Fall 2022

STUDENT PREFERENCES ABOUT STUDENT-TEACHER COMMUNICATION AND STUDENT PERCEPTIONS OF TEACHER PRESENCE IN AN ONLINE MIDDLE SCHOOL

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Recommended Citation

STUDENT PREFERENCES ABOUT STUDENT-TEACHER COMMUNICATION AND

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By

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A doctoral dissertation submitted to the
College of Education
in fulfillment of the requirements
for the degree Doctor of Education
in Curriculum and Instruction

Southeastern University
October, 2022

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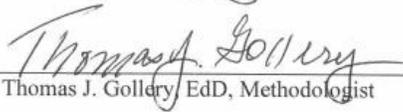
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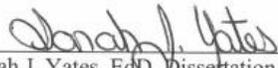
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DEDICATION

For Sharayah.

Also, for Jada, Sariye, Liam, Ames, and Eero.

ACKNOWLEDGMENTS

Abstract

The purpose of this non-experimental, quantitative survey study was to determine how middle school students in fully online language arts courses perceived their teachers to be present and what methods of communication with the teacher middle school students desired. The purposive sample was composed of 100 sixth and seventh grade language arts students from a large virtual school in the southeastern United States. Student responses were overwhelmingly skewed, and results from the survey indicated a statistically significant finding. Students in online middle school find their teachers to be present and desire to be communicated with using text messages first and phone calls second. The researcher found that communicating with students using the desired mode of communication is beneficial to students in online learning environments and that students find teachers to be present when teachers communicate with students with immediacy.

Keywords: virtual school, online education, online learning, online school, virtual education, middle school, teacher presence, teacher immediacy, communication, sixth grade, seventh grade, eighth grade, junior high school, junior high, jr. high, jr. high school, teacher-student communication, student-teacher communication

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I. INTRODUCTION

More students in K-12 educational settings are opting to take online courses to fulfill education requirements each year (Louwrens & Hartnett, 2015). The number of students who choose to take online courses are growing at compounding rates (Blaine, 2019). Students who choose to take online courses do so for a variety of reasons, including situations where attending a physical school is not possible or is inconvenient (Rehn et al., 2016). Furthermore, students may attend online schools that present educational material synchronously or asynchronously (Burdina et al., 2019; Murphy et al., 2011). Burdina et al. (2019) defined synchronous education as being online but in "real-time" (p. 3) and asynchronous as online but in "delayed time" (p. 3). In a study by Wang et al. (2021), whether students chose a synchronous or asynchronous online educational platform, they wanted teachers to be social and present. Online education, however, requires that students and teachers communicate over a distance rather than face-to-face.

Background of the Study

Communication in online environments could happen in four ways: video calls or other videoconferencing platforms; two-way text messages; phone calls to/from students; and two-way email messages. Communication between teachers and students in online classroom settings has been found important for student success, academic achievement, and authentic learning (Burdina et al., 2019; Louwrens & Hartnett, 2015). In a study focused on teacher-student communication in online courses, 90 graduate students' responses in a discussion board were

monitored and tracked (Campbell et al., 2019). The researchers discovered that students wanted

teachers to build rapport by posting questions to students during discussions and reply to email

promptly (Campbell et al., 2019).

Burdina et al. (2019) focused a study on distance learning and teacher-student

communication. Researchers followed 430 elementary-aged students in a two-step experiment to

understand the importance of teacher-student communication in online learning and then

surveyed the participants. The researchers discovered that teacher-student communication

positively affected student success, interest in learning, and high academic achievement. Another

set of researchers investigated student and teacher perceptions regarding online student

engagement using a case study with four teachers and 10 students ages 11-15 (Louwrens &

Hartnett, 2015). The researchers found that students preferred online teachers to be enthusiastic

about the learning content. The researchers also discovered that students desired teachers to

discuss non-school-related topics rather than focusing the teacher-student relationship solely on

academics. Louwrens and Hartnett (2015) found that students needed online teachers to offer

frequent encouragement to build student confidence and that teachers must check in regularly

with students, help them with course navigation, and provide verbal and non-verbal feedback on

student work (2015).

Mărgărițoiu, (2020) focused a study on teacher presence in online education in which 26

students were interviewed in an online focus group to learn about student opinions concerning

the types of classroom reconfigurations teachers must make when moving from classroom to

online learning. Mărgărițoiu (2020) discovered that one major indicator of teacher presence was

when teachers were readily available for students and communicated often with students about

course content and strategies to avoid online learning burnout due to stress, lack of motivation to learn, and feelings of isolation.

Wang et al., (2021) surveyed 1,041 students and 18 teachers about perceptions of teacher presence and found that students wanted to be heard by the online teacher, and students evaluated teacher presence by how much a teacher listened to students in the online learning environment. Teaching presence closed the gap between the learner and the teacher, affording students the value of teacher-student collaboration, and the positive relationship created by teacher presence strengthened the collaboration fostered between teachers and students (Wang et al, 2021). Another study had similar findings related to teacher presence (Martin et al., 2018). Researchers surveyed 188 graduate students taking online courses. The study examined students' perceptions of multiple course facilitation strategies employed by online educators. The researchers indicated that students preferred to be able to contact the online teacher using multiple methods and means (Martin et al., 2018).

Khalid & Quick (2016) studied the correlation between students' course satisfaction and perceptions of teacher presence during course discussion posts. Using the Community of Inquiry framework instrument and satisfaction scale to survey 73 online students, Khalid and Quick found that when students and teachers communicated frequently, students were satisfied with online courses and perceived teachers to be present in the learning environment (2016).

Wang & Liu (2020) worked to discover the implications of teacher presence in online classrooms and how teacher presence affected teacher-student interactions and collaboration in the course. The researchers focused on three different online courses with a total of 74 students participating in the study and discovered that teaching presence equated to the teacher's

manifested attendance in the learning environment. Teachers showed manifested attendance by actively facilitating the course and designing and organizing the learning goals for students.

A focus group study by Blaine (2019) was also interested in teacher-student interaction and used content analysis to determine student and teacher perceptions about teacher-student interaction in online courses. Researchers found 253 students and 103 teachers to participate in the study. Researchers coded and analyzed 76 transcripts to find themes which would arise from the focus group meetings. The researcher focused on Advanced Placement courses in an online environment and explained that teachers must be present, allowing for regular student-teacher communication for students to remain active in a course; otherwise, students became frustrated and course dropout rates increased.

Teacher presence in online education was important for student learning and accounted for a major part of daily learning in classrooms. The study of teaching presence in K-12 virtual education was pioneered by Garrison et al. (2000). Research by Garrison et al. resulted in a conceptual framework to measure teacher presence, cognitive presence, and social presence in online education after reviewing computer-mediated communication (CMC) transcripts (2000). When reviewing CMC transcripts, the researchers focused attention on teacher presence, cognitive presence, and social presence indicators. Garrison et al. (2000) found that teaching presence was comprised of "instructional management, building understanding, and direct instruction" (p. 24). Researchers' findings suggested that a teacher was needed to trigger a learning event which then sets the stage for learning to happen in the online classroom (Garrison et al., 2000).

Theoretical Foundation

The Community of Inquiry (CoI) framework developed by Garrison et al. (2000) focused on three presences within a learning community: teacher presence, social presence, and cognitive presence. The COI model was established to explain the relationship between online course instructors and students and measured the impact teacher and student relationships had on student learning (Picciano, 2017).

A constructivist philosophy, the CoI framework derived from the work of Jean Piaget and Vygotsky (Coffey, 2021). Education was developmental and constructed socially where students learned to problem-solve with the help of others, including a teacher (Coffey, 2021). The CoI framework was shaped by the work of philosopher John Dewey who surmised that students would respond well to respectful collaboration and extract meaning from inquiry in an environment conducive to communal learning and was rooted in "community, critical reflection, and knowledge construction" (Dean et al., 2009, p. 24). The research question that will be answered in this study revolves around teacher presence and teacher-student communication in virtual educational settings. Using the CoI framework as a guide to propel research and answer pertinent questions, this study aims to further the body of research on virtual education and middle school learning.

Problem Statement

Teachers who teach in online middle schools need to know how students want to communicate with the teacher and how students perceive teachers to be present in the online environment. Knowing how students want to communicate with online teachers and how students perceive teachers to be present in online environments will allow for a better online learning environment for middle school students.

Purpose Statement

The purpose of this quantitative study was to describe ways middle school students in online classroom settings prefer teachers to be present in the online classroom.

Overview of Methodology

Research Design and Methodology

A non-experimental, quantitative research design (Edmonds & Kennedy, 2017) was foreseen to be used to address the study's topic and research problem. The research methodology selected for the proposed study was survey research. The survey research methodology was selected for study purposes, as Lichtman (2013) noted, for its ability to provide many advantages and benefits to the researcher and the research process itself. Moreover, Denscombe (2010) noted that the survey research methodology offered the benefits of flexibility and generalizability as well as the potential to generate significant amounts of data on a research topic or construct.

Research Instrumentation

The study was conducted in sixth and seventh grades language arts courses at a large virtual school in the southeastern United States. The study's research instrument was represented as a researcher-created survey instrument. The survey instrument was sent to students via student email accounts provided by the school, and parents were copied. To protect student identity, parents were provided an electronic consent form and students were provided an electronic assent form. The survey was designed so that if the consent or assent were not agreed to, the survey could not be completed. Students' identifications were kept private with the only indicator of identification was the students' grade level, which students checked as either sixth or seventh grade. Information regarding the identifiers of student names, the students' teachers in the language arts course, and gender of each student were not recorded. Research instrument

validation was conducted in three distinct phases: content validity judgment phase, pilot study of the created instrument, and statistical validation using the Cronbach's alpha (*α*) statistical technique.

