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Impact of Remote Learning on Student Performance and Grade: A Virtual World of Education in the COVID-19 Era

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Abstract

The COVID-19 pandemic has had a profound influence on education around the world, with schools and institutions shifting to remote learning to safeguard the safety of students and faculty. Concerns have been expressed about the impact of virtual learning on student performance and grades. The purpose of this study is to investigate the impact of remote learning on student performance and grades, as well as to investigate the obstacles and benefits of this new educational paradigm. The study will examine current literature on the subject, analyze data from surveys and interviews with students and educators, and investigate potential solutions to improve student performance and participation in virtual classrooms. The study's findings will provide insights into the effectiveness of remote learning and inform ideas to improve student learning and achievement in an educational virtual world. The purpose of this article is to investigate the influence of remote learning on both students and educational institutions. The project will examine existing literature on the subject and collect data from students, instructors, and administrators through questionnaires and interviews. The paper will look at the challenges and opportunities that remote learning presents, such as the effect on student involvement, motivation, and academic achievement, as well as changes in teaching styles and technology. The outcomes of this study will provide insights into the effectiveness of remote learning and will affect future decisions about the usage of virtual learning environments in education. The research will also investigate potential solutions to improve the quality of remote education and handle any issues that occur.

Keywords

Remote Learning, Student Performance, Virtual World,
Covid-19, Grade, Student Learning

1. Introduction

The COVID-19 epidemic hastened the introduction of distance learning, which has both and drawbacks. Remote learning highlights the digital divide that exists in some areas while also providing flexibility, better access to resources, and the freedom to study from anywhere. The epidemic has shown that remote learning is an effective teaching strategy, and numerous academic institutions have invested in remote learning technologies and included remote learning choices in their long-term strategies [1]. This essay investigates how communication between students and teachers is affected by distance learning. Communication has been impacted in a number of ways, including by making it less personal and making time management more difficult. Due to the absence of fast feedback and reliance on digital platforms, has also impacted the effectiveness of communication [1]. Despite these difficulties, remote learning has given students and instructors the chance to become used to new communication methods and collaborate to ensure effective learning. Due to the COVID-19 epidemic, remote learning has gained popularity, but there are concerns about how it may affect students' grades. Students now learning remotely instead of in person find it challenging to focus, get rapid feedback, and efficiently manage their time. In-person instruction enables more individualized engagement and prompt feedback, which may result in higher marks. Remote learning has also given some students the chance to enhance their grades, especially those who might find it difficult to learn in a typical classroom setting. Whether through in-person or online learning, it is crucial for students and professors to collaborate to guarantee that students obtain a high-quality education. Remote learning has a bright future since it provides benefits including flexibility, resource availability, and opportunity for collaborative learning. Artificial intelligence (AI) and other technological breakthroughs like virtual and augmented reality can improve learning. Yet, issues like the digital divide, which restricts access for some students, and a potential loss of social connection are of concern. It is crucial to use remote learning to maximize benefits and raise educational standards [2]. The rest of the paper is arranged as follows: In Section 2 we discuss the rise in remote learning, In Section 3 we considered the impact of remote learning on communication between teachers and learnings, and in Section 4 we considered the impact of remote learning on grades, and then in Section 5 the future of remote learning, in Section 6 we have the survey and the paper was concluded in Section 7.

2. Literature Review

Means *et al.* (2010) did a meta-analysis and evaluation of online learning research to evaluate evidence-based strategies in online education. The researchers examined 51 independent effect sizes from controlled experiments that evaluated the efficacy of online learning to face-to-face education. The purpose was to discover empirically verified strategies in online education and to understand the conditions under which online learning is most effective. According to the

study, on average, online learning was determined to be more successful than traditional face-to-face training. It is important to highlight, however, that the observed advantage for online learning was often minimal and varied depending on the unique educational situation. The expanded studying time, the utilization of additional instructional tools, and the capacity to give students personalized training all contributed to the efficacy of online learning. Blended learning, which mixes online and in-person training, was found to be more effective than either online or in-person instruction alone. According to the authors, blended learning can deliver the best of both worlds by allowing for personalized learning, connection with teachers, and peer collaboration. The study also discovered that older learners, such as college students and adult learners, were more adept at online learning than K-12 students. More research, however, is required to assess the usefulness of online learning for younger pupils. The authors identified numerous instructional techniques related to more effective online learning, such as giving learners choice over their learning speed, utilizing multimedia resources, and enabling contact between learners and instructors [3].

