 spoke of the importance of access to Wi-Fi, especially at home. This relates to the economic background of students and their access to IT. P9 and P18 thought extracurricular activities and the student's ability to balance might impact student success online while P13 and P17 stated that technology proficiency was also crucial to the completion of online courses.

Q2. What internal factors do teachers perceive impacting students' academic performance in online courses? There were several internal factors that teachers perceived as impacting students' academic performance in their online courses. While discussing internal factors that impacted student success online, teachers readily agreed that student intrinsic drive

or motivation leads to success. Almost every teacher interviewed noted that without student motivation to complete the course, success was hindered in the online class.

Besides motivation, as discussed previously, teachers added some other internal characteristics of importance. A collective agreement was on the concept of age as it relates to maturity but also motivation. P2, P7, and P16 believed that age-linked to the level of maturity, which positively influences success. P8 and P14 disagreed, stating that older students are often less successful due to their lack of motivation and learned procrastination.

Other internal factors of note included students' organizational skills. Frequently noted was the concept that "organization is key to online success" (P3, P6, P10, P12). Gender differences in terms of focus where females tended to do better in the online environment compared to that of their male students were also noted (P5, P7, P9, P15). P7 and P10 stated that the IQ of students could help success as well as the type of personality as described by P9 and P15. P17, P19, and P20 also reminded that learning styles impacted how well students understand the online content.

Q3. How do teachers perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success? As far as the relationship between internal factors and external factors, most participants felt that the factors worked together to help or hinder student success. P7 noted that "the external factors help the external factors." P4 stated that success is better with "all factors working together. P16 said that the "factors work together, but students can overcome the lack of one to succeed." However, P1 stated that "parent support is the most important in determining success." This showed that without a support system, the student lacked the necessary tools for success. P9 and P14 disagreed, stating that internal motivation drives overall

success. In conclusion, the researcher determined that internal and external factors worked in conjunction to help or hinder the student in their online course.

Q4. What suggestions do teachers have for improving students' academic performance in online courses? Based on the teacher interviews and focus group discussion, teachers had specific suggestions to improve students' academic performance in online courses. There were two major categories to improve online academic performance online. The first dealt with the communication and relationship between teacher, student, and parent. P3, P10, and P14 noted the importance of building relationships and communication. P5 and P13 agreed that "communication was vital to improving success." With this suggestion, P17 reiterated the "essential importance of relationship regarding the online environment due to the lack of face-to-face interaction."

Another suggestion to increase online performance in their online course focused on additional support for students in various respects. P1 highlighted the need for teachers to "provide support by demonstrating skills for students." P2 felt that by demonstrating for students, we would be "preparing them for the real world." P4 stated that besides teacher demonstrations, "teachers needed to provide additional help like tutoring." P6 added that students should be given "additional time to comprehend the material." Another suggestion was creating early intervention programs that would allow for the preparation of needed technology skills, exposure to technology sooner, and focus on the needs of the child (P7, P8, P9, P12). Other suggestions included P11, who recommended the use of "different forms for directions," course design as noted by P18, and additional face-to-face interaction for social skills as highlighted by P15 and P16.

Chapter Summary

The study looked to uncover teachers' perceptions of the influence of internal and external factors of virtual education on student success. Online education has become a rising trend to supplement education, and further understanding its long-term impact on student success becomes of prime concern. One central research question drove the qualitative study along with four research subquestions.

Chapter 4 provided an overview of data collection and analysis. The chapter also highlighted any significant findings. Chapter 4 described the sample population used to conduct the interviews and the focus group discussion. After the collection of data and two rounds of coding, the researcher outlined the summary of findings and conclusions.

There were two sources of data for the study. The two sources were used for cross-examination of information to provide reliability. The individual teacher interviews occurred before the focus group discussion. Both the interview and the focus group discussion provided valuable insight into teachers' perceptions of the internal and external factors that influence online student success. By comparing the two sources of data, the researcher determined specific internal and external factors that teachers' perceived to be of importance to online student success.

Significant findings showed significant themes and significant emergent themes. Significant themes emerged due to the frequency of the internal or external factors mentioned by the participants. Teachers perceived that students with an internal drive or motivation were essential to the success of students in their online courses. The answers from the interviews and focus group discussion also showed that external factors, such as teacher support and parent support, played a significant role in online student success. The conclusion from these findings,

highlighted that internal and external factors work in conjunction to bolster or impede online student success. From the data collected from the individual teacher interviews and the focus group discussion, the central research question, along with the subquestions, were answered. From data collected, Chapter 5 determines major conclusions and discusses the impact of the study within the contemporary literature. Chapter 5 also suggest recommendations for further research as well as implications on future school and district practices and policies within the virtual education world.

Chapter 5: Discussions and Conclusions

Introduction

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. Chapter 5 provides a summary of the results, discusses the results, and interprets data as it relates to the current literature and the study's purpose. Chapter 5 notes the limitations of the study and concludes how the findings from the study impact future practices and policies within the virtual sphere. The researcher provides recommendations for further research on the topic of study.

Summary of the Results

The study sought to understand teachers' perceptions of the internal and external factors that impact student success in their online classes. The research used two sources of data collection: individual teacher interviews and a focus group discussion. The two sources of data were used for cross-examination of information. The use of the two sources of data were due to the researcher's aim for consistent findings to support the purpose of the study. The summary of both the individual teacher interviews and the focus group discussion are outlined below. The teacher interviews highlighted teachers' perceptions of the internal and external factors that influence student success in their online courses. The focus group discussion yielded similar results while also delving into an in-depth conversation on the support systems in place to increase student academic online achievement.

Interview Findings

Through two rounds of coding, the researcher determined several conclusions. Data showed general themes based on teacher perception of the external and internal factors that influence online student achievement. General themes emphasized student characteristics,

student access to technology, student exposure to technology, and the outside environment of the student. From those general themes, high-frequency responses from teacher perceptions on external and internal factors highlighted significant themes. Those significant themes included student motivation/drive in academics, teacher support of the students, communication of stakeholders involved in student success, and parent support and homelife. Other subthemes of interest included the technology proficiency of students, organizational skills, learning styles, technology exposure, and extracurricular activities of students.

Student motivation/drive in academics. Within the individual interviews and the focus group discussion, student motivation/drive in academics was a common identified internal factor perceived by teachers. Participants stated that without student motivation or drive, success in the online course is challenging. Students need to have the drive to succeed, especially in the online environment, due to the responsibilities of the student within their virtual course. “Motivation is the foundation on the road to online student success in their coursework” (P18).

During the interviews, teachers frequently related student drive and motivation to a student’s overall drive in life. Students that were motivated to achieve in other areas in their life also tended to want to achieve in academics. P13 stated, “Drive in all things” leads to the success of the student. As teachers mentioned, if someone wants something, they will work for it. Therefore, if a student wants to be successful in the course, they will strive for it and more than likely attain it.

Teacher support of the student. Teacher perceptions also noted the importance of teacher communication and support to bolster student online academic achievement. Teachers are needed to support students in their learning by assisting in questions on course content. The “course teacher can have a profound impact on student success in their online class,” P12 said.

Teachers should also demonstrate learning for students to help facilitate their learning. Because the student is self-teaching, teachers must help with questions and a deep understanding of course content. P2 felt that by demonstrating for students, we would be “preparing them for the real world.” Teachers should provide feedback that is relevant to the student and guide the student to success. If teacher support is missing, the student may become lost.

Communication of all stakeholders involved in student success. In the online environment, teachers need to form the foundation of the student’s support system in providing feedback and other communication for matters of importance. This communication includes building relationships between the student and the parent. Constant feedback and communication will allow for a personal connection leading to higher confidence levels. Through relationship building, the student will continue to build confidence, which might help in their overall success. The unique nature of virtual education means that teachers need to be more present for the student.

Parent support of the student. Parent support and involvement was another theme frequent in data. Parent support included involvement in the student’s academics. The more active the parent is involved in their academic life, the more successful the student. Parent support allows for higher confidence levels. “Family life often dictates the success of a child,” P13 stated. Teachers perceived that the students who tended to do well in online courses had parents who cared about their education. These parents modeled the importance of education and helped the students succeed. P20 concluded, “Parents shape the desire of the student to succeed and therefore impacts their success online.”

