Peer Education: Perceptions of Student Learning in Online and In-Person Tutoring Sessions

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Abstract

Post-secondary peer education provides both academic support and employment opportunities for students. Traditionally, this valuable resource has been held in person at specified tutoring centers on college campuses. Recently, in the light of the COVID-19 pandemic, the need for online academic support options is higher than ever. This study surveyed both tutors and students who taught or attended tutoring through both in-person and online formats throughout their time at South Dakota State University (SDSU). Twenty-six tutors and forty students completed this survey to generate both quantitative and qualitative data. Results of both the tutor and student survey showed that an in-person peer education format is overwhelmingly preferred. This can be explained by technology issues, lack of student engagement online, and the challenge of transitioning previously successful teaching strategies to an online format. All parties agree that going forward, a combination of both online and in-person tutoring offerings, or solely in-person tutoring, will best meet students' needs and expectations.

Research Problem

In 2019, 41% of students ages 18-24 attended some form of post-secondary education. Additionally, the rate of high school graduates choosing to attend a four-year institution increased by 30% from 2010 to 2019 ("College Enrollment Rates," n.d.). Transitioning from the smaller, more personalized, high school academic experience to the large college lecture atmosphere is a difficult transition for many students. This, coupled with the academic rigor that accompanies college classes, proves to be a challenge for many incoming freshmen. The drastic environment change for students further increases the need for academic support options for students of all skill levels and majors on campus. Universities have gradually implemented various academic support options such as subject-specific help centers, Supplemental Instruction (SI), required office hours, and peer led tutoring. South Dakota State University (SDSU) is no exception to the rise in both demand and utilization of such support options.

On campus, SDSU offers a variety of academic support options to students ranging from walk-in homework help to scheduled lecture review sessions. One of the most utilized is the Wintrode Tutoring Program where students who have taken the course assist those currently taking the class. This serves as both a valuable resource for those looking for more practice with course material as well as an on-campus employment opportunity.

In March 2020, with the rise of the COVID-19 pandemic, the need to transfer these educational support options online was a top priority as colleges and universities sent students home for online learning (Gopal & Aggarwal, 2021). Tutors learned how to transition their teaching styles to a virtual format alongside the students learning how to navigate online

courses. The need for academic review became stronger than ever as students and professors were trying to maintain the same academic rigor in an unfamiliar environment.

As college campuses begin to transition back to regular function, there is a divide in classes being offered in-person and online. In addition, colleges are beginning to offer more hybrid style classes. Hybrid classes intertwine both online and face-to-face learning (Arispe & Blake, 2012). While hybrid seems to bring the 'best of both worlds' component by combining both in-person and online learning components, this is not always the case (Salamonson & Lantz, 2005). Hybrid classes have been found to be a great option for upper-level classes where students are expected to have a baseline knowledge of the content (Arispe & Blake, 2012). These students typically perform better when learning during the online portion of hybrid classes because of their general understanding of course content. For introductory classes where students are gaining a baseline knowledge of a new topic, hybrid classes have not been shown to be beneficial (Arispe & Blake, 2012). This is due to the difficulty that comes with learning an entirely new concept independently during online learning. The variation in class format offerings at SDSU leads to a pivotal point for the tutoring program going forward. One aspect of determining future plans for the academic support programs and tutoring format is based on student and tutor perceptions of learning quality in both online and in-person formats.

Peer Education in College

Peer education, specifically tutoring, has become an integral part of many universities. While the main focus of peer education is to facilitate further learning among students, there are multiple other secondary benefits to the structure. Having a peer who has already taken the

class and done well is a benefit in itself, as the tutor knows how to study for the exams and can tell students what to expect throughout the semester (Provencio & Roesch, 2018). Additionally, by having a peer present the information, students are more attentive and receptive to learning (Carrico & Riemer, 2011). Tutors frequently utilize visual learning tactics such as charts or graphs along with review quizzes to aid student understanding. Furthermore, peer education can personalize learning in college classes as the students get more comfortable asking for help. This also aids in the mental shift that tutoring services are not just for students that need extra help to do well, but rather for all students to further their knowledge and gain additional practice with the course content.

