Journal of Online Learning Research (2019) **5**(2), 169-198

Interaction, Student Satisfaction, and Teacher Time Investment in Online High School Courses

CHAD TURLEY
Brigham Young University, United States
chad.turley@byu.edu

CHARLES GRAHAM
Brigham Young University, United States
charles.graham@byu.edu

This case study explores differences between two online course models by investigating the results of a student end-of-course evaluation survey and teacher communication logs in two online high school courses. The two course models were designed with different types and levels of interaction, one with high levels of student-content interaction, the second with high levels of student-content and student-teacher interaction. The majority of research on interaction in online learning has been conducted with adult learners at the university level. There is far less literature focusing on K-12 online learning while investigating interaction, student satisfaction, and teacher time investment. This case study addresses this gap by exploring the results of 764 student surveys and investigating the teacher time investments of four teachers. In this study the students' perception of their learning experience in both models met the online program's acceptable levels. In some dimensions of the course evaluation, the interactive course had a statistically significant higher rating. The teacher communication logs showed a higher teacher time investment in the more interactive courses, with the highest time investment coming from reaching out to inactive students. Due to the shortage of available literature in K-12 online settings regarding interaction, student satisfaction, and teacher time investment, the author recommends additional research in these areas. By continuing to research and understand better about K-12 online learners, this understanding could influence the development of course interaction standards, assist designers in building better courses, and ultimately lead to higher satisfaction for students.

Keywords: online learning, K-12, interaction, student satisfaction, teacher time investment

INTRODUCTION

Online learning enrollments continue to grow at both the K-12 and university levels (Allen & Seaman, 2017; Gemin, Pape, Vashaw, & Watson, 2015). Historically, distance education began as an independent form of study, which allowed students to receive and submit material through the mail. Correspondence courses relied heavily on content interaction with the self-instructional course packet mailed to students to complete on their own. Correspondence courses looked to address and improve educational issues of access, efficiency, and scale (Annand, 2007). Independent study has been called self-directed learning, with course activities completed by a student with little to no oversight (Annand, 2007). Lack of supervision and appropriate interaction between the teacher and student, could result in transactional distance (Moore,1993), requiring learner autonomy to increase. In past iterations of independent study, students working independently, without instructor or peer interaction, and were found to be difficult for some students (Anderson, 2003; Jung, Choi, Lim, & Leem, 2002). More recently, those researching K-12 online learning report higher levels of interaction in online courses that can lead to improved student motivation (Murphy & Rodríguez-Manzanares, 2009), higher completion rates (Hawkins, Graham, Sudweeks, & Barbour, 2013), and increased sense of presence (Borup, Graham, & Davies, 2013).

Attrition rates tend to range between 15-50% higher in online programs than in traditional classrooms (Bambara, Harbour, Davies, & Athey, 2009). Researchers have found that online course interactions can improve several student concerns such as isolation, dissatisfaction, technology issues, and boredom (Garrison & Cleveland-Innes, 2005; Roblyer, 2006; Swan, 2001). Opportunities for student interactions in an online course can be critical in avoiding students feeling isolated, developing a sense of course community, and achieving academic success (Oviatt, Graham, Borup, & Davies, 2016).

After 25 years of K-12 online learning practice in the United States, there are limited amounts of published research investigating if more interaction leads to higher student satisfaction in K-12 contexts (Barbour, 2010). The majority of current research in online learning interactions tends to focus on adult learners in the university setting. A few studies, with college student participants, suggest a correlation when student-content, student-student or student-teacher interaction goes up, and so does student satisfaction (Anderson, 2003; Bernard et al., 2009; Bernard, Borokhovski, Schmid, Tamin, & Abrami, 2014; Eom, Wen, & Ashill, 2006; Kuo, Walker, Schroder, & Belland, 2014; Swam, 2001). Garrett Dikkers (2018) suggested that future K-12 online learning research should focus on student satisfaction, while other researchers noted that few K-12 studies have deeply investigated the relationship of interaction and satisfaction in online learning (Barbour, 2010; Ferdig, Cavanaugh, DiPeitro, Black, & Dawson, 2009).

This case study explored the differences between two online course models by investigating the results of a student end-of-course survey and teacher time logs. The process used in this case study can best be explained as an exploration to examine current online course design, with improvement as the goal. This understanding could influence the development of course interaction standards, assist designers in building better courses, and ultimately lead to higher satisfaction for students.

LITERATURE REVIEW

Large numbers of students continue to take online courses at both the secondary and post-secondary levels, with the latest figures showing enrollments trending upward (Allen & Seaman, 2017; Gemin, Pape, Vashaw, & Watson, 2015). While the first K-12 online schools and programs began 15-20 years ago, distance education has been used by students for over 100 years (Matthews, 1999; Watson et al., 2015). Distance education allows instruction and learning to occur, even though the student and teacher are not geographically together (Matthews, 1999). In the evolution of distance education to online learning, opportunities for interactions have increased. Correspondence courses allow learners and instructors to interact. However, the time lag in providing feedback and communication can be substantial when communicating by mail. More recent technologies such as video conferencing, email, and learning management systems, have made it easier to promote higher levels of communication in the online environment. Also, those developing online learning models suggest more communication in learning environments leads to improved learning outcomes and increased student success (Bernard et al., 2009; Bernard et al., 2014; Borup et al., 2013; Garrison & Cleveland-Innes, 2005; Swan, 2001). Therefore, "failure to fully consider the relational dynamics in the online setting may produce greater feelings of isolation among distance learners, reduced levels of student satisfaction, poor academic performance, and increased attrition" (Woods & Baker, 2004, p. 1). Given the continuous growth and developing communication tools, it is essential to look for ways to increase student satisfaction regularly.

Student Satisfaction

Moore (2011) defined student satisfaction as students having success and a good experience while learning online. Student satisfaction, in any learning environment, can be difficult to measure. So why measure it? Students spend considerable time, effort and money to receive a quality education and should perceive their online learning experience as being high value (Bollinger & Erichsen, 2013). Studies have shown that student satisfaction can influence student motivation (Borup et al., 2013). The Online Learning

Consortium (OLC) state in their Five Pillars of Quality Online Education that "Student satisfaction reflects the effectiveness of all aspects of the educational experience" (Sinclaire, 2013, p. 3). OLC also notes that the most critical key to continuous learning is student satisfaction (Sinclaire, 2013). Lastly, there is research that suggests student satisfaction can decrease attrition rates and influence students to take more online courses (Hawkins et al., 2013). Many educational entities view their online students as customers, making their satisfaction essential to retention and recruitment efforts (Emery, Kramer, & Tian, 2001).

In a study involving 397 students, Eom et al. (2006) identified several factors essential to student satisfaction related to teacher interactions. The study highlighted that students wanted frequent teacher feedback, teacher facilitation of learning in the course, and teachers having strong content knowledge. In a similar study, conducted over three years at a university, researchers surveyed 553 undergraduate and graduate online students to investigate levels of satisfaction with online learning (Cole, Shelley, & Swartz, 2014). Results showed 46% of the students were satisfied with their course, citing convenience, structure, and learning preferences as reasons. The data showed that 54% of students were dissatisfied with their online course. The highest reported reason for dissatisfaction, noted by 33% of students, was lack of teacher and peer interaction. Another 8% of students were dissatisfied with their teacher's facility with online instruction (Cole et al., 2014). This research adds to the evidence that online interactivity links to student satisfaction.

Interaction Linked to Student Success

The interactions students experience in the online environment are much different than in face-to-face courses. For example, in the traditional classroom verbal and nonverbal communication can close the psychological distance between the teacher and student. Online teachers are limited in many instances to written communications, which do not have the benefits of voice cues or body language (Murphy & Rodríguez-Manzanares, 2009). What remains the same is that interaction is an essential element in all types of educational settings, perhaps if not more so in the online environment (Swan, 2001). The positive influence of interaction in online learning has been documented by educational researchers in both postsecondary (Eom et al., 2006; Swan, 2001) and K-12 settings (Borup et al., 2013; Cavanaugh et al., 2009).