Home life of the student. Participants stated that students needed to have a home life that created an environment that set up the student for success. The student’s home life could

help with intrinsic drive and motivation and, therefore, success in the online environment. This significantly related to parent support. P7 took parent involvement a step further by highlighting the fact that “homelife shaped student motivation.” If education was modeled as necessary at home, students were more likely to be with it.

Other important external/internal factors. Further analysis of data highlighted other internal and external factors based on teacher perception. Some internal factors teachers perceived as impactful on online success included the organizational skills of the student, their proficiency with technology, and the students learning style. Student characteristics often had a central role in their online success.

Teachers also noted external factors like early access to technology and the extracurricular activities of the student. Teachers stated that the early exposure of students to technology, the more proficient and comfortable they were navigating the course. Student’s schedules outside the class also impacted students who had trouble balancing their outside activities. The teacher interviews highlighted the need to understand further the impact online learning has on student success.

Focus Group Discussion Findings

Teachers in the focus group discussion explored the internal and external factors that influenced student success in their online coursework with a detailed assessment of the most impactful factors. Four core questions drove the discussion. From the discussion, the participants provided useful insights into the perceived internal and external factors that impact online student success. The focus group discussion also highlighted the perception of teachers on administrative support and suggested ways to improve student success through administrative support.

Teacher perceived internal and external factors. The focus group discussion highlighted teachers' perceptions of the internal and external factors that influence virtual students. The unanimous agreement within the focus group discussion was that motivation was an essential internal factor that determined online success. Also, of note were external factors of the home life of the student, teacher support, and parent support. P7 stated, "Homelife can heavily impact students' academic goals." P17 agreed that "support systems were necessary for student success." Communication and support systems were also discussed as necessary. Much like the individual teacher interviews, the focus group discussion highlighted that no one-factor predetermined success. Teachers agreed that internal and external factors often worked together to help student success.

Administrative support and suggestions for online student success. The focus group discussion also dived into the topic of administrative support of teachers. The discussion yielded a relative agreement that there was a primary support system put into place. However, there were suggestions to improve the administrative support of teachers for student support that included an increase in communication between not only the parent, student, and teacher but other stakeholders such as administration and the need for additional resources that would help the student success.

Discussions of Results

The study highlighted perceptions of teachers on the internal and external factors that impacted online student success. The significant themes that became relevant included student motivation and drive in academics, communication of all stakeholders involved, teachers' support of the student, parent support of the student, and student homelife. Based on these perceptions, the researcher was able to answer the research questions at the center of the study

and reach conclusions based on data. The researcher determined that online learning can genuinely be student-centered based on teachers' perceptions and identified internal and external factors of note that impact student success online.

Student-Centered Learning

Even before the collection of data, it was apparent from the previous literature that online education was unique. The unique nature of virtual learning is due to the student-centered approach. Online coursework is education based on student interaction with online course content. In this environment, students are more responsible for their education than in the traditional brick and mortar. Unlike in the traditional brick and mortar, online students are in charge of their learning, and teachers are the facilitators. The data from this study showed several teacher perceptions of internal student characteristics and student external environmental influences that impacted their learning online. This data relates to the necessity of courses to meet the needs of online learners and therefore be student-centered.

Once data were collected, different internal and external factors that impact student success online were highlighted. The highest frequency answer was the perception of teachers that online achievement was significantly due to the motivation or drive of the student. P18 said, "motivation or self-drive accounted for the foundation for success." If the student has no intrinsic motivation to succeed, the ability to complete an online course successfully went relatively downward (P1, P2, P4, P8). P1 declared that "if there is a desire to succeed, it will happen." In agreement was P14, who stated that students needed inner "intrinsic drive."

The individual interviews and focus group discussion reiterated that drive within the online environment was a significant internal factor to online student success. P11 added that "motivation tied to a student's perseverance which could also be linked to external factors."

Along with internal drive, teachers emphasized the essential need for parent/guardian support for online student success. As mentioned by P11, “internal perseverance of drive could be shaped by parental support.”

In agreement with the significant role parent support played in the success of the student in their course, P3 and P12 noted how parents form the basis of student characteristics. P7 stated the “desire to succeed stems from the home life and the support the parent gives the student.” This data showcased the importance of student characteristics and related to student-centered learning. In this learning method, students drive their education, much like in their virtual coursework.

Student-centered learning also focuses on external factors to support student success. Support in the online environment is also essential for the student to achieve academically. Teachers perceived that parent support was not only needed but also teacher support. In the online course, students need the teacher to support and communicate directions and information. P17 implored for the “need to have teachers continue to build relationships with students and parents.” P14 stated that “along with intrinsic characteristics, the teacher plays a major role in student success online.”

Other internal and external factors were of importance to online student achievement. The research continued to support the fact that online education can indeed be student-centered if it is personalized based on student characteristics. Teachers in the study explained certain internal factors such as student’s ethnicity and personality as crucial to their success. P12 said that “based on ethnicity, students are either set up for success or failure.” Both P9 and P15 felt that “individual personalities, such as introverts, tended to struggle more in the online environment due to the lack of communication to describe their needs.”

Student-centered learning in an online environment could occur based on teachers' perceptions of certain external factors that impact student success in the online class. P8 talked about the importance of the digital literacy of students. P19 and P20 thought course design hindered or helped student achievement. Still, other teachers thought exposure to technology created the foundation for success, as determined by Participant 16. What these results suggest is the need to design courses with student characteristics in mind in order to create student-centered courses.

External Factors and Online Student Success

Teachers perceived several external factors that impact students' academic performance in online courses. These identified external factors could help determine specific barriers to online courses. From the teacher interviews, several external factors came to light. A common factor that emerged was that of parent support. Parental support was the top external factor that teachers perceived as critical to student success. Parent support of the student links to how well a student does within their online coursework. Parents often model behaviors that students adopt. Therefore, if the parent models the importance of education, the student more than likely will find their education valuable.

Along with parent support was the idea of the partnership between the student, parent, and teacher. Thus, teacher support was necessary for terms of motivation and communication. The relationship between teacher, parent, and student created a solid foundation for online student success. P7 took parent involvement a step further by highlighting the fact that "homelife shaped student motivation." Therefore, parent support with a balanced home life allows students to flourish in education. A child that is set up for success will more than likely succeed.

Another repeated external factor throughout interviews and within the focus group discussion was that, of course, design. Course design, as mentioned before, can help create student-centered learning in the online environment. P3 suggested the need to “mainstream courses for general understanding.” P4 believed that course design was the main factor for success. P17 agreed and added that courses should be “engaging and relatable.” Course design could be the difference between student success and failure.

As with previous studies, the study highlighted that student access to needed technology was essential for success. P16 spoke about early exposure to technology while P5, P7, and P20 spoke of the importance of access to Wi-Fi, especially at home. This relates to the economic background of students and their access to IT. P9 and P18 thought extracurricular activities and the student’s ability to balance might impact student success online while P13 and P17 stated that technology proficiency was also crucial to the completion of online courses. These perceptions helped to further the conversation on the barriers facing online students.

Internal Factors and Online Student Success

The study also showed several internal factors that teachers perceived to influence online success. Identifying internal characteristics could again help in designing online course content to meet the needs of such learners. While discussing internal factors that impacted student success online, teachers readily agreed that student intrinsic drive or motivation led to success. Almost every teacher interviewed mentioned that without student motivation to complete the course, success was hindered in the online class. Thus, the data show that student motivation is essential, and thus course content should be designed to help with student drive.

Besides motivation, as discussed previously, teachers added some other internal characteristics of importance. A collective agreement was on the concept of age as it relates to

maturity but also motivation. P2, P7, and P16 believed that age-linked to the level of maturity, which positively influences success. P8 and P14 disagreed, stating that older students are often less successful due to their lack of motivation and learned procrastination.

Other internal factors of note included students' organizational skills. Frequently noted was the concept that "organization is key to online success" (P3, P6, P10, P12). Gender differences in terms of focus where females tended to do better in the online environment compared to that of their male students were also noted (P5, P7, P9, P15). P7 and P10 stated that the IQ of students could help success as well as the type of personality as described by P9 and P15. P17, P19, and P20 also reminded that learning styles impacted how well students understand the online content. All these noted characteristics can help stakeholders determine how to reach all types of learners based on their personal qualities.

