

New Jersey High School Students' Perceptions of Full-time Online Learning

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Abstract

The usage of online learning has dramatically increased since the start of Covid-19. Though the novel form of learning has seen sizeable economic growth and futuristic potential, it has received heavy critique from students worldwide. For these reasons, research on the viability of online learning is increasingly relevant. I analyzed New Jersey High School students' perceptions of online learning in comparison to in-person learning. I utilized an online survey to obtain results. Ultimately, I discovered that students have adapted to online learning, and, consequently, student perceptions of online learning have been generally positive. I also researched the factors that impact student perceptions of online learning and student perceptions of the potential of online learning. Some positive attributes of online learning are its convenience and comfort, while negative features include its lack of interaction, worsened learning quality, technological issues, and lack of engagement. Despite these flaws, Students have generally shown that they believed in the future of online learning. Future research in this field should further analyze the factors that impact student perceptions of online learning so that educators, school boards, and programmers can foster a positive learning environment for online students.

Keywords: Online Learning, High School, Student Perceptions, New Jersey

1. Introduction

In 1728, Caleb Phillips advertised a “private correspondence [course]” (Georgie, 2021), one of the first recorded instances of distanced learning, in the Boston Gazette. In this course, Phillips taught through the mail rather than in person. As technology advanced over time, distance learning improved as well. Distance learning involved the radio, records, and television by the mid-twentieth century. In 1976, the first virtual college, Coastline Community College, was formed (Thompson, 2021). Today, distance learning is rapidly developing both technologically and logistically. Now primarily online, distance learning has spurred economic

growth within multiple industries. Educators commonly utilize applications such as “Zoom” and “Google Meet” as the means of communication.

Since the onset of Covid-19, the utilization of online learning has drastically increased. In Wuhan, China, Covid-19 “resulted in the largest “online movement” in the history of education with approximately 730,000, or 81% of K-12 students, attending classes via the Tencent K-12 Online School in Wuhan” (Li, 2020). As the virus spread to the United States, so did online learning. Going into the 2020-2021 school year, many United States schools have remained entirely online, while others have switched to hybrid schedules. For example, on July 6, 2020, Harvard University decided to hold all classes

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online for the 2020-2021 school year but still charge full tuition (Algar, 2020). This “injustice” led a Harvard Law student to sue the school “over tuition prices as classes remain online.” The student felt “overall disrespected and unheard by the administration” (Lantry, 2020). Harvard University is one of many universities currently facing lawsuits, as “students at more than 25 U.S. universities who have been sent home to learn online during the coronavirus pandemic are filing lawsuits against their schools.” These lawsuits generally claim that the quality of online education is not of the same quality that the school promised the students, and thus, refunds are required (Betz, 2020). Parents have extensively complained about online learning as well. In September 2020, parents who believed their children received inadequate education online sued the Los Angeles Unified School District (Esquivel, 2020). The students within this district believed they had the right to quality education, and they believed online learning did not meet this quality. Reactions have been similar around the United States in all levels of education. Going forward, School boards should determine student perceptions of online learning to help foster a positive online learning experience. Understanding student perceptions can help teachers better understand student needs and adjust accordingly in this novel online learning environment.

Online learning has seen significant economic growth within the last year. According to the World Economic Forum, “even before Covid-19, there was already high growth and adoption in education technology ... the overall market for online education projected to reach \$350 Billion by 2025” (Li, 2020). Many investors and application programmers hold an interest in online learning, as it has immense economic potential. Therefore, understanding student perceptions of the potential of online learning and the changes that students believe would positively impact the online learning experience would be highly beneficial. For application programmers, understanding student perceptions of online learning would increase the understanding of student needs and thus allow developers to program the best possible online learning service. This understanding of student perceptions of online learning would bring

essential data about the economic potential of online learning, which is of utmost interest to many investors. Covid-19 has catalyzed considerable growth in online learning usage. Given futuristic improvements, the growth will continue.

Understanding student perceptions of online learning and what students believe would improve online learning are increasingly relevant for these social and economic reasons. This study will overview the current information in terms of student perceptions of online learning and conduct additional research to bolster the body of knowledge within the field.

