INVESTIGATING STUDENT SATISFACTION AND RETENTION IN ONLINE

HIGH SCHOOL COURSES

A Record of Study

by

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ABSTRACT


Caddo Parish Public Schools (CPPS) provides virtual courses via

Education2020.com for students wanting to accelerate their studies or repeat

coursework.  Currently, anecdotal comments from students, parents, and school

personnel and student data are the only feedback CPPS uses to evaluate its online

program.  The purpose of the current study was to assess student satisfaction and

retention in the CPPS summer school program.  I employed a mixed methods approach,

utilizing the district's database and responses from student surveys and interviews to

analyze student academic performance, evaluate variables, and understand student

experiences from the 2013 CPPS online summer school program.  Student participants

were sorted into four unique groups:  (a) students taking a course for the first time

who subsequently earned course credit, (b) students taking a course for the first time

who subsequently did not earn course credit, (c) students repeating a course

who subsequently earned course credit, and (d) students repeating a course

who subsequently did not earn course credit.  For the purposes of this study,

student participants identified as repeating a course had completed the original course in

either (a) a face-to-face classroom or (b) an online environment.  Independent $t$-tests

were used to determine whether statistically significant differences existed between

student populations.

Results from significance testing of data from the Education2020.com database

for CPPS students revealed no statistically significant differences among demographic

and academic variables. Similarly, only trivial effect sizes were identified. Student survey and interview responses affirmed that higher student satisfaction was associated with enrollment in electives, students who earned credit, students who repeated courses, and female students. Students who earned credit were self-motivated, investing considerable time and effort into their courses. Conversely, students who did not earn credit did not accept personal responsibility for their learning and had difficulty with course pacing. Data from this record of study indicate that helping students adopt effective learning strategies raises their chances of completing their online courses and increasing their satisfaction with the online program.

DEDICATION

I dedicate this work to the memory of my mother, Carolyn Susan Taylor Haley, whose lifelong passion for learning and compassion for others is my inspiration. Mom knew the power of learning to change lives. As a founding faculty member in the nursing program at Louisiana Tech University, she loved her students and demanded their very best work. In the same way, she encouraged and challenged her children to give their all to pursue their dreams and help others. Mom was thrilled when I began the doctoral program but passed away from pancreatic cancer during my first semester. This one is for both of us, Mom!

In February, 2014, I lost a second great encourager, my mother-in-law, Billie Richardson Rogers. She was a great supporter of all of my endeavors and just as proud as my own mother. I miss her greatly, but I know she joins Mom in rejoicing in this accomplishment.

Finally, I dedicate this work to the memory of my grandparents. My paternal grandparents, F. C. and Gladys Haley, served as career educators in Louisiana and Arkansas, touching the lives of thousands of students showing them the importance of education. Mr. and Mrs. Haley nurtured in their children and grandchildren a hunger and excitement for learning. My maternal grandparents, James and Sarah Taylor, ministered across the South while my grandfather served as a pastor. The Taylors shared the Bread of Life, knowing the power of studying the Gospel. What a legacy each grandparent left for our families.

ACKNOWLEDGEMENTS

## NOMENCLATURE

CPPS            Caddo Parish Public Schools

E2020           Education2020.com

E-notes         Electronic Notes Created by Students in the Online Program

PSOL            Noel-Levitz Priorities Survey for Online Learners

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Widespread access to computers and the advancement of academic software have opened new avenues to extend learning opportunities beyond traditional face-to-face classrooms.  A combination of shrinking budgets and growing demand for industry certifications and college degrees has led to the expansion of online course offerings at the same time that increased home access to computers and familiarity with technology have prepared students for the shift to limitless learning.  Offering the flexibility to accommodate the busy schedules of today's students, virtual courses have quickly gained popularity with students of all ages (Cavanaugh & Blomeyer, 2007; Schrum & Hong, 2002).

Nagel (2009) estimated as many as 12 million students were enrolled in online courses in 2009 and predicted exponential growth to 22 million students by 2014.  Rapid growth has caused academic concerns, however, because of the significantly lower retention rate of online students (Carr, 2000; Roblyer, Davis, Mills, Marshall, & Pape, 2008) at a time when schools already struggle with accountability.  As a result, numerous studies have investigated elements related to student retention in online classes as well as possible variables predicting student success (DiPietro, Ferdig, Black, & Preston, 2008; Kirby, Barbour, & Sharpe, 2012; Roblyer et al, 2008; Roblyer & Marshall, 2003; Schrum & Hong, 2002; Volery & Lord, 2000; Yukselturk & Bulut, 2007).  Researchers struggle to identify crucial factors for student online success to

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improve experiences for the increasing numbers of online learners (O'Dwyer & Kleiman, 2007; Sun, Tsai, Finger, Chen, & Yeh, 2008).

## Problem

Caddo Parish Public Schools (CPPS) is a public school system serving approximately 40,000 students in Shreveport, Louisiana, and surrounding small towns in northwest Louisiana. The school district provided virtual courses via Education2020.com for students who wanted to accelerate their studies or repeat coursework. The school system began using Education2020.com in 2009; however, CPPS has not performed a formal evaluation of its online program. Therefore, district officials are making administrative, curricular, and financial decisions based on limited data about its online program. Currently, anecdotal comments from students, parents, and school personnel and student data were the only feedback CPPS used to evaluate its online program.

## Justification

Caddo Director of Assessment and School Support Rosemary Woodard, Chief Academic Officer Antionette Turner, and school personnel who helped implement the online program agreed on a need for more comprehensive study of the district's virtual platform and shared a concern for the numbers of students who enroll but do not successfully complete online courses. A comprehensive study would help the school district (a) evaluate the effectiveness of its current online program and (b) explore the feasibility of developing a separate, high quality virtual school. To date, the only compiled district data was the quantitative data of the Education2020.com website that

maintained student scores and login data.  This study included an examination of student

data from the district's www.education2020.com database including student retention,

time to completion, and grades, as well as data from surveys and follow-up interviews to

assess students' satisfaction in the Caddo Schools 2013 summer online program.

## Purpose

The purpose of the current study was to assess student satisfaction and retention

in the CPPS 2013 online summer school program.  I employed a mixed methods

approach, utilizing the district's database and student surveys and interviews to analyze

student academic performance, evaluate variables, and understand student experiences

from the 2013 CPPS online summer school program.  Lessons learned from the study

could inform future district decisions pertaining to the implementation, support, and

potential growth of the virtual program.

## Context

The CPPS 2013 online summer school program for students in grades 6-12 was

held Monday through Thursday from 7:30 AM to 1:00 PM from June 3-August 1, 2013

at Captain Shreve High School, selected for its large number of available computer labs.

There was no separation of summer school into semesters because student progression

was dependent upon the rate of each student.  Students were able to enroll in courses any

time during the weeks of summer school in courses deemed appropriate per the student's

home school counselor.  Students had 24-hour access to their online coursework from

any computer with an Internet connection; however, they were required to attend daily

on-site classes in a computer classroom to participate in the blended format of computer

instruction, classroom mentoring, and test monitoring by a certified teacher. Once

students earned course credit with a grade of 67 or higher, they finished summer school

and stopped attending classes unless they enrolled in another summer school course.

Certified teachers served as mentors and facilitators within their content areas, assisting

students individually and in small and large groups as needed. In addition, the teachers

monitored student progress through the online platform to encourage students and help

students stay on track to complete their courses.

## Guiding Questions

To maintain a focus on student retention and satisfaction in the online summer

program, I developed four guiding questions to use throughout the development of the

student surveys and interviews. Furthermore, the four questions drove my decisions of

which student data to collect from the online database.

This study addressed the following research questions:

1. How did student demographic and academic variables relate to student satisfaction?
2. What did an analysis of the information about student retention in the online program reveal?
3. How did student satisfaction correlate to earned credit?
4. What were common traits for students who earned course credit?

## Limitations

This study was limited to an examination of the CPPS 2013 summer school

program and the students who enrolled in the 303 half-credit high school courses. Study

findings may be generalizable to districts with similar online programs, student

populations, and program conditions. Although CPPS utilizes Education2020.com for

all of its online courses, the population of students attending summer school was not

entirely representative of the population of students enrolled in academic-year courses. Students in summer school paid $250 in tuition per half-credit course pursued to cover facility and administrative costs and provided their own daily transportation to and from the site. Furthermore, summer students were restricted to enrolling in only one course at a time, whereas students enrolled during the school year had to concurrently manage additional course loads. The combination of factors from the CPPS summer program constrains its implications to other settings.

## Literature Review

The field of online learning is still in its emerging stage, especially for secondary students. The majority of virtual courses continue to be offered for post-secondary students; however, vendors have begun extending their course development to reach secondary and elementary students (Liu & Cavanaugh, 2012). Although online courses were once offered mainly to top performing students, many schools have expanded their online courses to target more diverse student populations (Hawkins, Graham, Sudweeks, & Barbour, 2013).

Results from prior research of online learning laid a foundation for additional studies. The early emphasis on college courses yielded numerous studies targeted toward comparisons of student grades between online and face-to-face courses to justify the validity of online courses (i.e., Ferguson & DeFelice, 2010; Horspool & Lange, 2012; Neuhauser, 2002; Rodgers, 2008). Alternatively, other studies examined potential benefits of utilizing hybrid formats to combine online instruction with face-to-face or

virtual environments in order to strengthen communication with students (Alstete &

Beutell, 2004). Researchers continue efforts to validate online lessons.

Very little information is available describing student retention in online

programs; most studies merely give a percentage of students who fail to complete the

course. Dedicated to retaining students struggling in their online courses, researchers

examined the variables of student technology skills and locus of control (Roblyer &

Marshall, 2003), learning styles (Neuhauser, 2002), and ease of access to and comfort

level with technology (Schrum & Hong, 2002). Studies demonstrated that when

teachers enriched student-to-student and student-to-instructor communication, students

felt more connected and viewed their learning experiences as more effective (Ferguson

& DeFelice, 2010; Schrum & Hong, 2002; Yukselturk & Bulut, 2007). Additional

research indicated that students preferred instructors who supported learners with

ongoing communication and opportunities to help them become more comfortable with

technology, rather than directing great effort to provide cutting-edge technologies

(Alstete & Beutell, 2004). Students uncomfortable with new technology had difficulty

focusing on the content of the lessons (Schrum & Hong, 2002). Teachers who focused

on supporting their online students increased student retention and academic success

(Kruger-Ross & Waters, 2013; Schrum & Hong, 2002; Volery & Lord, 2000).

Identification of critical variables for student performance in online programs

continues to be elusive. Researchers examining student achievement concluded that

grades were comparable in online versus face-to-face courses (Horspool & Lange, 2012;

Neuhauser, 2002); however, online students consistently reflected a lower completion

rate than students in traditional courses and programs (Carr, 2000; Patterson & McFadden, 2009).  Although still in preliminary stages, early statistics point to possible factors reducing the number of online course completions and retention in online programs such as a lack of personal contact with teachers, shortage of teacher training and experience with online programs, and overloads on student schedules whose busy lifestyles led them to select an online program (Carr, 2000).  Patterson and McFadden (2009) discovered that older college students were more likely to drop out of online graduate programs, a trend consistent with traditional programs.  Hawkins et. al (2013) also found identified an association linking high quality and frequent communications between teachers and students and an increase in course completions.  Additional studies are needed to clarify factors related to course completions.

Although studies concluded that students preferred online courses due to schedule flexibility and convenience, traditional students expressed more satisfaction with their learning experiences (Horspool & Lange, 2012).  Studies comparing student characteristics found that latent learners were more easily distracted from their lessons and earned grades lower than those earned by their peers (Kruger-Ross & Waters, 2013).  Taken together, this information yields several concerns for K-12 educators as they develop virtual programs for their emerging learners.

## Missing Information

Much information remains to be learned about the variables related to student satisfaction and retention of high school students in the 2013 CPPS summer school online program.  The school district seeks to improve the rate of retention in online

courses so that students earn course credits. Additionally, student satisfaction will be explored as it relates to course completions. As CPPS financial constraints cause greater reliance on online courses, the district's focus continues to consider the most appropriate teaching methods. A common misbelief about online learning is that virtual programs decrease the needed number of teaching faculty, thereby reducing faculty overhead without sacrificing educational benefit (Ramsden, 1998). Research has shown, however, that unless a significant investment in more faculty and high-quality training accompany the development of an online program, students and teachers may become frustrated, and attrition rates may be high (Schrum & Hong, 2002). Operating without a strong understanding of student, faculty, and program attributes, schools may not be able to provide sufficient supports to ensure student retention and satisfaction.

Through this study, I addressed the gap in the literature about retaining students in online programs. One of the strengths of my study was the addition of the qualitative nature of the student surveys and interviews to ask the students for their comments regarding program strengths and weaknesses and to help describe their experiences. My focus on both student retention and satisfaction was a deliberate effort to evaluate the quality of the district's online program and judge the support given to our students. As Louisiana continues its mandate to increase graduation cohort rates, the pressures compound our district's struggles to differentiate instruction to our diverse population. Lessons learned will help CPPS improve student retention in its online courses.

Only a limited number of rigorous, empirical studies of online programs have been published in peer-reviewed journals. Although a lack of extant research helped

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build the case for my study, it caused a need for greater investment in the development of my instruments and protocol.  Having to create my own questions, however, made the study more applicable to the population of the CPPS online courses and, therefore, more beneficial to the school district.  The predicted growth of online programs is expected to increase the number of published studies focused on essential factors for student successes.

CHAPTER II

METHODS AND RESULTS

**Rationale for Mixed Methods**

Johnson and Onwuegbuzie (2004) defined mixed methods research as "the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language into a single study" (p. 17). Woolley (2009) described the purpose of questions in mixed methods studies to explore "what and how or what and why" (p. 8). Creswell and Clark (2007) reported that collecting and evaluating quantitative data allows, through analysis of data from many participants, a development of broad descriptions and generalizability. Alternatively, collecting and evaluating qualitative data reduces the researcher's focus to a small group of participants but promotes a greater understanding of the participants' lived experiences (Creswell & Clark, 2007) and captures the descriptions from the participants' stories (Johnson & Onwuegbuzie, 2004). Utilizing mixed methods can enrich a study by combining the strengths of each practice (Creswell & Clark, 2007; Johnson & Onwuegbuzie, 2004) and provide a more accurate account of the participants' experiences (Lund, 2012).