Peer education benefits go beyond just learning in a group environment. When students learn or work to solve problems in groups, they are utilizing the three large pillars of group work: sharing, storage and retrieval (Wilson & Cronin, 2007). Sharing is the construct that each student has different strengths and has a different knowledge base to bring to the group. Storage is the course content the student has retained from lab or lecture and their ability to retain the information going forward. Retrieval is the ability of the student to remember and utilize course information during the tutoring session and recall tutoring information during class or on an exam. Because every student will have different models of the sharing, storage, retrieval construct, groupwork allows for more dynamic learning than what is seen in individual work (Lavy, 2017).

Group study in tutoring emphasizes interprofessional collaboration skills that future employers will be looking for (Räisänen & Lindblom-Ylänne, 2020). These skills are directly transferrable to all educational experiences and are most often developed throughout college.

Online Learning

Online learning has been on the rise as college classes are being offered in multiple formats in an attempt to reach as many students as possible. Nearly half of all college students will take at least one college class online during their four years at school (Song & Luo, 2016). Additionally, this allows access for students not on the main campus to take the course, as well as students who have other commitments during the in-person section to graduate on time. Online learning provides students with the schedule flexibility to take more classes or schedule work shifts.

While there are undoubtably benefits to offering classes and academic support options online to increase accessibility for students, there are some substantial drawbacks. Students who are participating in online classes need to have a strong academic drive and background before beginning the class (Bettinger & Taylor, 2017). Some of the main reasons students do not perform as well as they were expecting in online classes are due to a low grade point average before beginning the class or lacking a strong sense of time management (Bettinger & Taylor, 2017). This is accompanied by the challenge that a new class format presents. Online classes are often not structured the same as in-person classes, which can also prove to be a challenge for students who are not familiar with online classes (Bettinger & Taylor, 2017). Many students choose to refrain from turning on their cameras during online lectures which even further decreases student engagement (Gherhes & Para, 2021). All of these reasons can lead to a decrease in student success that is often associated with online classes.

Regardless of increasing offerings of online courses, many students, if given the option, will still choose to enroll in the in-person class (Jayaratne & Moore, 2017). Students are

interested in online classes only if it increases flexibility in their class and work schedules (Barker, 2015). For this reason, if students are only offered virtual class options, an asynchronous format is preferred. This ensures that when taking an online class, students are able to reference the content on their own time through resources such as PowerPoints, supplemental videos, and quizzes which provides schedule flexibility (Barker, 2015).

It is also important to note that a significant shift took place at the collegiate level during the COVID-19 pandemic. During this time, colleges were forced to utilize the online teaching technology and determine how to successfully accommodate students from remote locations (Kazieva & Zhukova, 2021). The majority of both students and teachers have a dislike for virtual learning based on the challenges experienced by this abrupt switch (Kazieva & Zhukova, 2021).

To help determine the next steps for academic support programs, it is important to analyze both the positive and negative aspects of online learning and peer led education. This will be further supplemented by input from students and tutors. The drastic adjustments made to learning environments the past few years led to the need to compare student and tutor perceptions of in-person vs. online learning. This will further be adapted to form a recommendation for future tutoring formats offered at the Wintrode Student Success and Opportunity Center at South Dakota State University.

Methods

In order to gain an accurate picture of perceptions of learning in online and in-person formats for both students and tutors, two separate surveys were created (Appendix A & B). Students who attended tutoring pre-March 2020 (in-person) and during the 2020-2021

academic year (virtual) were invited to participate in the study. Likewise, tutors who worked for the Wintrode Tutoring Program at SDSU during both face-to-face and virtual years were contacted to complete the tutor survey. These criteria presented 67 tutors and 226 students eligible to take the survey. Dr. Linde Murray, tutoring program coordinator, selected the eligible students and sent the survey via ConnectState email. Of the 67 tutors that were invited to complete the survey, 26 completed the survey (38% response rate). Out of the 226 students that received the survey, 40 completed the survey (17% response rate). The survey was also sent to recent graduates that met selection criteria which could explain the lowered response rate.