Statistical Power Analysis: Sample Size Conventions

Statistical power analysis of an *a priori* nature using the G*Power software (3.1.9.2, Universität Düsseldorf, Germany) was conducted at the outset of the study for sample size estimates associated with statistical significance testing. The study's statistical power analysis was delimited to anticipated medium effects, a power $(1 - \beta)$ index of .80, and a probability level of .05. In research question one, the Chi-square goodness of fit (GOF) was used. The general recommendation for sample size conventions using the Chi-square GOF test is 50 or greater; the sample of study participants in the study was 100, which far exceeded the generally accepted threshold for appropriate sample size. In research question two, the researcher used the one-sample *t*-test for statistical significance testing purposes, which resulted in a requirement of 27 participants to detect a statistically significant finding.

Sample/Sample Selection

A non-probability, convenient, and purposive sampling approach was used for study purposes (Adams & Lawrence, 2019). The primary delimitation of the sample selection process was that only middle-school-aged students who receive instruction through online platforms were considered for study participation.

Research Questions

The following represents the research questions foreseen to be used in the proposed study:

1. Considering the four types of communication, video call, text, phone call, and email, which type of communication do students prefer from teachers?

2. To what extent do students perceive that their teacher is present in the online classroom?

Research Hypotheses

Considering the stated research questions, the following hypotheses were considered:

1. Considering the four types of communication, video call, text, phone call, and email which type of communication do students prefer from teachers?

   H_0: There will be no statistically significant preferences from students regarding the type of communication students prefer from teachers.

   H_a: There will be a statistically significant preference from students indicating students prefer texts and videoconferencing using video call when communicating with the online middle school teacher.

2. To what extent do students perceive that their teacher is present in the online classroom?

   H_0: There will be no statistically significant student perceptions regarding teacher presence in the online classroom.

   H_a: There will be statistically significant perceptions regarding teacher presence.

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Data Analysis

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Data were first gathered and recorded using an Excel spreadsheet and then the study's analyses were conducted using IBM's Statistical Package for the Social Sciences (SPSS v. 28) analytics platform. Internal reliability of participant response to the survey instrument will be assessed using Cronbach's alpha (α). The study's demographic information was analyzed using

descriptive statistical techniques. Specifically, frequency counts (*n*) and percentages (%) was utilized for comparative and illustrative purposes.

The study's research questions were addressed broadly through the application of descriptive and inferential statistical techniques. Frequency counts (*n*), measures of central tendency (mean scores), and variability (standard deviation), standard errors of the mean, and measures of data normality (skew, kurtosis) represented the primary descriptive statistical techniques to be used in addressing the study's research questions.

In research question one, the Chi-square goodness of fit (GOF) test was used to assess the statistical significance of the response distribution of participants. Four assumptions are associated with the use of the Chi-square goodness of fit test and were addressed and satisfied at the outset of use of the statistic (one categorical variable, independence of observations, mutual exclusivity of the categories, and at least five expected frequencies).

The one-sample *t*-test was used to assess the statistical significance of participant response to the study's research question two. The assumption of data normality was assessed through inspection of the data's skew and kurtosis values. The conventions of data normality for skew and kurtosis proposed by George & Mallery (2020) was used to address the assumption of normality in both research questions. The probability level of $p \leq .05$ represented the threshold for statistical significance of study finding. The Cohen's *d* statistical technique was used to assess the magnitude of effect (effect size) of study participant response to survey items on the research instrument. Cohen's (1988) parameters of interpretation for small, medium, and large effect sizes were employed for comparative purposes, and the conventions proposed by Sawilowsky (2009) were used for effect sizes identified as very large and huge.

Additionally, the researcher wanted to determine if significant differences were present between participant responses of sixth and seventh graders' perceptions of teacher presence. A *t*-test of independent means was used to assess the statistical significance of mean scores in the comparison of perceptions in an ancillary, follow-up manner.

Limitations

There were several limitations to the study design and responses. The study only surveyed the perceptions of sixth and seventh grade students who attended a fully online K-12 school in the southeastern United States. The study only focused on four types of communication: Video Call, text, phone call, and email. Other schools may use different methods of communication not listed. In addition, the study focused on one specific region of the United States. Differences may exist in student perceptions of teacher presence in different parts of the United States or other cultures. Another limitation that arose was the fact that the study only focused on sixth and seventh grade language arts courses, and students may judge teacher presence and communication preferences in other subject areas differently.

Conclusion

This study described ways middle school students in online classroom settings preferred teachers to be present in the online classroom. Louwrens & Hartnett (2015) found that more and more students are choosing to earn an education away from the traditional classroom setting and are opting to take online courses. Teacher presence and teacher-student communication were at the heart of student motivation and success while taking online courses (Campbell, et al., 2019). According to Blaine (2019), not enough was known about students' perceptions of teacher-student interaction in online educational settings. Understanding how middle school students preferred online teachers to be present and how communication was fostered between teachers

and middle school students in the online environment would better prepare teachers to serve

online students to meet learning goals.

II. REVIEW OF LITERATURE

       The purpose of this quantitative study was to describe ways middle school students in online classroom settings prefer teachers to be present in the online classroom. Online middle school teachers face the challenge of creating a safe and personalized learning environment for students. Teachers must meet the online education challenge by showing teacher presence in the online environment, promoting teacher-student relationships and communication, encouraging student engagement and teacher-student collaboration, and providing appropriate feedback to student work. Online teachers finding ways to be present varying manners that appeal most to middle school learners is vital to the success of online learning and student achievement.

       Garrison et al. (2000), the co-founder of the Community of Inquiry (CoI) framework—a framework for measuring teaching presence in online educational settings—defined teacher presence as the design of the educational experience and facilitation of learning. In developing the Community of Inquiry theory, Garrison et al. evaluated a discussion between 14 participants in an online course and used content analysis to define different categories of presence in virtual educational settings. A test was made in which the moderator in one group passively monitored the course while the moderator for the other course was actively monitoring it. Then Garrison et al. coded the student discussion forums and used coefficient of reliability to measure agreement between statements. Garrison et al. found that teacher presence supports students' cognitive and social presence during the learning experience and that teachers must facilitate courses rather

than allow students to learn alone without the aid of a teacher. Garrison et al. (2000) also found that both the teacher and the student had to understand the type of communication required in the virtual educational setting, and teachers must work to bring higher order thinking into the online classroom.

Rehn et al. (2016) found that teacher presence was a construct of the Community of Inquiry and confirmed the findings of Garrison et al. (20000) in a mixed methods case study in which researchers interviewed, observed, and surveyed five teachers and 40 students in an online secondary school. Student participants were required to take a course online because the students were from rural areas with limited face-to-face courses offered. The teachers in the study had a minimum of 10 years' teaching experience and varying experiences using videoconferencing technology in virtual education. The researchers used Technological Pedagogical Content Knowledge (TPAK), a 5-point Likert scale questionnaire, to determine teachers' perceptions of TPAK to determine if TPAK had an influence on teacher presence. Teachers were also asked a series of questions to discover the level of confidence the teachers had with teaching via videoconferencing technology. Participating teachers agreed to allow researchers to observe at least one videoconferencing class to learn about teachers' behaviors in the online educational setting regarding instruction and interaction with students as well as to learn what indicators of teacher presence were found. Teachers also participated in a 1-hour interview with researchers about their experiences teaching online using videoconferencing technology and focused on the strategies online teachers used to promote teacher presence and feelings of connectedness with students (Rehn et al., 2016).

Participating students in this study by Rehn et al. (2016) were interviewed and observed in the classroom to gain insight into the perceptions and confidence of teachers and students

using videoconferencing in online learning environments. In addition to interviews and observations, students were provided a 5-point Likert questionnaire so researchers could learn about student perceptions of teacher presence. High teacher presence was indicated by a rating of 5 on the 5-point scale. Some students participated in seven online focus groups and were asked questions regarding student expectations of videoconferencing courses and indicators of teacher presence in online courses (Rehn et al., 2016).

Rehn et al. (2016) analyzed the quantitative data from survey results to provide quality details of videoconferencing in the online teaching environment. Data were used to measure teachers' perceptions and levels of confidence regarding teaching using videoconferencing, and then researchers compared the data with students' perceptions of teacher presence. For the qualitative research, interviews were transcribed, coded, and themes arising from the interviews were developed. In addition, they triangulated data from the quantitative, qualitative, and scholarly literature to establish reliable, credible data analysis (Rehn et al., 2016).

Rehn et al. (2016) discovered four major themes that surfaced from the data analysis: teachers' confidence levels, coupled with teaching experience, led to higher student-reported teaching presence; teaching presence was difficult to establish when teachers attempted to teach face-to-face while simultaneously teaching via videoconferencing; teacher behaviors in the areas of teacher immediacy and interpersonal connections with students correlated with better student perceptions of teacher presence; students' preferred learning methods related to the students' perceptions of teacher presence. Rehn et al. also found that teachers with higher levels of confidence (TPAK) in videoconferencing ability, coupled with years of teaching experience, had higher levels of teacher presence. Researchers deduced that teachers with higher confidence levels and more teaching experience had a unique understanding of the challenges of teaching

via videoconferencing and understood which pedagogical interventions were needed to guarantee learning. Teachers with higher TPAK confidence levels and more years of teaching experience had established varying strategies to connect with students, build rapport with students, and overcome the unique challenges that come with teaching online (Rehn et al., 2016).

Teachers who attempted to teach both online and face-to-face simultaneously faced challenges keeping the online students engaged and feeling connected to the course content (Rehn et al., 2016). Remote students learning in simultaneous face-to-face courses felt like audience members rather than members of a learning community and missed some learning experiences. In addition, students in the online portion of the course reported feeling like intruders in the course (Rehn et al., 2016). One student, discussing getting help from the teacher, wrote, "[The teacher] is often busy talking to other students and we don't want to interrupt" (Rehn et al., 2016, p. 11). One missed opportunity was during student presentations: a researcher observed that a face-to-face student passed out handouts during a presentation to the class but did not have a digital version for the remote, online students .Teacher presence was negatively impacted because students did not feel like members of the learning community. Camera presence also impacted teacher presence. When the camera was at the back of the classroom, rather than the front of the classroom, students felt more like members of the learning community because students could see the whole classroom, including the heads of face-to-face peers. One student indicated that the camera position allowed for feelings of connectedness saying during an interview, "it makes me feel like I am part of a class because I can see [my peers]" (Rehn et al., 2016, p. 8).