Before the explosive growth in online learning, Moore (1989) developed a theoretical framework for distance education interactions. Moore's interaction classification has been used thoroughly to examine online learning interactions in higher education settings. The framework identifies a three-part interaction scheme that includes student-content, student-teacher, and student-student interaction.

Student-content interaction refers to how students interact with textbooks, instructional videos, and other learning materials. This form of interaction tends to be one-sided as information flows to the student from the subject matter. Kuo et al. (2014) reported a positive correlation between student-content interaction and student satisfaction at the postsecondary level. There is limited literature on K-12 studies that have investigated and found a positive effect from student-content interaction on student achievement in online courses.

Student-teacher interaction includes asynchronous communications through discussion boards and email as well as synchronous communication through chat and video conferencing (Anderson, 2003). This form of interaction is a two-way communication between the student and teacher. Moore (1989) believed high quality and frequency of student-teacher interaction is required to have a successful distance learning experience. A few online K-12 studies have reported a positive effect between this form of interaction and motivation (Murphy & Rodríguez-Manzanares, 2009), attrition (Roblyer, 2006), and academic dishonesty (Watson, 2007). The post-secondary research has presented a much more robust case related to student-teacher interaction and a positive effect on student perceived learning and satisfaction (Jung et al., 2002; Kuo et al., 2014).

Student-student interaction refers to communications between students. This form of interaction includes collaborative learning that can help develop critical thinking skills and more in-depth knowledge (Anderson, 2003). There is little research in online K-12 settings regarding student-student interaction. A couple studies have documented students' desire for interpersonal communication (Cavanaugh et al., 2009) and that the lack of student-student interaction could lead to higher attrition rates (Weiner, 2003). Post-secondary research regarding student-student interaction has reported mixed results. Some studies indicate this interaction has little to no positive effect on student satisfaction (Jung et al., 2002; Kuo et al., 2014) while another study reports it helps increase achievement (Anderson, 2003).

The need for interaction will vary in each online course depending on the types of learners, the personality and philosophy of the teacher, and the course design. Designers and teachers should be made aware of the importance of interactions occurring in their courses. They should continue to explore ways to cope with the difficulty of communication in the online environment, increase opportunities for content impact, and explore new ways for students to engage with one another. Many studies have focused on the definition and description of online interactions such as learner-content, learner-instructor, and learner-learner in online education (Moore, 1989). However, there is little evidence in the K-12 literature that has focused on how high levels of interactions affect student satisfaction.

Instructor Time Investment

Research suggests that quality online teaching requires a more substantial time investment from the teacher than the face-to-face classroom (Cavanaugh, 2005; Mandernach, Hudson, & Wise, 2013; Pattillo, 2005, Van de Vord & Pogue, 2012). What seems to be missing from the literature is more research on the distribution of teacher time investment in the various aspects of online teaching. Some studies have concluded that the amount of time required to teach online varies, depending on teacher experience, enrollments, course design, content area, and other factors (Mupinga & Maughan, 2008; Rockwell, Schauer, Fritz, & Marx, 1999).

Van de Vord and Pogue (2012) surveyed 30 faculty members regarding online teaching time investments. Faculty reported that next to grading, student-teacher interaction was the second most time-consuming aspect of online teaching. Mandernach et al. (2013) conducted a study that surveyed 80 full-time online faculty members measuring their time investment estimates spent on different activities during an average week of teaching online. Faculty reported spending their most considerable weekly time investment of 52% grading assignments and providing student feedback. The second largest time investment, at 45%, was student-teacher interactions, such as initiating one-on-one contact with students and answering phone calls and email.

The majority of current research compares online teacher time investment to face-to-face teacher time investment. As online learning research continues, it is crucial to identify and understand the factors that affect the responsibilities of teaching online efficiently. Instructional designers must understand the time investment of teachers when designing courses to get the most efficient use of interactions. The online administration needs this information to decide on the best course design model to use, to fairly pay teachers, and to create training for teachers.

Theoretical Framework

The theoretical framework used for this study was the interaction equivalency theorem as proposed by Anderson (2003). The theorem succeeds and builds on Moore's (1989) three-part model of interaction. In the interaction equivalency theorem, Anderson (2003) suggested learning effectiveness will be achieved as long as an instructional designer designs the course with at least one of the three types of interactions (student–teacher; student-student; student-content) at a high level. Other forms of interaction may be included at lower levels or excluded altogether, and not affect the quality of learning. If a course provides multiple types of interaction, all at a high level, it increases the likelihood of student satisfaction.

Miyazoe and Anderson (2010) proposed that the interaction equivalency theorem focuses on interaction regarding quality and quantity. For example, the theorem assures a quality learning experience in an online course with high levels of student-content interaction, no student-student interaction, and no student-teacher interaction. The second part of the theorem refers to the quantity of interaction. A second example course with high levels in both student-content and student-teacher interactions would likely produce higher student satisfaction but may also increase the workload and time commitment for the student and the teacher.

This study explores differences in student satisfaction and teacher time investment between two online models (a) an independent study model that emphasizes student-content interaction and minimizes other interactions, and (b) a model that adds a teacher who proactively reaches out to interact with students. This understanding could influence the training and development of online teachers, assist designers in building better courses, and ultimately lead to higher satisfaction and academic success for students.

METHOD

The research questions investigated in this study were:

1. What differences exist between a correspondence model and a teacher-led model of K-12 online learning based upon examining the student end-of-course evaluation survey and the teacher communication log?
2. How does interaction affect a student's perception, satisfaction, and completion time in an online course?
3. How does interaction affect a teacher's time investment in teaching an online course?

Research Design

The purpose of this study was to explore what differences exist, if any, between two online course models by investigating the results of a student end-of-course survey and teacher time logs in high school online courses. This cross-case study approach, based on two data sources, further explored online learning student satisfaction and the time investments of the online teacher. Case studies are commonly used in online learning research due to the flexible method and application to a wide variety of contexts (Graham, 2016). Yin (2003) identified case studies as an appropriate methodology for explanatory research because they can analyze contemporary events and can explore descriptive questions.

The process used in this case study can best be explained as an exploration to examine current online course design, with improvement as the goal. For this case study, investigating teachers' interactions with students,

student satisfaction data, the topics of interactions such as grading and content questions, and teacher time investments were explored. Yin (2003) noted that a case study is ideal when looking to explore, explain or describe events in the contexts in which they occur. A case study also investigates and brings out details from the perspective of the participants (Yin, 2003). Eysenck (1976) wrote, "sometimes we simply have to keep our eyes open and look carefully at individual cases – not in hope of proving anything, but rather in hope of learning something!" (p. 9). Eysenck described the case study as an exploration, and rather than always working to prove new findings; researchers should give some credibility to the notion of better understanding a topic.

Participants

The participants in this study were high school students enrolled in secondary level math and English online courses. At the time the data was collected, there were 1,025 students enrolled in the four courses. With open enrollment and a year to complete a course, this is just a snapshot in time, as students were still enrolling and working in the courses. To encourage participation in the course evaluation process, students were told the survey was anonymous, therefore it did not include age, ethnicity or gender. Hence, demographic information of participants is not included in the analysis. This research was exempt from IRB review due to the following (a) use of existing student data that was a part of regular educational practices that was anonymous even to the online learning program (b) use of existing data time logs for instructor-student communication that was part of the regular business practices of the online learning program and were de-identified.