Inferences

From these results, the researcher concluded that the student motivation and drive within academics was an overreaching internal factor in their success online. The researcher also noted that parent and teacher support of the student were external factors that could create an "environment and support system to bolster online student achievement" (P5). Common trends the researcher highlighted included the fact that no one factor was the underlying reason, based on teacher perceptions, of student success in their online coursework.

Based on the teacher responses, the researcher concluded that parent support and student homelife were significant external factors that impact the success of online students. Support systems at home were necessary to create "confidence in the student to succeed" (P6). The researcher also determined that early access to technology and access to IT at home could impact

how successful a student was in their online course. If the student “lacks the resources” (P20), they will have a significant barrier to their online learning.

What these results presented was the fact that student characteristics play a role in how well a student succeeds in their online coursework. The researcher understood the need for student motivation but determined the need to explore further specific student characteristics that impact a student in their online courses. The researcher, therefore, concluded that within the online environment, students need a solid support foundation formed by both parent and teacher as well as additional resources to boost their academic success. In the future of virtual education, the continued need to elicit the suggestions of teachers for recommendations to improve the online sphere and course design will be essential to reaching all student learners.

Due to the participant’s background as virtual teachers, the results yielded common perceptions due to their role within the school. The teacher’s academic interaction with students highlights the understanding of the various barriers that impact a student’s success. Taken from the viewpoint of individuals who have constant contact with students, a deep comprehension of the difficulty students face within their online coursework is more apparent and relevant.

Discussion of the Results in Relation to the Literature

At the center of this study was to identify teacher perceptions of external and internal factors that impact student online learning. Due to the increase in students participating in distanced education, understanding the impact such virtual learning has had on student success becomes of critical importance. The research sought to understand how different factors influence academic achievement in the online environment. Contemporary literature shows focus on the concern of the overall effectiveness of online learning. Studies ranged for implementing evaluation systems to determine technology effectiveness in student learning as well as

determining the comprehension of such learners in online coursework. Concerning the literature, the results of the study suggested the continuation of discussions on topics such as the relevance of course design, student access to technology, and barriers to online learners.

Relevance of online course design and student interaction. Several studies that focused on the online environment looked at the evolving landscape of the virtual educational world. Besides just a concern for the long-term impact online education is having on students, researchers sought to understand the relationship between course design and student interaction. It was found that learners interacted with courses that were relevant to their everyday use of technology like their social media accounts (Friedman & Weiser, 2004). Through identifying relevant applications, student interaction with course content could increase and thus increase success.

The research conducted in this study yielded similar conclusions as teachers perceived that course design and use of specific applications led to a trend of positive results for student interaction within their course. If courses are poorly designed, students might lack the motivation to complete the course. If the course design is user-friendly, students will be able to navigate the course and more likely to succeed. The study highlighted teachers' perceptions that course design must be easily navigable as not to create another barrier to online student learning. Therefore, the study adds to the contemporary literature suggesting the need to study course design's impact on student success and use data to design future courses.

Teachers in the study felt that course design was an external factor that impacted student success. Courses should be user-friendly and navigable. Teachers stated that course design should be relevant to students, such as the incorporation of current social media. Relevant course design tended to yield positive student interaction in the course. Course design could be a barrier

to students if poorly designed. The online educational sphere is ever-evolving, and so should course design. Student interaction with their online course can provide data relevant to designing accessible courses. Using current social media trends and implementing these tools in courses could impact student learners. Course design should be relevant to student interest as it provides a positive interaction.

Access and exposure to technology. The impact of virtual school is of continued importance to contemporary literature. A primary concern of online education raises the question of access to needed technology resources. In several studies, research showed that students who had access to IT resources in their home environments tended to be more successful with technology-based learning (Hew & Tan, 2017). Data collected showed a positive trend of success when students had home access to resources such as the internet, Wi-Fi, computer, and exposure at an earlier age.

Data collected in this study reflected such thoughts with perceptions and teacher suggestions of early intervention programs to expose students to technology. Teachers also explained the need to provide all students access to the technology that is needed to be successful with virtual coursework. The common perception of the teachers in the study showed that students who had the technology at home were more comfortable with the technology and thus able to navigate the course. Thus, the study adds to the literature by stating the importance of IT access for online students.

Accessibility to necessary technology was of prime concern based on teacher perception. Students needed to have access to IT at home and other technology such as Wi-Fi, and so forth. Early exposure to technology was also an external factor that teachers perceived to be of high importance to their success. Previous studies noted the importance of IT access and technology

for all students. Literature explored the impact home access to technology had on student success and showed a positive trend if students had the necessary resources. Digital literacy increased if students had early exposure to technology, which links to online success in courses.

Barriers to online learning. Many researchers suggest that online student success was determined through specific student characteristics. Through different types of data collection, certain features appeared to impact student completion in online courses (Yu, 2016).

Such characteristics highlighted student interaction within their courses. Student interaction in their course had a positive or negative trend in student success, depending on the amount of interaction (Yu, 2016).

This relates to the concept of self-regulation. In agreement with this conclusion, many of the participants in this study noted the importance of student motivation (a student characteristic) as a determining factor for online achievement. This relates to previous literature that explores student characteristics within the virtual sphere. When asked to list the main factors impacting a student's online success, participants in the study continually commented on the essential impact of student drive as a significant component of completion.

Not all research, however, agreed on the idea that students solely determine their success in online courses. Other studies note that different external factors create barriers for online learners (Berge & Muilenburg, 2005). Participants in this study related to this as well. Participants explained that student drive, though the main factor did not always determine success. External factors such as support systems created by parents and teachers often showed positive impacts on online students.

Overall, on the question to determine how online education has impacted the success of students, studies have varied on pinpointing precisely what factors that may be hindering or

helping achievement. Within the current conversation, this study added to the list of identified potential factors highlighting the importance of student intrinsic motivation and external factors of exposure and access to technology as well as formed support systems. Teacher participants listed some student characteristics that were internal factors that had an impact on student success online. The drive/motivation of students was listed as a significant student characteristic. Previous literature noted the importance of identifying student characteristics that influence online success. LMS data helps show student interaction with their course. Much like the study's results, student motivation (positive interaction) in the course showed a positive trend in their overall success.

Limitations

The qualitative study examined teachers' perceptions at a virtual school on what student characteristics and other external factors impact academic achievement in online courses. The qualitative research had some limitations. One major limitation is that due to a small sample size in a case study, the findings could not be generalized to a larger population. Another limitation was the fact that teacher answers could not be assumed to be honest answers but only taken for honest answers. If answers were not honest, they might have skewed the results of the study.

A limitation that was noted before the study began was the proficiency of the English language of teachers in the interview. This limitation was not an issue, as all participants spoke English at an idiomatic level. However, the wording of the interview questions was a limitation. To determine the validity of the interview questions, the researcher conducted a field-test of the interview questions before initial interviews. One major delimitation included the fact that the interview was only a given point in time and could only be used for the short-term analysis of the target population.

Implication of the Results for Practice, Policy, and Theory

The study looked to understand teacher's perceptions of the internal and external factors that impacted students in distance education and their overall academic success. The accessibility of online courses has increased the population of online learners. With this increase in population, research needs to examine the long-term impact virtual courses are having on student success. Data collected in this study highlighted several external and internal factors perceived by teachers to impact online achievement. The study added to the contemporary literature that not only impacts students in the online courses but educators, administrators, and other stakeholders. Understanding online influence on students connects to the implementation of best practices to reach the ever-growing population of online learners (Friedman & Weiser, 2004).

Practice

Based on the study's findings, the researcher, as a current virtual instructor, can use data to implement and integrate resources within the online classroom and the study site of C CVS. To begin with, the school in which the researcher currently teaches, services an incredibly diverse student population. The demographics of the CCPS student body are as follows: roughly 40% Hispanic, 25% White, 25% Black, 5% Asian and, 5% Multi-Cultural. This diverse student population helped the researcher to understand if specific student demographic characteristics impact the success within online courses.

The study findings will help the researcher improve teaching practice in online classes. Using the results of the study, the researcher determined that student home life impacted online success. The researcher plans to explore each student's background to determine the necessary support systems to employ. This would include helping the student with the motivation to complete the course. The researcher will also continue to study best practices to reach diverse

student populations. Through continued extensive research, the researcher can, therefore, impact student success in online courses.