To assess student satisfaction and retention in the CPPS 2013 summer school program, I selected a mixed methods approach. Quantitative data from the Education2020.com database provided the data about student progress with trends that could be compared. This study, however, focused on student satisfaction and retention in the 2013 CPPS summer school program. Without gathering information about the

students' experiences, I would not have been able to identify variables related to the student satisfaction and retention. Therefore, collecting qualitative data was important because I could capture student responses emphasizing which variables affected student satisfaction and retention. The qualitative responses summarized the stories behind the quantitative data. I gathered the most appropriate data to answer the research study questions, a technique suggested by Creswell (2014).

For this study, I concentrated on interpreting the quantitative data from the Education2020.com database and combined the data with students' qualitative responses to the surveys and interview questions to elucidate student experiences in the CPPS 2013 online summer school program. I followed the recommendations of Creswell (2007) who urged researchers to focus on the experiences of the participants, and Seidman (2006) who argued for the use of interviewing as the best technique to explore the lived experiences of others. The combination of quantitative and qualitative methodologies has been shown to facilitate exploration of relationships between the study variables and participant experiences (Klingman & Boardman, 2011). The resulting analyses gave meaning to correlations of the quantitative and qualitative data.

## Data Collections

### Quantitative Data

I analyzed information from the Education2020.com database to determine whether there were statistically significant differences in academic performance among student populations. Student participants were sorted into four unique groups: (a) students taking a course for the first time who subsequently earned course credit, (b)

students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. For the purposes of this study, student participants identified as repeating a course had completed the original course in either (a) a face-to-face classroom or (b) an online environment.

I used independent *t*-tests to determine whether there were any statistically significant differences between academic performances of student groups. The null hypothesis was, "There are no statistically significant differences among academic performances of the four groups of students." Significance was set at $\alpha=.05$ for determination of whether to reject the null hypothesis. I downloaded CPPS student data from the Education2020.com website and conducted independent *t*-tests of multiple variables via IBM SPSS Statistics Software Version 22. I calculated effect sizes using Hedges' g, which takes into account the sample size when determining standard deviation (Ellis, 2009). Capraro (2004) demonstrated the importance of providing effect sizes for determination of determining statistical significance. In addition to examining data from the Education2020.com database, I collected and analyzed participant responses from student surveys and student interviews to understand the student experiences from the CPPS 2013 online summer school. Student responses to qualitative questions in the student surveys and student interviews yielded information unavailable from the Education2020.com dataset and assisted with the analysis of possible variables within the CPPS summer school program.

**Qualitative Data**

For this study, I used a mixed methods approach with priority on qualitative

analyses to address the following research questions:

1. How did student demographic and academic variables relate to student satisfaction?
2. What did an analysis of the information about student retention in the online program reveal?
3. How did student satisfaction correlate to earned credit?
4. What were common traits for students who earned course credit?

I collected qualitative data June–November of 2013 through student surveys and

interviews from three separate sources: (a) CPPS Online Student Demographics and

Satisfaction Survey, (b) Follow-up CPPS Online Student Survey for Maximum

Variation, and (c) CPPS Online Course Student Exit Interviews, removing student

identifiers from student responses and replacing them with demographic codes. I

followed the five-step inductive coding procedure recommended by Thomas (2006): (a)

formatting raw data, (b) careful reading of the text, (c) developing categories, (d)

examining uncoded text and overlapping codes, and (e) refining codes. Then I

transcribed the raw data from each source into separate Excel spreadsheets and cleaned

the data according to recommendations by Creswell and Clark (2011). I printed files for

reading during multiple iterations and reviewed the files to identify themes within the

qualitative data.

I carefully reviewed, marked, and categorized student comments, highlighting

passages that caught my attention as an outlier, a rich description or explanation, or

comments especially noteworthy, per recommendations by Seidman (2006) and

Creswell (2007). Using the constant comparative strategy (Thorne, 2000), I reviewed

student responses and the notes I had written. I examined the data, grouping student responses into similar themes and grouping student profiles with similar characteristics, using used the procedure from Seidman (2006). After examining the notes I had written in the margins, I explored emergent themes as I constantly reviewed my research questions while comparing responses from students of the following four unique groups: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. I re-read student responses and used tally marks to identify which of my initial 15 themes were the most common.

I reviewed student comments to sort them into meaningful categories. When I recognized some of the codes overlapped, I studied responses and groupings to determine which codes to combine. Examples of overlapping codes were the designated codes of streamline, alignment, progress bar, and pacing, which I combined into one category that I called lesson duration related to the design of the online lessons. Similarly, I combined my original codes for learning strategies, review, and student pacing into one group called student strategies, which described student methodologies to learn the content.

During the final reading of student responses, I grouped responses in each data source into the newly revised six themes. Then, I created a frequency distribution with the coded information from all three data sources and the four types of students because

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I was seeking an understanding of student experiences from each student perspective and similarities and differences between the groups. Using methods by Guest, Bunce, and Johnson (2006), I concluded additional student responses yielded saturated data. Therefore, I triangulated my data and searched for disconfirming evidence.

## Instruments and Interview Protocols

Within my duties as CPPS Supervisor of Science for High Schools, I developed and distributed student surveys to collect qualitative student responses about the CPPS 2013 summer school program. The CPPS Online Student Demographics and Satisfaction Survey (see Appendix A) contained 21 questions and followed the format of the collegiate Priorities Survey for Online Learners (PSOL) (Priorities Survey for Online Learners, 2014).

The PSOL uses Likert-type scales to rank variables related to institutional, academic, student, instructional, and enrollment services with nationally normed findings to help colleges compare their programs to other virtual programs across the U.S. (Priorities Survey for Online Learners, 2014). For this study, I was interested in academic and student variables related to the CPPS 2013 online virtual summer school program, which led me to create student surveys with some questions similar to those posed in the PSOL. Just as colleges want to learn how their students rate their online experiences, I wanted to know how 2013 CPPS summer school students rated their experiences.

The Follow-up CPPS Online Student Survey for Maximum Variation (see Appendix B) contained open-ended questions to collect student responses revealing

supplementary qualitative data about the CPPS summer program. I was careful to invite students who had not earned course credit to participate in the follow-up survey. Data from both surveys helped describe student experiences.

After studying the student responses from the CPPS Online Student Demographics and Satisfaction Survey and the Follow-up CPPS Online Student Survey for Maximum Variation, I realized a need for additional information from the students. I referred to my research questions and developed two sets of interview questions, one set to ask students who had earned course credit, and one set to ask students who had not earned course credit. I conducted CPPS Online Course Student Exit Interviews with sample populations from the (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit to collect more information about their satisfaction and retention in the summer program. Information from the student interviews was studied to understand student experiences from the CPPS 2013 summer school program.

## Participant Selection

Selection of the most appropriate sampling methods for a study is necessary to represent study populations accurately (Creswell, 2007; Fitzpatrick, Sanders, & Worthen, 2011). As students earned course credit or withdrew from the program, they were sorted into four unique groups: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time

who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. For the purposes of this study, student participants identified as repeating a course had completed the original course in either (a) a face-to-face classroom or (b) an online environment. I recognized the importance of appropriate student sampling for this study.

After sorting participants into the four groups of students, I chose the most suitable sampling technique for each subsequent instrument. I designed the CPPS Online Student Demographics and Satisfaction Survey and utilized criteria sampling (Creswell, 2007) to collect data about student experiences. I invited all students who met the criteria of having a signed IRB parent permission slips and students 18 years or older who completed a student consent form to complete the survey after they earned course credit or withdrew from their course. Fulfilling one of my roles as a CPPS supervisor, I administered the surveys and invited all students under the age of 18 with parental consent and students 18 or older enrolled in the program to complete the CPPS Online Student Demographics and Satisfaction Survey after they either (a) earned course credit or (b) withdrew from their course. Upon examination of the student responses, I realized that the student sample did not include any students who withdrew from their courses. I knew it would be important to collect data from students who had not earned course credit and I would need a different sampling method for subsequent data sources.

To increase the diversity of students invited to participate, for Maximum Variation, in the Follow-up CPPS Online Student Survey, I used sampling techniques targeted to increase the variability of my groups. After students earned course credit or withdrew from their course, they were sorted into four groups: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. I employed maximum variation sampling described by Creswell (2007), which "documents diverse variations and identifies important common patterns" (p. 127) to invite student participants to complete the follow-up survey. Additional selection criteria included gender, grade level, content area, ethnicity, first-time or repeater status, and course completion status. I discussed participant selection with the summer school administrators and invited participants until I had representative samples of each student category. My use of criteria sampling expanded the diversity of the participant pool to invite students from a range of courses and levels of success in the summer program.

To extract reasons for student responses and to develop a better understanding of student experiences in the CPPS online summer program, I repeated the same process of categorizing and inviting students from each of the four categories for the CPPS Online Course Student Exit Interviews to include a range of students based on gender, grade level, content area, and ethnicity. Furthermore, I relied on student recommendations for additional suggested criteria such as females who struggled in Algebra II courses as I

continued participant selection until I collected repetitive student comments. I used the

resulting data to develop a more in-depth understanding of student satisfaction and

factors related to student retention in the CPPS online summer program.

## Sample Demographics and Population Demographics

The participants of this study were the students in grades 8-12 enrolled in the

CPPS 2013 summer school program held June 3–August 1, 2013. Participation in

summer school was voluntary. Students paid $250 in tuition per half-credit course and

provided their own transportation to and from the school. As a result, the summer

school population was not identical to the CPPS school-year general population.

Enrollment in summer school was open to any student meeting admissions criteria for

Louisiana public and non-public schools. Students enrolled in courses to accelerate their

studies, to take courses needed because of scheduling conflicts, or to repeat a course in

an effort to earn a higher grade.

For the purposes of this study, student participants identified as repeating a

course had completed the original course in either (a) a face-to-face classroom or (b) an

online environment. Students were permitted to enroll in only one summer school

course at a time. Once students earned course credit, they were allowed to enroll in

another course towards their graduation requirements. After students earned course

credit or withdrew from their course, they were sorted into four groups: (a) students

taking a course for the first time who subsequently earned course credit, (b) students

taking a course for the first time who subsequently did not earn course credit, (c)

students repeating a course who subsequently earned course credit, and (d) students

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repeating a course who subsequently did not earn course credit.  Students were counted in this study for each course in which they enrolled.

**Education2020.com Database**

Student demographics from the Education2020.com database were examined. During the 2013 CPPS summer school program, students enrolled in half-credit courses (N=303).  Ethnicities represented by the highest numbers of students were African Americans (173 students) and Caucasian (108 students).  Numbers of students identified as paying full price for lunch (180) exceeded students identified as paying free/reduced price for lunch (123).  Students in the eleventh grade (102) outnumbered their peers. Table 1 displays the demographics of the summer school student population.

**CPPS Online Student Demographics and Satisfaction Survey**

None of the students who withdrew from their online courses chose to participate in the CPPS Online Student Demographics and Satisfaction Survey; therefore, all of the participants (N=71) had earned course credit.  The survey contained 21 questions:  eight drop-down menu questions, three rating questions, eight multiple-choice questions, and two open-ended questions (see Appendix A for survey questions).  Of the 71 students completing the survey, 35 (49%) were Black, Afro-Caribbean, or African American and 23 (32%) were Non-Hispanic White or Euro-American.  Males represented 75% of the sampled population.  The highest percentages of students were grade 11 (52%) and grade 10 (21%).  Student demographics from the survey are shown in Table 2.

Table 1

*Student Ethnicity, Lunch Status, and Grade Levels with Pass Rates and First or Repeat Status from Education2020.com Database*

| | | | First | | | | Repeat | | | |
| | | | Credit | | No credit | | Credit | | No credit | |
| Demographic | Total | Pass rate | F | M | F | M | F | M | F | M |
|---|---|---|---|---|---|---|---|---|---|---|
| African American | 173 | 91% | 7 | 3 | 0 | 1 | 47 | 101 | 4 | 10 |
| Asian | 9 | 78% | 4 | 0 | 0 | 1 | 0 | 3 | 0 | 1 |
| Caucasian | 108 | 86% | 2 | 1 | 0 | 0 | 35 | 55 | 8 | 7 |
| Hawaiian | 1 | 100% | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| Hispanic | 8 | 88% | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 0 |
| Native American | 4 | 100% | 0 | 0 | 0 | 0 | 0 | 4 | 0 | 0 |
| Free/reduced lunch | 123 | 89% | 6 | 3 | 0 | 0 | 36 | 64 | 4 | 10 |
| Full price lunch | 180 | 90% | 7 | 1 | 0 | 2 | 47 | 106 | 9 | 8 |
| Grade  8 | 2 | 100% | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Grade  9 | 70 | 89% | 2 | 2 | 0 | 0 | 15 | 43 | 1 | 7 |
| Grade 10 | 77 | 84% | 2 | 1 | 0 | 1 | 26 | 41 | 1 | 5 |
| Grade 11 | 102 | 90% | 6 | 1 | 0 | 1 | 33 | 52 | 5 | 4 |
| Grade 12 | 52 | 85% | 1 | 0 | 0 | 0 | 9 | 34 | 6 | 2 |
| Total | 303 | 89% | 13 | 4 | 0 | 2 | 83 | 170 | 13 | 18 |

*Note*.  Students taking more than one course were counted for each enrollment.