Setting

This study was conducted at a nonprofit online educational program in the Western U.S. The online program sponsored by a private, denominationally affiliated university, offers more than 550 online courses. Enrollments come from university, high school, and middle school students throughout the United States and in over 90 foreign countries. There are approximately 100,000 online course enrollments per year. Registration is open year-round, with a full year given to complete most courses.

The online program referred to in this study offers two model types of high school online courses and students self-enroll. This study focused on two high school math and two English classes, as both models exist in these subject areas. The two models emphasize different types and levels of interaction. Model One courses are designed with a high level of student-content interaction and a low level of student-teacher interaction. Model Two courses are designed with high levels of both student-content and student-teacher interaction, and with a low level of student-student interaction.

The two models exhibit similarities and differences in the course experience. Both models are self-paced, allow a year for completion, include a certified teacher, the same course content, and tutoring/technical support. Table 1 displays the differences in the course experience related to each model's course design.

Table 1
Course Models Descriptions

Descriptions	Model One	Model Two
Interaction design	Student-content	Student-content and student-teacher
Assignments	Asynchronous	Asynchronous and synchronous
Teacher feedback	Limited	Multiple
Communications	Student initiated	Teacher and student initiated
Virtual interactions	None	Live teacher lessons and office hours
Peer-to-peer interactions	None	Discussion boards (handled by TAs)

Teacher responsibilities for both course models included providing feedback on assignments and answering student-initiated email regarding course content and grading questions. Model two teachers, in addition, conducted synchronous lessons, virtual assignments, and provide live feedback while reviewing work with students. Model two teachers were also expected to post an announcement or send a general email blast weekly to students and contact five to seven students weekly with a personalized email.

Instruments

The information used for this study was collected from two instruments, an end-of-course student survey and a teacher communication log. Both instruments used in this study were self-reported by participants, which creates a limitation and may not provide an accurate reflection of students' perceptions and teacher activity. Participating teachers were instructed how to track communications, with examples given, and clarification after certain points during the study.

Instrument one. The online Student End-of-Course Evaluation Survey (SECES) was developed and currently in use by the online program. The survey contained 12 questions (with multiple parts) related to course and overall experience and was estimated to take students about 10 minutes to complete. For context, the online program has set acceptable standards for courses at 5-8 on the Likert scale questions and a 70% response score on Yes/No questions. This survey was distributed to all students during the

end-of-course completion process. All students received a notification that the volunteer survey was anonymous and would not impact their grade in any way.

Instrument two. A Teacher Communication Log (TCL) was created for this study to capture student-teacher interaction information for each communication. The log included eight questions and expected teachers to take two to three minutes to complete per interaction logged. Teachers self-reported the information, such as who initiated the communication, how much time the communication required, the mode of communication, and reason for communication.

Procedures

All students were encouraged to complete the existing SECES during the end-of-course completion process. Students received a notification that the survey was anonymous and would not impact their grade. The 764 SECES respondents included in this study completed the course over two years (January 2016- February 2018). An online program administrator collected the data, then shared the requested results with the researcher. The SECES data collection and organization was already in place as part of the online program's course assessment process.

Four online teachers (two for each model) tracked both student and teacher-initiated communications using the TCL. The logs represented communications with all students enrolled in the courses during a four-month period (October 2017- February 2018) and included both students that completed and did not complete during the four-month period. The log was in survey form that allowed the researcher to export the collected data to a spreadsheet for analysis.

Data Analysis

Descriptive statistics were used to summarize the quantitative data from both instruments identified in this study. One sub-section of the teacher communication log was coded, the communication topic of teacher-initiated and response to teacher interactions. Inter-rater reliability was calculated using two raters and eight possible coding categories into which the interactions were classified (a) content, (b) grading, (c) tech/policy forwarded, (d) encouragement, (e) welcome, (f) inactive, (g) policy, and (h) gratitude. In each category, there was at least 80% initial agreement between coders. Discrepancies were discussed until 100% agreement was reached.

Two researchers individually read and identified themes from the original teacher notes. Themes were categorized based on their perception on the underlying data. Following this step, the two researchers adjusted and

integrated their individual coding rubric into a unified coding rubric. The two researchers then attempted a trial coding of the data using the unified rubric to determine ease of use, needed clarification, and categories that could be eliminated or combined. Several iterations were necessary prior to finalization of the coding rubric.

Using the established coding rubric, the first phase of coding was independently conducted by two raters coding the teacher notes into categories. A percent agreement of 86% was reached out of all the coding decisions (529/615) by the two raters. The two raters then revisited and discussed each coding non-agreement through collaboration, using consensus agreement, and the ratings were finalized.

RESULTS

Findings were organized into four areas related to the research question (a) student perceptions of course quality, (b) student satisfaction, (c) course completion, and (d) teacher time investment.

Student Perceptions of Course Quality

Tables 2 and 3 provide a summary of 764 total student end-of-course evaluation survey results collected for the case study. For context, the online program has set acceptable standards for courses at 5-8 on the Likert scale questions and a 70% response score on Yes/No questions on the SECES. An independent-samples t-test was conducted to compare the Model One and Model Two course means for each SECES question, with an Alpha value set at $p < .05$.

Both the math and English course models met the acceptable levels set by the program, in all areas but two. Both the math and English Model One courses scored below the program's acceptable levels in *Meaningful instructor feedback* and *Timely instructor response time*. Overall, the SECES results displayed slightly higher ratings in the Model Two versions of the courses, with only two mean scores receiving an equal score for each model. However, the differences were only statistically significant in a few instances as shown in Tables 2 and 3.

Table 2
End-of-Course Student Evaluation Math Courses

	Model One (n=250)	*Model Two (n=54)*	*t-test*
Intellectual skills were developed	5.2	5.6	.277
Assignments were meaningful	5.3	5.6	.449
Learning material was engaging	5.0	5.2	.795
Meaningful instructor feedback	3.6	6.4	.000*
Timely instructor response time	3.2	6.2	.000*
Course was challenging	6.0	6.0	.957
I learned a great deal	5.7	6.0	.517
Instructor rating	5.0	6.0	.000*
Goals Achieved	87%	89%	.688
Recommend to a friend	77%	79%	.753
Satisfied with experience	79%	81%	.744
Comparing this course with others	5.0	5.3	.195

*p < .05

Table 3
End-of-Course Student Evaluation English Courses

	Model One (n=400)	*Model Two (n=60)*	*t-test*
Intellectual skills were developed	5.8	6.1	.380
Assignments were meaningful	5.8	6.0	.385
Learning material was engaging	5.8	5.8	.914
Meaningful instructor feedback	3.6	6.3	.000*
Timely instructor response time	3.1	6.7	.000*
Course was challenging	5.8	5.9	.918
I learned a great deal	5.9	6.1	.452
Instructor rating	5.7	6.5	.000*
Goals Achieved	92%	98%	.005*
Recommend to a friend	88%	97%	.005*
Satisfied with experience	92%	97%	.075
Comparing this course with others	5.6	6.3	.001*

*p < .05

The Model Two Math course results are slightly higher than the Model One course in all areas, except *Course was challenging* (M = 6.0), where the results were the same. The largest mean differences between the Model One and Two courses were displayed in *Timely instructor response time* (+3.0), followed by *Meaningful instructor feedback* (+2.8), and *Instructor rating* (+1.0). These same three areas, indicated by the t-test, showed a significant difference at the .05 level between the model means, *Timely instructor response time* ($p < .001$), *Meaningful instructor feedback* ($p < .001$), and *Instructor rating* ($p < .001$).

The Model Two English course also showed slightly higher ratings than the Model One course in all areas except *Learning material was engaging* (M = 5.8), where the results were the same. The largest mean differences between the Model One and Two courses were in *Timely instructor response time* (+3.6), followed by *Meaningful instructor feedback* (+2.7). For English courses there were statistically significant differences at the .05 level in the t-test scores of four areas (a) *Meaningful instructor feedback* ($p < .001$), (b) *Timely instructor response time* ($p < .001$), (c) *Instructor rating* ($p < .001$), and (d) *Goals achieved* ($p = .005$).