According to another study called Hodges *et al.* (2020), the fundamental contrasts between emergency remote teaching (ERT) and online learning are found in this paper. The authors underline that these two forms of instruction are distinct, and recognizing their differences is critical for educators and institutions dealing with abrupt changes in educational delivery techniques, such as during the COVID-19 pandemic. Online learning refers to courses that are well-planned and purposefully designed to be given digitally. Emergency remote teaching, on the other hand, is a brief change from face-to-face to remote training in reaction to an unexpected crisis or event.

Online learning frequently entails a well-prepared curriculum, extensive planning, and a heavy emphasis on interaction between instructors and students, as well as among students themselves. ERT, on the other hand, ERT frequently lacks the comprehensive support mechanisms, infrastructure, and training found in a well-designed online learning environment. This could result in a poorer learning experience than planned online courses. According to the authors, institutions and educators should recognize the limitations of ERT and avoid equating it with online learning. This distinction is critical to ensuring that the quality of online learning is not jeopardized by the difficulties encountered during emergency scenarios. The paper also offers advice to institutions and educators on how to overcome ERT, such as focusing on vital course content, maintaining regular communication with students, using existing resources, and offering support for both instructors and students [4].

3. The Rise of Remote Learning

The COVID-19 pandemic has resulted in radical changes in the way we live and work, with one of the most significant being the fast rise of remote learning. With schools and colleges closed around the world to combat the virus's spread,

educators and students have had to quickly adjust to online and remote learning platforms. The transition to remote learning has been difficult, but it has also opened new educational chances and possibilities. Remote learning platforms enable students to join classes from anywhere in the world, and they provide a variety of tools and resources to help students learn more effectively [5]. The COVID-19 pandemic has accelerated the adoption of remote learning, dramatically changing the landscape of education across the globe. As schools and universities shifted to online platforms, remote learning has emerged as an essential and viable alternative to traditional face-to-face education. This essay aims to analyze and interpret data from various articles and studies to better understand the impact of remote learning on student performance, engagement, and access to education. Teachers are also experimenting with new ways to engage students, such as using virtual reality and gamification to make classes more interactive and engaging. Simultaneously, remote learning has revealed the digital divide that exists in many parts of the globe. Students from low-income families may lack the necessary hardware and internet access to access remote learning platforms, posing a significant challenge for educators and lawmakers. Overall, the growth of remote learning has been a mixed bag of advantages and disadvantages. As we navigate the COVID-19 pandemic and its aftermath, remote learning is likely to remain a major part of the educational landscape in both the short and long term [5].

In 2016, 21 million students enrolled in Coursera's online classes, a figure that will rise by around 7 million per year over the next two years. However, as the pandemic struck, a threefold increase in new registrations occurred, bringing the total to 71 million in 2020 and 92 million in 2021. **Figure 1** below shows the statistics of rising of remote learning. Enrollment in online courses followed a similar trend, with pre-pandemic gains overshadowed by massive spikes. Enrollment more than doubled in 2020, then grew 32% the following year, reaching 189 million. These increases represent the increasing global acceptance of
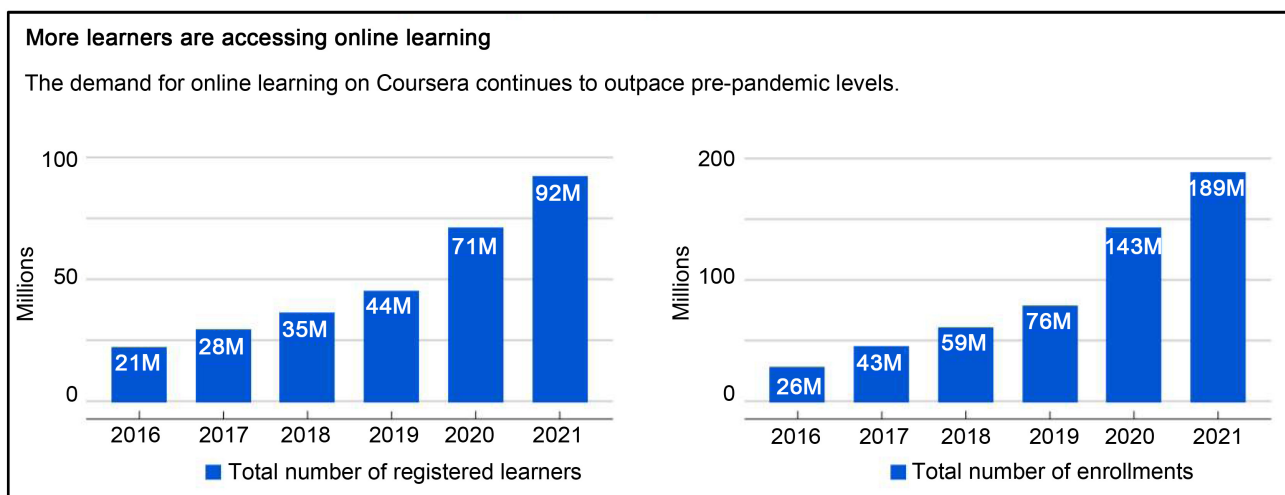