Table 2

*Student Ethnicity, Age, and Grade Level by Reason for Enrollment from the CPPS Online Student Demographics and Satisfaction Survey*

| | | Get ahead | | Repeat | | Schedule conflict | |
|---|---|---|---|---|---|---|---|
| Variable | Total | F | M | F | M | F | M |
| Black, Afro-Caribbean or African American | 35 | 1 | 4 | 7 | 20 | 1 | 1 |
| East Asian or Asian American | 2 | 0 | 0 | 0 | 2 | 0 | 0 |
| Latino or Hispanic American | 3 | 0 | 0 | 0 | 2 | 0 | 1 |
| Non-Hispanic White or Euro-American | 23 | 0 | 1 | 7 | 15 | 0 | 0 |
| South Asian or Indian American | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Mixed | 3 | 0 | 1 | 1 | 1 | 0 | 0 |
| Prefer not to answer | 5 | 1 | 0 | 0 | 4 | 0 | 0 |
| 13 years | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| 14 years | 2 | 0 | 0 | 2 | 0 | 0 | 0 |
| 15 years | 7 | 0 | 1 | 0 | 4 | 0 | 2 |
| 16 years | 18 | 0 | 2 | 5 | 9 | 0 | 1 |
| 17 years | 25 | 0 | 0 | 6 | 19 | 0 | 0 |
| 18 years | 16 | 1 | 2 | 2 | 11 | 0 | 0 |
| 19 years | 2 | 0 | 0 | 1 | 1 | 0 | 0 |
| Grade  8 | 2 | 0 | 1 | 1 | 0 | 0 | 0 |
| Grade  9 | 7 | 0 | 1 | 1 | 3 | 0 | 2 |
| Grade 10 | 15 | 0 | 1 | 4 | 10 | 0 | 0 |
| Grade 11 | 37 | 2 | 3 | 8 | 23 | 0 | 1 |
| Grade 12 | 10 | 0 | 0 | 2 | 8 | 0 | 0 |
| Total | 71 | 2 | 6 | 16 | 44 | 0 | 3 |

*Note*.  All 71 student participants earned course credit.

## Follow-up CPPS Online Student Survey for Maximum Variation

Respondents (N=15) to the Follow-up CPPS Online Student Survey for Maximum Variation were students who had earned course credit (n=9) and who had not earned course credit (n=6).  The survey contained 11 questions:  three multiple-choice questions, two rating questions, and six open-ended questions (see Appendix A for

survey questions).  The majority of participants (80%) enrolled in courses as repeat

students.  Of the students surveyed, 40% were African American and 40% were

Caucasian.  More males (n=8) participated in the survey than females (n=7).

Demographic information for survey respondents is shown in Table 3.

As participants turned in their completed surveys, I added student demographic

information and first-time or repeater status to each form.  When the first student to

complete the survey asked for the ranking scale to answer the question about student

satisfaction with the lessons in Education2020.com, I realized the instructions failed to

provide a ranking system for student responses to the question number nine.  Therefore,

as students turned in their completed surveys, I asked the student participants to rank

their level of satisfaction with the Education2020.com lessons and record their rankings

on their surveys.  On the scale of 1-10, 1 represented lowest satisfaction, and 10

represented highest satisfaction.

Table 3

*Credits, Pass Rates, Reasons for Enrollment, and Student Ethnicities from the Follow-up CPPS Online Student Survey for Maximum Variation*

| | | | First | | | | Repeat | | | |
| | | | Credit | | No credit | | Credit | | No credit | |
| Ethnicity | Total | Pass rate | F | M | F | M | F | M | F | M |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| African American | 6 | 67% | 0 | 1 | 0 | 0 | 1 | 2 | 1 | 1 |
| Asian | 1 | 100% | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Caucasian | 6 | 67% | 0 | 0 | 0 | 0 | 2 | 2 | 1 | 1 |
| Hispanic | 1 | 0% | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Native American | 1 | 100% | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Total | 15 | 67% | 2 | 1 | 0 | 0 | 3 | 4 | 2 | 3 |

**CPPS Online Course Student Exit Interviews**

After examining the data from the Education2020.com database and student responses from the CPPS Online Student Demographics and Satisfaction Survey and the Follow-up CPPS Online Student Survey for Maximum Variation, I wanted additional information to evaluate the CPPS 2013 summer school program. Specifically, I wanted to collect more qualitative information from students about the reasons for their responses, especially from students who did not earn course credit. Furthermore, I wanted the students to understand how much I valued the responses they were willing to share. Interviewing students allowed me opportunities to interact with the students while giving them a voice to share their summer school experiences.

Using criteria sampling (Creswell, 2007), I invited students to participate in the interviews. Prior to starting interviews, I reviewed student performance information from the Education2020.com database and examined student populations from my student surveys. As students either completed their courses and earned credit or withdrew from summer school, I sorted them into four unique groups: (a) students taking a course for the first time who subsequently earned course credit ($n=5$), (b) students taking a course for the first time who subsequently did not earn course credit ($n=0$), (c) students repeating a course who subsequently earned course credit ($n=15$), and (d) students repeating a course who subsequently did not earn course credit ($n=10$). For the purposes of this study, students identified as repeating a course had completed the original course in either (a) a face-to-face classroom or (b) an online environment. During the interviews, I listened to student comments for descriptions of which types of students might have had difficulties in the courses as well as which subjects might have been more difficult. I interviewed a sub-sample of interest (N=27), continuing to invite student participants until new responses echoed earlier student remarks.

Student interview participants (N=27) enrolled in 30 summer courses. CPPS policy restricted student enrollment to one course at a time. If a student finished a course and earned credit while there was ample time remaining in 2013 summer school program, the student was allowed to enroll in another course, if desired. Therefore, every student who enrolled in a second course during summer school had demonstrated success in a previous 2013 CPPS summer school online course.

Student demographics from the interviews were examined for trends. Only five students enrolled in courses as first time students of which all five (100%) earned course credit; conversely, 22 students enrolled in courses as repeaters, yet only 14 (64%) earned course credit. Of the students who participated in the interviews, 48% were Caucasian, and 41% were African American. The sampled population consisted of 16 males (59%) and 11 females (41%). Males outperformed females with 11 males (69%) earning course credit versus 6 (55%) of females earning course credit. Table 4 provides the demographics of students from the follow-up interviews.

Table 4

*Credits, Pass Rates, Reasons for Enrollment, and Student Ethnicities from Interviews*

| | | | First | | | | Repeat | | | |
| | | | Credit | | No credit | | Credit | | No credit | |
| Ethnicity | Total | Pass rate | F | M | F | M | F | M | F | M |
|---|---|---|---|---|---|---|---|---|---|---|
| African American | 11 | 64% | 0 | 1 | 0 | 1 | 2 | 3 | 3 | 1 |
| Asian | 2 | 100% | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Caucasian | 13 | 69% | 0 | 1 | 0 | 0 | 3 | 5 | 1 | 3 |
| Hispanic | 1 | 0% | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| Total | 27 | 63% | 1 | 2 | 1 | 1 | 5 | 9 | 4 | 4 |

**Procedure**

Student recruitment followed IRB protocol. On the first day of summer school, June 3, 2013, I explained the study to the entire population of CPPS 2013 summer school students and their parents and guardians during an assembly, specifically explaining the purpose of the study, IRB protocol, and voluntary participation for all

students.  For students enrolling after June 3, I met individually with the students and

their parents and guardians to invite their participation in the study.  After students

earned course credit or withdrew from summer school, I sorted them into four unique

groups:  (a) students taking a course for the first time who subsequently earned course

credit, (b) students taking a course for the first time who subsequently did not earn

course credit, (c) students repeating a course who subsequently earned course credit, and

(d) students repeating a course who subsequently did not earn course credit.  For the

purposes of this study, student participants identified as repeating a course had

completed the original course in either (a) a face-to-face classroom or (b) an online

environment.

**Analyses**

I analyzed data from four sources for this study:  (a) the Education2020.com

database, (b) CPPS Online Student Demographics and Satisfaction Survey, (c) Follow-

up CPPS Online Student Survey for Maximum Variation, and (d) CPPS Online Course

Student Exit Interviews.  Quantitative student data from the Education2020.com

database were analyzed with independent *t*-tests of multiple variables via IBM SPSS

Statistics Software Version 22.  I calculated effect sizes for each *t*-test and compared the

results to my calculations to determine whether statistically significant differences were

found.  I used the method of iterative analysis by Tracy (2013) to search for emerging

themes while reflecting upon current literature as I examined my own data.  I reviewed

student responses from surveys and interviews to identify emerging themes describing

student experiences in the summer school program.  Finally, I triangulated findings of all data to evaluate student satisfaction and retention in the program.

## Timeline

Figure 1 displays the timeline for this ROS study.

## Theoretical Issues

### Reliability and Validity

It is wise to check validity when possible (Shadish, Cook, & Campbell, 2002). Validity is a determination of whether judgments or conclusions have been appropriately developed from a study (Fraenkel & Wallen, 1993; Shadish et al., 2002).  When a study is thoughtfully constructed, the researcher ensures alignment between the research questions and chosen instruments to produce relevant, valid study results (Fraenkel & Wallen, 1993).  In this study, I controlled for construct and internal validity.  To address the most salient types of validity for this study, I emailed authors of peer-reviewed articles of studies of online programs asking for information about their instruments, and I sought counsel from other researchers.  Furthermore, I aligned some of my online survey questions to those in the PSOL (Priorities Survey for Online Learners, 2014) used with college students, although I adjusted for grade level language usage of the younger students in my district's online program.

In comparison to validity, reliability refers to the consistency of results (Shadish et al., 2002).  The consistency of the PSOL has been demonstrated over its 40-year history and implementation across the U.S. with over 816,000 student participants from more than 3,000 colleges and universities (Noel-Levitz, 2013).  In addition, I studied

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Figure 1

*ROS Timeline*

| Task | Start | Finish | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **ROS Approval** | 01/22/13 | 10/15/13 | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | | | |
| Skype with Drs. Loving, Capraro, & Stillisano | 01/22/13 | 01/22/13 | ■ | | | | | | | | | | | | | | | | | | | | | | |
| Skype with Drs. Capraro and Stillisano | 01/23/13 | 01/23/13 | ■ | | | | | | | | | | | | | | | | | | | | | | |
| Skype ROS Defense | 10/31/13 | 10/31/13 | | | | | | | | | | ■ | | | | | | | | | | | | | |
| **Planning Meetings** | 02/11/13 | 02/20/13 | | ■ | | | | | | | | | | | | | | | | | | | | | |
| Meeting with ROS field mentor | 02/11/13 | 02/12/13 | | ■ | | | | | | | | | | | | | | | | | | | | | |
| Meeting Chief Academic Officer | 02/13/13 | 02/13/13 | | ■ | | | | | | | | | | | | | | | | | | | | | |
| Meetings with Stakeholders | 02/18/13 | 02/20/13 | | ■ | | | | | | | | | | | | | | | | | | | | | |
| **IRB Process** | 03/01/13 | 05/31/13 | | | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | |
| Create consent forms and informational handout | 03/01/13 | 05/01/13 | | | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | |
| IRB online approval process | 03/25/13 | 05/31/13 | | | ■ | ■ | ■ | | | | | | | | | | | | | | | | | | |
| **Data Collection** | 05/15/13 | 12/15/13 | | | | | ■ | ■ | ■ | ■ | ■ | ■ | ■ | ■ | | | | | | | | | | | |
| Obtain IRB permission from parents, guardians, and students | 05/24/13 | 06/15/13 | | | | | ■ | ■ | | | | | | | | | | | | | | | | | |
| Students complete surveys when they end coursework | 06/14/13 | 09/30/13 | | | | | | ■ | ■ | ■ | ■ | | | | | | | | | | | | | | |
| Collect information from district website | 08/15/13 | 10/15/13 | | | | | | | | ■ | ■ | ■ | | | | | | | | | | | | | |

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Figure 1, Continued

| Task | Start | Finish | J | F | M | A | M | J | J | A | S | O | N | D | J | F | M | A | M | J | J | A | S | O | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Conduct follow-up surveys and student interviews | 11/01/13 | 12/15/13 | | | | | | | | | | | ▓ | ▓ | | | | | | | | | | | |
| **Data Analysis** | 11/01/13 | 05/15/14 | | | | | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | | | | | | | | |
| Analyze student responses | 11/01/13 | 05/15/14 | | | | | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | | | | | | | | |
| Look for database trends | 11/01/13 | 05/15/14 | | | | | | | | | | | ▓ | ▓ | ▓ | ▓ | ▓ | | | | | | | | |
| **Presentations** | 10/01/14 | 11/04/14 | | | | | | | | | | | | | | | | | | | | | | | ▓ | ▓ |
| ROS Defense | 10/02/14 | 10/02/14 | | | | | | | | | | | | | | | | | | | | | | | ▓ | |
| Presentation to School Board | 11/04/14 | 11/04/14 | | | | | | | | | | | | | | | | | | | | | | | | ▓ |

student data from the Education2020.com database rather than from students to decrease possible inaccuracies in self-reporting.  I used the PSOL as a resource for question alignment, accessed the Education2020.com database, and sought assistance from other researchers.

**Ethical Concerns**

A number of safeguards were built into this study to reduce potential ethical concerns.  I was not a summer school teacher, so I did not assign student grades.  This further minimized the possibility of a power relationship.  Additionally, I structured the timeline to invite students to participate in the surveys and interviews after grades were assigned so that students would not feel pressured to report positive responses. Furthermore, I completed the required documentation for the Institutional Review Board protocol, and both of my co-chairs reviewed the submitted forms.  The IRB committee carefully evaluated my planned procedure and forms to ensure this study met all requirements before the study began.

Additional ethical safeguards included my careful adherence to IRB protocol concerning student recruitment and confidentiality.  I met with each parent and guardian who registered a student in the CPPS 2013 summer school program to share an informational handout, discuss the purpose and process of the study, and answer any questions.  Written parental or guardian permission was required for all students 17 years or younger to participate in the study.  Students 18 years or older were allowed to give their own consent to participate.  I carefully avoided giving any impression that students would be pressured to participate in any part of the study.  Students were

permitted to decline the opportunity to participate in the surveys without any risk to their grades or future educational plans. With surveys and interviews, I asked students about their experiences while participating in the online course, but only minimal risk of student discomfort was expected from questions about experiences, technologies, and class design. If students showed signs of agitation or reluctance during the survey, they were allowed to stop their participation. To protect student confidentiality, I removed names and identifying information in the study, and used codes to identify the four unique groups: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. For the purposes of this study, student participants identified as repeating a course had completed the original course in either (a) a face-to-face classroom or (b) an online environment. Through careful attention to recruitment procedures and confidentiality measures, I reduced potential ethical concerns within this study.