Student Satisfaction

Tables 2 and 3 provide results of the three questions on the SECES that were categorized as related to student satisfaction (a) *Recommend to a friend,* (b) *Satisfied with experience,* and (c) *Comparing this course with others*.

Student ratings met the program's acceptable level for both Model One and Model Two Math courses on the three questions. The Model Two Math course showed a 0.3 positive difference in *Comparing this course with others*, and a 2% positive difference in *Satisfied with experience* and *Recommend to a friend*. For *Recommend to a friend* ($p = .753$), *Satisfied with experience* ($p = .744$), and *Comparing this course with others* ($p = .195$), the t-test revealed that the model means did not differ significantly at the .05 level.

The Model One and Model Two English courses also met the program's acceptable level for the three student satisfaction questions. The Model Two English course showed a 0.7 positive difference in *Comparing this course with others*, *Satisfied with experienc*e showed a 5% positive increase and *Recommend to a friend* showed a 9% positive increase. The t-test results for *Satisfied with experience* ($p = .075$) did not differ significantly, however, for both *Recommend to a friend* ($p = .005$) and *Comparing this course with others* ($p = .001$), the t-test indicated that a significant difference between model means was present. Overall, student satisfaction results were slightly higher in English courses than math courses.

Course Completion

Table 4 provides a summary of enrollments, time to complete, and completion rate for both models in the study. Enrollments are higher in both the Model One courses. Students were able to complete both the Model One courses in a shorter time frame. Students took an average of five weeks longer to complete the Model Two Math course and three weeks longer to complete the Model Two English course. The Model Two Math course completion rate is 5% higher than the Model One course. The Model Two English course completion rate is 3% higher than the Model One course.

Table 4
Course Model Enrollments, Time to Complete, and Completion Rate

Course	Model	Enrollments	Avg. Time to complete	Completion rate
Math	Model One	2728	13 weeks	38%
	Model Two	801	18 weeks	43%
English	Model One	1683	16 weeks	53%
	Model Two	151	18 weeks	56%

Teacher Time Investment

Time spent and who initiated the communications were tracked in both course delivery models (see Figure 1). Across all four courses, over a four-month period, a total of 707 communications were made, 3% (n=21) in the Model One courses, and 97% (n=686) in the Model Two courses. Teachers tracked interactions selecting from a time range of (a) less than 5 minutes, (b) 5-10 minutes, (c) 10-15 minutes, and (d) more than 15 minutes. Total time estimates were reached by using the following categories (a) less than 5 minutes= 5 minutes, (b) 5-10 minutes= 10 minutes, (c) 10-15 minutes=15 minutes, and (4) more than 15 minutes=16 minutes.

In Model One courses, where all interactions were student-initiated, there were a total of 21 interactions. The most common time investment being less than 5 minutes (n=14, 66.7%) per student interaction, followed by 5-10 minutes (n=5, 23.8%), 10-15 minutes (n=1, 4.7%) and more than 15 minutes (n=1, 4.7%). The total time investment for student interactions for the two Model One teachers was estimated at 151 minutes (2.5 hours) over a four-month period.

The Model Two courses also included student-initiated communications. There was a total of 118 interactions. The most common time investment being less than 5 minutes (n=72, 61%) per student interaction, followed by 5-10 minutes (n=32, 27.1%), 10-15 minutes (n=11, 9.3%), and more than 15

minutes (n=3, 2.5%). The time investment for student-initiated communications for the two Model Two teachers was estimated at 893 minutes (14.9 hours) over a four-month period.

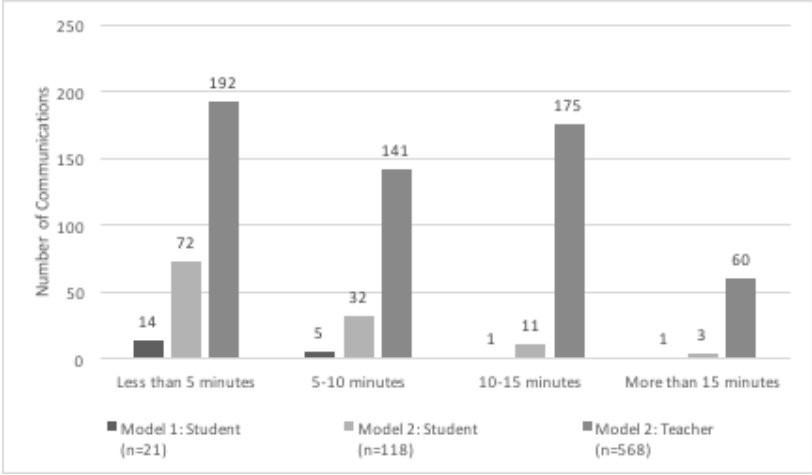

Figure 1. Teacher time spent and who initiated communication.

In Model Two courses, teachers also initiated proactive communications (n=568) with students. Teachers most frequently spent less than 5 minutes (n=192, 33.8%) per student interaction, followed by 10-15 minutes (n=175, 30.8%), 5-10 minutes (n=141, 24.8%) and more than 15 minutes (n=60, 10.6%). The time investment for proactive communications for the two Model Two teachers was estimated at 5,955 minutes (99.1 hours) over a four-month period.

The total time investment for the two Model Two teachers, combining student and teacher-initiated communications was estimated at 6,848 minutes (114.1 hours) over a four-month period.

Teacher method of communication. Teachers tracked their method of communication with students (see Figure 2). Of the 568 teacher-initiated communications, the highest percent of interactions (n=463, 81.5%) were in the form of a personalized email to an individual student. About 11% (n=65) of teacher communications were an email blast, containing the same message for a large number of students. The remaining communications were sent by announcement (n=18, 3.2%) and conducted by video conference (n=22, 3.9%). None of the teachers used a phone call as a method of communication.

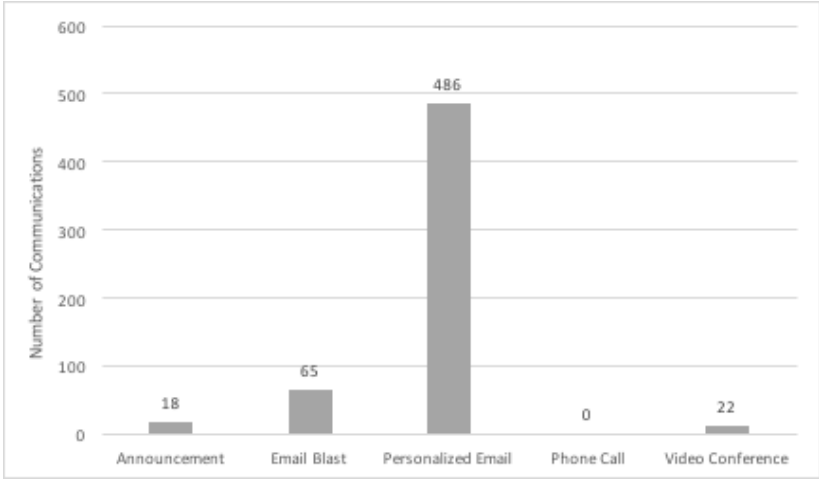

Figure 2. Teacher-initiated communication methods.

Communication topics. Communication topics between teachers and students were organized into eight categories (see Figure 3). Overall the highest category reported was reaching out to inactive students (n=361, 51.1%), followed by grading questions (n=104, 14.7%), encouragement to students (n=81, 11.5%), and content questions (n=58, 10.4%).