2. Literature Review

While news outlets have extensively shown that students negatively perceive online learning, researchers must also consider formal research. Since online learning has existed since the infancy of the internet, there are many studies on student perceptions of online learning. In a study that researched university student perceptions of online learning in Indonesia, researchers found that, of those surveyed, 77.5% of students were very satisfied with online learning, 18.75% of students were satisfied with online learning, and only 2.5% of students were dissatisfied with online learning (Maskun, 2020). Maskun performed this study before the Covid-19 outbreak became a pandemic, and the students all voluntarily took online classes. In another study that researched United States university students' opinions on online learning, 13.1% of students felt completely satisfied with online courses, 39.9% felt mostly satisfied, 24.4% felt somewhat satisfied, while 11.9% felt somewhat dissatisfied, 8.9% felt mostly dissatisfied, and 1.8% felt completely dissatisfied (Rodriguez, 2008). Rodriguez conducted this research in 2008 on roughly seven hundred university students who took part-time online classes. In general, research in this area strongly supports the notion that University students positively evaluate online learning, which contradicts what many news articles have implied through their reporting of student complaints towards online learning.

In a study conducted in May 2020, during the onset of Covid-19, researchers researched 407 Indian

online students on their perceptions of online learning. "The results of the survey showed that 87.1% of the students reported that they preferred classroom teaching method more than online teaching mode. 12.9% preferred online classes" (Nambiar, 2020). Overall, this study showed the exact opposite of previous studies, as students in this survey showed negative perceptions of online learning. Other studies conducted during or after the onset of Covid-19 show similar negative student opinions of online learning. In a study that surveyed 261 Indonesian university students, only 3.8% of students stated that they preferred online learning, while 96.8% of students answered that they preferred in-person learning (Widodo, 2020). While there will be differences between student perceptions of online learning depending on the country and class, this incongruency between perceptions of online learning is much too large to ignore. Some external factors may be the cause of this inconsistency.

I hypothesize that Covid-19 has skewed student perceptions of online learning from positive to negative. The logical explanation for this skew is that the students surveyed are very different before Covid-19 than after. Before Covid-19, if one took an online course, they likely did so voluntarily, meaning that they specifically chose to attend an online course alternative rather than an in-person course. Therefore, those surveyed would likely already have a positive perception of online learning. After Covid-19, online learning was enforced internationally due to safety concerns. Because many of the students likely had little to no experience with online learning, those surveyed would likely negatively perceive online learning. Research in student perceptions of online learning generally corroborates with this hypothesis, as shown in the four studies provided above.

I also hypothesize that because students now have experience in online learning (many students who took online courses due to Covid-19 have been online for over a year), students may more positively evaluate online learning. In the Los Angeles School District, which, as mentioned prior, had received lawsuits from the parents about its "flawed" online learning system, the majority of students have chosen remote learning over the in-person school. Although all schools within the school district have fully

opened, only "7% of high schoolers, 12% middle schoolers and 30% of elementary children are back in the classroom" (City News Service, 2021). I believe that student perceptions of online learning over time and experience have shifted from negative to positive. Since all previous research likely does not accurately represent current student perceptions of online learning due to environmental changes, researchers must conduct new studies.

Previous research has shown that convenience and comfort are advantages of online learning. Various studies "indicate that convenience, time flexibility, lack of a commute to campus and the need to "sit through" a class" (Reisetter, 2004) are integral reasons for student participation in online courses. In general, students feel that not having to commute to class at a designated time is a significant advantage of online learning. Conversely, previous research suggests that lack of interaction and technological issues negatively impact the online learning experience. According to a study on student perceptions of online learning, "the most dominant theme in student explanations for preferring face-to-face classes (92%) was related to interaction" (Tichavsky, 2015). Many students believed that seeing a "real" teacher and interacting with "real" classmates significantly improved their learning experience. In another study about online learning, students "talked about their frustration with technology glitches and how these glitches affected the quality of their interactions." (McBrien, 2009) Other students suggested that the overwhelming nature of flipping through videos, PowerPoints, speaking, listening hindered their learning ability. This field needs new research regarding the factors that impact student perceptions of online learning for the same reasons mentioned above. Environmental factors, like Covid-19, have dramatically changed the sample of online learners, and, therefore, this field requires new research on this changing sample.