## Quantitative Analysis

Quantitative student data were available for students in the 2013 CPPS summer school program from the online Education2020.com database. The data provided a variety of information concerning student grades, login details, starting and ending dates, and activity times that helped to quantify student coursework performance. I examined student records and looked for variables affecting student results.

To allow independent analysis of potential variables pertaining to student satisfaction and retention, I subdivided student data into four groups for later analysis: (a) students taking a course for the first time who subsequently earned course credit (n=17) (b) students taking a course for the first time who subsequently did not earn course credit (n=2), (c) students repeating a course who subsequently earned course credit (n=253), and (d) students repeating a course who subsequently did not earn course credit (n=31). For the purposes of this study, student participants identified as repeating a course had completed the original course in either (a) a face-to-face classroom or (b) an online environment. After separating student data into the four categories, I compared variables among the groups in an effort to identify key factors related to student retention and satisfaction. Students were permitted to continue their coursework past August 1 if they had not completed it before the end of summer school. Table 5 displays the passing rates and numbers of first time and repeating students who earned credit per subject area.

Table 5

*Subject Areas, Credits, Pass Rates, and Reasons for Enrollment from Education2020.com Database*

| | | | First | | | | Repeat | | | |
| | | | Credit | | No credit | | Credit | | No Credit | |
| Subject area | Total | Pass rate | F | M | F | M | F | M | F | M |
|---|---|---|---|---|---|---|---|---|---|---|
| Elective courses | 13 | 100% | 3 | 1 | 0 | 0 | 7 | 2 | 0 | 0 |
| English courses | 112 | 95% | 5 | 0 | 0 | 0 | 32 | 69 | 3 | 3 |
| History courses | 26 | 90% | 2 | 0 | 0 | 0 | 7 | 14 | 2 | 1 |
| Mathematics courses | 123 | 83% | 3 | 3 | 0 | 2 | 31 | 65 | 6 | 13 |
| Science courses | 29 | 91% | 0 | 0 | 0 | 0 | 6 | 20 | 2 | 1 |
| Total | 303 | 89% | 13 | 4 | 0 | 2 | 83 | 170 | 13 | 18 |

*Note*. Students taking more than one course were counted for each enrollment.

I examined course selections for numbers of students and passing rates. In previous CPPS summer school programs, a large number of high school juniors enrolled in the CPPS summer school trying to catch up with their graduation cohort. The same trend continued in the 2013 population with students in 11th and 12th grades comprising 51% of the group of summer school students. Similarly, the majority of students in the 2013 CPPS summer school were behind in their earned credits. In addition, most students who failed a course during the school year failed a core course, most commonly English or mathematics. For these reasons, summer school students enrolled in only 13 (4%) elective courses. Mathematics courses were most frequently chosen by students, with 122 (40%) enrollments in a mathematics course and 112 enrollments (37%) in an English course. Overall pass rates were the highest for electives (100%), followed by English (95%), and then science (90%). In total, 270 (89%) of the CPPS 2013 summer

school students earned course credit by September 30, 2013, the cut-off date for my

record of study.  Table 6 provides the passing rates for each subject area.

Table 6

*Credits and Pass Rates from Education2020.com Database*

|  | | | First | | Repeat | |
| --- | --- | --- | --- | --- | --- | --- |
| Course type | Total | Pass rate | Credit | Pass rate | Credit | Pass rate |
| Elective courses | 13 | 100% | 4 | 100% | 9 | 100% |
| English courses | 112 | 95% | 5 | 100% | 101 | 94% |
| History courses | 27 | 88% | 2 | 100% | 21 | 88% |
| Mathematics courses | 122 | 83% | 6 | 75% | 95 | 83% |
| Science courses | 30 | 90% | -- | -- | 27 | 90% |
| Total | 303 | 89% | 17 | 89% | 253 | 89% |

*Note*.  Students taking more than one course were counted for each enrollment.

I investigated credits and pass rates for the mathematics courses to search for

trends.  Of the 122 students taking courses in mathematics, 114 (93%) were repeating

the course.  Pass rates for first time students (75%) were lower than pass rates for repeat

students (83%).  The lowest pass rates occurred in Algebra I (71%) and Math Essentials

(71%).  Table 7 displays the mathematics credits and pass rates.

Table 7

*Mathematics Credits and Pass Rates from Education2020.com Database*

| Mathematics course | Total | Pass rate | First Credit | First Pass rate | Repeat Credit | Repeat Pass rate |
|---|---|---|---|---|---|---|
| Algebra I | 35 | 71% | -- | -- | 25 | 71% |
| Algebra II | 38 | 89% | 0 | 0% | 33 | 89% |
| Financial Math | 5 | 83% | 1 | 100% | 4 | 80% |
| Geometry | 33 | 91% | 5 | 100% | 25 | 89% |
| Math Essentials | 8 | 63% | 0 | 0% | 5 | 71% |
| Pre-calculus | 3 | 100% | -- | -- | 3 | 100% |
| Total | 122 | 83% | 6 | 75% | 95 | 83% |

I also in reviewed credits and pass rates for science courses. Each of the 30 students who enrolled in science courses was repeating the course, and the overall pass rate of science courses was 90%. Students in chemistry exhibited the highest pass rate (100%), and students in physical science exhibited the lowest pass rate (86%). Table 8 displays the mathematics credits and pass rates.

Table 8

*Science Credits and Pass Rates from Education2020.com Database*

| Science course | Total | Pass rate | First Credit | First Pass rate | Repeat Credit | Repeat Pass rate |
|---|---|---|---|---|---|---|
| Biology I | 9 | 89% | -- | -- | 8 | 89% |
| Chemistry | 4 | 100% | -- | -- | 4 | 100% |
| Environmental Sci. | 10 | 80% | -- | -- | 9 | 90% |
| Physical Science | 7 | 86% | -- | -- | 6 | 86% |
| Total | 30 | 90% | -- | -- | 27 | 90% |

The results of independent *t*-tests were shown in Table 9. For this study, the null hypothesis was "There will be no statistically significant differences between the academic performance of the four groups of students." Alpha was set at $\alpha=.05$ for determination of whether to reject the null hypothesis. The first test of the data in each comparison was Levene's test for equality of variances. Each case yielded values indicating little variability in the data therefore, equal variances were assumed.

Table 9 shows group statistics from the Education2020.com database. Enrollment consisted of students in 19 courses for first time status and 284 courses as repeater status. Of the 303 courses, males represented 64% of the enrollment.

Table 9

*Group Statistics from Education2020.com Database*

| Variable | n | M | SD | Standard error of mean |
|---|---|---|---|---|
| Earned course credit | | | | |
|    First time | 19 | .895 | .315 | .072 |
|    Repeater | 284 | .898 | .303 | .018 |
| Grade earned | | | | |
|    First time | 19 | 74.526 | 27.126 | 6.223 |
|    Repeater | 284 | 70.408 | 24.701 | 1.466 |
| Earned course credit | | | | |
|    Females | 109 | .881 | .326 | .031 |
|    Males | 194 | .907 | .291 | .021 |
| Grade earned | | | | |
|    Females | 109 | 70.495 | 26.938 | 2.580 |
|    Males | 194 | 70.763 | 23.638 | 1.697 |
| Earned course credit | | | | |
|    Free/reduced lunch | 127 | .898 | .304 | .027 |
|    Full price lunch | 176 | .898 | .304 | .023 |
| Grade earned | | | | |
|    Free/reduced lunch | 127 | 70.087 | 24.461 | 2.171 |
|    Full price lunch | 176 | 71.085 | 25.156 | 1.896 |

I reviewed the calculated results, shown in Table 10, to investigate possible relationships among earned course credit rates and earned grades between the groups of students.  No statistically significant differences were found between earned course credit for first time students (M=.895, SD=.315) and for repeater students (M=.898, SD=.303), conditions $t$ (301) = -.044, $p$ = .965, $g$ = -.010 or between grades earned by first time students (M=74.526, SD=27.126) and repeater students (M=70.408, SD=24.701), conditions t (301) = .699, $p$ = .485, $g$ = .017.  Similarly, there were no statistically significant differences between earned course credit for females (M=.881, SD=.326) and for males (M=.907, SD=.291), conditions $t$ (301) = -.728, $p$ = .467, $g$ = -.085 or between grades earned by females (M=70.495, SD 26.938) and males (M=70.763, SD=23.638), conditions $t$ (301) = -.090, $p$ = .928, $g$ = -.010.  Finally, no statistically significant differences were identified between earned course credit for free or reduced lunch students (M=.898, SD=.304) and for full price lunch students (M=.898, SD=.304), conditions $t$ (301) = -.003, $p$ = .998, $g$ = 0 or between grades earned by free or reduced lunch students (M=70.087, SD=24.461) and full price lunch students (M=71.085, SD=25.156), conditions $t$ (301) = -.345, $p$ = .730, $g$ = -.04. Results from all tests revealed no statistically significant differences.

Table 10

*Results from Significance Testing from Education2020.com Database*

| Variable | Levene's test significance | t | Sig. (2 tailed) | Mean difference | Std. error difference |
|---|---|---|---|---|---|
| Earned course credit | | | | | |
| First vs. repeater | .931 | -.044 | .965 | -.003 | .072 |
| Grade earned | | | | | |
| First vs. repeater | .722 | .699 | .485 | 4.118 | 5.889 |
| Earned course credit | | | | | |
| Females vs. males | .149 | -.728 | .467 | -.027 | .036 |
| Grade earned | | | | | |
| Females vs. males | .152 | -.090 | .928 | -.268 | 2.977 |
| Earned course credit | | | | | |
| Free/reduced vs. full | .996 | -.003 | .998 | -.000 | .035 |
| Grade earned | | | | | |
| Free/reduced vs. full | .750 | -.345 | .730 | -.999 | 2.895 |

## Qualitative Analysis

I invited samples of students to participate in the three phases of the qualitative portion of my study. Using the CPPS Online Student Demographics and Satisfaction Survey, Follow-up CPPS Online Student Survey for Maximum Variation, and CPPS Online Course Student Exit Interviews, I collected qualitative responses from eight first time students (42% of the first time enrollees) and 105 repeat students (39% of repeat enrollees).

**CPPS Online Student Demographics and Satisfaction Survey**

I collected my first set of qualitative data using the CPPS Online Student Demographics and Satisfaction Survey. Participants completed the survey after they finished their courses. All survey participants (N=71) earned credit. Of the students, 36

students (51%) enrolled in mathematics courses and 15 students (21%) enrolled in English courses. Students enrolled in courses to get ahead with credits (*n*=11), to repeat courses (*n*=59), and to accommodate schedule conflicts (*n*=1). I reviewed participant comments to identify common themes indicating key variables from student experiences. Table 11 displays the credits earned by reasons for enrollment from the first survey.

Table 11

*Credits Earned by Reason for Enrollment from the CPPS Online Student Demographics and Satisfaction Survey*

| | Total | Get ahead | | Repeat | | Schedule conflict | |
|---|---|---|---|---|---|---|---|
| | | F | M | F | M | F | M |
| English | | | | | | | |
| English I | 6 | 0 | 1 | 2 | 2 | 0 | 1 |
| English II | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| English III | 5 | 1 | 0 | 1 | 3 | 0 | 0 |
| English IV | 3 | 0 | 0 | 1 | 2 | 0 | 0 |
| History | | | | | | | |
| American history | 4 | 1 | 0 | 0 | 3 | 0 | 0 |
| Civics | 6 | 0 | 1 | 1 | 4 | 0 | 0 |
| Mathematics | | | | | | | |
| Algebra I | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
| Algebra II | 29 | 0 | 4 | 6 | 19 | 0 | 0 |
| Financial math | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| Geometry | 4 | 0 | 0 | 1 | 3 | 0 | 0 |
| Pre-calculus | 1 | 0 | 1 | 0 | 0 | 0 | 0 |
| Science | | | | | | | |
| Biology I | 5 | 0 | 1 | 0 | 4 | 0 | 0 |
| Chemistry | 3 | 0 | 0 | 2 | 1 | 0 | 0 |
| Physical science | 2 | 0 | 1 | 0 | 1 | 0 | 0 |
| Total | 71 | 2 | 9 | 16 | 43 | 0 | 1 |

**Follow-up CPPS Online Student Survey for Maximum Variation**

        I collected additional qualitative information from a sample of summer school students, chosen through maximum variation sampling (Creswell, 2007). Students were invited to complete the survey, which asked about their CPPS 2013 summer school experiences. Because all participants from the first survey had earned course credit, I took special care to invite students who had not earned course credit to participate in the second survey. Table 11 shows course enrollments by student participants from this survey. The sample of students (N=15) for this survey was students who earned course credit (n=9) and students who did not earn course credit (n=6). All first-time students (n=3) earned course credit, but only 58% of repeat students (n=12) earned course credit. The majority of the students (80%) enrolled to repeat a course. The most popular content areas were English (33%), history (20%), and mathematics (20%). Electives, English, and science courses had a 100% pass rate. The inclusion of students who did not earn course credit increased the variability of the student population beyond the variability of the student population in the initial survey. Table 12 displays the credits earned by reasons for enrollment from the follow-up survey.

Table 12

*Credits Earned by Reason for Enrollment from the Follow-up CPPS Online Student Survey for Maximum Variation*

| | | First | | | | Repeat | | | |
| | | Credit | | No credit | | Credit | | No credit | |
| Course | Total | F | M | F | M | F | M | F | M |
|---|---|---|---|---|---|---|---|---|---|
| Electives | | | | | | | | | |
|   Spanish 1 | 2 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| English | | | | | | | | | |
|   English I | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
|   English II | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
|   English III | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 |
|   English IV | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| History | | | | | | | | | |
|   Civics | 3 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| Mathematics | | | | | | | | | |
|   Algebra I | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
|   Algebra II | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| Science | | | | | | | | | |
|   Biology I | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
|   Environ. Science | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
| Total | 15 | 2 | 1 | 0 | 0 | 3 | 4 | 2 | 3 |

I interviewed a sample of students, chosen through maximum variation sampling, to collect my final qualitative data. Of the 30 interview participants, 20 students (67%) earned credit. Mathematics classes represented 53% of the courses and had a 56% pass rate. English courses represented 20% of the courses and had a 67% pass rate. Including five students who did not earned credit (33% of the sample population) allowed me to learn more about the struggles these students faced during summer school. Table 13 displays the credits earned by first time and repeating students from the interviews.