The surveys were comprised of both quantitative and qualitative questions with an emphasis on gauging students' perceptions of their learning. The student survey addressed topics such as how the student preferred to learn and if they felt tutoring was the same quality online as they had experienced in-person. The tutor survey examined the tutors teaching methods and if they felt students were as engaged during online tutoring as they had been in a face-to-face format. Both surveys addressed which form of tutoring better facilitated learning and if students and tutors preferred online or in-person tutoring going forward.

All survey responses were kept anonymous and participants could choose to discontinue their participation at any time. The responses to the survey were stored on QuestionPro which is the database participants completed their responses on.

Results

Student Survey Data

Forty South Dakota State University students completed the student survey. The goal of this survey was to gauge student's perception of his/her learning in both online and in-person formats. A complete list of questions can be found in Appendix A. Demographic questions were asked to ensure that the students were eligible to be included in the study data. This included year in school and tutoring formats they attended. The entirety of responses were juniors or seniors who attended both in-person and online tutoring. To gather an overall view of student's preference based on their previous tutoring responses, a question regarding which format was more beneficial to learning was addressed early in the survey (Table 1).

Students were also asked which way they prefer to learn. Student responses indicated that the majority of students prefer visual learning with tables and charts (39.76%), closely followed by hands on (33.73%), and listening to lecture (22.89%). Students were relatively split on whether online tutoring maintained the same level of quality as in-person tutoring. Responses indicated that 47.5% of students did not experience the same level of quality, whereas 52.5% of students did. Similarly, students were evenly split on whether online tutoring benefited learning to the same degree as in-person tutoring. Students were invited to comment on their response to the previous question and many students stated there was very little structural difference in tutoring online vs. in-person. One student noted:

> Online tutoring was nice because it offered the ease of getting help wherever you were. The only issue that I ran into with it was some connection issues with the WIFI. I think that the tutors that I had though did a great job at overcoming the challenges, and through them really did a great job at getting me the help I needed. The in-person tutoring was more predictable.

When asked if online tutoring played a role in how the students performed in the class, the majority responded yes (62.5%) and commented that any form of tutoring aided in their understanding of course content more than lecture alone would have. One student commented: "The Zoom tutoring option really helped me to get a better understanding of the material. Tutoring has always helped me, no matter the format, in the past."

Students were also asked to comment on what their tutors did during online tutoring that benefited and/or hindered their learning. Many of the responses identified the tutor's use of visual aids (sharing their screen during the session, drawing charts and graphs, PowerPoint presentations, and short quizzes to assess learning). Negative comments addressed that many of the drawbacks to online tutoring were not at the fault of the tutor but rather the lack of student engagement or technology issues. One student commented "By hiding behind my computer and answering questions that way, I am lesser prepared for in-person classes that require answering questions. Even if I know the answer, I am afraid to be wrong."

Finally, students were asked to share their preference of tutoring format going forward. Similarly, to the initial format preference question, in-person tutoring was the overwhelming response. Results can be seen in Table 2.

Going forward, would you choose online or in-person tutoring?	Number of Respondents (40)
Online (Zoom)	6 (15%)
In-Person	31 (77.5%)
The format of tutoring played no role in my learning	3 (7.5%)

Table 1: Student Survey "Going forward, would you choose online or in-person tutoring?" data

Tutor Survey Data

Twenty-six tutors completed the tutor survey. The goal of this survey was to compare teaching methods and perception of student learning and engagement in online tutoring to in-person. The survey questions can be found in Appendix B. Similar to the student survey, the tutors were asked early in the survey which tutoring format they preferred based on past sessions (Table 3). The majority of responses favored in-person tutoring.

Did you like tutoring better online or in-person?	Number of respondents (26)
Online	2 (7.7%)
In-person	22 (84.6%)
I have no preference in the format of tutoring	2 (7.7%)

Table 2: Tutor Survey "Did you like tutoring better online or in-person?" data

Tutors were asked if they felt that students were as engaged during online tutoring as they were during in-person tutoring. The majority of tutors (84%) indicated that students were less engaged online in comparison to in-person tutoring. While 15% indicated that engagement was similar regardless of format, no tutor selected that engagement was better online than in-person. The majority of tutors (69%) agreed that the change in tutoring format impacted students' learning of class content.