Figure 1. Statistics of rising of remote learning.

online education, including an increase in remote learners enrolled in higher education courses and those from vulnerable or remote communities [6].

After COVID-19 forced schools and universities around the globe to close their doors and shift to online learning, remote learning became widespread. The pandemic demonstrated that remote learning was not only a temporary solution, but also a viable choice for future education. During the pandemic, the benefits of remote learning, such as scheduling flexibility, the ability to study from anywhere, and increased access to resources, became more evident. Consequently, many educational institutions have invested in remote learning technologies and built remote learning options into their long-term plans [6].

4. The Impact of Remote Learning on Communication between Student and Teacher

Remote learning has grown in popularity in recent years, owing in part to the COVID-19 epidemic. It has resulted in numerous changes in the educational sphere. One major change is the shift from in-person to online communication between students and instructors. This has raised concerns about the effect of remote learning on student-teacher communication. A study conducted by Bao (2020) compared student performance in remote and face-to-face learning environments. The study found mixed results, with some students experiencing improvements in their grades, while others faced challenges due to the lack of in-person interaction and the need for increased self-discipline. This finding was supported by a meta-analysis by Means *et al.* (2013), which indicated that remote learning could be as effective as traditional face-to-face instruction when implemented correctly [7]. This paper investigates the effect of remote learning on student-teacher communication. Remote learning has had an impact on student-teacher contact in a variety of ways. One of the most important consequences is that communication has become less personal. In-person communication enables students and instructors to have more personalized interactions. Research by Al Lily *et al.* (2020) investigated the impact of remote learning on student engagement. The study found that although online platforms offered numerous opportunities for collaborative learning, the absence of in-person interaction made it challenging to maintain student motivation and participation. A study by Marinoni *et al.* (2020) similarly highlighted the importance of finding innovative ways to foster student engagement in remote learning environments [7]. However, communication in remote learning is confined to online platforms such as video conferencing, email, and instant messaging. These platforms lack the personal touch that in-person communication provides, which can lead to misinterpretation of messages and misunderstandings. Another impact of remote learning on communication between student and teacher is the challenge of time management. With remote learning, students and teachers must manage their time effectively to ensure that they meet deadlines and communicate effectively. However, this can be challenging, especially for students who may be

dealing with other responsibilities outside of school [7].

The quality of communication between students and instructors has also been impacted by remote learning. In-person communication provides instant feedback, which remote learning does not. Students may struggle to grasp concepts and pose questions due to a lack of immediate feedback. Furthermore, with remote learning, communication is confined to digital platforms, which may be difficult for some students, particularly those without reliable internet or digital devices. Remote learning has had a significant effect on student-teacher communication. It has made conversation less personal, has made time management difficult, and has impacted communication quality. Despite these difficulties, remote learning has enabled students and teachers to adapt to new modes of communication and collaborate [7].