Table 13

*Credits Earned by Reason for Enrollment from Student Interviews*

| | | First | | | | Repeat | | | |
| | | Credit | | No credit | | Credit | | No credit | |
| Course | Total | F | M | F | M | F | M | F | M |
|---|---|---|---|---|---|---|---|---|---|
| Electives | | | | | | | | | |
|   Health | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| English | | | | | | | | | |
|   English I | 3 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 1 |
|   English II | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 |
|   English III | 2 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 |
| History | | | | | | | | | |
|   Civics | 3 | 1 | 0 | 0 | 0 | 0 | 2 | 0 | 0 |
|   Free Enterprise | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Mathematics | | | | | | | | | |
|   Algebra I | 6 | 0 | 0 | 0 | 0 | 1 | 3 | 1 | 1 |
|   Algebra II | 5 | 0 | 0 | 0 | 0 | 1 | 2 | 2 | 0 |
|   Geometry | 5 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 2 |
| Science | | | | | | | | | |
|   Biology I | 3 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| Total | 30 | 2 | 3 | 0 | 0 | 4 | 11 | 6 | 4 |

*Note.* Students taking more than one course were counted for each enrollment.

## How did student demographic and academic variables relate to student satisfaction?

Data sources: CPPS Online Student Demographics and Satisfaction Survey
Follow-up CPPS Online Student Survey for Maximum Variation
CPPS Online Course Student Exit Interviews

Research question one focused on possible relationships between student demographic and academic variables with student satisfaction. I asked students completing the CPPS Online Student Demographics and Satisfaction Survey to rate three areas of satisfaction (on-site computers, lessons, and teacher support) on a four-point scale with 1=very dissatisfied, 2= dissatisfied, 3=satisfied, and 4=very satisfied. All of the participants had earned course credit, which negated my ability to compare student

satisfaction ratings with earned course credit. Females rated their satisfaction higher than males in seven of the nine categories. Only two females enrolled to get ahead in their courses, and they gave 4.0 ratings in all three categories. The highest overall averages by ethnicity were given by students of Non-Hispanic White or Euro-American descent (schedule conflict 4.0), students who preferred not to provide ethnicity information (get ahead 4.0), and students of Black, Afro-Caribbean, or African American descent (get ahead 3.8). Students in grade 11 gave the two highest ratings of all grade levels for the categories of students working to get ahead and to accommodate schedule conflicts. Student satisfaction rates varied with student demographic variables and reasons for enrollment but did not produce trends for future predictions of student success. Table 14 displays demographic variables and student satisfaction ratings.

In the Follow-up CPPS Online Student Survey for Maximum Variation and CPPS Online Course Student Exit Interviews, I asked students for overall satisfaction ratings (10-point satisfaction scale with 1 = highly dissatisfied and 10 = highly satisfied) with the summer school program. Participants represented the four unique groups: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. Participation from students who did not earn credit affected this set of data. This research question focused on demographic and academic variables, whereas my fourth research question addressed relationships between student satisfaction and earned credit.

Table 14

*Satisfaction Ratings by Student Demographic and Academic Variables from the CPPS Online Student Demographics and Satisfaction Survey*

| Variable | On-site computers | | | Lessons | | | Teacher support | | | Overall average | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat |
| Gender | | | | | | | | | | | | |
|   Females | 4.0 | 3.5 | 3.3 | 4.0 | 4.0 | 3.1 | 4.0 | 3.5 | 3.9 | 4.0 | 3.7 | 3.4 |
|   Males | 1.5 | 3.4 | 3.1 | 2.5 | 3.0 | 3.2 | 4.0 | 3.8 | 3.7 | 2.7 | 3.4 | 3.3 |
| Ethnicity | | | | | | | | | | | | |
| Black, Afro-Caribbean or African American | 4.0 | 1.0 | 3.0 | 3.5 | 3.0 | 3.2 | 4.0 | 4.0 | 3.7 | 3.8 | 2.7 | 3.3 |
| East Asian or Asian American | -- | -- | 3.5 | -- | -- | 3.5 | -- | -- | 4.0 | -- | -- | 3.7 |
| Latino or Hispanic American | -- | -- | 3.0 | -- | -- | 3.0 | -- | -- | 4.0 | -- | -- | 3.3 |
| Non-Hispanic White or Euro-American | 3.0 | 4.0 | 2.9 | 3.0 | 4.0 | 3.1 | 3.3 | 4.0 | 3.5 | 3.1 | 4.0 | 3.2 |
| South Asian or Indian American | -- | -- | 3.0 | -- | -- | 3.0 | -- | -- | 4.0 | -- | -- | 3.3 |
| Mixed ethnicities | 3.0 | -- | 3.0 | 3.0 | -- | 3.0 | 4.0 | -- | 3.0 | 3.3 | -- | 3.0 |
| Prefer not to answer | 4.0 | 3.0 | 3.5 | 4.0 | 4.0 | 2.5 | 4.0 | 4.0 | 4.0 | 4.0 | 3.7 | 3.3 |

Table 14 Continued

| Variable | On-site computers | | | Lessons | | | Teacher support | | | Overall average | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat | Get ahead | Conflict | Repeat |
| Grade | | | | | | | | | | | | |
| Grade  8 | 3.0 | -- | 3.0 | 2.0 | -- | 3.0 | 4.0 | -- | 3.0 | 3.0 | -- | 3.0 |
| Grade  9 | 3.0 | 2.0 | 3.7 | 3.0 | 2.0 | 3.3 | 3.0 | 4.0 | 3.8 | 3.0 | 2.7 | 3.6 |
| Grade 10 | 3.0 | -- | 3.4 | 3.0 | -- | 3.3 | 3.7 | -- | 3.8 | 3.2 | -- | 3.5 |
| Grade 11 | 3.7 | 3.5 | 2.9 | 3.7 | 3.5 | 3.2 | 3.7 | 4.0 | 3.7 | 3.7 | 3.7 | 3.3 |
| Grade 12 | -- | 1.0 | 3.1 | -- | 3.0 | 3.2 | -- | 4.0 | 3.8 | -- | 2.7 | 3.4 |

*Note*.  All students had earned course credit.  Satisfaction scale 1—very dissatisfied, 2—dissatisfied, 3—satisfied, and 4—very satisfied
[a]n = 71

I combined the data from both the follow-up survey and student interviews and searched for trends. Table 15 displays satisfaction ratings. Females taking courses as first time students reported higher satisfaction ratings than males taking courses as first time students. Repeat females and males reported the same satisfaction ratings. Asian students reported the highest overall average satisfaction ratings, followed by Native American students. Hispanics gave the lowest ratings. Elective course ratings led the overall satisfaction rankings, and mathematics courses ranked lowest. Repeat students outranked their first time peers in every subject except English. Satisfaction ratings varied with demographic and academic variables.

Table 15

*Satisfaction Ratings by Student Demographic and Academic Variables from the Follow-Up CPPS Online Student Survey for Maximum Variation and CPPS Online Course Student Exit Interviews*

| Demographic | First | Repeat | Overall |
| --- | --- | --- | --- |
| Females | 7.0 | 6.1 | 6.6 |
| Males | 6.2 | 6.1 | 6.2 |
| African American | 6.8 | 5.5 | 6.2 |
| Asian | 9.5 | -- | 9.5 |
| Caucasian | 4.0 | 6.3 | 5.2 |
| Hispanic | 5.0 | 1.0 | 3.0 |
| Native American | 8.0 | 7.5 | 7.8 |
| Elective courses | 8.0 | 8.5 | 8.3 |
| English courses | 6.8 | 6.2 | 6.5 |
| History courses | 4.0 | 9.0 | 6.2 |
| Mathematics courses | 3.5 | 6.0 | 4.8 |
| Science courses | 6.0 | 7.7 | 6.9 |

*Note*. 10-point satisfaction scale. 1 = highly dissatisfied to 10 = highly satisfied
[a]n = 42

Student comments suggested repeating students did not require as much content support as their peers. One mathematics student commented, "It's a great program if

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you've had prior knowledge of the material.  If you didn't have prior knowledge, it would be a problem."  Repeating students were familiar with their course content before beginning summer school, and those students were able to recall prior information, making them less reliant upon computer instruction than their peers.

Recurring themes from student observations addressed concerns about the lessons.  Students in English courses complained that they frequently had to use search engines to find links to stories they were required to read.  One student in English IV noted, "Actually teach some stuff relevant to the quiz and on [the] final exam review.  None of that applied to the final exam."  Students rated mathematics courses as the lowest in satisfaction, and many students wanted access to more examples than were provided in the lessons.  A mathematics student commented, "Shorten the direct instruction [videos]," suggesting he wanted lessons broken into more segments.  Other minor complaints mentioned that biology lab activities were overwhelming and that several history lessons needed corrections in the vocabulary assignments.  The majority of students shared only minor complaints about their lessons.  Content area, particularly with regard to first time or repeat status, affected student satisfaction as reported in the follow-up survey and interviews.

**What did an analysis of the information about student retention in the online program reveal?**

Data source:    Education2020.com database

My second research question required an analysis, comparing student demographic variables with pass rates, to investigate retention in the summer program until students earned credit.  Only a few students in some ethnic categories and only two

students in eighth grade enrolled in summer school, which meant that the success of one or two students greatly affected passing rates in those categories. Table 16 displays the pass rates for each variable. In most categories, pass rates for first time students exceeded pass rates for repeat students. Of all summer school students, 89% of first time students and 89% of repeating students passed their courses. Overall pass rates for African Americans were higher than Caucasians at 91% and 86%, respectively. Students with free/reduced lunch and students with full price lunch passed at nearly identical overall rates of 89% and 90%, respectively. Both eighth grade students were first time students who passed their courses. Students in grades 9-12 exhibited pass rates varying from 84-90%. I was unable to identify trends between demographic or academic variables and pass rates from the Education2020.com database.

**How did student satisfaction correlate to earned credit?**

Data sources:    Follow-up CPPS Online Student Survey for Maximum Variation
                 CPPS Online Course Student Exit Interviews

For my third research question, I explored relationships between student satisfaction and earned credit. I was unable to use student comments from the CPPS Online Student Demographics and Satisfaction Survey because all of the participants had earned credit. Therefore, I relied upon participant responses from the 42 students who participated in the follow-up survey and student interviews.

Table 16

*Demographic and Academic Variables and Pass Rates from Education2020.com Database*

| Demographic | Overall | | First | | Repeat | |
|---|---|---|---|---|---|---|
| | Total | Pass rate | Total | Pass rate | Total | Pass rate |
| African American | 173 | 91% | 11 | 91% | 162 | 91% |
| Asian | 9 | 78% | 5 | 80% | 4 | 75% |
| Caucasian | 108 | 86% | 3 | 100% | 105 | 86% |
| Hawaiian | 1 | 100% | 0 | -- | 1 | 100% |
| Hispanic | 8 | 94% | 0 | -- | 8 | 88% |
| Native American | 4 | 100% | 0 | -- | 4 | 100% |
| Free/reduced lunch | 123 | 89% | 9 | 100% | 114 | 88% |
| Full price lunch | 180 | 90% | 10 | 80% | 172 | 90% |
| Grade  8 | 2 | 100% | 2 | 100% | 0 | -- |
| Grade  9 | 70 | 89% | 4 | 100% | 66 | 90% |
| Grade 10 | 77 | 84% | 4 | 75% | 73 | 92% |
| Grade 11 | 102 | 90% | 8 | 88% | 94 | 90% |
| Grade 12 | 52 | 85% | 1 | 100% | 51 | 84% |
| Females | 109 | 88% | 13 | 100% | 96 | 86% |
| Males | 194 | 90% | 6 | 67% | 192 | 90% |
| Total | 303 | 89% | 19 | 89% | 284 | 89% |

*Note.* Students taking more than one course were counted for each enrollment.

Trends in the data, displayed in Table 17, showed that students who earned credit rated their overall satisfaction at least 1.8 points higher in every category than peers who did not earn credit.  Of students who earned credit, female satisfaction ratings averaged 8.7 and male satisfaction ratings averaged 7.2.  Conversely, of students who did not earn credit, female satisfaction ratings averaged 4.4, which was lower than male satisfaction ratings that averaged 5.1.  Asian students reported the highest satisfaction (average of 9.5), and Hispanic students reported the lowest satisfaction (3.0).  It is important to point out that both Asian students earned credit and the Hispanic student did not earn credit, a variable already shown in this study to influence student satisfaction ratings.  Students in

electives and science courses who earned credit had higher satisfaction ratings than students in other content areas.

Table 17

*Satisfaction Ratings from the Follow-up CPPS Online Student Survey for Maximum Variation and CPPS Online Course Student Exit Interviews*

| Variable | Credit | | | No credit | | |
|---|---|---|---|---|---|---|
| | First | Repeat | Average | First | Repeat | Average |
| Gender | | | | | | |
| Females | 9.0 | 8.3 | 8.7 | 5.0 | 3.8 | 4.4 |
| Males | 6.3 | 8.1 | 7.2 | 6.0 | 4.1 | 5.1 |
| Ethnicity | | | | | | |
| African American | 7.5 | 7.7 | 7.6 | 6.0 | 3.2 | 4.6 |
| Asian | 9.5 | -- | 9.5 | -- | -- | -- |
| Caucasian | 4.0 | 8.5 | 6.3 | -- | 4.0 | 4.0 |
| Hispanic | -- | -- | -- | 5.0 | 1.0 | 3.0 |
| Native American | 8.0 | 7.5 | 7.8 | -- | -- | -- |
| Course type | | | | | | |
| Elective courses | 8.0 | 8.5 | 8.3 | -- | -- | -- |
| English courses | 7.5 | 8.3 | 7.9 | 6.0 | 4.0 | 5.0 |
| History courses | 7.0 | 9.0 | 8.0 | 1.0 | -- | 1.0 |
| Mathematics courses | -- | 7.8 | 7.8 | 3.5 | 4.2 | 3.9 |
| Science courses | -- | 8.3 | 8.3 | 6.0 | 7.0 | 6.5 |

*Note*. 10-point satisfaction scale. 1 = highly dissatisfied to 10—highly satisfied
[a]n = 42

Comments revealed complaints common to all four types of students: (a) students taking a course for the first time who subsequently earned course credit, (b) students taking a course for the first time who subsequently did not earn course credit, (c) students repeating a course who subsequently earned course credit, and (d) students repeating a course who subsequently did not earn course credit. Predominant complaints concerned starting summer school at 7:30 each morning and staying until 1:00 each

afternoon. Students felt the day was too long to try to concentrate on the computer

lessons, especially with only a few short breaks during the school day. Additionally,

students reported on-site technology issues with slow-playing videos or videos that

would skip or stop playing, computers kicking students offline or failing to record

student answers, confusion over grading of journal entries, and difficulties returning to

earlier questions during tests. Students from each of the four groups shared complaints

about the summer schedule and technologies.