Teacher immediacy behaviors and interpersonal connections with students were found to be strong indicators of teacher presence (Rehn et al., 2016). Researchers reported that the

teachers with high teacher presence scores were teachers who were able to provide students with attention by regularly asking questions, checking for understanding, and engaging with students in informal discussions. A student of one of the teachers in the study indicated that they would "like it if he came every morning and said, 'Is there anything I can help you with? Do you understand the homework?' (Rehn et al., 2016, p. 12). The researchers also discovered that students wanted the opportunity to ask questions and receive in-moment tutoring when needed. Teachers with high teacher presence scores used students' names and inclusive pronouns, exhibited good posture while on camera, used hand gestures, utilized humor, took advantage of classroom space, and made time for online students allowing students to text or email questions (Rehn et al., 2016).

Students' learning preferences and desired interaction with the teacher in the classroom was the final theme which emerged from the results (Rehn et al., 2016). Lecture was easiest for teachers, but the teachers did not believe lecture was the best approach to online instruction. However, students found that teacher-centered lecture was an acceptable method of learning, especially if students had taken other online courses in which lecture was the primary method of instruction. Some students reported that during face-to-face teaching would provide more activities and less talking, but no students offered a different solution. Teachers with high teacher presence scores made time for the online students by offering tutoring times. As a means of increasing student interaction in the online classroom, teachers impressed upon students the importance of asking questions during lectures. In addition, students reported that teachers were expected to check in and make sure students were doing well during the class and ask if any student had questions or needed help. To teach online and have high teacher presence, teachers must learn to adapt teaching theory to technology in an appropriate way that adheres to what

students taking the course want. The researchers found that courses must be designed so that online learning adaptations are possible (Rehn et al., 2016).

More research on teacher presence was conducted by Martin et al. (2018) in which researchers studied 188 graduate students' perceptions of facilitation strategies that increased teacher presence in online learning environments. Among the graduate students, 62% were education majors, and the remaining students majored in arts and sciences, engineering, and business. The participants had an average age of 34 years old with the range of ages 17 – 70. A 12-question, Likert-scale instrument was developed to survey students about teacher presence, teacher-student connection, engagement, and learning. Researchers created the instrument after an extensive literature review to study teacher facilitation strategies in online learning environments. Additionally, the researchers utilized two open-ended questions to measure student perceptions about facilitation strategies and helpfulness of facilitation strategies. The instrument was delivered to students via email from course professors. Data were analyzed using descriptive statistics and factor analysis to examine instrument validity; inferential statistics were utilized to measure students' perceptions of facilitation strategies (Martin et al., 2018).

Martin et al.'s (2018) findings suggested that students found teachers to have high levels of teaching presence when teachers responded quickly to questions and provided feedback on assignments in a timely manner. Additionally, the use of a video-based introduction by the instructor and instructor responses to students' coursework reflections were also highly rated by students. Students desired to be known by the teacher and wanted to establish connectedness with the teacher; students indicated that a way teachers established strong teacher presence and connections with students was though the use of video-based introductions that allowed students to recognize the teacher was real and active. Students also indicated that they perceived teachers

to be present in the online course when the teacher regularly communicated with students and used technology to their teacher's voice during the course (Martin et al., 2018). Researchers also discovered what students did not find useful for teacher presence to be high: synchronous learning sessions and interactive orientation to the course were not favorably received. Researchers also found that students did not perceive group work and forced discussions to enhance perceptions of teacher presence. Overall, an online course in which the teacher was active during the length of the course, used technology to project a real voice, provided timely responses to questions, and returned assignments to students in a timely manner was found to be a favorable course with high levels of teacher presence (Martin et al.,2018).

Ashe and Lopez (2021) worked to describe teachers' experiences using technology-mediated communication (TMC) with secondary school students at a virtual school in Alabama. The researchers conducted a phenomenological study to gain knowledge of teachers' experiences in computer-aided communication between teachers and students by interviewing 12 teachers who each had at least one year experience teaching in online environments All participants were also required to have at least one year using TMCs. In addition to interviews, participants were invited to participate in an asynchronous online focus group to answer additional questions pertaining to the study, and artifacts from virtual classrooms were collected throughout the study. Ashe and Lopez triangulated the three different types of data by comparing each data type against the others to ensure that the themes, patterns, and ideas which arose from the data were consistent. As a means of validating the data further, participants were asked to check the coded data. Researchers then analyzed the data for reliability. Ashe and Lopez discovered four themes regarding teacher-student communication in online educational settings that arose from the

collected data: teacher mindset, teacher presence, integration of technology, and technological issues (2021).

Ashe and Lopez (2021) defined teacher mindset as the thoughts and feelings teachers had towards TMC as it pertained to online teaching. Among participants, 10 of the 12 participants had a positive mindset about using TMC. Participants also indicated that a willingness to try new ways of communication with students was of most importance at fostering positive teacher-student communication. Ashe and Lopez found that participants were mostly interested in the efficiency of using TMC and if a TMC was easy to use. An example that came up several times during the research was the use of email as a main mode of TMC. "Email is easy to use," said one participant, "but the response is often delayed, causing this to be an inefficient method of communication (Ashe & Lopez, 2021, p. 21).

Teacher presence was the value teachers placed on being active in the online educational environment (Ashe & Lopez, 2021). Participants saw themselves as being a vital part of students' success in the online learning environment. Teachers saw themselves as important for student support, being present for students, and course support. Some participants indicated that teacher presence was established by building rapport with students. One participant wrote, "even though it's a virtual school, you still have that personal touch with students" (Ashe & Lopez, 2021, p. 22). In addition to building rapport with students, video applications were found, among some participants, to help with establishing teacher presence in the online learning environment (Ashe & Lopez, 2021).

Ashe and Lopez (2021) also found that integrating technology into instruction was a common theme among participants. The way teachers used TMC to communicate with students was of utmost importance to teaching and learning. As stated previously, email was negatively

viewed as an efficient TMC; however, all participants agreed that email was used because it was the most widely used and understood form of communication among teachers and students. Teachers indicated that email would be better if students were able to check email regularly from a cell phone application; however, the virtual school system did not have an email application but required students to log into the virtual school system before being allowed to check email. The participants shared agreement that the use of video and the classroom group newsfeed were positive ways to communicate with students (Ashe & Lopez, 2021).

According to Ashe and Lopez (2021), technology issues were of greatest concern among participants during the study. Participants indicated that timing between teachers and students and issues arising from the computer system were some of the biggest hurdles to effective teacher-student communication and establishing teacher presence. Participants shared agreement that it would be best if teachers and students could work synchronously sometimes. In addition, participants indicated that standardization of computer systems and communication programs would alleviate some of the technology issues teachers and students faced when attempting to communicate about the course (Ashe & Lopez, 2021).

Using TMC was important for learning to take place in online educational settings (Ashe & Lopez, 2021). Researchers found that teachers had to be willing to change or adapt to new ways of communication with students based on what was best for each student. Using various communication methods was found to be of greater benefit to students than relying on one type of communication method. Furthermore, the use of phone calls was found to be less beneficial because students tended to avoid phone calls, and the use of email as a means of communication with students was met with mixed reviews among participants. Teachers indicated that students desired quick turnaround on graded work, feedback that offered motivation, and a space to ask

questions with quick response times to questions. Participants agreed that teachers must do whatever is possible to communicate with students despite teachers' frustrations or comfort levels with some TMC (Ashe & Lopez, 2021).

Blaine (2019) interviewed 253 students and 103 teachers from a virtual AP program using focus group interviews to determine student and teacher perceptions of teacher presence and teacher-student interactions in online schools. Blaine wanted to know if there were differences in the ways that teachers and students perceived interaction and teacher presence in online educational settings (2019.

Blaine (2019) allowed all students and teachers to participate in the qualitative focus group interviews. Qualitative content analysis was used to analyze data. Having a large amount of data, researchers opted to use content analysis because such a research analysis allowed for researchers to systematically analyze the focus group interview transcripts to find the meaning in the data. Blaine coded 38 transcripts from the student focus group interviews and another 38 transcripts from focus group interviews with teachers. The researcher used inductive and deductive coding to find patterns in the transcript data. Rather than looking for words or phrases to surface in the interview transcripts, Blaine focused only on complete thoughts to determine patterns. Coding began with researchers searching for indicators of positive and negative interaction between teachers and students. From there, Blaine developed 47 categories of codes; the top four categories were student negative interaction, teacher negative interaction, student positive interaction, and teacher positive interaction. From the top four categories, the other 44 categories were considered sub-categories of each of the top four. Coding categories were organized by social presence and teacher presence, and a coding frame was used to organize ideas (Blaine, 2019).

Blaine (2019) found that there were different perspectives among students and teachers regarding positive and negative interaction and teacher presence in online educational settings. Students preferred online teachers to respond quickly to questions, meet occasionally face-to-face, show flexibility regarding course pace, and offer regular academic guidance. Teachers had equally strong preferences with some overlap with students' perceptions of teacher presence and interaction. For example, teachers indicated that more face-to-face time with students was a necessary component of strong teacher presence and positive interactions with students. In addition, teachers reported that quality feedback, being physically present for students, and responding quickly to students were also positive indicators of teacher presence and interaction (Blaine, 2019).

Blaine (2019) used the Community of Inquiry framework as the building blocks for the study. Garrison et al. (2000) found that there were three components to online education: teacher presence, social presence, and cognitive presence. During coding, Blaine (2019) discovered what Kozan and Caskurlu (2018) suggested for a revision of the Community of Inquiry framework and found that learning presence was active in the online classroom. Learning presence increased when the online teacher worked to teach students how to learn online and become self-aware of their learning through self-regulation (Blaine, 2019). The more students knew how to learn online, and the more the teacher was focused on being active in the online classroom, the more students found teachers to be present (Blaine, 2019). For this reason, Blaine suggested that course designers and teachers include self-regulation strategies like time and task management into online courses as a means of increasing positive student learning experiences and possibly increasing students' perceptions of teacher presence and interaction in online educational settings (Blaine, 2019).