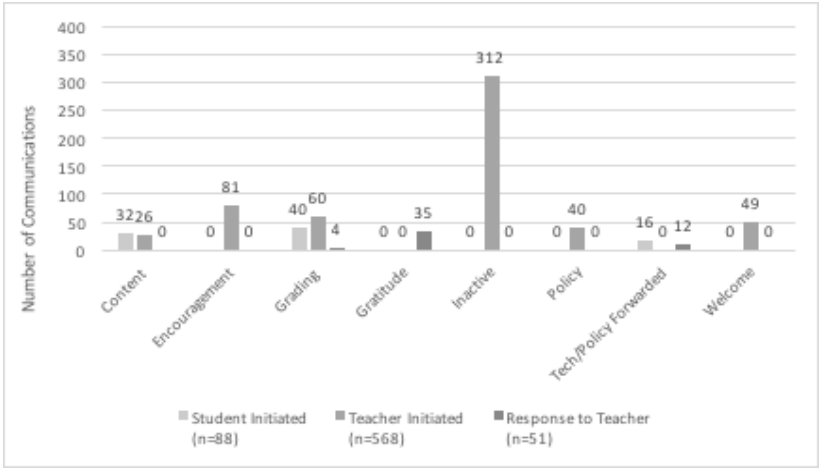

Figure 3. Student and teacher communication topics.

Student-initiated topics were highest regarding grading questions (n=40, 45.5%), followed by content questions (n=32, 36.3%), and tech/policy questions that were forwarded to another area (n=16, 18.2%). Teacher-initiated topics were highest in reaching out to inactive students (n=361, 58.5%), followed by encouraging students (n=81, 13.1%), and providing grading information (n=60, 9.7%). When students responded to a teacher-initiated communication, the highest category was gratitude (n=35, 68.6%), a tech/policy question forwarded (n=12, 23.5%), and grading questions (n=4, 7.8%).

Charting interactions. Two scatterplots (see Figure 4 & 5) were constructed to examine differences between the number of teacher-initiated interactions and number of student-initiated interactions per student. The size of the bubble represents the number of students on a particular point on the graph. Figure 4 displays the interactions that took place in the Model One courses over a four-month period. Model One courses allowed proactive communication from students (n=21) and reactive communications from teachers. Over the four months of the study, 16 students reached out to the teacher one time, three students reached out twice, and two students contacted the teacher four times. Teachers did respond to each student communication, but did not engage with students in a proactive manner.

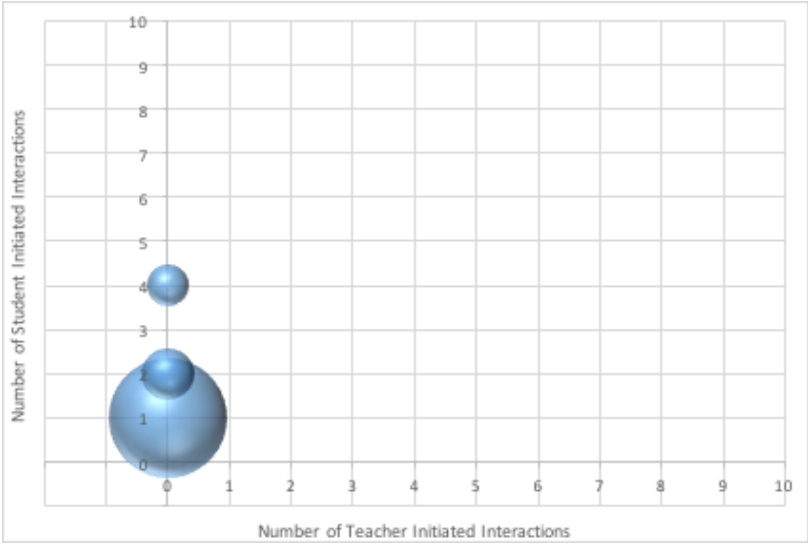

Figure 4. Number of student and teacher-initiated interactions per student in Model One.

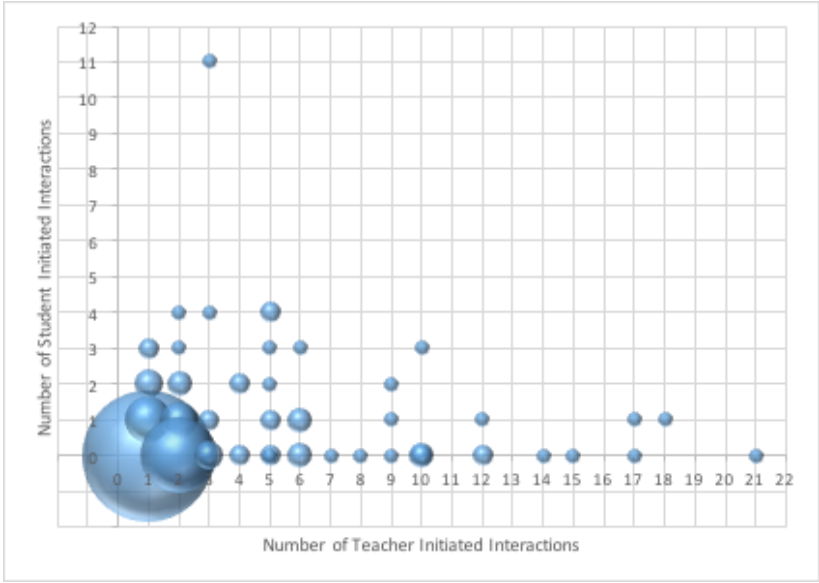

Figure 5. Number of student and teacher-initiated interactions per student in Model Two.

Figure 5 shows the number of teacher and student-initiated interactions per student in the Model Two courses over a four-month period. The largest area (n=92) is the teacher contacting the student one time with no return communication. The next largest areas are the teacher reaching out twice with no return communication (n=30), followed by the teacher reaching out once with the student communicating once as well (n=11). The largest amount of student-initiated communications by one student was eleven, with four teacher-initiated communications. The largest amount of teacher-initiated interactions toward one student was twenty-one, with no response from the student. The largest area of correspondence is in the 1-6 range for teacher interactions, which resulted in the 0-4 range of student interactions

DISCUSSION

This study examined differences between two online course models by investigating the results of a student end-of-course survey and teacher time logs in high school online courses. This study also explored the relationship between interaction and student satisfaction. Lastly, this study examined how interaction affects a student's time to complete a course and overall course completion rates.

Differences in Course Models

The Model One courses were designed to be an independent study model, with only high levels of student-content interaction, with very little opportunity for teacher interaction and no peer interaction. Previous research has reported that working independently, without an instructor or peer interaction was difficult for many students (Anderson, 2003; Jung et al., 2002). However, our study shows that many students can be successful in an independent study model course. The online program has set an above 5 response score on the 8-point Likert scale questions and a 70% response score on the Yes/No questions as an acceptable standard for courses. The Model One courses met the program's acceptable standard level in all areas but two, *Meaningful instructor feedback* and *Timely instructor response time*. This finding reflects other studies that have reported issues with lack of feedback and instructor's untimely response time as the most unsatisfactory element in a students' online learning experience (Cole et al., 2014; Eom et al., 2006).

Model Two courses were designed to be a teacher-led model, enabling high levels of both student-content and student-teacher interactions. Overall, the SECES results displayed slightly higher ratings in the Model Two versions of the courses, with only two mean scores receiving an equal score for each model. However, the differences were only statistically significant in a few instances. The largest differences of means between the two models, with positive differences toward the Model Two courses, were *Timely instructor response time*, *Meaningful instructor feedback*, and *Instructor rating*. It is interesting that the highest rated areas for the Model Two courses were all related to the instructor. This may indicate that the teacher can have a positive effect on the student's perception of course quality. One possibility is that feedback and timely responses may act as a motivator for students. This may lead students to pay more attention to course content and learning activities after receiving quality feedback and timely communications with the teacher. As referenced previously, this is in line with research noting the importance of feedback and timely responses to the students' online learning experience (Cole et al., 2014; Eom et al., 2006).