### Students Who Earned Credit

Students who earned credit commented on the configuration and pacing of

lesson activities. Students appreciated how the lessons presented the content in an

organized structure that built upon earlier lessons with mini-lessons along the way.

Students praised the incremental steps of the videos with comments including, "I liked

the way they taught it step by step instead of the whole concept. They taught it one thing

at a time and made it easy to understand." Other students liked completing the

vocabulary lessons before starting the lessons because they became familiar with the

terminology. Not all students, however, felt they needed quite as much content. Such

detail caused several students to reduce their satisfaction ratings because lessons moved

too slowly or provided too much content. "I just wanted to read the story, but there was

a pre-lecture, lecture, and post-lecture. We didn't need that much information. I didn't

want to know about the author." Predominant remarks were praises of the software's

progress bar, which helped students maintain pace. Overall, students who earned course

credit praised the lessons.

Technical issues posed only minor difficulties for students who earned credit. Although students cited multiple errors with the on-site computers throughout the summer when logging in or videos that froze during a lesson, they accepted the small issues without many criticisms. Frequent technology comments focused on delays caused when students needed additional quiz retakes but had to wait for teachers to reset the lessons. Common complaints about technology conveyed annoyance with the interruption of their self-pacing when they were not on campus.

One student described his dissatisfaction thus:

A few instances when I ran out of retakes on Saturday, I couldn't work through the weekend. I couldn't call to ask for more retakes. You'd be surprised how many kids are up at 10 PM working on school work. That moment when you are just one topic away, you can't keep working.

Remaining comments addressed teacher assistance and grading concerns. Students commended the helpfulness of summer school teachers with responses such as, "You can ask questions that the video did not answer, so I was more satisfied having a teacher in the room." Responses indicated some students recognized the role of learning styles in their satisfaction rating. In particular, one learner explained the program was "very tedious" but that as an auditory learner, he benefitted from the video examples and teacher explanations. Criticisms included difficulties with lesson content or grading. "Some videos don't fully explain how to do something," remarked a student.

Everything was good except for one thing that bothered me. A lot of the time I would get 0 in journal and didn't know why. I would go back and I don't know

how it works.  If it counts number of words or keywords.  One of the girls asked

and [the teacher] didn't know.  Sometimes I got 0 and sometimes 100.  I didn't

know if was too short.  I just went back and started writing more.

**Students Who Did Not Earn Credit**

Of the eight students who did not earn course credit, five commented they

lowered their satisfaction ratings because they did not finish their classes.  Student

comments noted that using the online program was more difficult for them than

traditional classroom learning.  A student noted, "I'm not sure I really learned much this

summer."  Furthermore, when students experienced confusion with their lessons, they

were unable to progress until they received help, creating significant delays and adding

student confusion.

Common frustrations noted by students who did not earn credit were the isolation

in learning and inability to work with their peers.  "It is pretty lonely, and you are

supposed to just sit there and do your lessons all alone."  Two other student comments

included, "I like to ask lots of questions" and "I wish I had a teacher talking to all of us

so I could ask questions and find out how to do what she's teaching."  Remarks

suggested students would have been more likely to earn credit if part of the school day

featured cooperative learning to facilitate peer and teacher interactions.

Students became exasperated with the large number of classmates assigned to

each classroom teacher due to the subsequent competition for teacher attention and

explanation.  A student remarked, "We all need help, and I'm a face-to-face type of

person.  When you have 20 other students who need [the teacher], you compete for it."

In addition to having to wait for teacher assistance, the large number of students was distracting because of the associated noise and activity within the classrooms.

Students who did not earn credit blamed additional factors for their lack of success. Few students had prior success with independent learning, and none had experience in online courses. "You really have to pace yourself because you can't see how much other students are doing," explained one of the learners. Learners became discouraged by the large number of lessons required to complete the courses. Several students complained about long lesson videos, with one commenting, "Sometimes videos were long, and we couldn't skip through them." Furthermore, students described frustrations with the difficulty of lessons. One student noted, "I'm used to a teacher breaking it down." Self-pacing, lesson length, and lesson difficulty proved troublesome for students who did not earn credit.

**What were common traits for students who earned course credit?**

Data sources: Follow-up CPPS Online Student Survey for Maximum Variation
CPPS Online Course Student Exit Interviews

**Students Who Earned Credit**

To answer research question four, I analyzed participant responses from the surveys and interviews, seeking traits common among students who earned credit. These students attended summer school regularly with one goal—to earn credit. Students were self-motivated and driven to finish their courses, overcoming whatever obstacles were in their way. They accepted responsibility for their own learning. If unhappy with classroom arrangements, they worked extra hours at home to finish early. When students experienced difficulties with lessons, they sought help from teachers,

content websites, or tutors. "It was really the mindset. If I don't catch up, then I couldn't graduate in May." Further explanation came from a student who remarked, "Make sure to really pay attention to what you are doing. Do not goof off and get on other websites while working, it will only throw you off track of what you are doing." Strong motivation helped these students succeed.

Students invested tremendous effort into passing their courses and used a variety of strategies to succeed. They paid close attention to the lesson videos. "It's all right there. It gives you the video. Just re-watch [the] video and take notes. It's not giving you questions that aren't there," remarked a student. Students explained that they diligently reviewed, and sometimes rewrote, their course notes before taking quizzes. Describing her method for taking notes, one student wrote,

> The advice I would like to offer to future students is that make sure you use your eNotes and also have a spare notebook. I know it sounds like a lot of work, believe me it is, but it really helped me get the information in my head. When I'm at home and I would continue my online course, it's better for me to concentrate with a notebook and a pen along with the keyboard to make myself understand the lesson and the certain information that I need to know.

Students frequently reviewed earlier lessons when they missed questions or needed to review topics. One student described his strategy in a mathematics course with these words, "By writing down each problem, pausing video to see if I could work it out on my own. If not, watching how [the online teacher] worked it out." Students

who earned credit were serious about their tasks and maintained careful attention on the coursework.

I discovered a second common theme was that students carefully paced themselves through their lessons.  Many students set daily pacing targets.  In the words of a student, "Don't procrastinate, get it done."  Students praised the software's pacing bar, with many students relying upon it to help them determine whether they needed to spend extra hours on their lessons after summer school.  While the majority of the students spent only a few extra hours on their lessons each week, some students invested many extra hours.  "I worked about two hours every single day," wrote one student.  A few students preferred to do most of their lessons at home.  By carefully pacing themselves, students completed their lessons and earned course credit.
The following described one student's strategy:

> I liked being able to do it at my own time and get my own help.  I probably did 75% at home.  I would get as far as possible and then come back to school and take tests.  It was too hard to sit there all day at school.  Easier to pace it at home to take breaks.  I would fall asleep during school day.

Students were pleased they could progress independently as they mastered the concepts.  "I liked that it let me work at my own pace and that the online teachers explained it very well.  I'm horrible at math and the teachers were much more clear than the teachers at my school."  A complaint about pacing was dissatisfaction with the inability to fast forward through lesson videos when students were already familiar with the content.  Fast forwarding was available only when reviewing prior lessons.  Students

who earned course credit carefully paced themselves to finish their lessons early or on time.

Students who earned credit were comfortable with the technology and Education2020.com program. Even though they experienced the same types of classroom computer difficulties as the students who did not earn credit, these students cited only minor complaints about the computers. If the online program failed to save their completed work, students restarted the lessons without great complaint. Students reported no problems accessing their lessons from home and quickly learned to navigate the software.

**Students Who Did Not Earn Credit**

The majority of students who did not earn credit did not accept personal responsibility for their learning. School was not a top priority, and they were not motivated to succeed. Common frustrations focused on the competition for teacher attention. Students yielded to classroom distractions; cited physical complaints such as boredom, hunger, and discomfort; and missed school days for a variety of reasons. Technology issues really upset the students, especially if scores were erroneously deleted. In such situations, students complained and disengaged from their coursework. Students blamed their lack of success on external factors.

Students who subsequently did not complete their courses had trouble pacing themselves through the lessons. "It's harder without having someone talk you through it and looking over your shoulder all the time. Everyone is doing something different, and it's easy to act like you are working on it," shared one of the students. Few students

worked on their lessons after school hours although most said they had computer access. Many students ran out of time to complete their lessons.

Although the summer school literature described the self-paced, online course design, the majority of students were not prepared for the format of summer school. Students were disappointed about not having opportunities to work with their classmates. "Tell kids it's not like playing video games," reported one student. "It's pretty lonely, and you are supposed to just sit there and do your lessons all alone." Another student summed up her feelings, "Some of us wanted a class where we had a teacher so we could learn together and not have to watch videos. I liked that I could see the videos again but still wanted to have a class." If they did not understand the content from the lesson videos, students waited for their teachers to work with them individually. Few students wrote notes. A common theme was not reviewing notes before quizzes or tests. A student commented, "I wrote stuff in my notebook and some in the computer, but it was hard to find where I put it when I had to need it." Limited teacher access delayed students who waited for help with their lessons. "Working one-on-one really takes its time, and I don't think we reached that," shared a student. Student expectations for the computer lessons did not match the Education2020.com structure.

## Triangulated Findings

Evaluating responses and performance of online students has been shown to be a difficult science yielding few clear variables related to student success (Liu & Cavanaugh, 2012; Roblyer et al., 2008; Roblyer & Marshall, 2003; Ronsisvalle & Watkins, 2005; Willging & Johnson, 2004). In most studies, no dominant factors

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emerged to explain why some students failed to earn credit in their online courses. Furthermore, researchers have struggled to identify key components of student satisfaction in their courses. These difficulties, combined with an increasing enrollment of students in online courses, frustrated educators intent on improving learning experiences.

Employing a mixed methods approach and collecting data from four separate sources enhanced this record of study. I examined the Education2020.com database for trends linking student demographic and academic variables to earned credit and found no statistically significant differences among any of the variables. Answering research question one, I determined that females, repeat students, and students in electives reported higher rates of satisfaction than their peers rated satisfaction. My investigation to answer research question two identified no patterns to student pass rates. I discovered in research question three that students who earned credit rated their overall satisfaction at least 1.8 points higher in every category than peers who did not earn credit. Students in electives and science courses who earned credit had higher satisfaction ratings than students in other content areas. For my fourth research question, I studied traits of students and found those who were self-motivated and self-driven were more likely to earn credit and rate their courses with higher satisfaction. By triangulating data from all four sources, I devised recommendations for improving the CPPS online summer school program.

CHAPTER III

CONCLUSIONS

My interest in studying the 2013 CPPS online summer school began with observations that some of the district's students experienced remarkable academic success in their courses while other students struggled. A number of students simply stopped making progress and dropped out of the program. When Education2020.com was adopted by the CPPS district, middle and high schools were given autonomy in student selection and program design, resulting in great diversity of students and faculty. The district was collecting data, but not identifying trends or critical variables. My desire to help CPPS students and shape the program's future guided my interest in the study.

For this study, I examined data from four sources: (a) Education2020.com database, (b) CPPS Online Student Demographics and Satisfaction Survey, (c) Follow-up CPPS Online Student Survey for Maximum Variation, and (d) CPPS Online Course Student Exit Interviews. I focused my study on four research questions: How did student demographic and academic variables relate to student satisfaction? What did an analysis of the information about student retention in the online program reveal? How did student satisfaction correlate to earned credit? What were common traits for students who earned course credit? I used data to describe student experiences and to describe student challenges in the 2013 CPPS summer school program.

**Discussion**

My examination of data from the Education2020.com database revealed discrepancies among student enrollments and summer school files.  Approximately 30 students were still listed in the database as not having earned course credit even though CPPS records documented those students had finished their courses.  Discrepancies may be attributable to errors in enrolling a student in the wrong course and not correcting the database or in mistakenly enrolling a student in the same course more than once.  Either possibility would precipitate the discrepancy by inflating the number of students who did not complete their courses and negatively affecting an assessment of how many students earned course credit.

For the purposes of this study and reader clarification, reported student grade levels were the grade classifications of students in May 2013, just prior to the start of summer school.  For example, students listed in eighth grade in the Education2020.com database would subsequently enroll as high school ninth grade students in August 2013 if they met all necessary academic requirements.

**How did student demographic and academic variables relate to student satisfaction?**

Finding studies that investigated student satisfaction in online programs continues to be difficult.  Published findings almost exclusively compared student satisfaction in face-to-face courses to online courses, which did not apply to the online-only format of CPPS summer school.  After an exhaustive search of the literature, I was unable to find published studies comparing satisfaction of repeating and first-time students in online courses.

I used student ratings and comments from surveys and exit interviews to explore relationships with student satisfaction. While investigating how student demographic and academic variables related to student satisfaction, I discovered that students repeating courses, students in electives, and females reported higher rates of satisfaction than reported by their peers.