Working with the Australian government, Stone and Springer (2019) sought to understand ways to keep online students engaged and actively learning while placing a distinct focus on teacher presence. Researchers found 70 participants who joined the study from academic and teaching roles at the universities; another 75 participants were in professional roles, and six more participants held senior executive roles at the universities (Stone & Springer, 2019).

Stone and Springer (2019) emailed invitations to participate in the study to participants, and researchers used a snowballing approach which allowed participants to invite other participants to contribute to the study. Teaching participants were from different schools or colleges within universities. Stone and Springer (2019) surveyed and interviewed participants. Note that face-to-face interviews were conducted to explore discussion strategies employed in online education and the impact of discussion strategies on student retention and scholastic success. Participants' views on what universities must do to enhance student success was explored during each interview and on the survey. Stone and Springer used an iterative approach to data analysis repetitively crossing between the survey data and the interview transcripts. Themes which emerged from the data analysis were checked against the gathered data, which helped to develop each theme and create new themes, then researchers coded the themes using NVivo (Stone & Springer, 2019).

Stone and Springer (2019) found that online teachers must be attentive to the online learning platform. Students had access to learning materials all hours of the day and night, and online teachers had to be aware of when students were active in the course and be readily available for students. Teachers could enhance teacher presence by creating a quality online presence, providing regular and meaningful interventions, and being personable. Stone and

Springer found that teachers were successful when students felt cared for in the online learning space, and students wanted teachers to check in regularly and personably. One of the interviewees said that students must "have an impression of there being someone on the other end of the system listening to them" (Stone & Springer, 2019, p. 153). Another interviewee indicated that students wanted a relationship with the online teacher and that relationship was important in building a community of learners. Researchers uncovered that student attrition rates went up when teachers lacked positive teacher presence. Online teachers need to communicate regularly and positively with students. Interaction with students was found to be a major factor in student retention, and a link between teacher presence and student retention was found. One interviewee stated that teachers "are very consistent communicating – every day, every week" (Stone & Springer, 2019, p. 154).

In the online learning environment studied by Stone and Springer (2019), students were reliant on the teacher. As one teacher said, "the reliance of students on the instructor is much more intensive—basically you're it. The instructor is everything to the students" (Stone & Springer, 2019, p. 154). Teachers reported that being present in the online learning environment was difficult. However, teachers must be interactive and must connect with students about the learning activities and outcomes. Stone and Springer also found that students wanted some aspects of synchronous learning on video with the teacher at a specified time each week, and such synchronous learning led students to attribute higher levels of teacher presence to the teacher. In addition to video, students wanted more live interaction with the teacher throughout the course. The creation of an "interactive room" (Stone & Springer, 2019, p. 158) in which students could come in and out was a way students found teachers to be more present in the online learning environment.

According to Stone and Springer (2019), increasing teacher presence by enhancing communication through immediate responses, providing quality and timely feedback, and offering some synchronous activities allowed more students to be retained in the course; thus, more learning happened, and the quality of online education and the quality of learning increased.

Zhao and Sullivan (2017) conducted a study focused on teacher presence in an undergraduate course's online discussion forum. The researchers wanted to know how different levels of teaching presence impacted student participation and interaction during the course and also studied cognitive presence and development of knowledge in the online course. At a university, 26 students, mostly female, participated in the mixed methods study in a fully online course. Students were required to interact asynchronously with peers using an online discussion forum, but no directions were given to students to allow them generous freedom to participate in the discussion forum without teacher influence (Zhao & Sullivan, 2017).

Teacher presence was measured by studying teacher messages and questions, along with student responses to teacher messages and questions, in the online discussion forum (Zhao & Sullivan, 2017). Researchers analyzed and coded messages from two student discussion boards and determined the level of teaching presence by how often instructors posted messages to the board. Using the 48 messages in one discussion forum and the 38 messages in the second discussion forum, Zhao and Sullivan chronologically assigned each message a number. A data analysis was performed by each researcher separately, and then data and codes were discussed until full agreement on the codes was met. Researchers used an interaction map to track discussions between students and teachers to assist in analyzing the data (Zhao & Sullivan, 2017).

Teaching presence was measured by using the number of instructor messages in each of the discussion forums. Zhao and Sullivan (2017) paid close attention to teacher questions and statements and how students interacted with the teachers. The researchers used both quantitative and qualitative measures to reach a conclusion. Perspective, participation, and interaction were measured by examining the number of participants, student messages, and peer-to-peer responses. Messages that were popular with multiple peer responses and messages that were ignored were also analyzed or counted. Zhao and Sullivan (2014) developed a turn-taking chart, and the chart was used to create a visual diagram of interaction patterns. Codes were made based on the cognitive presence research by Garrison et al. (2000). Zhao and Sullivan (2014) examined the discussion forums for triggering events, exploration phase, integration phase, and resolution phase. A triggering event was an event that created a new idea or expanded an idea based on the teacher-assigned task; exploration phase were events where students brainstormed or discussed classroom assigned reading; integration phase was found to happen when students used outside resources or personal life events to make a connection with what was being learned during the course; and resolution phase was when students could be found applying what had been learned in the course.

Zhao and Sullivan (2017) discovered that although teaching presence was found to be important, teaching presence decreased if teachers attempted to direct teach too often. Teachers were involved in triggering the learning event through specific and well-thought-out questions posed to students, and teachers with high teaching presence encouraged the exploration of new ideas and concepts, helped students integrate new ideas with previously learned material, and assisted students in resolving problems by applying new knowledge. Researchers also discovered that effective teaching presence was graduated, meaning that teachers tapered off teaching

presence as students became more comfortable with the course and the learning materials. Thus, teachers became a guide or facilitator of learning rather than a direct instructor interrupting students' learning. Zhao and Sullivan also determined that using questioning strategies was better than direct teaching because questioning was more like facilitation. A final element of teaching presence was related to teacher intervention to correct or guide students along the learning path. The research study provided valuable ideas about teaching presence by expanding knowledge about what effective online teachers do, which is facilitate courses and guide students rather than focusing on direct teacher -to-student teaching (Zhao & Sullivan, 2017.

Lamanauskas et al. (2021) explored how students perceived the value of lectures in online educational environments using an e-learning platform with 298 students from European countries comprised of 158 students from Lithuania and 140 students from Romania, all attending university at a teacher's college. Lamanauskas et al. created a structural model to explore the relationships between different online learning constructs: perceived ease of use, perceived learning effectiveness, perceived enjoyment, and perceived academic value. Researchers surmised that perceived ease of use would positively influence learning effectiveness, enjoyment, and academic value. In addition, researchers speculated that learning effectiveness would positively influence enjoyment and academic value and hypothesized that perceived enjoyment would positively influence academic value. Lamanauskas et al. (2021) surveyed students and asked general questions, then asked students to evaluated statements on a survey using a 5-point Likert scale.

Lamanauskas et al. (2021) validated the researcher-created model using a two-step process that utilized the goodness of fit, literature, chi-square, normed chi-square, comparative fit index, goodness of fit index, and standardized root mean square residual, and root mean square

error of approximation. In the second step of the process, the model was tested using Lisrel 9.3 with Windows. The *p*-value was <.001, and Lamanauskas et al. (2021) surmised that the perceived ease of use would positively influence learning effectiveness, enjoyment, and academic value.

Lamanauskas et al. (2021) found students' perceptions of the enjoyment of learning and learning effectiveness of the curriculum had an impact on their perceptions of academic value. Students' perceptions of the ease of use of the learning platform were a factor in student motivation to learn and their desire to engage with learning during the course. Lamanauskas et al. discovered that positive emotions during online learning led to positive learning outcomes for students. Students' perceptions of enjoyment while learning online, specifically the enjoyment of completing learning tasks, contributed to intrinsic motivation to continue learning. Teacher lectures that were "attractive, interesting and pleasant generat[ed] involvement and support[ed] the cognitive effort necessary for learning (Lamanauskas et al., 2021, p. 10). Researchers also found that students who self-regulated learning, had autonomy, and were engaged were more likely to perceive the learning platform as being easy to use, find learning enjoyable, and perceive that online learning was effective. Students' positive emotions were valuable in positive perceptions of online learning. Students also indicated that learning online led to more learner-centered activities, reporting that online learning allowed students to use preferred learning tools and students had regular access to information. Teachers were also able to provide quality feedback, in a timely manner, using technology. In addition, students reported that communication with teachers using technology was a positive experience because communication was flexible, allowing for a sense of independence.

Continued research into specific learning tools to enhance online learning could allow for better learning online. Furthermore, students' perceptions of ease of use, learning effectiveness, enjoyment, and academic value are important in creating a learning environment in which students are motivated to learn, which makes learning easier for students and enhances student engagement within the online course (Lamanauskas et al., 2021).

When Stern (2015) had to move away from the university, the researcher conducted a study in a college-level course focusing on the methods of reconstructing the face-to-face interactions often found in the physical classroom into the online learning environment. Stern created online courses that mirrored physical courses taught on campus and conducted a narrative study and worked to create a rich discussion-based learning format in the online course using Blackboard 8.0. Through observation and experience, Stern found that students' perceived psychological gap could be remedied by bringing some in-person learning strategies into the virtual educational environment. Using an "icebreaker" (Stern, 2015, p. 485) with students in a discussion group was found to be successful as well. Students were posed a hypothetical question and had to discuss the problem with one another with the teacher monitoring. Regular email updates about upcoming due dates and interesting articles about worldwide happenings kept students interested in class and aware of the teacher's continued presence in the class. During virtual office hours, students met with the teacher live. Students reported it was a positive experience and allowed them to feel connected to the teacher. Overall, to bridge the psychological gap between the student and teacher, the researcher found that teachers had to be socially active in the course on a regular basis for students to perceive the teacher to be present in the online classroom environment (Stern, 2015).