5. The Impact of Remote Learning on Grade

Remote learning has grown in popularity in recent years, owing in part to the COVID-19 epidemic. It has resulted in numerous changes in the educational sphere. The shift from in-person to remote learning is a major change. Concerns have been raised about the effect of remote learning on student grades. This paper investigates the effect of remote learning on pupil grades. Remote learning has had a variety of effects on students' scores [7]. One critical aspect of remote learning is its potential to increase access to education. UNESCO (2020) reported that during the COVID-19 pandemic, millions of students worldwide experienced disruptions in their education. Remote learning, however, provided an opportunity to continue their studies. A study by Bozkurt *et al.* (2020) emphasized the role of remote learning in bridging the digital divide, but also acknowledged that students from disadvantaged backgrounds might face challenges in accessing the necessary technology and resources for remote learning. One of the most important consequences is that it has made it difficult for some students to focus on their studies. Remote learning requires students to learn in a less structured setting, which may make it difficult for them to focus on their studies. Furthermore, remote learning has made it difficult for students to receive immediate feedback from their teachers, which can have an impact on their learning and comprehension of ideas [8].

Figure 2 below shows the distribution of participants according to their age. According to the most recent statistics, the average evaluation was 4.02 1.11 points. Most participants, 96.7% (n = 1346), felt that the COVID-19 pandemic lockdown had an impact on their academic achievement to varying degrees. Almost half of the participants (47.5%, n = 661) were severely impacted, 19.9% (n = 278) were significantly affected, 23.3% (n = 324) were moderately affected, and 6.0% (n = 83) were slightly affected. Only 3.3% (n = 46) of participants said lockdown had no impact on their academic performance [9].

Another effect of remote learning on student scores is the difficulty in managing time. Students must manage their time efficiently when using remote learning to make deadlines and complete assignments. However, this can be difficult,
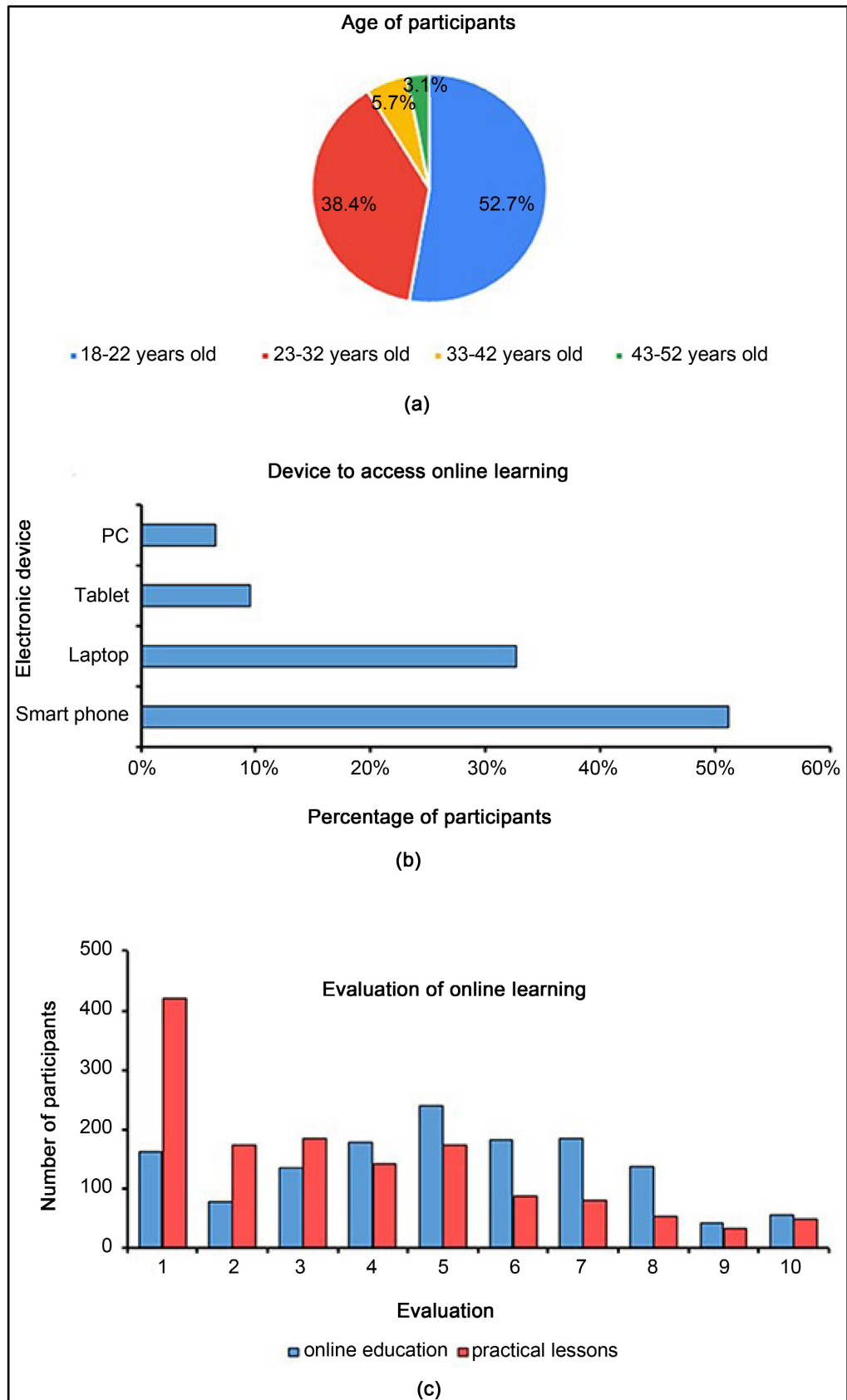
Figure 2. The distribution of participants according to their age.