Student Satisfaction and Student-Teacher Interaction

Three questions on the SECES were identified as being related to student satisfaction. In this study, student-teacher and student-content interactions were the main features of the course design, and both models scored at the program's acceptable level. When comparing the student satisfaction levels between the two models, the math course displayed a slightly higher rating in the Model Two courses, but the t-test results did not show a significant

difference between the two models. The English courses also displayed a higher rating in Model Two courses, and did show a significant difference through the t-test for two of the three satisfaction questions. We were surprised however that none of the satisfaction questions in the math course with increased student-teacher interaction were statistically different from the version without the interaction. We expected to see that timeliness in responding to students, meaningful feedback, teacher and student enthusiasm would play a significant role in student satisfaction (Eom et al., 2006). This could be due to student expectations when taking a math class versus an English class. In English classes there are many opportunities for students to receive feedback when they submit assignments such as rough drafts, and in math, feedback may be limited to getting a math problem right or wrong. Miyazoe and Andersons' (2010) claimed that higher quality and quantity of interaction will result in greater satisfaction looks to be supported in the English courses, but not in the math courses included in this research.

Course Completion

The Model One courses on average were completed at a quicker pace. Students were able to complete the Model One math course five weeks quicker and the Model One English course two weeks quicker. These results do match a previous study that found when there are higher quality and quantity of interactions, it will result in a higher time investment for the student (Miyazoe & Anderson, 2010) which can lead to longer completion times. The longer student time investment for Model Two courses may be related to the higher amount of assignments and the requirement to meet multiple times virtually with the teacher during the course experience. The length of time for the student to complete the Model Two courses is more closely related to the length of time it takes a student to complete a class in the regular face-to-face classroom. In this study, completion rates are slightly higher in the Model Two courses. These results are similar to other studies that have found higher completion rates in online courses with higher student-teacher interaction (Hawkins et al., 2013).

Teacher Time Investment

Previous research suggested that online teaching requires a larger time investment than the regular classroom (Cavanaugh, 2005; Pattillo, 2005). Other research suggest that this time increase is related to variables, such as, number of enrollments, content area, and course design (Mupinga & Maughan, 2008). Higher enrollments did not seem to have an effect on the Model One courses with low student-instructor interaction levels, which resulted in low teacher time investment. The course design did have an effect

in that Model Two courses were designed to be more interactive, encouraging communications between the student and teacher. Higher enrollments in the Model Two course may have resulted in higher teacher time investment. Two related studies (Mandernach, et al., 2013; van de Vord & Pogue, 2012) found that grading and student communications were the teachers largest time investments. The findings in this case study support a more substantial time investment for the participating online teachers in the Model Two courses, with the highest communication time investment related to trying to contact inactive students. These results relate back to the different course designs of the two models. This did not explore the time distribution of the teacher time investment, as in how many hours were spent grading, teaching lessons, communicating with students, etc. In this study, the cost related to the teachers' higher investment of time in the Model Two courses was minimal. The online program does not pay the Model Two teachers substantially more than the Model One teachers for the additional duties. All online programs have different pay structures, but knowing the higher time investment of teachers teaching highly interactive courses could be important to know. Another question raised by the teacher time investment data is if the mode of communication, mostly email, made a difference or not. It could be that teacher email was being caught in a spam filter. It is also unclear if more students would have responded to other forms of communication such as a text message, or a phone call. Further research investigating other ways to interact with students could provide important findings. Since this study only focused on teacher interactions with students, it could be beneficial to investigate how to better involve the students' proximate community of engagement (Oviatt, Graham, Borup, & Davies, 2016; Oviatt, Graham, Borup, & Davies, 2018) including supporting roles, such as counselors, parents, and mentors.

Teacher time investment is an area that needs further investigation at the K-12 level. As online programs investigate course design models, those choosing more interactive models will need to consider the time investment of the teacher (Eom et al., 2006). Teachers may require more training in time management and guidance in creating assignment feedback and frequently asked questions templates. They may also need coaching in how much time they invest in reaching out to inactive students, versus how much time they invest in helping and encouraging students that are being successful.

Though not a focus of this case study, motivation of students has been found to affect student satisfaction in online education (Murphy & Rodríguez-Manzanares, 2009; Borup et al., 2013). Eom at al., (2006) suggested that students displaying self-motivation may encourage a student to learn above what is required and succeed in situations where there is not adequate

support. This suggests that even with high efforts from teachers to interact with students, there may be situations when students may not appear motivated, or engaged with the content and teacher feedback. In some cases, some students may not expect the need to respond to a teacher communication or the teacher may not expect a response as well. For example, if the teacher sends a course policy email reminder, the teacher and student may figure no response is needed. Results show that while some students never responded to the teacher, some students did respond. While we do not have data to support these interactions made a difference, the communications may have motivated or encouraged the students who responded or reach out to teachers to be successful. This warrants further research on interaction's relation to student satisfaction, grades, and course completion data be examined over an extended period of time, so not to be interpreted as limited to a single study and to ensure reliable interpretation.

Overall this study has reported many similarities and differences between two online course models. Some statistical significances found between the models through t-tests were related to instructor feedback, timely instructor response time, and the instructor rating. Other statistical significances were found in the student satisfaction results in the English courses. These findings about the importance of the teacher related to course quality, student satisfaction, and course completion rates could be called a practical significance that this study has identified. The other practical significance identified is the higher teacher time investment identified in the Model Two courses.

Finally, looking at the results of this study as a whole, both models worked as designed. Both models resulted in an acceptable form of course quality, student satisfaction, and allowed students to have a meaningful learning experience through course completion. Jung et al. (2002) noted in another study that regardless of the interaction type, students experienced a more positive view of online learning, which appears to be the case in both models.

Limitations

There are several limitations of this study that should be addressed by future research. First, this study was conducted at one institution in only two subject areas. This context limits the generalizability of the findings to other educational institutions similar to this study. Second, this study used a self-reported survey to measure and identify students' impressions of course experience and overall experience related to satisfaction. This limitation does not allow an accurate reflection of verification of the students' survey responses. Third, the participants in this study self-selected the type of online course they desired. Due to self-selection, there may be some differences

between the participants who want to take the course and those who choose not to, such as motivation, student expectations, and preferred learning preferences. Fourth, learner-learner interactions were not examined in this study due to the interactivity equivalency theorem stating only to investigate high levels of interaction. The courses in this study had none or very low levels of peer to peer interaction.

Future Implications

Most studies investigating interaction in online courses and the correlation between teacher time investment and student satisfaction have been in postsecondary settings. These studies focus on specific interactions such as learner-content, learner-instructor, and learner-learner (Moore, 1989) in online courses (Jung et al., 2002; Kuo et al., 2014). K-12 research studies have addressed the importance of interaction in online classes related to increased completion rates (Hawkins et al., 2013), increased motivation (Borup et al., 2013), a more positive learning environment (Weiner, 2003), and a decrease in academic dishonesty (Watson, 2007). Hawkins et al. (2013) noted little evidence in K-12 online learning research identifying the correlation between interaction and student satisfaction.

This study adds to the limited research focusing on online interactions in the K-12 context. The insights gained from this research could influence the development of K-12 online course interaction standards and teacher professional development, such as outlining what to do when a student does not respond to 21 email messages from an instructor. It could be switching the communication tool, or contacting an adult mentor. This information, in turn, could assist designers as they build online courses and look for ways to improve student satisfaction and interaction in the online environment. The accumulated information on interaction could add to the foundation of knowledge and best practices for online administrators as they try to decide which online learning model is best for their institution. Ultimately, insights gained from this study could help programs to increase satisfaction and academic success for future online students.