Bolldén (2016) framed teacher presence as the way an online teacher plans learning and develops interventions in the online learning environment. Bolldén studied teacher presence by focusing on the idea of teacher embodiment. Using an ethnographic approach to research, researchers observed two different groups of learners, one online and one face-to-face, led by three teachers. Researchers collected data three different ways: first, one-and-half hour to two-hour interviews were conducted and transcribed verbatim; next, the researchers observed both courses from beginning to end, recording 20 hours of observations in the synchronous environment and observing 18 discussion forums, 508 discussion threads, 2937 posts, and nearly 20 documents; third, field notes were taken during observations, which amounted to 211 pages of notes. To analyze data, researchers used NVivo conduct thematic analysis. A second round of analysis was conducted using practice theory to find broader themes (Bolldén, 2016).

The first course studied by Bolldén (2016) was asynchronous and used a learning platform called IL which was text-based and used discussion boards, profile pictures, and teacher-created video insets to show presence. The second course was synchronous, taught by two teachers using a platform called Second Life where one teacher used a specific avatar and the other utilized a generic silhouette. Researchers found that teacher presence was embodied by using an avatar, but the technology changed often, and the avatar often made sporadic, or unreliable, movements (Bolldén, 2016).

Findings by Bolldén (2016) suggested that teacher presence was focused on expressing that the teacher was active and present in the online classroom. Although, the use of an avatar showed students that the teacher was present, the teacher in the text-based course was able to show presence by posting messages, creating inset videos during lessons, and responding to students. Making one's voice heard and writing regularly were also found to be important to

show teacher presence. Bolldén (2016) determined that by not posting or interacting in the online classroom, the teacher was perceived as not being and suggested that teachers "type oneself into being" (p. 14) by posting photos and videos of oneself.

In another study, researchers sought to investigate the success of teaching presence indicators on the interactions and knowledge construction between students in three different classes (Wang & Liu, 2020). Wang & Liu wanted to determine teaching presence patterns and the effects of teaching presence patterns on student interactions and knowledge construction. One online instructor with experience teaching online courses taught students in three mandatory courses and focused on evaluation, course design, the theory and practice of e-learning, respectively. A total of 74 students participated in the study, where 25 students participated in course one, 28 students participated in course two, and 21 students participated in course three (Wang & Liu, 2020).

According to Wang & Liu (2020), the instructor managed each of the three courses differently. In the first course, the instructor regularly posted in the course concerning the learning activities and expectations. The second course was managed by the same instructor, but the was managed with more detail: the instructor regularly posted about what the students were to accomplish and expectations in the learning module, but also posted about the overall teaching plan, rubric, learning materials, and provided a rubric for the discussion board before the first class began. For the third and final course, the instructor posted about learning requirements and discussion board parameters. The instructor emphasized that posting on the discussion board was mandatory and that students had to read others' discussion posts and respond to others being mindful to use evidence to support ideas in addition to providing a detailed learning schedule and

regularly posting about all learning activities and expectations. The instructor was emphatic about facilitating participation among students (Wang & Liu, 2020).

According to Wang & Liu (2020), syllabus transcripts, details about announcements, discussion posts, and learning reports from the first, midterm, and final modules of each of the three courses were analyzed. Content analysis, social network analysis, and lag sequential analysis were used to analyze the data gathered from the three courses. All posts from the instructor were used to measure teaching presence while student-to-student posts were used to measure collaborative knowledge. A total of 150 instructor posts were coded by graduate students. Students' posts were analyzed using social network analysis and focused on in-degrees and out-degrees, or the member with many or few posts. The instructor's posts to the students were analyzed for in-degrees and out-degrees because researchers wanted to know how many ties to or from the instructor there were to students (Wang & Liu, 2020).

Wang and Liu (2020) used three indicators of teacher presence: design and organization of a course, facilitation of discourse, and direct instruction. Researchers found that course 1 had the lowest teaching presence indicators and course three had the highest number of teaching presence indicators. In courses 2 and 3, the instructor focused more on design and organization of the course than the instructor did in course 1, while the instructor in courses 1 and 2 mostly provided students with information about how to participate during the course. In course 3, the instructor provided more information to students pertaining to time parameters for finishing coursework. Also, during course 1, the instructor provided students with information about how to complete coursework in a successful manner, outlining minimal time parameters to help students with the task of scheduling work. In courses 2 and 3, the instructor focused more on

peer-to-peer interactions, was more detailed with instructions for course assignments, and clearly defined a schedule for finishing coursework (Wang & Liu, 2020).

During course 1 and 2, the instructor focused mostly on facilitating discourse; however, in course 3, the instructor facilitated less discourse from the first module to the last. In addition, in course 3, the instructor replied to every student in the first module and offered suggestions to improve learning. The instructor in course 3 utilized interventions less and less as the semester continued, and by the time students were working in the final module in course three, the students were prepared to take over all learning activities and were autonomous. In courses 1 and 2, the instructor constantly facilitated the discussion board encouraging participation; the instructor in course three had the highest frequency of facilitating discourse by helping students connect with course topics, using students' proper names, and encouraging students to continue learning and exploring course topics. The instructor in course 3 also summarized discussions and guided each discussion towards the topic's end. Courses 1 and 2 used more posts that focused on direct instruction while course 3 did not use as much direct instruction. All three courses clarified information (Wang & Liu, 2020).

Wang and Liu (2020) found that the indicator of teaching presence in course three focused more on facilitating discourse and less on direct instruction. In courses 2 and 3, the instructor focused more often on the indicators of design and organization strategies than in course 1. Researchers found that students were more active in course 3 than in the other two courses; students in course 1 participated less than in course 2, and, in course 3, the instructor guided discussions, motivated students to learn, and responded to every student. Wang and Liu discovered that students responded more favorably to frequency of design and organization of a

course and of an instructor's willingness to facilitate discourse. Direct instruction negatively reinforced students to participate (Wang & Liu, 2020).

Wang & Liu (2020) discovered that clearly communicating with students, setting course goals with students, clarifying assignments for students, and providing absolute expectations and regular feedback were positive indicators of teacher presence. They also found that teaching presence decreased if the instructor successfully trained students how to learn early on, thus allowing students to facilitate their own learning (Wang & Liu, 2020).

Online instructors must facilitate discourse and focus on the design and organization of learning materials but put less emphasis on direct instruction. Researchers found that instructors must front load courses with teacher presence by using students' proper names, responding to students regularly, and encouraging and motivating learning. In addition, students will learn to self-motivate and facilitate their own learning as the course progresses. Direct instruction must be minimal as it was found to be viewed negatively by students and did not motivate students to learn or participate in class.

Conclusion

Online middle school teachers face the challenge of creating a safe and personalized learning environment for students. Teachers must meet the online education challenge by showing teacher presence in the online environment using methods that students perceive as helpful and necessary to their learning. Online educators must promote teacher-student relationships through regular communication, timely feedback using both written and verbal feedback, and encouraging students during regular communication.

III. METHODOLOGY

The purpose of the study was to evaluate the preferences of middle school students in online classroom settings for teacher presence in the online classroom setting. The following represents a presentation of the essential elements of the study's methodology:

Description of Methodology

Study Sample & Sample Selection

Study participants were delimited to sixth and seventh grade students enrolled in language arts courses at a large virtual school located in the southeastern United States. Participants were accessed through a non-probability, purposive sampling approach. The study's research instrument, a survey, was sent to study participants via student email accounts with parents being copied in the process. To protect the identity of students and maintain the integrity of the study, parents were provided an electronic consent form to give permission for their child to participate in the survey. Students were also provided an electronic assent form indicating that participation in the survey was not mandatory. Student participant identification was kept private, and the only indicator of identification was their grade level, which students checked on the survey as either sixth grade or seventh grade. There were more than 20 teachers in sixth and seventh grade who had students who participated in the study, so grade-level did not identify students.

Statistical Power Analysis for Sample Size Estimation

To estimate the sample size of the study necessary to determine statistical significance of study findings, a power analysis of an a priori nature using G*Power software (3.1.9.2, Universität Düsseldorf, Germany) was conducted for research question two. The study's statistical power analysis was delimited to anticipated medium effects, a power $(1 - \beta)$ index of .80, and a probability level of .05 (Faul & Lang, 2009). In research question two, the one-sample *t*-test was used for statistical significance testing purposes. An anticipated medium effect ($d = .50$) would require 27 participants to detect a statistically significant finding. In research question one, the Chi-square Goodness of Fit (GOF) Test was used, with the general recommendation for sample size conventions using the Chi-square GOF Test being 50 or greater; the sample of study participants in the study was 100, which far exceeded the recommended threshold value.

Research Instrumentation and Validation

Data collection was achieved using a researcher-created survey instrument found in the Appendix. Note that a standardized, pre-existing research instrument appropriate in addressing the study's construct was not available, justifying the creation of the research instrument used to measure students' perceptions of teacher presence in an online middle school environment. The research instrument featured four questions with response choices of Video Call, Text, Phone Call, and Email. The other six questions were Likert scale-type survey questions consisting of a 5-point scale. Three Likert-scale survey questions provided options ranging from *Fully Present* to *Not present at all*. Two Likert-scale survey questions provided options ranging from *Every*

Time to *Never*. One Likert-scale survey question asking students about the teacher's use of an avatar provided options ranging from *Every Time* to *Does Not Use an Avatar*.

The research instrument validation process followed the central steps detailed by Boateng et al. (2018). The first step in the process of instrument validation was the use of a panel of experts (SMEs) to address the content validity judgment phase of the survey validation process and consisted of the researcher's dissertation chair and methodologist from the College of Education at Southeastern University, a doctorate-level 6-12 virtual middle school language arts teacher, and an instructional leader (principal) at a virtual middle school.

The second step of the instrument validation process was the piloting of the study's research instrument to verify the construct of the survey instrument with 25 study participants. The Cronbach's alpha *(α)* statistical technique was used to assess the internal reliability of study participant response to survey items on the research instrument. Cronbach's alpha has been described as "one of the most important and pervasive statistics in research involving test construction and use" (Cortina, 1993, p. 98). The internal reliability level achieved $α = .83$ in the pilot process of the study, which was well beyond the acceptable level of $α = .60$ (Griethuijsen et al., 2015).