Students repeating courses rated their satisfaction ($\bar{x}$=7.5) higher than first-time students ($\bar{x}$=5.7) on a 10-point scale in every subject except English on the Follow-up CPPS Online Student Survey for Maximum Variation and CPPS Online Course Student Exit Surveys. In this study, students repeating courses reported their prior content experience helped them succeed in summer courses. Satisfaction ratings by repeating students were 5.0 points higher in history, 2.5 points higher in mathematics, 1.7 points higher in science, and 0.5 points higher in electives than students taking courses for the first time. Both first-time and repeat students in history classes commented on the large number of online lessons and tremendous amount of information to learn, factors that helped explain the dramatic difference between satisfaction ratings for students repeating history courses. Students taking mathematics courses for the first time commented they needed more examples in online lessons and more one-on-one time with teachers to help them understand the content, comments that helped explain why students repeating mathematics courses had higher satisfaction. Students repeating English courses, however, reported satisfaction levels 0.6 points lower than peers taking first-time English courses, complaining of extraneous information about the authors and the inability to fast forward through the lesson videos. With further analysis, I realized

many students repeating English courses had previously failed their school-year English courses due to not completing a research paper.  Repeat students in English resented having to retake the entire course to earn credit.  In general, students repeating courses were more satisfied with their online experience.

Students in electives reported the highest levels of satisfaction ($\bar{x}$=8.3) on a 10-point scale of all summer school courses.  Exploring potential factors that might have contributed to high levels of satisfaction, I discovered only three participants from the follow-up survey and exit interviews enrolled in electives.  All three students earned course credit, a factor identified in this study as increasing student satisfaction and described later in this paper.  Of the three students in electives, two were female, another factor correlated to higher student satisfaction in this study.  Additionally, two of the students took their elective course as first-time students, which I found linked to higher satisfaction.  Furthermore, student satisfaction may be attributable to freedom in choice selection, which was unique to enrollment in electives versus core courses.  High student satisfaction in elective courses may have been influenced by a number of factors already shown to increase student satisfaction.

Student satisfaction varied by gender with females reporting higher levels of satisfaction ($\bar{x}$=3.7) than male students ($\bar{x}$=3.1) on the 4-point scale on the CPPS Online Student Demographics and Satisfaction Survey.  Similarly, female students rated overall satisfaction ($\bar{x}$=6.6) higher than male students ($\bar{x}$=6.2) on the 10-point scale on the Follow-up CPPS Online Student Survey for Maximum Variation and CPPS Online Course Student Exit Surveys.  These results support findings by González-Gómez,

Guardiola, Rodríguez, and Alonso (2012) that females were more satisfied with e-learning experiences than males. Conversely, Liu and Change (2010) and Al-Asfour (2012) found no conclusive differences between male and female satisfaction in online courses, and Padilla-Meléndez, Aguila-Obra, and Garrido-Moreno (2013) reported no gender differences between ratings of online course usefulness or ease of use. However, in the current study, female satisfaction levels were higher than male satisfaction levels.

Higher female satisfaction ratings were surprising in this study because only 78% of female participants earned credit compared to 91% of male participants. These rating contradict the earlier association between higher satisfaction and earned credit in this study discussed in subsequent pages. When reviewing student comments for additional information to understand this phenomenon. I discovered males were frustrated with unexpected technology glitches, inability to skip to future lessons, and traditional rather than gaming design of lessons, comments indicating high expectations with regard to the online program and on-site technology. Males expected the technology issues would be solved before the start of summer school. Conversely, comments by females focused on wanting more collaboration with teachers but witnessed the large number of students assigned to each teacher. Because they could see the logistical issue of competition for teacher time, females may have discounted their frustrations and reported higher levels of satisfaction than males reported. Prior expectations by gender may have resulted in higher satisfaction ratings by female students.

**What did an analysis of the information about student retention in the online program reveal?**

I discovered a gap in the literature concerning correlations among demographic and academic variables related to student retention in online courses. O'Dwyer and Kleiman (2007) and Sun et al. (2008) were unable to identify key factors for student success, although Joo, Lim, and Kim (2011) discovered a strong relationship between student satisfaction and retention in online courses.

I began my examination of data from the Education2020.com database by searching for trends and potential contributing factors. I noted identical pass rates (89%) of first-time students and repeating students. Students on free/reduced lunch and students on full price lunch exhibited nearly identical overall pass rates at 89% and 90%, respectively. First-time students on free/reduced lunch, however, exhibited a 100% pass rate compared to first-time students on full price lunch (80%). With only a small sampling of fewer than 20 first-time students, it is difficult to pinpoint factors for the difference in pass rate, although I found that 50% of students on free/reduced lunch were in grades 11-12 and closer to graduation than the 45% of students on full price lunch in grades 11-12. Small differences in first-time versus repeat student status were the first trends I discovered.

I reviewed the Eduction2020.com database to search for relationships between student grade levels and pass rates. Students with the highest pass rate (100%) were in eighth grade, and students with the lowest pass rate (84%) were in tenth grade. Both eighth grade students took their courses for the first time, working to get ahead on their high school credits. An interest in working ahead and earning credits indicated high

student motivation and determination to succeed with lessons, which is evident in the 100% pass rate.  Students in the eleventh grade earned an overall pass rate of (90%), which was the second highest pass rate of all grade levels.  As previously mentioned, eleventh grade students have historically comprised the highest percentage of CPPS summer school enrollees due to their interest in catching up to their peers with course credits to graduate the following May.  A strong motivating factor for eleventh grade students, therefore, is the realization that summer school typically provides the best opportunity for students to focus their attention to earning the courses they need to become high school seniors.  As a result, the overall pass rate of 90% for eleventh grade students was likely tied to students' desires to graduate with their high school cohorts.  I attributed variations in pass rates to factors beyond merely student grade levels.

Pass rates varied with content area.  All students in electives courses earned credit exceeding pass rates for all other subjects, which may be attributable to students' free choice in selecting their courses.  First-time students in English courses also earned a 100% pass rate, followed closely by repeater students in English courses with 94% pass rate.  Of the 112 students enrolled in English courses, 67 students (60%) were students in grades 11 or 12, students traditionally eager to gain credits to fulfill graduation requirements.  Pass rates in each subject area were likely affected by the maturity of enrollees as well as their grade classification and proximity to graduation.

Students repeating mathematics courses performed at the lowest level of students in all content areas with only an 83% pass rate, followed by students taking mathematics for the first time with an 85% pass rate.  A contributing factor to the low pass rates was

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that the majority of summer school mathematics students (57%) were students in grades 9 or 10, young students still several years from graduating and many of whom struggled through their academics during the 2012-2013 school year.  Historically, a large number of CPPS students enter ninth grade without strong foundations in mathematics and do not pass or barely pass their school-year mathematics courses.  For many students already straining to learn mathematics in a traditional, school-year course with a classroom teacher available to answer questions, the online design of independent learning with limited access to a teacher presented obstacles too great to overcome.  Other difficulties in summer school mathematics courses, described by student comments, were the frustrations of needing additional examples in lessons, wanting hands-on applications of the content, and desiring more time to work with the teacher individually.  Students' past struggles with content, combined with the design of the online lessons and the high pupil-to-teacher ratio, reduced student pass rates in mathematics courses.

All of the students enrolled in science were repeating their courses.  Some of the chemistry students had failed their school-year courses because they did not complete a science fair project.  Those students may have had otherwise satisfactory course grades, which meant they may not have encountered content difficulties during summer school. All four students in summer school chemistry courses earned credit.  Only eight students enrolled in physical science, and seven (86%) of those students earned credit.  Physical science is a freshman level course, so these students were among the youngest in summer school.  The nine students in sophomore level Biology I, a course required for

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graduation in Louisiana schools, had a similar pass rate (89%). Overall, students earned a 90% pass rate for science courses, which may have correlated to student age, maturity, and proximity to graduation.

In addition to the higher grades, males had higher pass rates (90%) than females (88%). I looked for trends in the Education2020.com for additional factors contributing to the lower pass rates. I compared percentages of each gender enrolled in courses. Of all female students in summer school, 37% enrolled in mathematics courses, the content area with the lowest passing rate, whereas only 32% of males enrolled in mathematics courses. Therefore, a greater proportion of the females enrolled in courses with the lowest pass rates. In addition, higher proportions of the male population enrolled in electives and science courses, which had high pass rates of 100% and 91%, respectively. Enrollments in English courses were identical (37%) for males and females. A clear correlation can be derived between percentages of enrollments students of each gender with the higher pass rates of males over females.

Ethnicity showed a small correlation with overall pass rates of 91% by African American students versus overall pass rates of 86% by Caucasian students. Students of other ethnicities comprised only very small percentages of the summer school. A likely factor accounting for the differences between pass rates may have been the higher enrollment of African American students in English (42%), a content area with high pass rates, than Caucasian students (30%). Also of importance is the enrollment in mathematics courses, which had the lowest pass rates, and 37% of the enrollments of Caucasian students versus 28% of the enrollments of African American students. Pass

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rate differences were attributable to corresponding pass rates of the content areas in which students enrolled.

**How did student satisfaction correlate to earned credit?**

I continued investigating factors related to student satisfaction. As previously described, I located research connecting females with higher levels of student satisfaction in online learning (González-Gómez, et al., 2012), which matched the findings of this study. An extensive search of the literature failed to reveal any studies directly related to satisfaction of first-time students and repeat students; however, I found higher satisfaction by students repeating courses. Findings by Noel-Levitz (2013) linked satisfied students with academic success and higher rates of graduation and by Joo et al. (2011) associated satisfaction with persistence to completing learning goals. In this study, high levels of satisfaction were correlated to females and students repeating courses.

While exploring data from my four sources, I discovered increased course satisfaction by students who earned credit, a correlation confirming a study by Herbert (2006). Satisfaction ratings by students who earned credit ($\overline{x}$=8.0) greatly exceeded ratings by students who did not earn credit ($\overline{x}$=4.8). Females who earned credit ($\overline{x}$=8.7) rated their satisfaction higher than males who earned credit ($\overline{x}$=7.2), and females commented they felt they learned the content from the instructional videos. Males who earned credit praised the opportunity to work away from the onsite campus and the self–paced lesson format that let them complete their courses quickly. Conversely, females who did not earn credit ($\overline{x}$=4.0) reported they did not want to be at the on-site school

and had other activities competing for their time during the summer. Males who did not earn credit ($\bar{x}$ =4.4) commented the lessons were too difficult and numerous, with males wanting more opportunities to work with their classroom teachers. Females who earned credit reported the highest satisfaction ratings, and females who did not earn credit reported the lowest satisfaction ratings.

One factor in the relationship between earned credit and student satisfaction may have been the cost of summer tuition, which altered the role of students into consumers seeking returns on their financial investments. Delucchi and Korgen (2002) found undergraduates believed it was their instructor's responsibility to keep them engaged in lessons and duty to award grades commensurate with students' future career plans. Additionally, students felt entitled to earning degrees because they paid for their classes, preferring to enroll in courses more likely to promise higher grades than stronger academic skills (Delucchi & Korgen, 2002). Student comments in the surveys and exit interviews described contentment with the cost of tuition when they earned returns on tuition investment and dissatisfaction when they failed to earn academic credit.

**What were common traits for students who earned course credit?**

I searched my data for commonalities among students reporting high and low levels of satisfaction with online learning. Students who described themselves as self-motivated had the highest satisfaction levels. Student responses from this study corroborated the findings of Barbour (2008) who found that the majority of students were satisfied with online courses and Herbert (2006) who identified an association between students earning course credit and high levels of student satisfaction. This

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study also confirmed the findings of Schrum and Hong (2002) who described correlations among student success in online courses, high levels of student motivation tied to individual learning goals, and strong student determination to remain focused on coursework. Finally, the data of this study supported the results of the literature study by Barbour and Reeves (2009) who found only independent learners with high levels of motivation were successful in online learning environments. Successful, satisfied students in the CPPS summer school were self-driven to complete their lessons.

Conversely, a high percentage of students who did not earn credit cited frustrations with the independent learning configuration of online courses, findings that supported studies by Boling, Hough, Krinsky, Saleem, and Stevens (2012), Drouin (2008), and Muilenburg and Berge (2005). Furthermore, Muilenburg and Berge (2005) cited a lack of community as the greatest barrier to student success in online courses. Wickersham and McGee (2008) reported student distress and subsequent dissatisfaction, similar to what was reported in this study. These emotions might have been caused by challenging online learning activities for students unfamiliar with such lessons. Furthermore, Ke and Kwak (2013) described a strong desire for a sense of community among Hispanic students, which reduced student satisfaction in online courses. Similarly, in this study, Hispanic students who did not earn credit reported low satisfaction levels.

## Recommendations for Practice

### Online Program

Informed decisions promote the greatest chance of success in any program. District personnel and summer school literature briefly described what students could expect from their online summer school experience, but many students were unprepared for the actual online format. Comments indicated students expected lessons embedded in video games and social learning rather than independent, self-paced lessons. District brochures should more completely describe the summer program, and online information should feature a video depicting the learning environment and independent format. If possible, students could participate in an online mini-lesson to determine whether they would be interested in enrolling in an online course. Furthermore, teachers should conduct experience inventories on students' first days to identify which learners have previously demonstrated success in independent learning. Enrolling students who are informed and interested in online learning will increase compatibility between learners and the summer program to increase student success.

### Learning Environment

When CPPS selected the Education2020.com online program for summer school, it promised to provide an exceptional experience for students. Such a commitment includes ensuring on-site hardware, internet connections, and supporting services are prepared for the start of classes and available for the duration of the program. Delivering on those promises, however, proved more difficult than expected. Student complaints described excessive download times for lesson videos, technical glitches

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when saving student responses, repeated server errors, and frozen computers. To reduce student frustrations and maximize student success, summer school computer labs should provide the best computers and networks available within the school district. Only by providing exceptional technologies can CPPS prove its commitment to an online summer school program.

Although schools can create learning-centered classroom environments, few computer labs, including those used in the 2013 CPPS online summer school program, facilitate engaging classroom lessons. Moreover, once students left the summer school setting to continue lessons via the Internet, the district lost the ability to promote quality surroundings. Students who wanted to continue lessons away from the on-site school often struggled to obtain computer access and avoid competing distractions. Teachers should explain the importance of completing lessons in good learning environments and should dedicate their best efforts to promoting effective classrooms. The district should offer after-hours accessibility to summer school computer labs, which would likely require staffing by only a small number of teachers. Students interested in continuing their lessons would benefit from the availability of both the labs and monitoring by teachers. Encouraging students to find learning-centered workspaces and providing additional access to school computer labs would improve opportunities for student success.