CONCLUSION

This case study explored the differences between two online course models by investigating the results of a student end-of-course survey and teacher time logs. The process used in this case study can best be explained as an exploration to examine current online course design, with improvement as the goal. Both course designs appear to be functioning as designed, with students having a meaningful learning experience, as indicated by the student end-of-course survey results. Most participants in this study reported

acceptable levels of student satisfaction, but experienced a general increase in satisfaction in areas in a course with higher levels of interaction. The data gathered from this case study related to teacher time investment supports what previous studies have found, that there is an increased student and teacher time investment in an online class with higher levels of interaction. This case study has explored how much of a teacher time investment might be required when moving from an independent study model to a more teacher involved model. The data is preliminary, so student satisfaction in K-12 online learning should be explored further. Due to the shortage of available literature in K-12 online settings, we recommend additional research in this area. By continuing research and expanding our knowledge of K-12 online students, we can better improve teacher development on time management for online teachers, better support the diverse needs of learners, and improve the course design in the overall experience for online students.

References

Allen, I., & Seaman, J. (2017). Digital learning compass: Distance education enrollment report 2017. *The Digital Learning Compass Partnership*. Retrieved from http://digitallearningcompass.org/

Anderson, T. (2003). Getting the mix right again: An updated and theoretical rationale for interaction. *The International Review of Research in Open and Distributed Learning, 4*(2), 9-14. doi:http://dx.doi.org/10.19173/irrodl.v4i2.149

Annand, D. (2007). Re-organizing universities for the information age. *The International Review of Research in Open and Distance Learning, 8*(3), 1-9.

Bambara, C., Harbour, C., Davies, T., & Athey, S. (2009). Delicate engagement: The lived experience of community college students enrolled in high-risk online courses. *Community College Review, 36*(3), 219-238.

Barbour, M. K. (2010). Researching K-12 online learning: What do we know and what should we examine? *Distance Learning, 7*(2), 6–12.

Barbour, M. K., & Reeves, T. C. (2009). The reality of virtual schools: A review of the literature. *Computers & Education, 52*(2), 402–416. doi:10.1016/j.compedu.2008.09.009

Bernard, R. M., Abrami, P. C., Borokhovski, E., Wade, C. A., Tamim, R. M., Surkes, M. A., & Bethel, E. C. (2009). A meta-analysis of three types of interaction treatments in distance education. *Review of Educational Research, 79*(3), 1243–1289. doi:10.3102/0034654309333844

Bernard, R. M., Borokhovski, E., Schmid, R. F., Tamim, R. M., & Abrami, P. C. (2014). A meta-analysis of blended learning and technology use in higher education: From the general to the applied. *Journal of Computing in Higher Education, 26*(1), 87–122. doi:10.1007/s12528-013-9077-3

Bollinger, D. U., & Erichsen, E. A. (2013). Student satisfaction with blended and online courses based on personality type. *Canadian Journal of Learning & Technology, 39*(1), 1-23.

Borup, J., Graham, C. R., & Davies, R. S. (2013). The nature of adolescent learner interaction in a virtual high school setting. *Journal of Computer Assisted Learning, 29*(2), 153–167. doi:10.1111/j.1365-2729.2012.00479.x

Cavanaugh, C., Barbour, M. K., & Clark, T. (2009). Research and practice in K-12 online learning: A review of open access literature. *The International Review of Research in Open and Distance Learning, 10*(1), 1–22.

Cavanaugh, J. (2005). Teaching online—A time comparison. *Online Journal of Distance Learning Administration Content, 8*(1), 1-9.

Cole, M., Shelley, D. J., & Swartz, L. B. (2014). Online instruction, e-learning, and student satisfaction: A three-year study. International Review of Research in *Open and Distance Learning, 15*(6), 111-131. doi:10.3200/JOER.98.6.331- 338

Emery, C., Kramer, T., & Tian, R. (2001). Customers vs. products: Adopting an effective approach to business students. *Quality Assurance in Education, 9*(2), 110–115. Retrieved from http://www.bus.lsu.edu/accounting/faculty/lcrumbley/customersVSproducts.htm

Eom, S. B., Wen, H. J., & Ashill, N. (2006). The determinants of students' perceived learning outcomes and satisfaction in university online education: An empirical investigation. *Decision Sciences Journal of Innovative Education, 4*(2), 215–235. doi:10.1111/j.1540-4609.2006.00114.x

Eysenck, H. J. (1976). Introduction. In H. J. Eysenck (Ed.), *Case studies in behaviour therapy.* London, England: Routledge and Kegan Paul.

Ferdig, R. E., Cavanaugh, C., DiPietro, M., Black, E. W., & Dawson, K. (2009). Virtual schooling standards and best practices for teacher education. *Journal of Teacher Education, 17*(4), 204–226.

Garrett Dikkers, A. (2018). Social Interaction in K-12 Online Learning. In K. Kennedy & R. E. Ferdig (Eds.), *Handbook of research on K-12 online and blended learning (2nd ed.)* (509-524). Pittsburgh, PA: ETC Press.

Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *American Journal of Distance Education, 19*(3), 133-148.

Gemin, B., Pape, L., Vashaw, L., & Watson, J. (2015). Keeping pace with K-12 digital learning: An annual review of policy and practice. Durango, CO: Evergreen Education Group.Retrieved from http://www.kpk12.com/wpcontent/uploads/Evergreen_KeepingPace_2015.pdf

Graham, C. R. (2016). Case studies: An authentic research method. In Picciano, A. G., Dziuban, C. D., Graham, C. R., & Moskal, P. D. (Eds.) *Conducting Research in Online and Blended Learning Environments* (pp. 97-113). New York, NY: Routledge/ Taylor Francis Group.

Hawkins, A., Graham, C. R., Sudweeks, R. R., & Barbour, M. K. (2013). Academic performance, course completion rates, and student perception of the quality and frequency of interaction in a virtual high school. *Distance Education, 34*(1), 64–83. doi:10.1080/01587919.2013.770430

Jung, I., Choi, S., Lim, C., & Leem, J. (2002). Effects of different types of interaction on learning achievement, satisfaction and participation in web-based instruction. *Innovations in Education and Teaching International, 39*(2), 153–162. doi:10.1080/14703290252934603

Kuo, Y.-C., Walker, A. E., Schroder, K. E. E., & Belland, B. R. (2014). Interaction, internet self-efficacy, and self-regulated learning as predictors of student satisfaction in online education courses. *The Internet and Higher Education, 20*(1), 35–50. doi:10.1016/j.iheduc.2013.10.001

Mandernach, B. J., Hudson, S., Wise, S. (2013). Where has the time gone? Faculty activities and time commitments in the online classroom. *Journal of Educators Online, 10*(2), 1-15.

Matthews, D. (1999). The origins of distance education and its use in the United States. *T.H.E. Journal, 27*(2), 54–66.

Miyazoe, T., & Anderson, T., (2010). The interaction equivalency theorem. *Journal of Interactive Online Learning, 9*(2), 94-104.

Moore, J. C. (2011). A synthesis of Sloan-C effective practices. *Journal of Asynchronous Learning Networks, 16*(1), 91-115. Retrieved from http://files.eric.ed.gov/fulltext/EJ971042.pdf

Moore, M. G. (1989). Three types of interaction. *The American Journal of Distance Education, 3*(2), 1–6.

Moore, M. G. (1993). Theory of transactional distance. In D. Keegan (Ed.), *Theoretic principles of distance education* (pp. 22-38). London, England: Routledge. Retrieved from http://www.c3l.unioldenburg.de/cde/found/moore93.pdf

Mupinga, D. M., & Maughan, G. R. (2008). Web-based instruction and community college faculty workload. *College Teaching, 56*(1), 17-21.