The main goal of this study is to determine student perceptions of online learning. Additional goals are to identify factors that impact student perceptions, determine student perceptions of the potential of online learning, and identify specific changes that would positively impact the online learning experience. Although online learning has

shown remarkable futuristic growth, very little research has targeted the potential of online learning; therefore, new research about online learning potential would be beneficial. I also want to understand what changes would positively impact the online learning experience because understanding this will help improve online learning. I hypothesize that students in this study will positively rate online learning compared to in-person learning, contradicting what much research after Covid-19 has shown. I also hypothesize that students believe in the futuristic potential of online learning.

3. Methods

To understand student perceptions of online learning, one must question students themselves on their evaluation of online learning, which eliminates the possibility of using an experimental procedure or a meta-analysis. The only methods that would rationally make sense for this research are focus groups, interviews, and surveys. I ultimately conducted a survey. The most utilized method in measuring student perceptions is a survey. I believed that following similar methods to previous expert research would prove beneficial. Surveys also do not involve face-to-face contact, an essential trait during the Covid-19 pandemic. Furthermore, surveys generally require less time commitment from the subjects in comparison to interviews and focus groups. I believe that subjects are more likely to participate in a study that requires less time. Therefore, to ensure that the study's sample size is large, this study utilized an online study.

For the survey, I researched New Jersey, full-time, online, high school students. I chose to research New Jersey since it was one of the states with the longest enforcement of online learning. Consequently, these students would have a more nuanced understanding of online learning. I used similar logic when choosing to research full-time students. These students spent the longest time in online classes, and their perspectives on online learning would likely be more constructive. I researched high school students since it would be easiest to research personally, allowing me to obtain a larger sample.

The survey consists of eleven questions that pertain to the online learning experience. These questions range from semi-structured (open response) to a 5-point Likert scale (strongly agree, agree, neutral, disagree, strongly disagree). There was also a section where the subject could list their demographic information. This information was solely utilized to understand if the sample size was skewed. For example, if substantially more females respond to the survey than males, the sample may not accurately represent student perceptions of online learning. The Likert scale questions in the survey are as follows:

1. Overall, I would rather attend full-time online learning rather than in-person learning.
2. My overall level of comfort was greater in online school than in in-person school
3. I learn better in online school than in in-person school
4. I believe online learning is more convenient than in-person learning
5. I believe online learning is lacking in terms of interaction
6. Technological difficulties have, to some degree, hindered my online learning experience
7. I believe online learning has the potential to permanently replace in-person learning in the future
8. I will take an online course in the future

As opposed to free-response questions, Likert scale questions provide more concrete answers. The student responses are separated into five categories, making organizing student responses and interpreting general student evaluations of online learning more straightforward. Although many questions are quite general, such as number one, which asks if students would rather attend full-time online learning over traditional learning, they are integral for analyzing how students generally view online learning in relation to in-person learning. Other questions are more specific, such as questions four through six, which revolve around specific factors that have been commonly associated with student perceptions of online learning. These questions are essential in understanding the factors that impact student perceptions of online learning. Finally, questions seven and eight hope to gauge student perceptions of

the potential of online learning. All of these questions were specifically designed to reach one of my four research goals. The semi-structured questions in the survey are as follows:

1. If any, what change in online learning would most improve your opinion of online learning?
2. If any, name the most prominent factor that positively impacted your perception of online learning?
3. If any, name the most prominent factor that negatively impacted your perception of online learning?

Semi-structured questions give the respondents opportunities to express their views with more nuance. They contain fewer barriers that constrict the respondent from thinking critically. These questions hoped to catalyze critical thinking amongst the respondents. I hoped that respondents answered question one with detail, as it was an integral part of understanding how online learning can be improved in the future. Question two and three deal with potential positive and negative factors that impact student perceptions of online learning. In contrast to questions four through six in the Likert scale questions, the respondents can answer the question freely and possibly identify new factors that have not been commonly considered throughout past research.

The survey was distributed to high school students across New Jersey via social media and messaging. I also distributed the survey through various teachers across New Jersey high schools. To ensure balanced demographics, I contacted teachers within schools of varying locations and economic classes. Students filled out an informed consent form; after completed, they were given a link to the online survey. I utilized the Google Forms program for the survey, as it was the most familiar to the respondents. It also was the most advanced in the user interface, allowing a detailed analysis of the respondent's answers to the various questions. This survey must have a relatively large sample size to be accurate. Therefore, I marketed for the survey accordingly to ensure a sufficient sample size.