The final step of the instrumentation validation process used the Cronbach's alpha *(α)* statistical technique. Validation was conducted upon using the study's complete data set. An alpha level exceeding $α = .60$ was considered adequate for internal reliability purposes (Field, 2005; George & Mallery, 2020).

Procedure

Data were first obtained and recorded using an Excel spreadsheet format. Study data were then migrated to IBM's 28th version of its Statistical package for the Social Sciences (SPSS).

Data Analysis

The probability level of $p \leq .05$ represented the threshold value for study findings considered statistically significant. Descriptive statistical techniques were used to evaluate the study's demographic information and for analysis at the preliminary foundation level with essential response data.

Research Question 1

In research question one, the Chi-square goodness of fit (GOF) Test was used to assess the statistical significance of study participant response distribution. The four assumptions associated with the use of the Chi-square GOF Test were addressed and satisfied at the outset of use of the statistic (one categorical variable; independence of observations; mutual exclusivity of the categories; and at least five expected frequencies).

Research Question 2

A one sample *t*-test was used to assess the statistical significance of study participant mean score response to study participant perceptions of teacher on-line presence in research question two. Additionally, and to determine if there were significant differences between the responses of sixth and seventh graders pertaining to perceptions of teacher presence, a *t*-test of independent means was used to assess the statistical significance of mean scores in the comparison of perceptions in an ancillary, follow-up manner. The assumption of data normality was addressed through an evaluation of the dependent variable's skew and kurtosis values. The

conventions of data normality using the interpretation of skewness and kurtosis proposed by George and Mallery (2020) were used in research question two. The assumptions associated with the use of the follow-up *t*-test of Independent Means, data normality and homogeneity of variances, were addressed and satisfied through statistical means (skew and kurtosis; Levene's *F*).

Summary

A non-experimental, quantitative research design was used to broadly address the study's topic and research problem. A survey research methodology represented the specific methodological approach used in the study. The study's participant sample, accessed through a non-probability, purposive approach, was delimited to students enrolled in sixth and seventh grade language arts courses at a large virtual school located in the southeastern United States. A researcher-created instrument was necessitated considering the lack of availability of a suitable, standardized research instrument appropriate in addressing the study's construct. Research instrument validation was addressed through a three-phase procedure mirroring the essential elements of instrument validation offered by Boateng, et. al, (2018). Two research questions and hypotheses were formally stated in the study, and both descriptive and inferential statistical techniques were used to analyze study data.

IV. RESULTS

The purpose of this quantitative study was to describe the ways middle school students in online classroom settings prefer teachers to be present in the online classroom. A non-experimental, quantitative research design was used to address the study's topic. The research methodology used in the study was a researcher-created survey. Two research questions were stated to address the study's research problem. Study data were analyzed at the preliminary, foundational level through descriptive statistical techniques. The study's research questions were addressed analytically using descriptive and inferential statistical techniques. The analysis and reporting of study data were achieved using IBM's Statistical Package for the Social Sciences (SPSS v. 28). The following represents the formal reporting of the study findings.

Initial Descriptive Statistical Findings

Descriptive Statistics: Study Demography

Descriptive statistical techniques were used to assess the study's demographic information. The study's demographic information of grade-level grouping was specifically addressed using the descriptive statistical techniques of frequencies (n) and percentages ($\%$).

Table 1

Descriptive Statistics Summary Table: Study Participants Grouping by Grade-Levels

Grade-Level Grouping	N	$\%$	Cumulative $\%$
Grouping			
Sixth Grade	82	82.00	82.00
Seventh Grade	18	18.00	100.00
Missing	0	0.00	100.00

Table 1 contains a summary of findings for the descriptive statistical analysis of the study's demographic identifying information related to the primary grouping variable of respective grade level. Note that there were 82 sixth graders and 18 seventh graders who participated in the study.

Table 2 contains a summary of findings for the descriptive statistical analysis of the study's response data by communication preference by respective task of study participant. Student participants indicated a strong preference for texting with teachers over options of email, phone call, or video chat. Communication preferences were sought by categorizing reasons for communication with the teacher: communication during lessons, writing assignments, or taking quizzes. For all three task categories of lessons, writing, and quizzes, students indicated strong preferences for texting with the teacher. While working through lessons, students ($N = 46$) indicated a preference for texting over phone call, which was the second most preferred method of communication with the teacher during lessons ($N = 28$). Students ($N = 46$) also indicated texting with the teacher was most preferred when questions arose during quizzes. Phone calls, during quizzes, was again the second most desired communication mode with the teacher while taking a quiz ($N = 32$). Students ($N = 35$) once again showed an affinity for texting with the teacher while working on writing assignments and preferred phone calls with the teacher as the second greatest preference ($N = 33$). Overall, students wanted to be texted as the main mode of communication with the online teacher ($N = 43$).

Table 2

Descriptive Statistics Summary Table: Communication Preference by Task

Communication Format by Task	*n*	*%*	Cumulative *%*
Teacher Question (Lesson)			
Email	17	17.00	17.00
Text	46	46.00	63.00
Phone Call	28	28.00	91.00
Video Chat	9	9.00	100.00
Missing	0	0.00	100.00
Teacher Question (Quiz)			
Email	18	18.00	18.00
Text	46	46.00	64.00
Phone Call	32	32.00	96.00
Video Chat	4	4.00	100.00
Missing	0	0.00	100.00
Teacher Question (Writing)			
Email	20	20.00	20.00
Text	35	35.00	55.00
Phone call	33	33.00	88.00
Video Chat	12	12.00	100.00
Missing	0	0.00	100.00
Overall Communication Preference			
Email	18	18.00	18.00
Text	43	43.00	61.00
Phone Call	30	30.00	91.00
Video Chat	9	9.00	100.00
Missing	0	0.00	100.00

Table 3 contains a summary of findings for the descriptive statistical analysis of the study's response data for study participant perceptions of teacher on-line presence. Students reported that while on video during video chats, teachers were fully present ($N = 75$). When students were surveyed about the timeliness in which teachers returned text messages, students' preferred mode of communication with the online teacher, students reported that the teachers responded by text within an hour ($N = 39$). Participants indicated that teachers often answer on

the first attempt ($N = 37$) and that the teachers' presence on the phone was fully present ($N = 81$).

Students also reported that teachers returned emails within a day ($N = 61$). The overall student

perception of teacher presence in the online language arts classroom was fully present ($N = 77$).

Table 3

Descriptive Statistics Summary: Perceptions of Teacher On-Line Presence

Teacher Online Presence	n	%	Cumulative %
Teacher Presence Video			
Somewhat Present	2	2.00	2.00
Uncertain	3	3.00	5.00
Mostly Present	20	20.00	25.00
Fully Present	75	75.00	100.00
Missing	0	0.00	100.00
Teacher Return Texts			
Never	1	1.00	1.00
Not Often	5	5.00	6.00
Sometimes	14	14.00	20.00
Most of the Time	39	39.00	59.00
Every Time	13	13.00	72.00
Missing	28	28.00	100.00
Teacher Answers Phone on First Attempt			
Not Often	11	11.00	11.00
Sometimes	21	21.00	32.00
Most of the Time	37	37.00	69.00
Every Time	31	31.00	100.00
Missing	0	0.00	100.00
Teacher Call Presence			
Somewhat Present	3	3.00	3.00
Uncertain	2	2.00	5.00
Mostly Present	14	14.00	19.00
Fully Present	81	81.00	100.00
Missing	0	0.00	100.00
Teacher Email Return			
Not Often	2	2.00	2.00
Sometimes	12	12.00	14.00
Most of the Time	25	25.00	39.00

Teacher Online Presence	n	$\%$	Cumulative $\%$
Every Time	61	61.00	100.00
Missing	0	0.00	100.00
Teacher Overall Online Presence			
Somewhat Present	5	5.00	5.00
Uncertain	1	1.00	6.00
Mostly Presence	17	17.00	23.00
Fully Presence	77	77.00	100.00
Missing	0	0.00	100.00

Missing Data/Survey Completion Rate

The study's extent of missing data and concomitant survey completion rate were evaluated using descriptive and inferential statistical techniques. As a result, the extent of missing data in the survey's response arrays was minimal (2.8%; $n = 28$) and therefore inconsequential for subsequent analyses (Shafer & Graham, 2002). The concomitant survey completion rate achieved in the study was 97.2%. The study's missing data were, moreover, sufficiently random in nature (MCAR x^2 (9) = 13.58; $p = .14$).

Findings by Research Question

Two research questions were stated to address the study's topic. Descriptive and inferential statistical techniques were used in the analyses associated with the research questions. A probability level of $p \le .05$ was adopted for use in the study as the value for study findings to be considered statistically significant. Numeric effect sizes values achieved in the analyses were interpreted qualitatively using the conventions of interpretation offered by Sawilowsky (2009).

The following represents the formal reporting of findings by research questions stated in the study.

Research Question #1

Considering the four types of communication, video call, text, phone call, and email, which type of communication do students prefer from teachers?

A chi-square goodness of fit test (GOF) was conducted to evaluate whether study participant preference was equally distributed across all categories of communication. Four levels were represented in the analysis of communication preference: email, text, phone call, and video chat. The four assumptions of the use and interpretation of findings using the chi-square GOF test were addressed and satisfied. The four assumptions were as follows: the presence of one categorical variable; independence of observations (i.e., no relationship between any of the cases); mutually exclusive groups of the categorical variable; at least five expected frequencies in each group of the categorical variable (Field, 2018). The GOF test findings were statistically significant ($\chi^2(3) = 26.16$, $p < .001$). There were fewer observations than expected in preferences for email and video chat and more observations than expected in preferences for text and phone call. The greatest single communication preference was for the use of text, reflecting a preference level of 43% ($n = 43$). The effect size for the GOF analysis was considered large at Cohen's $w = .51$.

Table 4 contains a summary of findings for the chi-square GOF test in research question one. Students indicated a preference for texting with the online teacher ($N = 43$). The statistical analysis shows that the preference for texting with the online teacher was an outlier and noteworthy, as it was beyond what was expected. The students' preferences for texting with the online teacher skewed considerably beyond researcher expectations.