The tutors identified the teaching methods they utilized in both online and in-person tutoring sessions. The main response for in-person teaching strategies included group work, students teaching each other on a topic, and sample problems for students to complete on their own whiteboard. During online tutoring sessions, tutors utilized PowerPoints and worksheets, polling or Kahoot games, and relied much more on lecture-style teaching. In both formats, utilizing a drawing or whiteboard was common to further explain content.

Tutors were then asked which tutoring method better facilitated learning, as that is the main goal of peer education in higher education. Overwhelmingly, 96% of tutors felt tutoring in-person better facilitated student learning (Table 4).

Which tutoring format do you feel better facilitated learning?	Number of respondents (26)
Online (Zoom)	1 (3.8 %)
In-Person	25 (96.2%)

Table 3: Tutor Survey "Which tutoring format do you feel better facilitated learning?" data

The one tutor to select online tutoring as the format that better facilitated learning commented: "I feel like the students are retaining the information better because they are able to take the resources I show them electronically and utilize those to help them outside of tutoring as well." The remainder of the tutors selected in-person tutoring and identified student engagement as their rationale. One tutor stated,

> While we were able to accommodate online learning well at the tutoring center, I always think it's better to be face to face. There are less technology issues to deal with, the students feel more comfortable, and are able to be more engaged when sessions are in person.

Finally, tutors were offered the chance to make any general comments regarding in-person vs. online tutoring. The majority commented that online tutoring was a worse experience for both parties and that in-person tutoring was much better for engagement and quality of learning. One tutor did comment positively about online academic support, stating, "The one benefit of online was I was able to reach non-traditional students who otherwise wouldn't have been able to attend a session."

Discussion

Student Survey

Through the student survey we see two main themes. The first being that during their time in online tutoring, the students have conflicting opinions on how they perceived their quality of learning in comparison to what they have experienced in the past. We can conclude this through the almost perfectly split responses for and against the quality of learning remaining the same and benefit of tutoring. This divide could be caused by multiple factors such as different classes being taken each year, how the student prefers to learn, their specific tutor, or their personal academic drive during online learning. Many students also commented that having tutoring in some capacity was much more beneficial than not having tutoring during the months that SDSU was only able to offer virtual options. Secondly, the students responded overwhelmingly that they preferred in-person tutoring sessions. This was an unexpected result as online tutoring can be accessed from any location with internet connection and therefore significantly increases convenience for students.

The main benefit of tutoring was identified as increased engagement and information retention. They also commented that they feel more comfortable participating in an in-person setting which directly leads to better learning. Students' recommendation going forward was also overwhelmingly in favor of in-person tutoring sessions (77%). While there were some students that commented that they had no preference, others preferred online tutoring because it allowed them the flexibility to attend tutoring sessions when they otherwise would not have been able to attend. To address the accessibility of tutoring sessions, a combination of online and in-person tutoring sessions was suggested by survey participants.

Tutor Survey

Similar to the student survey, the tutor survey was also heavily sided toward in-person tutoring. The tutors were more opinionated in how the format of tutoring played a role in the atmosphere of their tutoring sessions, likely due to the fact that this survey will help to advise the Wintrode Tutoring Center in which formats they should offer tutoring going forward. The tutors indicated almost unanimously that students are more engaged and learned better with in-person tutoring. Many tutors assess student progress by watching the students work through a problem or by getting feedback during a session; both of those aspects were lost during online tutoring. If the tutor has a better grasp of the knowledge level of each student, he/she can better cater the session to meet each student's needs and expectations.

Tutors were also faced with the challenge of adapting their previous teaching styles into virtual-friendly ones. Some in-person teaching strategies are very difficult in an online setting and are only made worse with low student engagement and participation. Tutors commented they were forced to transition into more of a lecture-style approach to ensure the students were getting the information to study later. This likely also was disappointing to tutors as they felt in-person teaching strategies were more fun and helpful for students.

Interestingly, the teaching strategies utilized by tutors during online tutoring actually matches up directly with what students are looking for through their online classes. Students commented that during online post-secondary classes they prefer to be given the needed resources and listen to a lecture-based class format which is very similar to what tutors commented they transitioned to during virtual tutoring. However, tutoring sessions are typically structured to be a different, more engaging, presentation of material than what

students are expecting during class which explains the dissatisfaction felt by tutors. Tutors also

identified that while online tutoring helped non-traditional students or students that otherwise

would not have been able to attend tutoring, they still concluded in-person tutoring is the

better option for all involved. Seeing the benefit on both sides is consistent with the student

survey and suggests that offering both formats of tutoring in upcoming years may be a way to

service varied student needs.