There were various limitations associated with conducting the survey. It naturally was challenging to make sure the sample size was representative of the student population of New Jersey. At times, males

and Asians were much over-represented in my survey, which would lead to inaccurate results. I mitigated this limitation by periodically checking if my respondents' demographics matched up with the New Jersey averages. Therefore, when I spotted significant skews in my sample, I adjusted accordingly by targeting specific groups. Another challenge in the surveying process was obtaining a sufficient sample size. I marketed my survey extensively on social media and sent my survey to numerous teachers within various schools to prevent this limitation.

4. Results

4.1 Quantitative Data

The survey received one hundred and four results from students across over ten high schools in New Jersey. Most responses came from schools in Camden County, which is located in southern New Jersey. Student populations within these schools ranged from 8%-55% economically disadvantaged (gross income for household size of four less than \$52,000). Most schools within this area had relatively diverse student populations. Other responses came from schools in northern New Jersey, which generally had wealthier students. Every high school student surveyed partook in full-time online learning for over a semester. The economic, gender, and racial demographics can be found in Figures 1, 2, and 3.

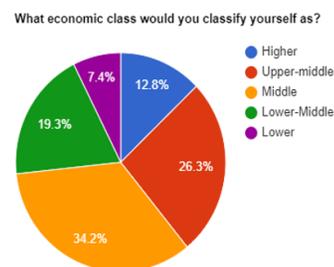


Figure 1. Pie-chart showing the economic-class distribution of the surveyees.

The Likert-scale question results are presented in the quantitative data section, while the open-response question results are presented in the qualitative data section. The responses to the Likert-scale questions can be found in Figures 4 through 11. (Note: 1=Strongly Agree, 2=agree, 3=neutral, 4=disagree, 5=strongly disagree).

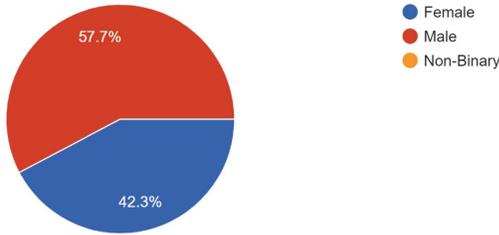


Figure 2. Pie-chart depicting the gender distribution of the respondents.

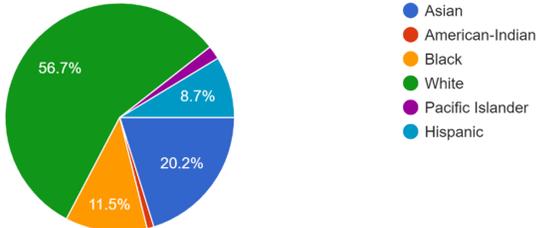


Figure 3. Pie-chart portraying the racial demographics of the respondents.

The demographic information shown in Figures 1, 2, and 3 shows the respondents’ economic, gender, and race distribution. Figure 1 shows that respondents classified themselves as primarily middle to upper-middle class, with slightly fewer lower-class individuals than higher-class. These results were self-classified based on the student’s perception of their wealth, meaning I did not give set guidelines for which income bracket meant which class. I thought this was preferable because there is no “official” definition of how each income bracket matches up with each class, so I did not want my question to be subjective to my personal classifications. Figure 2 illustrates that there were slightly more respondents identifying as male than female. Figure 3 shows that most respondents were White, followed by Asian and Black. While the distributions of the demographic results are not perfect, I believe they are close enough to represent New Jersey student perceptions of online learning accurately.

4.2 Likert-Scale Questions

In Figure 4, I asked students if they would rather attend online learning than in-person learning. 31.7% of students strongly agreed with that statement, 20.2% agreed, 15.4% were neutral, 11.5% disagreed, and 21.2% strongly disagreed. Students generally agreed that they would rather attend online learning

than in-person learning; though, a substantial portion of students still prefer in-person instruction.