Table 4

Chi-Square Goodness of Fit Test Summary Table: Evaluating Communication Preference

Communication Venue	Observed Frequency (O)	Expected Frequency (E)
Email	18	25.00
Text	43	25.00
Phone Call	30	25.00
Video Chat	9	25.00

Note. $\chi^2(3) = 26.16$, $p < .001$.

H$_a$1

Considering the four types of communication, video all, text, phone call, and email, the type of communication students prefer from teachers will be text.

Considering the superior degree of study participant preference for text, the alternative hypothesis in research question one was retained.

Research Question #2

To what degree do students perceive that their teacher is present in the online classroom?

A one sample *t*-test was used to assess the statistical significance of study participant mean score response to participant perceptions of teacher online presence. Banda (2018) noted that the one-sample *t*-test is used to compare a sample mean to a specific value. Researchers can use one-sample *t*-tests to compare the mean of a sample with a hypothesized population mean to determine whether the sample is significantly different, and in many instances, to compare the sample mean and the sample midpoint of the test variable.

The assumption of data normality was addressed and satisfied through the interpretation of the dependent variable's skew and kurtosis values. The conventions of data normality assessment using skew and kurtosis proposed by George and Mallery (2020) were used to evaluate and interpret the normality of data for the dependent variable in research question two.

As a result, the data array's skew value of -2.54 was slightly beyond the convention of -/+2.0 and the kurtosis value of 6.21 was within the parameters of -/+7.0. Given the robustness of the *t*-test against possible violations of the assumption of normality with large samples (Field, 2018; Posten, 2010), analysis of data for research question two proceeded using the one sample *t*-test.

The study participants' mean response of 4.66 ($SD = 0.74$) to perceptions of teacher online presence was statistically significant ($t_{(99)} = 22.39$; $p < .001$). The magnitude of response for perceptions of teacher online presence was considered huge at $d = 2.24$ (Sawilowsky, 2009). Table 5 contains a summary of findings for the evaluation of study participant perceptions of teacher online presence.

Table 5

Summary Table: Study Participant Perceptions of Teacher Online Presence

Variable	*M*	*SD*	μ	*t*	*p*	*d*
Teacher On-Line Presence	4.66	0.74	3	22.39	< .001	2.24

Note. Degrees of freedom for the *t*-statistic = 99. *d* represents Cohen's *d*.

H$_a$2

There will be a statistically significant degree of study participant perceptions that their teacher is present in the online classroom.

Considering the statistically significant degree of effect for study participant perceptions that their teacher is present in the online classroom, the alternative hypothesis for research question two was retained.

Comparison by Grade Level

A follow-up comparative analysis was conducted to evaluate the statistical significance of difference in mean score perceptions of teacher online presence for study participants identified as sixth graders and seventh graders. The *t*-test of independent means was used to assess the

statistical significance of mean scores in the comparison of perceptions. Levene's test was conducted to assess whether the variance of the dependent variable was equal between the categories of grouping of grade levels. The Levene's F-value in the analysis was non-statistically significant ($F(1, 98) = 0.43$, $p = .51$), indicating that the variance of perceptions of teacher online presence is equal for each category of grade-level grouping. As a result, the assumption of homogeneity of variances was satisfied.

The assumption of data normality was addressed through the interpretation of the dependent variable for the data arrays of sixth grade and seventh grade study participants using skew and kurtosis values by George and Mallery (2020). The mean score difference of 0.12 favoring study participants identified as sixth graders for perceptions of teacher online presence was reflected at a non-statistically significant level ($t_{(98)} = 0.66$; $p = .51$). The magnitude of effect in the mean score comparison's difference was considered small at $d = .17$.

Table 6 contains a summary of the comparison of mean score perceptions of sixth grade and seventh grade study participants for perceptions of teacher online presence.

Table 6

Summary Table: Comparison of Perceptions of Teacher Online Presence by Grade Level of Study Participant

	sixth Grade		seventh Grade				
Variable	*M*	*SD*	*M*	*SD*	*t*	*p*	*d*
Teacher Online Presence	4.68	0.73	4.56	0.78	0.66	.51	0.17

Note. N = 100. Degrees of freedom for the *t*-statistic = 98. *d* represents Cohen's *d*.

Summary

The study's sample of participants was sufficient in providing the statistical power in addressing the two research questions. An excellent level of survey response rate was achieved in the study's administration of the research instrument. Study participants' preference for

communication with their teachers significantly favored texting, and teacher online presence was

perceived to be mostly present to fully present by 9 in 10 study participants. Perceptions of

teacher online presence did not differ to a statistically significant degree between study

participants identified as sixth graders and seventh graders. Chapter V contains a thorough

discussion of the findings achieved in the study as reported in Chapter IV.

V. DISCUSSION

The purpose of this non-experimental quantitative study was to evaluate the preferences of middle school students in online classroom settings in communicating with teachers and to determine students' perceptions of teacher presence. The population sample was comprised of students in grades 6 and 7 at a large virtual school in the southeastern United States. Students were invited to participate anonymously by answering survey questions regarding students' perceptions of teacher presence and students' preferences in student-teacher communication in online classroom settings. An online survey was completed by 100 sixth and seventh grade students. The following represents a thorough description of findings acknowledged and reported in Chapter 4.

Review of Methodology

The study was centered around survey responses from sixth and seventh grade students taking language arts courses at a large virtual school in the southeastern United States. Surveys were emailed to students through the course email, and two reminders were sent to remind students of the opportunity to participate in the study. Parents were provided a parental consent section on the survey and students were given a student assent section. Data was obtained using Microsoft Excel and then moved into SPSS where the data were analyzed. Question one utilized the goodness of fit (GOF) test to determine the distribution of responses for each survey question. Question two made use of a one-sample t-test to assess the statistical significance of

study participant mean score response to study participant perceptions of teacher online presence. Finally, to determine whether there were significant differences between sixth grader and seventh grader responses pertaining to perceptions of teacher presence, the *t*-test of independent means was used to assess the statistical significance of mean scores in the comparison of perceptions.

Due to the lack of a pre-existing survey instrument, the researcher used a researcher-created survey instrument, a copy of which is found in the Appendix. Using the survey, students in sixth and seventh grade were asked to provide their perceptions of teacher presence and preferred ways of communicating with the language arts teacher. Data were collected and dissected for research questions using SPSS.

Summary of Results

Results showed that teachers in the sixth and seventh grade langauge arts courses at the online school mostly texted students back in less than an hour, answered student phone calls on the first call attempt, and replied to student emails within a day. Students surveyed indicated an overwhelming preference for two-way text messages with online teachers when questions arose during lessons, taking quizzes, or working on writing assignments. As a secondary preference, students indicated a high preference for phone calls with online teachers when questions arose while working on learning material. Students indicated they perceived that teachers were present in the online classroom when on the phone and during video chats. Considering that the survey results showed that teachers responded to students quickly via text messages, answered phone calls on the first call attempt, and replied to student emails within a day, the researcher deduced that teachers can be perceived as present in online educational settings when they reply quickly to students.

Discussion by Research Question

Research Question 1

Considering the four types of communication, video all, text, phone call, and email, the type of communication students prefer from teachers will be text.

H$_a$1

Considering the superior degree of study participant preference for text, the hypothesis in research question one was retained.

The first research question asked students to indicate which type of student-teacher communication was preferred during language arts coursework at an online school. A chi-square goodness of fit test was conducted and indicated that the findings were in line with the hypothesis. The effect size for the GOF analysis was considered to be large at Cohen's $w = .51$. More noteworthy, however, was the way data skewed on the GOF test: data was skewed considerably in favor of students' preferences for text messages. Sixth and seventh grade students at the online school preferred text messages with teachers ($p < .001$) over phone calls, video chat, and email. A secondary student communication preference was found in the data. The researcher found that phone calls were preferred noticeably over email and video chat. Thus, the researcher determined that sixth and seventh grade students prefer to be texted while working in an online langauge arts course before they are called on the phone.

The researcher designed the survey instrument to determine the kinds of student-teacher communication preferred by students based on kinds of help students needed: help while reading lessons, help while taking a quiz, or help while working on a writing assignment. In every category, students indicated that they preferred text messages for help while learning. Students responded to the question about overall communication preference and reported they preferred

text messages. The students' preference for text messages was determined to be an outlier because of the exorbiant number of student responses indicating that preference. The research determined the finding to be noteworthy as it skewed considerably beyond researcher expectatations.

Students not only preferred text messages over phone calls, email, and video chat, but participants also indicated that teachers in sixth and seventh grade langauge arts courses at the online school mostly returned texts in less than an hour. The finding was in line with the researcher's hypothesis that students would prefer text messages over other modes of communication. Text messaging is considered by many to be more convenient and welcomed due to its non-invasive nature. Texts can be read at any time when students have the time or patience to read the messages. Students may also prefer texts because speaking to a person on the phone, especially about schoolwork, could cause anxiety. A text message from the teacher opens the lines of communcation to phone calls or video chats. Additionally, the student participants revealed that teachers mostly answered phone calls on the first student call attempt. Some students could prefer the immediacy that comes from a phone call or appreciate the teacher's friendly tone of voie on the phone. Students who have trouble with reading comprehension, or who are auditory learners, may prefer phone calls with the teacher when discussing schoolwork.

Results of the present study reinforce what other educational research has suggested. Belair (2012) found that students preferred written communication in online courses and asserted that communication quality depends on the needs and desires of the students. Texting is the modern form of written communication. Texting is also more informal, so students may feel more comfortable texting with a teacher because that is how students communicate with friends. In addition, Wang and Liu (2020) found that students taking online courses did not want direct

instruction. In this study, students indicated a preference for text messages over phone calls. Texting with a teacher is not an action that would lend itself to direct instruction, whereas a phone call could lead to more direct lecture, or instruction. Other research by Stone and Springer (2019) found that students in online environments must be communicated with often and in ways that are determined by students to be meaningful. Students prefer texting because text messages are a quick form of communication and meaningful to students since that is how students communicate with friends. A study by Ashe and Lopez (2021) found that online teachers should use communication technologies that are a good fit for students and that help teachers meet student needs quickly. When a student is working on an assignment or quiz, students can send a text message to the teacher quickly in a way that is familiar and comfortable. Finally, the use of technology while working with students was found to be beneficial to student-teacher communication and guided learning (Harper, 2018). Two-way text messages between students and teachers may enhance student learning due to students' familiarity with texting. In addition, text-based responses from teachers using text messages allow students to learn in the least restrictive environment and allow teachers to help students navigate course material using a mode of communication with which students are familiar.