Student progress in the summer school program using Education2020.com was self-paced. As a district supervisor, one of the difficulties I observed was that although teachers monitored student grades and progress, the unexpected large turnout of summer

school students pushed the student-to-teacher ratio to challenging proportions, especially in some English and mathematics courses. The resulting burden reduced the ability of classroom teachers to facilitate online lessons and monitor student learning. Despite the reported high levels of student satisfaction with summer school teachers, many students described frustrations with having only limited interactions with their teachers. Student progress was dependent upon how quickly students were able to assimilate new information and proceed to the next lessons.

**Lessons**

Student comments described frustrations with poorly designed online courses. Lead content teachers should review and modify Education2020.com courses to ensure alignment within each CPPS course, online lessons, and exams before students ever enroll. To address common complaints of students, mathematics teachers should examine past student records to identify troublesome areas and locate additional content materials to assist future learners. Furthermore, teachers of all subjects should ensure hyperlinks within online lessons are current and direct students to all needed supplements, a need particularly emphasized by students in English courses. Preliminary corrective measures will reduce student frustrations with online lessons.

Program logistics and district implementation of summer school limited teacher and student interactions and reduced modifications to meet student needs. Throughout their lessons, teachers adapt instruction to specific language and cultural needs of students (Bransford & Brown, 2000) to aid student comprehension of lessons. Additionally, classroom teachers assess student metacognitive skills (Pellegrino,

Chudowsky, & Glaser, 2001), monitoring and addressing student reasoning and misconceptions (Bransford & Brown, 2000). Such modifications occur seamlessly within traditional classrooms, but must be designed into online programs through careful planning for both the physical setting and interactions with learners. Student-to-teacher ratios should be reduced, at least in courses with low pass rates, to maximize the frequency of interactions to facilitate student learning, monitor progress, and encourage learners.

**Social Learning**

Summer school courses were not individualized to each student's learning needs, and the format of the CPPS 2013 summer school program limited the assistance teachers were able to provide. Learning is complex and highly individualized for each student (Sarason, 2004). To process and experience information in such a way as to comprehend it, students must build upon known facts, merge new data into organized thoughts, and develop a deep awareness of the content (Bransford & Brown, 2000). Students learn subject matter through developing schema for organizing and retrieving knowledge (Pellegrino et al., 2001). Adept learners have developed processing skills, but novice learners have not (Bransford & Brown, 2000), which may be one of the difficulties embedded in online learning. Students who struggled in the 2013 CPPS online summer school program may have been unable to assimilate new knowledge in meaningful, organized patterns to be retrievable in a day, week, or longer. The district should modify its one-size-fits-all approach to online courses with supportive measures including teacher-prepared exercises scaffolded for novice independent learners. Once

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student difficulties are identified, teachers should utilize their options to individualize online lessons for students, which is a strength of the self-paced program. In addition, reduced student-to-teacher ratios in courses within classrooms with low pass rates would allow increased needed interactions. By customizing online lessons for students who need additional content supports, teachers can help novice learners strengthen their skills as independent learners.

Summer school students who did not earn credit lamented the lack of student-to-student and small group learning opportunities and longed for a sense of community through collaboration with peers. Bransford and Brown (2000) described the power of social learning in traditional face-to-face classrooms, which was a gap overlooked in summer school. The isolation of independent learning, a dramatic shift from students' familiar social learning, caused many frustrations. As a result, students faced a sudden, and unanticipated, shift from collegiality to autonomous learning causing many learners to disengage from their lessons. Comments from students who did not earn credit described not only their longing to learn within groups of students but also to interact daily with peers. Conversely, highly-focused students reported they enjoyed the freedom to progress at their own rates to finish courses as quickly as possible. The district should continue to allow successful students the autonomy to advance at their own speeds, while providing flexibility in offering small-group opportunities for students who prefer to learn with peers.

Summer school required tremendous perseverance as students faced long school days with infrequent breaks. Many students complained of required daily

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attendance and of starting school early each summer morning.  As a result, quite a number of motivated students invested long hours at home to complete their courses early. Conversely, many students who battled to earn credit often were unwilling or unable to find opportunities to complete assignments away from school and suffered through the long hours.  Mounting frustrations of struggling students reduced learner endurance and effectiveness.  The school system should explore alternative attendance requirements and/or creative scheduling within the school day that could facilitate both independent learners and students needing greater assistance.

**Teacher Preparation**

CPPS should continue to provide mandatory extensive, hands-on training for all summer school administrators and teachers prior to the start of classes.  To reduce confusion with grading, workshop presenters should ensure all teachers understand the automatic scoring of student journals by Education2020.com.  Additional emphasis should focus on promoting high quality classroom environments including monitoring student progress, modifying lessons to scaffold learning, and nurturing independent growth.  District policies should clearly stipulate allowances for modifications of lessons to safeguard fairness for all students.  Trainers should confirm all summer school teachers are competent and confident in administering Education2020.com courses.

Information from this study identified struggles students faced in the online program.  Knowing which content areas and courses had the lowest pass rates, teachers should remain alert while monitoring student progress for signs of difficulties.  As soon as teachers identify needs such as problems with vocabulary, reading level, or concept

mastery, they should provide additional content supports to students. Learners who are new to independent learning would benefit from an orientation presentation modeling best practices. Finally, to facilitate student progress beyond summer school hours, teachers could alternate sporadic weekend call duties enabling remote resets for students needing authorization for retakes so they can continue their studies. Through careful and continued monitoring of students throughout the summer, CPPS teachers can improve practices to increase student success.

### Next Steps for Caddo Schools

Results from this study will be presented to the school district in an effort to improve preparation and implementation of the CPPS online summer school. Similarly, findings may be used to improve the district's school year online program.

In addition to incorporating the preceding recommendations for practice, CPPS should demonstrate its commitment by ensuring funding, equipment, facilities, staffing, and professional development adequately support the goal to provide an exceptional online program. Priority status must be given to the needs of district personnel responsible for the program. Employees tasked with program oversight, including directors, supervisors, principals, and guidance counselors, should receive thorough, regular professional development about the best practices of the online program.

The conclusions from this study emphasize the importance of matching students with the most appropriate course options. Misconceptions about the CPPS online summer school program abound, and the district should develop and distribute unified, clear communication for interested students, parents, and the public. Guidance

counselors, who are the staff enrolling students into summer school, should receive detailed training about the online program.  Although all students should be given the opportunity to enroll in the online program, counselors should work with students to make informed decisions to promote student success.  Brief trial online exercises should be offered to anyone interested in the program to determine whether the CPPS online program would be a good option for them.

The short timeframe of summer school mandates efficient program implementation.  The principal and assistant principal of summer school should already be experienced with the online program.  In addition, Caddo should hire and train a guidance counselor who is also competent with the technology to serve as a liaison among summer school teachers, students, parents, and guardians.  The counselor should be alert to and meet with students experiencing difficulties to determine which interventions should be taken.  All summer school teachers should be proficient and confident in their online computer skills and course strategies and embrace the power to individualize learning pathways.  Faculty meetings should be held after each of the first few summer school days and periodically thereafter to promote communication and brainstorming among teachers and administrators to handle immediate concerns and discuss strategies such as promoting active student engagement, monitoring of students, and student collaboration.  Administrators should encourage teacher and student creativity for scheduling sessions, collaborating among students, and mentoring learners. Summer school leaders should promote among students a focus on course lessons and maintain a sense of urgency towards identifying and solving problems.

## Future Studies

Good studies generate new questions. The findings of this study revealed new variables to examine. As CPPS expands its online program, further review of pertinent variables related to student retention and satisfaction will facilitate the district's efforts to help students succeed in their courses. Further research is needed to address the following research questions: How does student satisfaction relate to pupil-to-teacher ratio? How does student satisfaction relate to time to completion? How does student satisfaction relate to teacher experience leading online courses? How does retention relate to previous online student experience? How does time to completion relate to pass rate? I look forward to continuing my studies to assist in predicting and promoting student success in CPPS online courses.

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APPENDIX A

CPPS ONLINE STUDENT DEMOGRAPHICS AND SATISFACTION SURVEY

What was your grade level during the 2012-2013 school year? *

What is your current age? *

What is your gender?

Which of the following best represents your racial or ethnic heritage?  Choose all that apply.

○  Non-Hispanic White or Euro-American

○  Black, Afro-Caribbean, or African American

○  Latino or Hispanic America

○  East Asian or Asian American

○  South Asian or Indian American

○  Middle Eastern or Arab American

○  Native American or Alaskan Native

○  Prefer not to answer

○  Other:

What was your reason to take this online course? *

In which Education2020.com online course were you enrolled? *

If you were enrolled in a course that spans two semesters, which semester did you take this summer?This question is not applicable to Health or Strategies for Academic Success.

Did you earn credit in your online course? *

○ Yes

○ No

If you earned credit in the online course, what was the grade you earned in the course? [ ▼ ]

If you did not complete the course, please indicate the reason(s) you did not finish. Please check all that apply.

☐ I did not have enough time to complete my course.

☐ My summer plans conflicted with my studies.

☐ I had difficulty understanding the lessons.

☐ I had trouble getting to Captain Shreve to take my tests.

☐ I needed more time with the teacher.

☐ I prefer to learn in a traditional class.

☐ I was not interested in the online lessons.

☐ I had trouble with the Education2020.com website.

☐ I had technology issues at Captain Shreve.

☐ I had technology issues when accessing the program away from Captain Shreve.

☐ Other: [ ]

Have you enrolled in an online course before this one? *

○ Yes

○ No

If you were in an online course before, did you complete the full course?

○ Yes

○ No

How many hours per week did you work on your online class OUTSIDE of summer school? * [ ▼ ]

Please rate your level of satisfaction using the computers at Captain Shreve during summer school. *

                    1    2    3    4

Very dissatisfied ○   ○   ○   ○   Very satisfied

Please rate your level of satisfaction with the lessons presented in your Education2020.com course. *

                     1     2     3     4

Very dissatisfied ○   ○   ○   ○   Very satisfied

Please rate your level of satisfaction with the support given to you by your teacher during summer school. *

                     1     2     3     4

Very dissatisfied ○   ○   ○   ○   Very satisfied

Did you take electronic notes while working on your online course? *

☐   Yes

☐   No

How would you rate the rigor or academic requirements of the course you took? *

○   The course was very easy.

○   The course was somewhat easy.

○   The course was neither easy nor difficult.

○   The course was somewhat difficult.

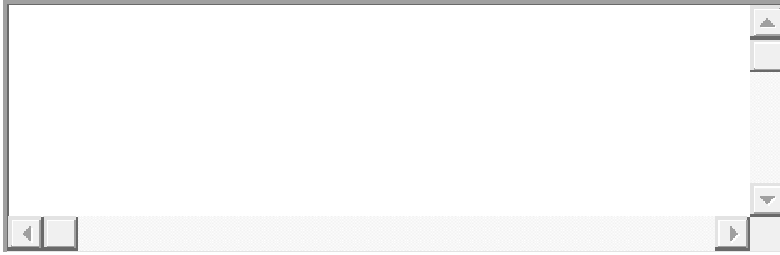○   The course was very challenging.

Would you be interested in taking another Education2020.com online course?*

○   Yes

○   No

Please provide any suggestions that would help Caddo improve its online program.

What advice would you like to offer future students taking an online course?

[text input box]

* Questions that required a response.

APPENDIX B

FOLLOW-UP CPPS ONLINE STUDENT SURVEY FOR MAXIMUM VARIATION

This open-ended survey was designed to allow students to expand upon their responses as they desired.

1. Which course did you take in summer school this year?

2. Did you complete the course you were taking in summer school?

3. If you completed the course, did you earn a C or better?

4. If you did not complete the course, would you mind sharing information to help us understand why you did not finish?

5. How easy was it for you to navigate (access) the Education2020.com program?

6. We realize that students have different styles and strategies for their schoolwork. Was there anything that you found to be especially helpful as you completed your online coursework?

7. Please describe any difficulties you encountered in summer school this year.

8. What did you like and/or not like about the online summer program?

9. What was your level of satisfaction with the lessons in Education2020.com and why?

10. The summer school program featured a blended model of learning with a teacher in the content area who served as a mentor and tutor in the computer classroom. Can you elaborate on your experiences in the classroom and any effects of the blended model upon your level of success in your coursework?

11. Are there any additional comments you would like to make about the online summer school program this summer?

APPENDIX C

STUDENT INTERVIEW QUESTIONS FOR STUDENTS
WHO DID NOT EARN CREDIT

1. Which course did you take in summer school this year?

2. What prevented you from completing your summer course?

3. Are you still working on your summer course?  When do you plan to finish?

4. Have you ever taken an online course before?

5. How would you compare taking an online course to a traditional course?

6. How would you describe your working relationship to the teacher who helped in the summer school classroom?

7. How would you rate your level of satisfaction with the summer school program? Why?

8. How did having a teacher in your summer school classroom affect your progress?

9. How many absences did you have during your summer course?

10. If you worked away from summer school, where did you work on your lessons?

11. How much did you work on your school lessons beyond the summer school day?

12. What kinds of technology issues did you experience?

13. What types of distractions affected your academic performance this summer?

14. Would you be interested in taking another online course?

15. What suggestions would you like to make about the online program?

APPENDIX D


STUDENT INTERVIEW QUESTIONS FOR STUDENTS
WHO EARNED CREDIT


1.  Which course did you take in summer school this year?

2.  How easy was it for you to navigate (access) the Education2020.com program?

3.  Describe any techniques you found to be especially helpful to you during summer school.

4.  How long did it take you to complete your course?

5.  Please describe any difficulties you encountered in summer school this year.

6.  What did you like and/or not like about the online summer program?

7.  How would you rate your level of satisfaction with the summer school program on a scale from 1-10 with 10 as highest satisfaction? Why?

8.  We realize that students have different styles and strategies for their schoolwork. Was there anything that you found to be especially helpful as you completed your online coursework?

9.  The summer school program featured a blended model of learning with a teacher in the content area who served as a mentor and tutor in the computer classroom. Can you elaborate on your experiences in the classroom and any effects of the blended model upon your level of success in your coursework?