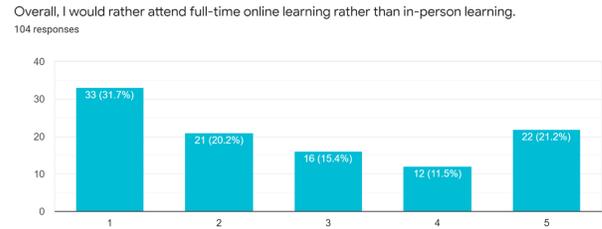


Figure 4. Bar graph depicting whether respondents agree that they would rather attend full-time online learning than in-person learning

In Figure 5, I questioned students if they believed that they had a greater level of overall comfort in online learning. 38.5% strongly agreed with that assertion, 21.2% agreed, 15.4% were neutral, 9.6% disagreed, 15.4% strongly disagreed. Comfort is a positive attribute of online learning, according to students. Interestingly, a portion of students agreed that while online learning is more comfortable than in-person instruction, they would still rather attend in-person learning.

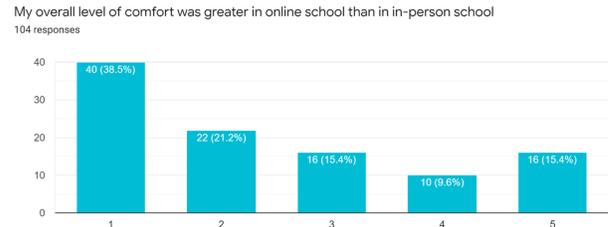


Figure 5. Bar graph showing if students agreed that their comfort was greater in online school than in in-person school

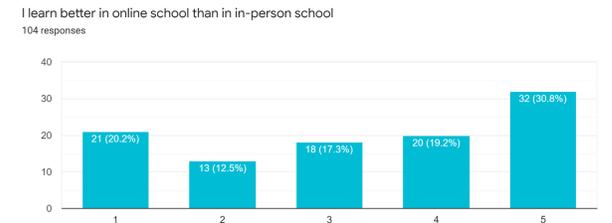


Figure 6. Bar graph showing whether students believe they learn better in online school than in in-person school.

In Figure 6, I asked students if they thought they learned better online than in an in-person environment. 20.2% strongly agreed with that statement, 12.5% agreed, 17.3% were neutral, 19.2% disagreed, 30.8% strongly disagreed. Figure 6 is the

only figure that received more responses with disagreements than agreements. Students' responses show that students believe they learn better in an in-person setting. One might think that because students negatively perceive their ability to learn in an online setting, they would dislike online learning; however, this is not the case for this sample of students as they generally positively rated online instruction.

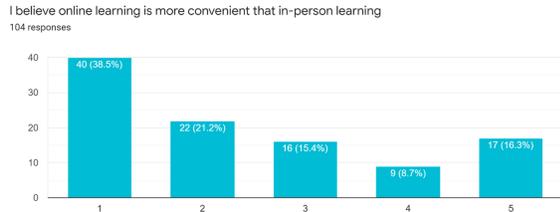


Figure 7. Bar graph depicting whether students believed online learning was of greater convenience than in-person learning.

In Figure 7, I questioned students if they believed online learning is more convenient than in-person learning. 38.5% strongly agreed with that assertion, 21.2% agreed, 15.4% were neutral, 8.7% disagreed, 16.3% strongly disagreed. Similar to comfort, students believe that convenience is a positive attribute of online learning. Figure 7 and Figure 5 nearly have identical distributions, likely because convenience and comfort are similar attributes.

In Figure 8, I asked students if they thought online learning was lacking in interaction. 35.6% strongly agreed with that assertion, 23.1% agreed, 16.3% were neutral, 9.6% disagreed, 15.4% strongly disagreed. Lack of interaction seems to be a substantial negative factor in students' perceptions of online learning; although, it seems that other positive attributes, like comfort and convenience, outweighed the lack of interaction in impacting students' overall opinion of online learning.

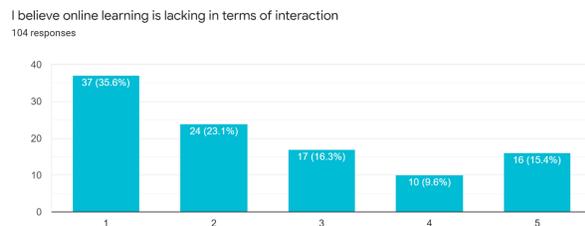


Figure 8. Bar graph portraying if students believe online learning is lacking in terms of interaction.