Research Question 2

To what degree do students perceive that their teacher is present in the online classroom?

H$_a$2

Considering the superior degree of study participant perceptions of teacher presence, the hypothesis in research question two was retained.

Using research by Banda (2018) as justification, the researcher used a one sample *t*-test to assess the statistical significance of the study. The researcher also used George and Mallery's

(2020) research on data normality assessment using skew and kurtosis to address the assumption of data normality of data for the dependent variable. In line with the hypothesis, middle school students at the online school perceived teachers to be present in the online environment $(p < .001)$. Evaluating participant responses was useful in determining the magnitude of response for sixth and seventh grade student perceptions of teacher presence in online language arts courses. The magnitude of response was considered huge at $d = 2.24$.

The majority of student participants indicated that they perceived their teachers to be fully present in the online langauge arts classroom. In line with previous research by Mărgăriţoiu (2020), which stated that a major indicator of teacher presence was when teachers were available for students when students wanted teachers to be available. As previously stated, student participants indicated that teachers mostly responded to texts within an hour and most of the time answered the phone on the first call attempt, further supporting findings by Mărgăriţoiu (2020). Students surveyed indicated that while students were on a phone call with teachers, students preceived that teachers were overwhelmingly fully present. Student perceptions regarding teacher presence on phone calls are likely the result of students having the teacher's explicit attention in a one-on-one learning environment which phone calls afford. The finding that middle school students have a secondary preference for student-teacher phone calls is in contrast to findings by Ashe and Lopez (2021), who reported that students avoid phone calls with teachers in the online learning environment.

Research by Rehn et al., (2016) discussed teacher presence in terms of teacher presence being an active connectivity with students because teachers exhibit what is called immediacy behavior, described as behaviors teachers employ to connect with students in virtual learning environments that increases student perceptions of teacher presence. Further survey data from

sixth and seventh grade students in the study confirm findings by Rehn et al. (2020). Student participants indicated that teachers returned email communication within a day and found teachers to be fully present when on video chat with students. Students' responses indicating that teachers mostly texted back within an hour and answered phone calls on the first call attempt are also in line with teacher presence being an active connectivity as suggested by Rehn et al. (2020). The present study also confirms findings by Burdina et al., (2019) whose research indicated that open lines of communication between teacher and student was a vital component of teaching presence. The researcher can assume that teachers are perceived by sixth and seventh grade students to be present in online educational environments when teachers respond quickly to text messages from students, answer phone calls on the first call attempt, and reply to emails within a day.

The Community of Inquiry framework by Garrison et al. (2000) was used as the framework of the present study. The Community of Inquiry framework was shaped by the work of philosopher John Dewey who surmised that students would respond well to respectful collaboration and extract meaning from inquiry in an environment conducive to communal learning and was rooted in "community, critical reflection, and knowledge construction" (Dean et al., 2009, p. 24). Garrison et al. (2000) created the Community of Inquiry framework to identify teacher presence. The researcher found that teacher presence had three elements which made up an educational experience: social presence, cognitive presence, and teaching presence. Research by Anderson et al., (2001), who were research members in the original Garrison et al. (2000) study, suggested that teachers with high teaching presence foster ongoing and trustworthy communication between the teacher and the student. Online teachers work to support discussion, set a climate that is conducive to learning, and selects appropriate learning content.

Follow-up Comparative Analysis

The researcher conducted a follow-up comparative analysis to evaluate the statistical significance of difference in mean score perceptions of teacher online presence for study participants identified as sixth graders and participants identified as seventh graders.

Implications for Professional Practices

This study provides insight into practical applications for better understanding of middle schoolers' preferences for student-teacher communication and perceptions of teacher presence in online educational settings. The study showed that teachers in the sixth and seventh grade langauge arts courses at the online school mostly texted back in less than an hour, answered student phone calls on the first call attempt, and replied to student emails within a day. Students surveyed indicated an overwhelming preference for two-way text messages with online teachers when questions arose during lessons, taking quizzes, or working on writing assignments. As a secondary preference, students indicated a high preference for phone calls with online teachers when questions arose while working on learning material. Students indicated their perceptions that teachers were present in the online classroom when on the phone and during video chats. Considering the survey results showed that teachers responded to students quickly via text messages, answered phone calls on the first call attempt, and replied to email within a day, teachers can be perceived as present in online educational settings when they reply quickly to students. A high degree of focus should be placed on how teachers will use text messages and phone calls to communicate with students when students need help with lessons, quizzes, or writing assignments.

Teachers working in online middle school settings need to evaluate their present communication practices with students and determine if different commuincation modes should

be adopted or abandoned. By using text messages and phone calls more often with students, teachers will increase student-teacher communication and students' perceptions of teacher presence. The students in this study indicated that teachers mostly replied to text messages within an hour and perceived their teachers to be present. Teachers should work to reply to text messages quickly, within one hour.

Students surveyed during this study also indicated that teachers answered student phone calls on the first call attempt. Therefore, teachers can increase student-teacher communication and student perception of teacher presence by determining to answer student phone calls on the first call attempt or return phone calls in a timely manner agreed upon between teacher and student. Teachers who utilize email with students should make a priority to check email often and respond within a day or sooner since students in this study indicated the teachers at the study's online school returned emails within a day showed teacher presence.

Study Limitations

The researcher acknowledges that certain limitations exist within this study. This study was conducted using only sixth and seventh grade students from langauge arts courses at a large online school. Students from other subject areas were not considered within the parameters of this research. In addition, students from eighth grade were not surveyed; thus, participants from all three middle school grade levels were not considered.

The study design was quantitative and non-experimental using survey research. Student interviews were not conducted, nor were short response questions used to gather richer, deeper ideas about student-teacher communication preferences or perceptions of teacher presence.

This study was conducted at an online school that offers year-round education and students have the option of working at an accelerated or slower pace than traditional brick-and-mortar schools. The study was conducted during the latter part of the school year when many students had already completed courses and some of the participants had either just begun taking the course as part of a year-round schedule or were taking the course as an obligation to meet credit retreival (summer school) requirements and would not have otherwise chosen the online option. Students taking the courses for credit retrival or those students who had just begun the course as part of a new year-round schedule may not have been experienced in the langauge arts courses to have a well-rounded communication preference or perception of teacher presence.

Recommendations for Future Research

Future research on teacher presence and student-teacher communication methods in online middle school environments will be needed to clarify the body of evidence in educational research. Recommendations for future research include replicating the study using participants from all three middle school grade levels to compare with present findings and research into whether student preferences for communication and perceptions of teacher presence changes between seventh and eighth grade as students mature. In addition, researchers might also consider replicating the study in other subject areas to conclude whether student preferences of communication and student perceptions of teacher presence changes based on subject area. Researchers may attempt to design a qualitative or mixed-methods sudy design to gather richer and deeper ideas about student-teacher communication preferences and students' perceptions of teacher presence. Students from smaller online middle schools or blended online middle schools may provide future researchers with different perceptions of teacher presence and student preferences for student-teacher communication modes.

Conclusion

The number of students who choose to take online courses is growing at compounding rates (Blaine, 2019). Teachers must know how middle school students taking online classes want to communicate with the teacher and how students perceive their teachers to be present in the online classroom. Communicating with students in the way students prefer can lead to higher levels of perceived teacher presence in online learning environments. By communicating with students through text messages and phone calls, teachers can be certain they are using modes of communication middle schoolers in online learning environments prefer. Replying to text messages within one hour and answering the phone on the first call attempt can lead to higher student perceptions of teacher presence. The current research study was the first to discover the modes of communication middle school students prefer and whether middle school students in online learning environments perceive teachers to be present and contributes to the body of knowledge related to online middle school education.

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APPENDIX

Survey

1. Which type of communication do you most prefer when you have a question for your teacher about a lesson you are learning?
A.   Video Call
B.   Text
C.   Phone Call
D.   Email

2.   Which type of communication do you most prefer when you have a question for your teacher about a quiz you are taking?
A.   Video Call
B.   Text
C.   Phone Call
D.   Email

3.   Which type of communication do you most prefer when you have a question for your teacher about a writing assignment you are working on?
A.   Video Call
B.   Text
C.   Phone Call
D.   Email

4.   Overall, which type of communication with your teacher do you prefer?
A.   Video Call
B.   Text
C.   Phone Call
D.   Email

5.   When I am in Video Call, my teacher's presence (teacher's attention) could be described as
       5 Fully present
       4 Mostly present
       3 uncertain
       2 somewhat present
       1 Not present at all

6.   When I text my teacher, my teacher texts me back in less than an hour
       5 every time

4 most of the time
3 sometimes
2 not often
1 never

7.   When I call my teacher, my teacher answers the phone on my first attempt to call.
5 Every Time
4 Most of the Time
3 Sometimes
2 Not Often
1 Never

8.   When I call my teacher, my teacher's presence could be described as:
5 Fully present
4 Mostly present
   3   uncertain
2 somewhat present
1 Not present at all

9.   My teacher emails me back within a day of sending the email
5 every time
4 most of the time
3 sometimes
2 not often
1 never

9.   My teacher's online presence (my teacher shows up for me and I have his/her full attention) overall is
5 Fully present
4 Mostly present
3 uncertain
2 somewhat present
1 Not present at all

10.   If my teacher uses an avatar to represent themselves, the use of the avatar makes me feel connected to my teacher
5 every time
4 most of the time
3 sometimes
2 not often
1 never
0 does not use an avatar