Murphy, E., & Rodríguez-Manzanares, M. A. (2009). Teachers' perspectives on motivation in high-school distance education. *International Journal of E-Learning & Distance Education, 23*(3), 1–24.

Oviatt, D., Graham, C. R., Borup, J., & Davies, R. S. (2016). Online student perceptions of the need for a proximate community of engagement at an independent study program. *Journal of Online Learning Research, 2*(4), 333–365. Retrieved from http://www.learntechlib.org/p/173649

Oviatt, D., Graham, C. R., Borup, J., & Davies, R. S. (2018). Online student use of a proximate community of engagement at an independent study program. *Online Learning, 22*(1), 223–251. http://doi.org/10.24059/olj.v22i1.1153

Pattillo, G. (2005). Teaching online: A time comparison. *College and Research Libraries News 66*(6), 500-502.

Roblyer, M. D. (2006). Virtually successful: Defeating the dropout problem through online school programs. *Phi Delta Kappan, 88*(1), 30–35. doi:10.1177/003172170608800107

Rockwell, S. K., Schauer, J., Fritz, S. M., & Marx, D. B. (1999). Incentives and obstacles influencing higher education faculty and administrators to teach via distance. *Online Journal of Distance Learning Administration, 2*(4), 1-18.

Sinclaire, J. (2013). An empirical investigation of student satisfaction with college courses. *Research in Higher Education Journal, 22*(2), 1-21.

Swan, K. (2001). Virtual interaction: Design factors affecting student satisfaction and perceived learning in asynchronous online courses. *Distance Education, 22*(2), 306–331.

Van de Vord, R., & Pogue, K. (2012). Teaching time investment: Does online really take more time than face-to-face? *International Review of Research in Open and Distance Learning, 13*(3), 132-146. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/1190/2212

Watson, J. (2007). *A national primer on K-12 online learning.* Vienna, VA: North American Council for Online Learning. Retrieved from https://files.eric.ed.gov/fulltext/ED509633.pdf

Watson, J., Pape, L., Murin, A., Gemin, B., & Vashaw, L. (2015). *Keeping pace with K-12 digital learning: An annual review of policy and practice*. Evergreen Education Group. Retrieved from https://files.eric.ed.gov/fulltext/ED570125.pdf

Weiner, C. (2003). Key ingredients to online learning: Adolescent students study in cyberspace. *International Journal on E-Learning, 2*(3), 44–50.

Woods, R. H., & Baker, J. D. (2004). Interaction and immediacy in online learning. *International Review of Research in Open and Distance Learning, 5*(2), 1-13. Retrieved from http://www.irrodl.org/index.php/irrodl/article/view/186/801

Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). Thousand Oaks, CA: SAGE Publications.

APPENDIX
INSTRUMENTS

Student End-of-Course Evaluation Survey

Q1 What is your current student status? (Please mark one option that describes you best.)

- ❍ Home school student (high school, middle or junior high school) (1)
- ❍ Junior high or middle school student (3)
- ❍ High school student (2)
- ❍ University student (currently attending and earning a degree on campus) (4)
- ❍ Bachelor of General Studies (5)
- ❍ Other college degree-seeking student (formally admitted to another college) (6)
- ❍ Seeking admission to a college or university (7)
- ❍ Taking courses for personal interest, not seeking to earn a degree (8)
- ❍ Other (Please describe.) (9) _____

Q2 Please rate your course experience according to the following scale:1 = Very Strongly Disagree, 2 = Strongly Disagree, 3 = Disagree, 4 = Somewhat Disagree, 5 = Somewhat Agree, 6 = Agree, 7 = Strongly Agree, 8 = Very Strongly Agree, NA = Not applicable

	1 (1)	2 (2)	3 (3)	4 (4)	5 (5)	6 (6)	7 (7)	8 (8)	NA (0)
The course helped me develop intellectual skills (such as critical thinking, analytical reasoning, integration of knowledge). (1)	❍	❍	❍	❍	❍	❍	❍	❍	❍
The graded assignments were meaningful and helped me apply the concepts taught in the course. (2)	❍	❍	❍	❍	❍	❍	❍	❍	❍
The learning material was engaging and intellectually stimulating. (3)	❍	❍	❍	❍	❍	❍	❍	❍	❍
The instructor or tutor provided useful feedback on my assignments. (9)	❍	❍	❍	❍	❍	❍	❍	❍	❍
The instructor or tutor responds responded to my questions in a timely manner. (4)	❍	❍	❍	❍	❍	❍	❍	❍	❍
This course was challenging. (11)	❍	❍	❍	❍	❍	❍	❍	❍	❍
I learned a great deal in this course. (12)	❍	❍	❍	❍	❍	❍	❍	❍	❍

Q3 Please comment on the strengths and/or weaknesses of the course material:

Q4 Please indicate an overall rating for your instructor:

- ❍ Very Poor (1)
- ❍ Poor (2)
- ❍ Somewhat Poor (3)
- ❍ Fair (4)
- ❍ Good (5)
- ❍ Very Good (6)
- ❍ Excellent (7)
- ❍ Exceptional (8)

Q5 Please comment on the strengths and/or weaknesses of your instructor:

Q6 How did you contact customer support while taking the course? Select all that apply.

- ❍ I did not contact customer service. (1)
- ❍ phone (2)
- ❍ email (3)
- ❍ fax (4)
- ❍ chat (5)
- ❍ in person (6)
- ❍ mail (7)

Q7 Please rate your customer service experience. You may skip this question if you did not contact customer support.

	Very Poor (1)	Poor (2)	Somewhat Poor (3)	Fair (4)	Good (5)	Very Good (6)	Excellent (7)	Exceptional (8)
Accuracy (1)	❍	❍	❍	❍	❍	❍	❍	❍
Timeliness (2)	❍	❍	❍	❍	❍	❍	❍	❍
Professionalism (3)	❍	❍	❍	❍	❍	❍	❍	❍

Q8 Please help us understand your rating of our customer service:

Q9 Overall Experience

	Yes	No
Did you achieve the goals you had when you started the course? (1)	❍	❍
Would you recommend this program to a friend? (2)	❍	❍
Overall, were you satisfied with your experience? (3)	❍	❍

Q10 Comparing this course with other courses you have taken (online or in person), please indicate an overall rating from the following:

- ❍ Very Poor (1)
- ❍ Poor (2)
- ❍ Somewhat Poor (3)
- ❍ Fair (4)
- ❍ Good (5)
- ❍ Very Good (6)
- ❍ Excellent (7)
- ❍ Exceptional (8)

Q11 The instructor and course contributed to the Mission of the University:

- ❍ Very Strongly Disagree (1)
- ❍ Strongly Disagree (2)
- ❍ Disagree (3)
- ❍ Somewhat Disagree (4)
- ❍ Somewhat Agree (5)
- ❍ Agree (6)
- ❍ Strongly Agree (7)
- ❍ Very Strongly Agree (8)
- ❍ Not Applicable (9)

Q12 Why did you choose to take this course through this program?

Teacher Communication Log

Q1 Teacher Name:

Q2 Date of Communication:

Q3 Minutes spent on communication
- ❍ Less than 5 minutes
- ❍ 5-10 minutes
- ❍ 10-15 minutes
- ❍ More than 15 minutes

Q4 Who initiated communication
- ❍ Student-Initiated
- ❍ Teacher-Initiated

Q5 Student-Initiated Communication
- ❍ Content question
- ❍ Grading question
- ❍ Question forwarded to Instructor Support/Tech Support
- ❍ Response from teacher-initiated email

Q6 Teacher-Initiated Communication
- ❍ Announcement
- ❍ Email blast
- ❍ Personalized email
- ❍ Phone call
- ❍ Video conference

Q7 Student name:

Q8 Action taken (Notes):