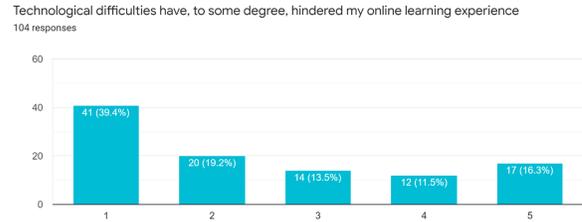


Figure 9. Bar graph depicting whether students believe technological difficulties have hindered their learning experience.

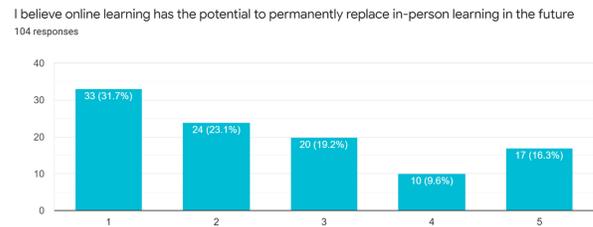


Figure 10. Bar graph showing if students believe online learning has the potential to replace in-person learning in the future.

In Figure 9, I asked students if technological issues have, to some degree, hindered their online learning experience. 39.4% strongly agreed with that statement, 19.2% agreed, 13.5% were neutral, 11.5% disagreed, 16.3% strongly disagreed. Students most strongly agreed with the statement in this figure. This result logically makes sense as online learning has only become widespread recently, thus the technology is far from perfect.

In Figure 10, I inquired students if they believed that online learning could permanently replace in-person learning in the future. 31.7% strongly agreed with that assertion, 23.1% agreed, 19.2% were neutral, 9.6% disagreed, 16.3% strongly disagreed. Despite various negative attributes of online learning, students still believe in the potential viability of online learning. This figure had the highest percentage of "neutral" responses, which is likely caused by the theoretical nature of the question. Many students may not surely understand what the future entails for online learning.

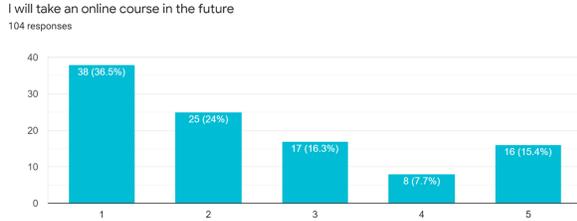


Figure 11. Bar graph depicting if students would be willing to take an online course in the future.

In Figure 11, I questioned students if they would take an online course in the future. 36.5% strongly agreed with that assertion, 24% agreed, 16.3% were neutral, 7.7% disagreed, 15.4% strongly disagreed. Even though this question did not receive the most “strongly agree” responses, it received the most “agree” responses, which is likely because students are still uncertain about online learning, and, consequently, they would not “strongly agree” about their future participation in online learning. Overall, it makes sense that students would be willing to take an online class in the future as students generally positively evaluated online learning.

4.3 Qualitative Data

The open-response questions yielded mostly short responses (2-3 words); I sorted the responses for each question into different categories. For instance, if, in Figure 14, a respondent believed that their inability to foster connections with peers most negatively impacted their perception of online learning, I would manually sort this answer into the “social related” section. If another respondent believed that the continual technological issues encountered in online learning most negatively impacted their opinion of online learning, I would put this response as “technology related.” If I found that the response could not be sorted into any group, or if the question was not adequately answered, I labeled this response as “other.” The pi-chart of the types of responses can be found in Figures 12, 13, and 14.

In Figure 12, I questioned the respondents on what would most improve their perception of online learning. 35% of respondents agreed that an increased sense of community and collaboration with peers would improve their perception of online learning. One student believed that online school should foster

“more time spent on collaborative projects rather than independent work.” Other respondents believed improved technology and more engaging teaching styles (both 10%) would improve their online learning experience.

If any, what change in online learning would most improve your opinion of online learning?

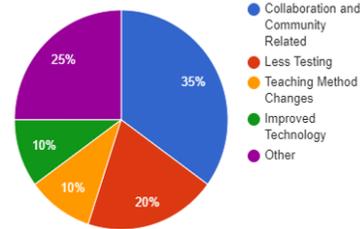


Figure 12. Pie chart showing how students generally responded when asked what change would most improve their opinion of online learning.