particularly for students who have other responsibilities outside of school. Remote learning has also had an impact on the educational quality of pupils. In-person learning provides instant feedback and interaction with teachers, which remote learning does not. Students may struggle to comprehend concepts and ask questions due to the lack of quick feedback, which may have an impact on their grades. Remote learning has given some students the chance to improve their grades. For example, students who struggle with conventional in-person learning may find that remote learning is better suited to their learning style [10]. Furthermore, remote learning has given students greater flexibility by allowing them to study at their own pace. Students' scores have improved significantly because of remote learning. It has made it difficult for some students to focus on their studies, effectively manage their time, and receive instant feedback from their instructors. Despite these challenges, remote learning has given some students the chance to improve their grades. Finally, students and instructors must collaborate to ensure that students receive quality education, whether through in-person or remote learning [10].

6. The Future of Remote Learning

Remote learning has transformed the way education is provided. Remote learning has a bright future and could significantly improve educational quality. One of the major benefits of remote learning is that it gives pupils more flexibility. Students can learn at their own speed and on their own schedule, resulting in a more personalized learning experience [11]. Furthermore, remote learning has increased students' access to educational materials, which can aid in their learning. Another benefit of remote learning is the increased opportunity for collaborative learning. Remote learning has made it possible for students from all over the world to work together on projects and exchange ideas. As a result, the learning setting may become more diverse and dynamic [11]. Furthermore, remote learning allows students to attend classes and learn from experts who may be in various parts of the globe. The future of remote learning holds great promise for enhancing educational quality using technology. Virtual and augmented reality, for example, can be used to provide pupils with a more immersive and interactive learning experience. Furthermore, artificial intelligence can be used to personalize the learning process and provide students with relevant information [12].

There are also worries about the future of distance education. One major worry is that it may result in a loss of social interaction and connection between students and teachers. Furthermore, there is concern about the digital divide, which may restrict some students' access to remote learning. Remote learning has a bright future and can significantly improve educational quality. It gives students more flexibility, chances for collaborative learning, and access to educational resources. There are, however, worries about the loss of social interaction and the digital divide. Finally, it is critical to ensure that remote learning is used

in a way that optimizes its potential for improving educational quality while minimizing its drawbacks [12].

7. Survey

This paper includes a survey among two teachers and two students about their experience and opinion about remote learning.

First interview: This is the interview conducted by the writer with an instructor named Surekha Rao of Indiana University Northwest. She is a lecturer of Business faculty, and she is working with Indiana university northwest from 2003. Below is the written interview script:

Writer: Good afternoon! and thank you for being here today. Can you tell us a little bit about your teaching experience and how long you have been teaching?

Surekha Rao: Thank you for having me today. For the past 20 years, I have mainly taught in-person in a traditional classroom setting at Indiana University Northwest campus.

Writer: As a result of the COVID-19 pandemic, many schools and teachers were forced to rapidly adapt to remote learning. How did you find the experience?

Surekha Rao: It was a major departure from my previous teaching experience. Adapting to remote learning has brought with it a slew of new challenges and roadblocks, but it has also brought with it some unique possibilities.

Writer: What specifically have you found challenging about remote teaching?