Along with the understanding and implementing best practices, the researcher will work on continuing to build relationships with students and parents in order to form support systems for the student. This is based on the teachers' perceptions of the study that repeatedly mentioned the importance of such relationship building. Teachers perceived the communication between all stakeholders were of the grave importance of student success online. The researcher will find ways to improve communication with students and parents. The study will also help the researcher implement new support systems within the online course framework to support student success. The study's findings can also be used by educational leaders in the future construction of virtual courses. The researcher can use data from the study to implement best practices and better understand the barriers that online students face within their environment.

Policy

By sharing these results with the study site administrators, policies to motivate students in their online coursework, and additional resources can be implemented. The research conducted in this study can be implemented into the CCPS School & District Continuous Improvement Plan. School & District Continuous Improvement plans follow a typical cycle of implementation for best practices with school districts across the nation. Each step is an essential process in the continuous development of school districts, and this research can help with the trend in online learning. The School & District Continuous Improvement Plan includes the following steps: schools/district sets a shared vision, schools/district assess needs, schools/district create a strategic plan to reach the vision, schools/district implement the strategic plan, schools/district

monitor, evaluates and adjust the strategic plan based on data collected. The cycle is continuous and can include the upward trend of online education to complement traditional coursework.

The study's focus on teacher's perceptions of internal/external factors that impact online student learners highlighted their constant interaction with students. This interaction was essential to understanding factors that influence students in the online environment and thus implement best practices. If schools look to understand the impact of virtual learning, policies could be put in place to design courses with best practices in mind and increase academic success (Bobeva et al., 2015). With increasing awareness of online course structure and practices, student achievement overall will lead to significant growth. Assessing the impact online learning has had on students in various areas can help shed light on the creation of future courses as the trend for online education increases (Yu, 2016).

The data presented here could be used in the CCPS School & District Continuous Improvement Plan. The current trend of CCPS requires students to participate in two or more online courses along with their traditional coursework. This is a district-wide graduation policy. Using the data collected, CCPS can use the identified internal and external factors to implement further policy. The current shared vision of the county is that students are exposed to technology through online courses that help them prepare for their future careers.

With this vision in mind, CCPS needs to address the need for its diverse population. Of the significant areas of concern, accessibility is the current need of the student population. CCPS should lead with this need and create a plan to increase the accessibility of IT to its students. Students in the district are assigned a school computer but may lack the necessary Wi-Fi to access course content. By investigating this, the district can find ways in which to provide

students with the IT to be successful in their online coursework. The study highlighted the importance of home access IT to student success.

Regarding the study site, the research can help the school to implement new policies for best practices. The teachers' perceptions of the internal and external factors that impact student success relate to the diverse population in which they serve. The researcher can share the data collected with the site administrators for the future design of course content. By highlighting the student characteristics that impact online success, course design can tailor and personalize courses to meet the learner's needs.

Administrators can also share the positive impact teacher communication has on student success. By sharing such information, teachers can improve their communication with both students and parents and increase student academic success. New school policies regarding communication between stakeholders could be implemented. This would include communication between the teacher, parent, student, and administration. By strengthening these support systems, student confidence will increase, and student success plans can genuinely be personalized. The study can be used as the foundation for change to help the success of online learners.

Theory

These findings relate to the theories presented in the literature review. With the results of the study, theories can be used to increase the online achievement of students. These theories include social cognitive theory, learning theory, behaviorist philosophy of learning, and information processing theory. An in-depth analysis of the internal and external factors that influence students in their online coursework correlate with social cognitive theory and behaviorist philosophy of learning.

The social cognitive theory outlines learning (in this case, within the virtual world) due to interaction in the student's environment. If stakeholders are aware of the external and internal factors the impact online success, course design can help lead to educational equality within the virtual sphere as the online environment (cognitive learning) will be crafted to meet the needs of all learners. Course design is of importance as it can help or hinder a student's success. How students interact with their course can display how they learn in the virtual sphere. By focusing on course design, stakeholders can use social cognitive theory (how students learn in specific environments) and design accessible courses for all creating educational equality.

This is also true using the lens of the behaviorist philosophy of learning. Much like the social cognitive theory, the behaviorist philosophy of learning is based on learning in terms of demonstrating wanted behaviors within the online environment. Once teachers and administrators understand the student characteristics or behaviors that lead to success in the online environment, best practices can be put into place. Best practices will tailor the behaviors students need to be successful in the online environment.

The results of the research were significant in terms of helping a variety of stakeholders to reconsider students' challenges in online education (Githens et al., 2012). The study highlighted internal factors such as student characteristics that teachers perceived to impact online success. By understanding these student characteristics, desired behaviors can be modeled by online teachers. Best practices using the behaviorist philosophy of learning can be implemented in the online environment. This can thus create digital inclusion of all students with proper modeling. The study added to the understanding of the external factors or internal characteristics that bolster or hinder student success in the online environment and show the achievement gaps within virtual coursework.

The highlighted data related to the theories of learning theory and information processing theory presented in the literature review. Both theories explore the different ways in which individuals learn and process information. In recent years, these theories have been used to understand how students are learning in the virtual sphere. Further practices and policies can use the study to examine the relationship between student achievement and internal/external factors in the online environment.

By using the lens of learning theory and information processing theory, policies can be put into place to provide students with resources that will lead to higher achievement based on their learning needs. Teachers in the study noted the importance of understanding that students all learn differently. The need to tailor online courses for these different learners is essential. The study showed the different internal factors that impacted student success, such as their learning style. By using the information processing theory, stakeholders can see how students learn and prepare courses for digital literacy.

Recommendations for Further Research

In this study, the researcher adopted a qualitative method with a case study design to explore teachers' perceptions on the external and internal factors that impact student online academic success. The literature review suggested that more research needs to be conducted on the long-term impacts that virtual education has had on student academic achievement. Due to the increase in online learners and the various needs of these learners, further studies could benefit the future on the design of the online curriculum.

Future studies could be conducted to include all K–12 online schools and look at the impact on students' academic growth. Future studies can also be expanded beyond K–12 to cover community colleges and 4-year colleges and universities. Through researching online

education's impact on all levels of education, additional knowledge can be used to increase student success online.

Further research could base studies on students' perceptions of internal and external factors that impact their online learning. Researchers could use a qualitative research case study design with interviews or journaling, much like this study. The research could also be quantitative based on the impact of the external and internal factors in online learning through instrumentation, such as surveys sent out to students or other stakeholders as well as experimental design. Future research could also be conducted in mixed methods approach to look at both sides of the stories from administrators, teachers, parents, and students.

The research was a snapshot in time of a given virtual school by its population of teachers. By conducting other long-term studies on other schools based in different geographical regions, grade levels, and demographics, the impact of online coursework on students could be readily accessed. Teachers will, therefore, be able to use contemporary research to ascertain the influence of virtual courses on their students and determine best practices in which to implement to improve online learning. The research determined that certain external and internal factors were perceived by teachers to impact online academic achievement. Thus, longitudinal studies across different demographic online schools could highlight specific factors in which to focus on and use such to design future courses. The researcher recommends that future researchers can replicate the study using other methods, settings, and participants.

Conclusion

Virtual education and student academic achievement in online courses are at the forefront of educational research (Caranikas-Walker et al., 2011) due to the increase in technology. The need to understand further implications it has on students (Cheung & Slavin, 2013) could be

based on teachers' perceptions since they will be at the forefront of implementation. Best practices can thus be implemented to meet the needs of the ever-increasing population of online learners.

The problem that drove the research was the fact that full-time virtual students often showed less learning gains than their traditional counterparts. The study was driven to determine teacher's perceptions of the impact of internal and external factors of online education on academic achievement. With the rise of students partaking in virtual courses to supplement their traditional coursework, the researcher sought to investigate the impact of online education on student success. The study sought to highlight specific internal and external factors that influence the success of online students.

The study began with a current overview of the problem and the purpose of the study. Contemporary literature was examined for trends in determining the impact of virtual education. Research showed that student interaction in their online coursework was of considerable importance (Ismail & Siti, 2012), including various features and factors that influenced students' achievement in the virtual environment (Boyer et al., 2008). The researcher sought to develop further the current conversation on virtual education with the study. The theoretical framework for this study consisted of the learning theory in distance education, behaviorist philosophy of learning, information processing theory, and social cognitive theory

The purpose of the study was to explore teachers' perceptions of internal and external factors influencing students' academic achievement in online courses. The central research question was: what factors do teachers perceive as a significant impact on online students' success? The qualitative research method was employed using a case study design. Data were collected from two sources: individual teacher interviews and a focus group discussion. From the

collection of data, five significant themes occurred. These significant themes were: student motivation/drive in academics, teacher support for online students, communication between stakeholders for student success, parent support of the student, and home life of the student.