In Figure 13, I asked respondents which factor most positively impacted their online learning experience. The most common trend by far, yielding approximately 50% of responses, pertained to convenience. Many students mentioned that “later school start times” and “more lenient schedules” positively impacted their online learning experience. 20% of students also believed that the comfort of learning online greatly improved their perception of online learning, with one student stating that “being able to learn from the bed made online learning all the better.” Another trend within the responses, about 10%, was that the less time-consuming nature of online learning allowed students to “better pursue non-school related hobbies.”

If any, name the most prominent factor that positively impacted your perception of online learning

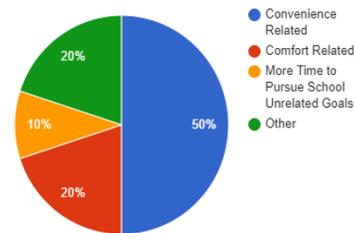


Figure 13. Pie chart showing how students generally responded when asked what factor most positively impacted their perception of online learning.

In Figure 14, I asked respondents which factor most negatively influenced their perception of online learning. 40% of responses were social related, with many respondents believing that online learning had

a “lack of social interaction.” 20% of respondents believed that lack of engagement most negatively impacted their perception of online learning, which I did not consider beforehand. Multiple students declared that online learning was “repetitive.” One student believed that “online learning is a lot more boring than in-person school.” 15% of students believed that online learning had a lesser quality of learning than in-person learning. To many, “online learning did not mimic the traditional school atmosphere,” and distractions hindered their learning ability.

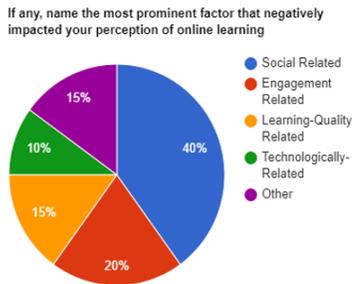


Figure 14. Pie chart portraying how students generally responded when asked what factor most negatively impacted their perception of online learning.

5. Discussion

Through Figure 4, I found that most full-time high school students would rather attend online than in-person school. 51.9% of students strongly agreed or agreed that they would rather than online school than an in-person school (compared to the 32.7% who disagreed or strongly disagreed). These results are congruent with the research done before Covid-19, where online learners voluntarily chose online learning over in-person learning; However, this contradicts the research done during the infancy of Covid-19. During this time, many studies showed that students abhorred online learning and would much rather return to in-person school. I deduce that student perceptions of online learning have improved due to students’ adaptability to their environment. At the time of surveying, all surveyees have attended over a semester of fully online school. This experience has allowed many students to adjust their learning techniques and thus perceive online learning positively.

Figure 10 and Figure 11 portray those students who believe in the futuristic potential of online learning. In figure 10, 54.8% of students strongly agreed or agreed that online learning could potentially replace traditional learning, while only 25.9% disagreed or strongly disagreed. These results surprised me, and it shows how the students’ experiences with online learning have improved their perceptions. In Figure 11, 60.5% of students strongly agreed or agreed that they would take an online class in the future, while 23.1% disagreed. The results show that students believe that online learning can overtake in-person learning with some technological improvements. Figure 10, which shows that 58.6% of students faced technical difficulties that hindered their online learning experience, suggests that student perceptions of online learning will also improve with improved technology.

Through the research, I have identified various areas of improvement that can positively impact student perceptions of online learning. Figures 9, 12, and 14 suggest that technological difficulties hinder student perceptions of online learning. Therefore, technological improvements that foster faster internet, higher-quality cameras, and more fluid conversations will naturally result in improved perceptions of online learning. Figure 14 shows that the most prominent factor that negatively impacts perceptions of online learning is the lack of social interaction. Futuristically, improved technology can encourage increased online social interaction amongst peers. Many students believe that online learning does not mimic traditional learning well, which technological improvements can change. Students will naturally socialize in an online learning setting that more accurately mimics traditional learning, thus improving their perceptions of online learning. Research also portrayed that a teaching style that fosters group interaction and less individual work would improve student perceptions of online learning. Figure 8 shows that students believe increased collaboration and a sense of community would improve their perceptions of online learning. Consequently, a teaching style that allows students to team-build and creates a sense of community would drastically improve online students’ experience. Figure 14 illustrated that students believed online

school lacked engagement. With a more personalized and engaging teachings style, student perceptions of online learning will naturally improve.