Learning Preferences and Teaching Strategies

Each student has their own personal combination of learning preferences. While most

students are able to adapt their learning to the activity at hand, there is typically a preference

for learning and studying even if it changes based on the subject area. In this study, the

majority of students were visual learners with graphs and charts, or they preferred hands-on

learning environments. These learning preferences coincide to many of the teaching tactics that

tutors utilize during in-person tutoring. Common teaching strategies that cater to the visual

learners include drawing on the whiteboard, concept mapping, and challenging students to

place concepts into charts or graphs to better organize the information. Some of the hands-on

in-person activities include practice problems on the board, students roleplaying as tutors,

building chemical structures with models, and group work or discussion. Many of these

activities were directly lost when tutoring transitioned online. The tutor's comment that due to

lack of engagement via Zoom, they were forced to teach mainly through lecturing indicates that

students were still getting the same information, but they were not actively participating to the

same caliber as they were during in-person tutoring.

Tutors did try to combat this issue to the best of their ability by directly calling on students or utilizing other websites or Zoom functions to facilitate active participation such as the polling function or Kahoot quizzes. While this does facilitate some of the active learning environment that tutoring is based on, it does not directly replace the previously utilized in-person teaching strategies. This is supported by the data where students that indicated online tutoring was more beneficial, or that the format of tutoring played no role in their tutoring experience, were the students who also identified listening to lecture as a top learning preference. Because the tutors fell back on using more of a lecture-based style of teaching during online tutoring, this played in to how these students preferred to learn, thus creating a better environment for them. The disconnect between how students prefer to learn, how they are used to learning, and the teaching strategies that tutors are able to successfully offer virtually may explain the push to move tutoring back in-person in future years.

Virtual Limitation

Through analysis of both survey responses, there were a multitude of limitations that tutors and students had to navigate during sessions. Aside from the disconnect between online tutoring capabilities and students learning preferences, the virtual technology has its limitations as well. Internet connections and camera capabilities were a challenge with online learning. If students did not have a stable internet connection, they could miss information or not be able to participate. This was also a challenge for the tutors as the new Zoom technology was unfamiliar and, at times, difficult to use.

Additionally, because Zoom meetings do not require a camera to be on at all times, many students left their camera and microphone off for the entire tutoring session. This left

tutors to teach to blank squares, and also adds to the more lecture-based teaching styles that tutors had to turn to. With no one watching to make sure they are engaged and participating, many students also noted that they were distracted during the session which led to less information retention. This distraction could also be linked to a high level of Zoom burnout that was experienced nationwide by students and employees.

Future Tutoring Format

Due to the difficulties using the online technologies, and the disconnect in attempt to replicate in-person teaching strategies, both students and tutors much prefer the in-person tutoring format. First and foremost, it is what both tutors and students are most familiar with. The shift from in-person tutoring to online was a difficult transition for many long-term tutors. Tutors were suddenly thrown into a new teaching environment with new technology they had not used previously. Secondly, many tutors and even students commented that in-person tutoring is more engaging and beneficial. They acknowledged that the convenience factor is a huge benefit to online tutoring, but it takes more of an academic drive to pay attention and participate through online learning. The students recognized that they prefer the more engaging learning environment in comparison to the convenient lecture-style that comes with online tutoring. In summary, all parties involved preferred the familiar, in-person tutoring format and overwhelmingly indicated they would prefer that format going forward.

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Limitations and Future Studies

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While this study did yield helpful qualitative results used to guide future tutoring sessions at the Wintrode Tutoring Center, there were some limitations to this study. This survey was only performed at South Dakota State University with students who met a specific

criterion. This limited our sample population to a small size, which ultimately led to few responses. This study could benefit from more participants at various universities across the country to gain a better picture of the overall perception of online vs. in-person tutoring. Additionally, it would be interesting to explore more into the capabilities of Zoom and other potential online tutoring sites to bridge the gap and make online tutoring more interactive for students.