The researcher chose a qualitative case study design to examine the virtual school, Coral County Virtual School (pseudonym), and interview a sample of the teacher population as to what they perceived as external and internal factors that impact online students. The researcher expected that through data collection through the teacher interviews and the focus group discussion, various teacher perceptions on factors influencing students' achievement in virtual courses were measured and examined. The two sources of data collection were to ensure the validity and reliability of the information.

Through data collected, the researcher determined significant themes of internal factors such as motivation and drive of the student performance in the online environment as well as external factors of support systems to provide additional assistance for student success. The findings of this study as aforementioned presented five significant themes: student motivation/drive in academics, teacher support for online students, communication between stakeholders for student success, parent support of the student, and home life of the student. Common teachers' perceptions included that students with an internal drive or motivation were essential to the success of students in their online courses. External factors, such as teacher support and parent support, were also noted as playing a significant role in online student success. The data from both the focus group discussion and the individual interviews helped highlight internal and external factors that impact student success.

With these external and internal factors, the researcher suggested ways in which to improve online success through helping students with motivation within their online courses as

well as create support systems for students in their virtual coursework. The overall implication of the study determined that there were significant factors based on teacher's perceptions that can help or hinder student success in their online environment. Thoroughly understanding these factors can help teachers and all stakeholders construct and drive course design and support systems to improve student success.

The researcher outlined different ways the Coral Country Public School District, and the study site, Coral County Virtual School, could implement best practices based on the study's data. Of note was the impact such data could have on the future policies of the district and the construction of courses to meet the growing population of online learners in the virtual school and the school district. The researcher suggests a longitudinal study for future research to determine the impact such internal and external factors have on student success online.

The implication of this study highlights the need for all stakeholders to evaluate the impact of online courses and redesign courses to meet the needs of students. The recommendation for further research includes expanding the scope of the study to understand online learning's impact on other student populations, including student populations across the United States, along with countries around the world. The researcher will integrate the findings to teaching practice in the online school. The researcher will also share the findings with the principal and school district superintendent as well as present the findings in the conference in future. Hopefully, the findings can help educational leaders, administrators, teachers, stakeholders, parents, and students understand internal and external factors influencing students' academic performance in online school as well as improve the system to help students learn more in the virtual environment.

References

- Abrami, P. C., R. M., Brauer, A., & Surkes, M. (2004). The development of a questionnaire for predicting online learning achievement. *Distance Education, 25*, 31–47.
- Alonso, M. Á., González-Gómez, F., Guardiola, J., & Rodríguez, Ó. M. (2012). Gender differences in e-learning satisfaction. *Computers & Education, 58*, 283–290.
doi:10.1016/j.compedu.2011.08.017
- Arendtsz, A., Bempechat, J., Li, J., Holloway, S. D., & Park, S. (2011). What makes students engaged in learning? A time-use study of within- and between-individual predictors of emotional engagement in low-performing high schools. *Journal of Youth and Adolescence, 41*, 390–401. doi:10.1007/s10964-011-9738-3
- Artino, A. R., & Jones, K. D. (2012). Exploring the complex relations between achievement emotions and self-regulated learning behaviors in online learning. *The Internet and Higher Education, 15*, 170–175. doi:10.1016/j.iheduc.2012.01.006
- Atchison, C. L., Carabajal, I. G., & Marshall, A. M. (2017). A synthesis of instructional strategies in geoscience education literature that address barriers to inclusion for students with disabilities. *Journal of Geoscience Education, 65*, 531–541. doi:10.5408/16-211.1
- Balaban, I., Kermek, D., & Zlatović, M., (2015). Using online assessments to stimulate learning strategies and achievement of learning goals. *Computers & Education, 91*, 32–45.
doi:10.1016/j.compedu.2015.09.012
- Bazarova, N. N., Mcleod, P. L., & Walther, J. B. (2011). Minority influence in virtual groups. *Communication Research, 39*, 295–316. doi:10.1177/0093650211399752

- Beck, H. P., & Milligan, M. (2014). Factors influencing the institutional commitment of online students. *The Internet and Higher Education, 20*, 51–56.
doi:10.1016/j.iheduc.2013.09.002
- Berge, Z. L., & Muilenburg, L. Y. (2005). Student barriers to online learning: A factor analytic study. *Distance Education, 26*, 29–48. doi:10.1080/01587910500081269
- Bobeva, M., Clarida, B. H., Hutchings, M., & Taylor, J. (2015). Strategies for digital inclusion: Towards a pedagogy for embracing and sustaining student diversity and engagement with online learning. *IAFOR Journal of Education, 3*. doi:10.22492/ije.3.se.06
- Borges, N. J., Nieder, G. L., & Pearson, J. C. (2011). Medical student use of online lectures: Exam performance, learning styles, achievement motivation, and gender. *Medical Science Educator, 21*, 222–228. doi:10.1007/bf03341711
- Boyer, L., Brunner, B. R., Charles, T., & Coleman, P. (2006). Managing impressions in a virtual environment: Is ethnic diversity a self-presentation strategy for colleges and universities. *Journal of Computer-Mediated Communication, 12*, 136–154. doi:10.1111/j.1083-6101.2006.00318.x
- Caranikas-Walker, F., Maloney, C., Shapley, K., & Sheehan, D. (2011). Effects of technology immersion on middle school students' learning opportunities and achievement. *The Journal of Educational Research, 104*, 299–315. doi:10.1080/00220671003767615
- Cheung, A. C., & Slavin, R. E. (2013). The effectiveness of educational technology applications for enhancing mathematics achievement in K–12 classrooms: A meta-analysis. *Educational Research Review, 9*, 88–113. doi:10.1016/j.edurev.2013.01.001
- Conway, K., Hachey, A. C., & Wladis, C. (2015). Which STEM majors enroll in online courses, and why should we care? The impact of ethnicity, gender, and non-traditional student

- characteristics. *Computers & Education*, 87, 285–308.
doi:10.1016/j.compedu.2015.06.010
- Cook-Wallace, M. (2012). Testing the significance of core components of online education. *The Business Review, Cambridge*, 19, 64–70.
- Coy, K. (2014). Special educators' roles as virtual teachers. *Teaching Exceptional Children*, 46, 110–116. doi:10.1177/0040059914530100
- Creswell, J. W., & Creswell, J. D. (2017). *Research design: Qualitative, quantitative, and mixed methods approach* (5th ed.). Los Angeles, CA: Sage Publications.
- Dupeyrat, C., Huet, N., Escribe, C., & Sakdavong, J. (2011). The influence of achievement goals and perceptions of online help on its actual use in an interactive learning environment. *Computers in Human Behavior*, 27, 413–420. doi: 10.1016/j.chb.2010.09.003
- Field, T., & Gartland, M. (2004). Case method learning: Online exploration and collaboration or multicultural education. *Multicultural Perspectives*, 6, 30–35.
- Friedman, H., & Weiser, L. Using social media technologies to enhance online learning. *Journal of Educators Online*, 10, 1–22.
- Gatchair, S. (2013). Race/ethnicity and education effects on employment in high technology industries and occupations in the U.S., 1992–2002. *The Review of Black Political Economy*, 40, 357–370. doi:10.1007/s12114-013-9157-7
- Githens, R. P., Jost, B., & Rude-Parkins, C. (2012). Academic performance, age, gender, and ethnicity in online courses delivered by two-year colleges. *Journal of Research and Practice*, 36, 656–669. doi:10.1080/10668921003744876
- Gyamfi, G., & Sukseemuang, P. (2018). EFL learners' satisfaction with the online learning program, tell me more. *Turkish Online Journal of Distance Education*, 19, 183–202.