I have identified six factors that I believe most prominently impact student perceptions of online learning. The first factor is convenience, which of course, is a positive factor. In Figure 13, 50% of students believed that convenience most positively impacted their online learning experience. The ability to attend class anywhere in the world certainly benefits the case for switching to online learning. The next factor is comfort: the second most prominent factor in Figure 13 that positively impacted student perceptions of online learning. Figure 5 showed that 59.7% of students strongly agreed or agreed that their level of comfort in online learning was greater than in-person learning (25% strongly disagreed or disagreed). Comfort plays a significant role in the online learning experience. The following four factors are all negative, and the most prominent of these factors is a lack of social interaction (Figure 8, 12, 14). Other negative factors found in the results are as follows: general learning quality (Figure 6, 14), technological issues (Figure 9, 12, 14), and lack of engagement (Figure 14). While there are more prominent negative factors than positive ones, the two positive factors, convenience, and comfort outweigh the negative ones. Interestingly, students seem to prioritize their time over their learning quality.

6. Conclusion

The utilization of online learning has drastically increased due to Covid-19, and, likely, this newly popularized form of learning is here to stay. Previous research has shown conflicting results about student perceptions of online learning. This research definitively shows full-time online high-school students' evaluations of online learning, as well as the specific factors that impact these evaluations. Teachers and school boards must consider the factors that impact student perceptions of online learning when adapting their teaching styles and curriculum respectively; software engineers should also consider student perceptions when constructing new online learning platforms. The research shows that lack of

engagement and lack of community hinder students' online learning experience. Therefore, teachers and school boards must adjust accordingly to foster engagement and community in an online setting within their schools. The research shows that despite various flaws, students strongly believe in the futuristic potential of online learning. While to some, it is far-fetched, others believe that online learning can replace in-person learning in the future. For investors, understanding student perceptions of the potential of online learning is vital for their investments in the growing online learning market. Many of the pitfalls of online learning today can be solved through improved technology and software updates. With the knowledge of what specifically hinders students' online learning experience, software engineers can better construct a system that fosters the requests of its students. For example, the research shows that a lack of social interaction strongly hinders students' perceptions of online learning. With this knowledge, software engineers are encouraged to create a system that makes socialization amongst peers more appealing a fluid. Wholistically, this research provides valuable information for various groups that, through time, can drastically improve the online learning experience for students.

In the process of my research, I have found various limitations that must be addressed. While the results may be accurate for the time being, they likely will become outdated very quickly. Student perceptions of online learning are drastically changing as technology and society change. Future generations will likely evaluate online learning more positively because they have acclimated to advanced technology. The same applies to the factors that impact student perceptions of online learning. In the coming years, societal changes may influence the different factors that students believe positively and negatively impact online learning. Becoming outdated is inevitable for studies on this topic, and future researchers should be aware of this fact. Another limitation is a relatively small sample size of one hundred and four responses. While distributing surveys to students through their respective schools seemed logical, the survey did not receive as many responses as I initially hoped. I would recommend future research to conduct a more widespread

distribution to ensure a holistic representation of students. The final limitation pertains to the surveyees themselves. Although all have attended full-time online school for over a semester, and some for about a year, very few would consider themselves “full-time online students.” Most view online learning as a temporary replacement for in-person learning during Covid-19. This lack of experience and commitment towards online learning may slightly skew my results. For future researchers, it would be ideal for surveying those with ample experience in full-time online learning. These individuals may provide a more nuanced perspective on online learning and provide a more accurate evaluation of online learning as a whole.

Future research on perceptions of online learning can be conducted on different samples. While it is important to understand student perceptions of online learning, it is also crucial to understand parental perceptions of online learning. Therefore, future research could potentially target the parental perspective of online learning. In terms of student perceptions of online learning, researchers could perform statistical analyses on the factors that impact student perceptions. I performed a more qualitative approach in my analysis of these factors, so additional research that quantifies these factors could further the body of knowledge. Finally, the research portrayed that students believe online learning could benefit from increased engagement. Future research should construct an in-depth analysis of this relationship so that teachers can further understand how their online teaching style impacts their students.

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