There were many students who began leading tutoring and attending tutoring for the first time during the 2020-2021 academic year. This means that their first experience with tutoring at SDSU was online. These students have not had a solid foundation of either entirely in-person classes or in-person academic support options. It should be explored to determine if this group of individuals has a different opinion of the tutoring format as that was not specifically addressed with this survey.

It would also be interesting to directly compare in-person and online tutoring experiences for students from the same class in the same semester to see the direct impact that the tutoring format has on their academic performance. Because this study asked both students and tutors to reflect on years past and compare experiences, there were likely discrepancies between class structures and student cohorts. The students could also be influenced by sessions with different tutors with different teaching styles, or by their general perception and difficulty of the course they are seeking tutoring for during that semester. This could influence both the perception of online tutoring as well as student engagement in tutoring in general.

Conclusion

Academic support options, such as peer-led tutoring, are a critical part of student success in college. South Dakota State University offers a variety of academic resources to aid students. Tutoring is utilized by many students because of its adaptability to address students' questions and concerns in an approachable, fun environment. Tutors lean on an interactive format to gauge student understanding and identify any confusion with course content. Through the transition to online learning, many of these typical in-person teaching tactics were lost. Both students and tutors identified that in-person tutoring was more beneficial and facilitated better learning, which is the ultimate goal of peer education. This is due to difficulties that arose with online tutoring such as technology barriers, lack of student engagement, and decreased ability to facilitate group discussions or group work.

Going forward, both tutors and students indicated that in-person tutoring should be utilized. The positive benefits of in-person learning far outweigh the few students that indicated online tutoring increases accessibility for them. A way to address all needs and learning types would be to offer both in-person and online tutoring options for each subject. However, this would increase the need for student tutors, which would create a larger financial burden on the university. In-person tutoring addresses the academic need of the majority of students and therefore is the clear option to be utilized by South Dakota State University's tutoring program going forward.

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Appendix A- Student Survey Questions

1. Year in school
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Other
2. Throughout your time at SDSU which format(s) did you attend tutoring through the Wintrode Tutoring Program? (select all that apply)
   a. In person (In Wintrode)
   b. Online (zoom)
3. Which of the following ways do you prefer to learn? (select all that apply)
   a. Hands on
   b. Listening to Lecture
   c. Visually with tables and charts
   d. Other
4. Which tutoring format did you find to be more beneficial?
   a. Online (zoom)
   b. In-Person
   c. I do not think the tutoring format played a role in my learning
5. Yes or No- Did online tutoring maintain the same level of quality as in-person tutoring has for you in the past?
6. Yes or No- Did online tutoring benefit learning to the same degree as in-person tutoring has for you in the past?
7. Fill in the blank- Please explain your answer to the previous question:
8. Yes or No- Did you feel like online (zoom) tutoring played a role in how well you did in this class?
9. Fill in the blank- Please explain your answer to the previous question:
10. Fill in the blank- What did your tutor do during online (zoom) tutoring that **benefited** your learning?
11. Fill in the blank- What did your tutor do during online (zoom) tutoring that **hindered** your learning?
12. Going forward, would you choose online or in-person tutoring?
    a. Online (zoom)
    b. In-person
    c. The format of tutoring played no role in my learning
13. Fill in the blank- Any additional comments about tutoring format?

Appendix B- Tutor Survey Questions

1. Did you like tutoring better in-person or online (zoom)?
   a. In-person
   b. Online
   c. I have no preference in the format of tutoring
2. Yes or No- did you think your students were as engaged during online (zoom) tutoring as they were during in-person tutoring?
3. Yes or No- Do you feel that a change in tutoring format (zoom vs in-person) impacted your students understanding of class content?
4. Fill in the blank- What teaching methods did you utilize during **IN-PERSON** tutoring?
5. Fill in the blank- What teaching methods did you utilize during **ONLINE(zoom)** tutoring?
6. Which tutoring format do you feel better facilitated learning?
   a. Online (zoom)
   b. In-Person
7. Fill in the blank- please explain your answer for the previous question:
8. Fill in the blank- Any additional comments regarding in-person vs online tutoring?