- Horowitz, S. M., Oltmann, S. M., & Shachaf, P. (2008). Service equality in virtual reference. *Journal of the American Society for Information Science and Technology*, *59*, 535–550. doi:10.1002/asi.20757
- Ismail, I., & Siti, N. A. (2012). Distance learners' needs on interactivity in SMS-based learning system. *Asian Social Science*, *8*, 119–128.
- Jaggars, S. S., & Xu, D. (2013). The impact of online learning on students' course outcomes: Evidence from a large community and technical college system. *Economics of Education Review*, *37*, 46–57. doi: 10.1016/j.econedurev.2013.08.001
- Ke, F., & Kwak, D. (2013a). Online learning across ethnicity and age: A study on learning interaction participation, perception, and learning satisfaction. *Computers & Education*, *61*, 43–51. doi: 10.1016/j.compedu.2012.09.003
- Ke, F., & Kwak, D. (2013b). Constructs of student-centered online learning on learning satisfaction of a diverse online student body: A structural equation modeling approach. *Journal of Educational Computing Research*, *48*, 97–122.
- Kerr, A. (2015). Online education and academic performance: The case of online tertiary. *Caribbean Educational Research Journal*, *3*, 90–108.
- Kim, G. M. (2015). Transcultural digital literacies: Cross-border connections and self-representations in an online forum. *Reading Research Quarterly*, *51*, 199–219. doi:10.1002/rrq.131
- Kim, M. S. (2013). Technology-mediated collaborative learning environments for young culturally and linguistically diverse children: Vygotsky revisited. *British Journal of Educational Studies*, *61*, 221–246. doi:10.1080/00071005.2012.745480

- Layton, L. (2015). Stanford study shows that online charter school students are lagging. Retrieved from https://www.washingtonpost.com/local/education/stanford-study-shows-that-onlinecharter-school-students-are-lagging/2015/10/27/c42dc502-7cce-11e5afce2afd1d3eb896_story.html.
- Lin, Z., & Songtao, M. (2012). Using tracking data for continuous monitoring in management distance learning courses. *Academy of Educational Leadership Journal*, 16, 89–98.
- Loftus, J. (2013). Improving technology literacy and skills among minority nursing students. *Journal of Nursing Education*, 52, 238–238. doi:10.3928/01484834-20130322-11
- Mahboub, E. H. (2011). The role of new information technology in education and development: A case study of building trust in distance education. *International Journal of Arts & Sciences*, 4, 387–398.
- Mcbride, M. R., & Napiertibere, B. (2004). Harnessing technology and collaboration for an online ethnogeriatric educational resource. *Gerontology & Geriatrics Education*, 24, 61–75. doi:10.1300/j021v24n04_05
- Nam, C. W. (2016). The effects of digital storytelling on student achievement, social presence, and attitude in online collaborative learning environments. *Interactive Learning Environments*, 25, 412–427. doi:10.1080/10494820.2015.1135173
- Phillips, J. (2005). Strategies for active learning in online continuing education. *The Journal of Continuing Education in Nursing*, 36, 77–83.
- Reynolds, R. (2011). Trends influencing the growth of digital textbooks in U.S. higher education. *Publishing Research Quarterly*, 27, 178–187. doi:<http://dx.doi.org/10.1007/s12109-011-9216-5>

- Wang, F. H. (2017). An exploration of online behavior engagement and achievement in the flipped classroom supported by a learning management system. *Computers & Education*, 114, 79–91. doi:10.1016/j.compedu.2017.06.012
- Yin, R. K. (2014). *Case study research: Design and methods*. Thousand Oaks, CA: Sage.
- Yin, R. K. (2017). *Case study research and applications: Design and methods* (6th ed.). Los Angeles, CA: Sage.
- Yu, J. W. (2016). Identifying significant indicators using LMS data to predict course achievement in online learning. *The Internet and Higher Education*, 29, 23–30. doi: 0.1016/j.iheduc.2015.11.003

Appendix A: Previous Research

Year	Author	Title	Research Question	Research Method Design	Findings
2004	Gartland, M., & Field, T.	Case Method Learning: Online Exploration and Collaboration for Multicultural Education	Greater student diversity and greater educational standardization draws the need for innovative approaches for teacher preparation.	Qualitative	Although more research must be done to measure the ultimate and long-term effectiveness of the case study method, including its online application, current philosophy and studies indicate that the employment of cases in teacher preparation can be as valuable as it is in law, business, and other fields.
2005	Muilenburg, L. Y., & Berge, Z. L.	Student barriers to online learning: A factor analytic study	How can we focus on individual differences among students to increase our ability to design instruction, to improve how we instruct, and to	Qualitative	Independent variables that significantly affected student ratings of these barrier factors included: gender, age, ethnicity, type of learning institution, self-rating of online learning skills, effectiveness of learning

			advise students?		online, online learning enjoyment, prejudicial treatment in traditional classes, and the number of online courses completed.
2010	Razak, R. A., & See, Y. C.	Improving academic achievement and motivation through online peer learning	How does online peer learning enhance students' academic achievement and facilitating their motivation?	Mixed-Method	Results of t-tests indicated that the experimental group reported a significant difference in motivation and that this subsequently contributed to a significant difference in academic achievement.
2012	González-Gómez, F., Guardiola, J., Rodríguez, Ó M., & Alonso, M. Á.	Gender differences in e-learning satisfaction	Understanding Gender differences and how these differences can help to restructure courses to meet these needs?	Qualitative	Female students are more satisfied than male students in the e-learning subjects. Female give more importance to planning of learning and contact with the teacher.
2012	Artino, A. R., & Jones, K. D.	Exploring the complex relations between achievement emotions and self-regulated	How do personal factors influence success in online contexts?	Qualitative	Results generally support the theoretical assumptions of control-value theory.

		learning behaviors in online learning			Findings suggest that emotions are linked to self-regulated learning behaviors. Emotions labeled as “negative” can potentially produce “positive” outcomes.
2012	Jost, B., Rude-Parkins, C., & Githens, R. P.	Academic Performance, Age, Gender, and Ethnicity in Online Courses Delivered by 2-Year Colleges. Community College	Does GPA indicate student success?	Quantitative	The results of the analysis indicated that only cumulative ^[1] GPA was a significant predictor.
2013	Ke, Fengfeng, and Dean Kwak.	Constructs of Student-Centered Online Learning on Learning Satisfaction of a Diverse Online Student Body: A Structural Equation Modeling Approach	What are the barriers that impact online student learning?	Qualitative	The results indicated that five key constructs of student-centered learning in online courses— learner relevance, active learning, authentic learning, learner autonomy, and computer technology competence— predicted students’

2013	Loftus, J.	Improving Technology Literacy and Skills Among Minority Nursing Students	How can technology be used beyond the classroom?	Qualitative	perceived satisfaction with online courses and web-based distance education at a statistically significant level. The program met the goal of creating a formative experience for minority students by using handheld technology to increase students' access to technology and by providing high-quality information sources to improve informatics literacy.
2013	Cheung, A. C., & Slavin, R. E.	The effectiveness of educational technology applications for enhancing mathematics achievement in K-12 classrooms: A meta-analysis	How does educational impact student learning?	Quantitative	Consistent with the more recent reviews, the findings suggest that educational technology applications generally produced a positive, though modest, in comparison to traditional methods.

2013	Gatchair, S.	Race/Ethnicity and Education Effects on Employment in High Technology Industries and Occupations in the US, 1992–2002	How can we help educational gaps between ethnicity groups?	Quantitative	African Americans, Hispanics, and others continue to lag whites and Asians in the level of educational attainment, particularly in S&E studies despite making educational gains since the mid-1970s
2013	Kim, M. S.	Technology-Mediated Collaborative Learning Environments for Young Culturally and Linguistically Diverse Children: Vygotsky Revisited	How does technology learning support young CLD children's affective, social and cognitive needs?	Qualitative	The technology-mediated collaborative learning environment supported young CLD children's affective, social and cognitive needs and created meaning-centered collaborative learning environments
2014	CIGDEM, Harun, and Osman Gazi YILDIRIM .	Effects of Students' Characteristics on Online Learning Readiness: A Vocational College Example	What skills do students need to be successful in an online course?	Qualitative	In order to learn, the student will need internet self-efficacy, learner control, motivation for learning, and online communication self-efficacy

2014	Ye, He.	Universal Design for Learning in An Online Teacher Education Course: Enhancing Learners' Confidence to Teach Online.	Universal Design for learning has shown that by 2020 50% of all high schools in the United States of America will be offered an online class.	Qualitative	self-direct learning. One important technique is that the teacher must have confidence in his or herself.
2014	Nieder, G. L., Borges, N. J., & Pearson, J. C.	Medical Student Use of Online Lectures: Exam Performance, Learning Styles, Achievement Motivation and Gender	Are students that are highly motivated to achieve success are also more likely to use lectures?	Mixed-Method	Exam scores for males were significantly higher than those of females and a gender effect was apparent
2014	Coy, K.	Special Educators' Roles as Virtual Teachers	The purpose of this article is to explore a changing set of competencies for a successful transition to online teaching in a virtual school.	Qualitative	Online schools may be more attractive to parents of students with disabilities for several reasons.
2015	Clarida, B. H.,	Strategies for Digital	What characteris	Qualitative	Findings suggest that

	Bobeva, M., Hutchings, M., & Taylor, J.	Inclusion: Towards a Pedagogy for Embracing and Sustaining Student Diversity and Engagement with Online Learning	tics indicate digital exclusion?		digital exclusion cannot be predicted or dealt with by categorizing students into groupings of gender, age, ethnicity, geography, socioeconomic status and educational background.
2015	Wladis, C., Hachey, A. C., & Conway, K.	Which STEM majors enroll in online courses, and why should we care? The impact of ethnicity, gender, and nontraditional student characteristics	How can we increase minority group's enrollment in online courses at the same rate as White students, especially in STEM Programs?	Quantitative	Hispanic and Black STEM majors were significantly less likely to enroll online while females and nontraditional characteristic STEM student majors were significantly more likely to enroll online.
2015	Nam, C. W.	Effects of Technology Immersion on Middle School Students' Learning Opportunities and Achievement	How can we find methods for using digital storytelling as an instructional strategy for improving online collaborative learning	Qualitative	The overall results indicated that after each group took part in the treatment during online collaborative learning activities, groups had significantly higher social presence.

2015	Zlatović, M., Balaban, I., & Kermek, D.	Using online assessments to stimulate learning strategies and achievement of learning goals	effectiveness> Can Learning strategies be stimulated by announcing appropriate online assessments?	Mixed-Method	Results indicate that students' learning strategies can be influenced in a relatively short period of time by announcing various types of online assessments
2015	Auvinen, T., Hakulinen, L., & Malmi, L.	Increasing Students' Awareness of Their Behavior in Online Learning Environments with Visualizations and Achievement Badges	How to increase interaction with course materials and finding best practices?	Qualitative	The results indicate that increasing students' awareness of their behavior can have a positive impact on their study practices and results.
2015	Shaw, A., & Krug, D.	Heritage Meets Social Media: Designing a Virtual Museum Space for Young People	Can social media sites support sociocultural understandings of learning and identity formation?	Qualitative	Concluded that to engage youth such a site must both allow for and encourage participation, communication, and collaboration.
2016	You, J. W. (2016). Identifying significant indicators	Identifying significant indicators using LMS data to predict	How can LMS help predict student achievement	Quantitative	Significant indicators from the LMS data on course achievement

	using LMS data to predict course achievement in online learning.	course achievement in online learning	nt in online courses?		were identified.
	<i>The Internet and Higher Education</i> , 29, 23-30. Doi: 10.1016/j.jiheduc.2015.11.003				
2016	Kim, G. M.	Transcultural Digital Literacies: Cross-Border Connections and Self-Representations in an Online Forum	How can we examine informal, nonlocal, and digitally mediated literacy practices and their implications for understanding a dynamic literacy landscape and multicultural and global learning?	Qualitative	Online multimodal literacy practices allowed them to disrupt a notion of identity as constituted monolithically according to singular categories of difference, such as race, ethnicity, or nationality.
2016	Tan, C. Y., & Hew, K. F.	Information technology, mathematics achievement and educational equity in	How does access to home and school IT resources impacted student	Quantitative	Student achievement benefited from their access to home IT resources.

		developed economies	mathematics achievement?		
2017	Gyamfi, G., & Sukseemuang, P.	EFL Learners' Satisfaction with the Online Learning Program, Tell Me More	How learners' perceptions influence their satisfaction and how it translates to overall learners' achievement?	Qualitative	The results indicated that the learners perceived TMM moderately useful and easy to use for learning English.
2017	Wang, F. H.	An exploration of online behavior engagement and achievement in flipped classroom supported by learning management system	How to promote engagement and achievement in flipped classroom?	Qualitative	Findings demonstrate that engagement in problem-solving activities has a significant effect on achievement.
2017	Carabajal, I. G., Marshall, A. M., & Atchison, C. L.	A Synthesis of Instructional Strategies in Geoscience Education Literature That Address Barriers to Inclusion for Students with Disabilities	How can we help make education equitable in virtual education?	Qualitative	The purpose of highlighting this collection of literature is to encourage the use of more equitable and inclusive instructional strategies, including alternative strategies and

2017	Bitting, K. S., Mccartney, M. J., Denning, K. R., & Roberts, J. A.	Conceptual Learning Outcomes of Virtual Experiential Learning: Results of Google Earth Exploration in Introductory Geoscience Courses	How does the use of technological tools impact student learning?	Quantitative	virtual learning environments Analyses show that learning from the Google Earth exploration activity is highly significant overall and for all but one of the concept inventories items.
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Appendix B: Introductory Email Letter

Dear Fellow Educators,

My name is Autumn Reyes-Sokolowsky and I am a doctoral candidate at Concordia University–Portland. I am currently conducting my research for my Dissertation. I am looking to elicit 20 teacher volunteers for my study to participate in an interview. The purpose of the study is to explore teachers’ perceptions of internal and external factors influencing students’ academic achievement in online courses. No one will be paid to be in the study. To be in the study, you will need to complete and submit your written consent form and then complete a face-to-face interview. There are limited risks to participating in this study which include providing your honest feedback and your information. However, we will protect your information. Any personal information you provide will be coded so it cannot be linked to you. Information you provide will help determine if there are certain factors that influence students’ academic performance in online courses. You could benefit this by providing valuable insight to educators and other education stakeholders in creating online course content that meets the needs of online learners and leads to an increase in their success.

Thank you in advance for your participation.

Sincerely,

Appendix C: Consent Letter of Participation

Research Study Title: Teacher’s Perceptions on the Factors Influencing Students’ Academic Performance in Online Courses
Principal Investigator: Autumn Reyes-Sokolowsky
Research Institution: Concordia University–Portland
Faculty Advisor: Dr. Libi Shen

Purpose and what you will be doing:

The purpose of the study was to explore teachers’ perceptions of internal and external factors influencing students’ academic achievement in online courses. We expect approximately 20 volunteers. No one will be paid to be in the study. We will begin enrollment on _____ and end enrollment on _____. To be in the study, you will need to complete and submit your written consent form and then complete a face-to-face interview.

Risks:

There are limited risks to participating in this study which include providing your honest feedback and your information. However, we will protect your information. Any personal information you provide will be coded so it cannot be linked to you. Any name or identifying information you give will be kept securely via use of pseudonyms and a lock box. When we or any of our investigators look at the data, none of the data will have your name or identifying information. We will only use a secret code to analyze the data. We will not identify you in any publication or report. Your information will always be kept private and then all study documents will be destroyed 3 years after we conclude this study.

Benefits:

Information you provide will help determine if there are certain factors that influence students’ academic performance in online courses. You could benefit this by providing valuable insight to educators and other education stakeholders in creating online course content that meets the needs of online learners and leads to an increase in their success.

Confidentiality:

This information will not be distributed to any other agency and will be kept private and confidential. The only exception to this is if you tell us abuse or neglect that makes us seriously concerned for your immediate health and safety.

Right to Withdraw:

Your participation is greatly appreciated, but we acknowledge that the questions we are asking are personal in nature. You are free at any point to choose not to engage with or stop the study. You may skip any questions you do not wish to answer. This study is not required and there is no penalty for not participating. If at any time you experience a negative emotion from answering the questions, we will stop asking you questions.

Contact Information:

You will receive a copy of this consent form. If you have questions you can talk to or write the principal investigator, Autumn Reyes-Sokolowsky at email [redacted]. If you want to talk with a participant advocate other than the investigator, you can write or call the director of our institutional review board, Dr. OraLee Branch (email obranch@cu-portland.edu or call 503-493-6390).

Your Statement of Consent:

I have read the above information. I asked questions if I had them, and my questions were answered. I volunteer my consent for this study.

_____	_____
Participant Name	Date
_____	_____
Participant Signature	Date
_____	_____
Investigator Name	Date
_____	_____
Investigator Signature	Date

Investigator: Autumn Reyes-Sokolowsky email: [redacted]
c/o: Professor Dr. Libi Shen
Concordia University–Portland
2811 NE Holman Street
Portland, Oregon 97221

Appendix D: Interview Questions

1. What do you perceive as the internal factors, such as student characteristics, that impact students' academic performance in online courses?
2. What impact do internal characteristics, such as ethnicity/language, gender and age, have on students' online achievement?
3. What do you perceive as external factors, such as course design, that impact students' academic performance in online courses?
4. What impact do external factors, such as technology proficiency/literacy, course design/curriculum, parent support, teacher support/teaching strategies and motivation have on students' online achievement?
5. What do you think are the most significant internal/external factors that impact online students' success?
6. Why do you think they are the most significant internal and/or external factors that impact online students' success?
7. How do you perceive the relationship between student characteristics and other factors such as technology literacy, course design, instructor interaction, and so forth, on students' success?
8. If achievement gaps exist in online courses, what would you suggest as ways to implement best practice?
9. What suggestions do you have to improve students' online performance based on those factors?

Appendix E: Focus Group Discussion

1. What factors do you believe impact students' academic performance online most?
2. Why do you believe those factors impact students' academic performance most?
3. How do the high school Administration support you to improve students' academic performance online?
4. What support would you suggest school district Administration to help improve students' academic performance online?

Appendix F: Summary of the Findings from Teacher Interviews

Interview Categories	Themes and Participants' Codes
Most impactful factors	Drive/motivation (P1, P2, P4, P7, P8, P11, P14, P18) Parent Support (P3, P7, P11, P12) Teacher support (P5, P17) Course Design (P19, P20) Personality (P9, P15) Home life (P7) Ability to balance (P10) Technology proficiency (P8) Economics (P12) Communication (P14) Ethnicity (P12) Exposure (P16)
External factors	Parent Support (P1, P2, P3, P5, P6, P7, P8, P12, P13, P14, P15, P16, P18, P20) Course Design (P3, P4, P6, P8, P12, P14, P17, P18, P19, P20) Teacher Support (P1, P2, P5, P6, P8, P12, P13, P14, P16, P17, P18, P19) Communication (P1, P2, P5, P6, P8, P12, P13, P14, P16, P17, P18, P19) Access to technology (P5, P7, P16, P20) Home life (P1, P3, P7, P9) Economics (P12, P13, P16) Technology proficiency (P13, P17) Extracurricular Activities (P9, P19) Age (P11)
Internal factors	Drive/motivation (P1, P2, P3, P5, P6, P7, P8, P10, P13, P14, P16, P17, P18, P20) Age (P2, P7, P8, P14, P16) Organizational skills (P3, P6, P9, P10, P12) Gender (P5, P7, P9, P15) Personality (P9, P15) IQ (P7, P10) Learning style (P17, P19, P20) Ethnicity (P12)
Relationship between external and internal Factors	External most important (P1) Internal most important (P9, P14) External/Internal work together (P2, P3, P4, P5, P6, P7, P8, P10, P11, P12, P13, P15, P16, P17, P18, P20)
Suggestions to improve academic success	Communication/Relationships (P3, P5, P10, P13, P14, P17, P19) Additional Resources/support (P1, P2, P4, P6, P7, P8, P9, P11, P12, P15, P18, P20)

Appendix G: Summary of Findings from the Focus Group Discussion

Interview Categories	Themes and Participants' Codes
Most impactful factors	Drive/motivation (P2, P7, P8, P14, P18) Parent Support (P7) Teacher support (P17) Home life (P7) Technology proficiency (P8) Communication (P14)
Suggestions to improve academic success	Communication/Relationships (P17) Additional Resources/support (P2, P7, P8)

Appendix H: Factors Impacting Student Success Online

Participant	Overall Factors that Impact Success	External Factors that Impact Success	Internal Factors that Impact Success	Relationship between Internal and External Factors
Participant 1	Drive/Parent support	Parent support/background/teacher role	Drive	External is most important
Participant 2	Motivation	Parent support/teacher strategy	Motivation/Age	Internal/external work together
Participant 3	Parent support	Homelife/parent support	Organization	Internal/external work together
Participant 4	Internal motivation	Course design	Intrinsic drive/Age	Internal/external work together
Participant 5	Communication	Access to resources/teacher and parent communication	Self-motivation/gender	Internal/external work together
Participant 6	Homelife	Design of course/Teacher and parent involvement	Motivation/organization	Internal/external work together
Participant 7	Desire to succeed/Parent background + support	Home environment/access to technology/parent support	Motivation/IQ/Gender	Internal/external work together
Participant 8	Motivated/Technology proficiency	Teacher style/Course design/parent support	Motivation/ability/age	Internal/external work together
Participant 9	Personality	Family life/extracurricular activities	Personality/organization/gender	Internal most important
Participant 10	Balance of factors	Access to technology/parent and teacher support	Motivation/IQ/organization	Internal/external work together
Participant 11	Perseverance/Parent support	Perseverance/drive/age	Economics/Parent involvement/reading level	Internal/external work together
Participant 12	Economics/Ethnicity/parent involvement	Economics/course design/teacher and parent support	Student skills/ethnicity	Internal/external work together

Participant 13	Self-discipline/Access to resources/technology proficiency	Family support/economics/technology proficiency/teacher communication	Motivation/drive	Internal/external work together
Participant 14	Intrinsic motivation/Teacher support	Course design/teacher and parent support	Intrinsic motivation/age	Internal most important
Participant 15	Personality	Ability to self-teach/parent support	Personality/Age	Internal/external work together
Participant 16	Early exposure to technology	Economic background/exposure to technology/parent and teacher support	Focus/time management/age	Internal/external work together
Participant 17	Relationship building	Teacher support/technology proficiency/engaging course	Motivation/Learning style	Internal/external work together
Participant 18	Motivation/drive/organization	Course design/extracurricular activities/teacher and parent support	Motivation/drive/organization/age	Internal/external work together
Participant 19	Design of course	Course design/teacher support	Learning style	Internal/external work together
Participant 20	Self-pace	Wi-Fi access/distractions/decide of course/parent support	Motivation/learning style	Internal/external work together

Appendix I: Statement of Original Work

The Concordia University Doctorate of Education Program is a collaborative community of scholar-practitioners, who seek to transform society by pursuing ethically-informed, rigorously- researched, inquiry-based projects that benefit professional, institutional, and local educational contexts. Each member of the community affirms throughout their program of study, adherence to the principles and standards outlined in the Concordia University Academic Integrity Policy. This policy states the following:

Statement of academic integrity.

As a member of the Concordia University community, I will neither engage in fraudulent or unauthorized behaviors in the presentation and completion of my work, nor will I provide unauthorized assistance to others.

Explanations:

What does “fraudulent” mean?

“Fraudulent” work is any material submitted for evaluation that is falsely or improperly presented as one’s own. This includes, but is not limited to texts, graphics and other multi-media files appropriated from any source, including another individual, that are intentionally presented as all or part of a candidate’s final work without full and complete documentation.

What is “unauthorized” assistance?

“Unauthorized assistance” refers to any support candidates solicit in the completion of their work, that has not been either explicitly specified as appropriate by the instructor, or any assistance that is understood in the class context as inappropriate. This can include, but is not limited to:

- Use of unauthorized notes or another’s work during an online test
- Use of unauthorized notes or personal assistance in an online exam setting
- Inappropriate collaboration in preparation and/or completion of a project
- Unauthorized solicitation of professional resources for the completion of the work.

Statement of Original Work

I attest that:

1. I have read, understood, and complied with all aspects of the Concordia University–Portland Academic Integrity Policy during the development and writing of this dissertation.
2. Where information and/or materials from outside sources has been used in the production of this dissertation, all information and/or materials from outside sources has been properly referenced and all permissions required for use of the information and/or materials have been obtained, in accordance with research standards outlined in the *Publication Manual of The American Psychological Association*.

Autumn Reyes-Sokolowsky

Digital Signature

Autumn Reyes-Sokolowsky

Name (Typed)

3/15/2020

Date