Surekha Rao: One of the biggest challenges has been keeping students engaged and motivated. When teaching in-person, there is a sense of camaraderie and community that can be difficult to replicate virtually. It can also be challenging to provide individualized attention to students and to ensure that they are understanding the material. Also, less student engagement in person is creating difficulty.

Writer: Have there been any advantages to remote teaching that you've experienced?

Surekha Rao: Absolutely! Remote teaching has allowed me to be more flexible with my schedule, which has been helpful in balancing my personal life with my professional responsibilities. It has also opened new opportunities for collaboration and professional development with other educators outside of my usual network.

Writer: Do you think remote learning has changed the way you approach teaching in general?

Surekha Rao: Yes, I think it has helped me become more adaptable and creative in my teaching approach. Remote learning has forced me to try new strategies and methods to keep my students engaged and motivated, which I believe will be beneficial as I continue to teach in the future.

Writer: Lastly, do you think remote learning will continue to have a place in education even after the pandemic ends?

Surekha Rao: I do believe that remote learning will continue to have a place in education, especially as technology continues to evolve and improve. However, I also believe that in-person learning and the sense of community that comes with it will remain an important and valuable part of the educational experience.

Writer: Thank you so much for the interview. I really appreciate your time and opinion.

Surekha Rao: No problem! I was happy to contribute.

Second interview: This is the interview conducted by the writer with an instructor and academic advisor named HelenMarie Harmon of Indiana University Northwest. She is Director, Student Success & Career Development. She is working with Indiana university northwest from 2002. Below is the written interview script:

Writer: Good morning! Thank you for joining me today and giving me your valuable time. Could you please start by introducing yourself?

Helen: Good morning! My name is HelenMarie Harmon, and I am the director of student success and career development department with over 20 years of experience in education. I primarily teach English and Literature.

Writer: We have seen a massive shift towards remote learning in recent years. How has this impacted your teaching experience?

Helen: Remote learning has changed the dynamics of teaching or connecting with students. It has allowed us to reach students who might not have access to traditional schooling, and it has made education more flexible for students who juggle multiple responsibilities. However, it has also posed challenges in terms of student engagement, technical issues, and building strong relationships with students.

Writer: Can you share some of your experiences with remote teaching or advising curriculum?

Helen: Of course. When we first transitioned to remote learning, there was a steep learning curve in terms of adapting our teaching methods and using technology effectively. We had to find new ways to present material, keep students engaged, and assess their understanding.

Over time, we have found some successful strategies, like using interactive tools, breaking the advising into smaller segments, and incorporating real-time feedback. We have also learned to be more patient and empathetic, as we understand that students may be dealing with personal challenges during remote learning or academic advising.

Writer: In your opinion, what are the advantages and disadvantages of remote learning or interaction?

Helen: There are advantages to remote learning or having meetings with students, such as flexibility in scheduling, access to a wider range of resources, and the ability to reach students in remote areas or those with health concerns. Remote learning can also be more cost-effective for families and schools.

However, there are disadvantages as well. Remote learning can sometimes

lead to feelings of isolation, and it can be difficult to maintain motivation and engagement without the in-person interactions that students are used to. Additionally, not all students have equal access to technology and internet connectivity, which can create an unfair learning environment.

Writer: Do you believe remote learning should continue to play a role in education, even after the pandemic subsides?

Helen: I think remote learning has a place in education moving forward. It provides opportunities for students who may not thrive in traditional classroom settings or those who need more flexibility in their schedules. However, I believe we should also recognize the importance of in-person learning and social interaction for students. A blended approach that combines the best of both remote and in-person learning could be beneficial in creating a more inclusive and adaptive educational system.

Writer: Thank you for sharing your experiences and insights, Helen. We appreciate your time and dedication to education.

Helen: You are welcome! It was my pleasure to discuss this important topic.

Third interview: This is the interview conducted by the writer with an undergraduate student at Indiana University Northwest. Her name is Priya Karnam, and she is a sophomore in Business. Below is the written interview script:

Writer: Good evening and thank you for joining us today. Can you please start by introducing yourself?

Priya: Hi, my name is Priya Karnam. I am a sophomore at Indiana University with a Business major. I have experienced both in-person and remote learning during my time in school.

Writer: Remote learning has played a significant role in education in recent years. How has it impacted your learning experience?

Priya: Remote learning has been a mix of positives and negatives for me. On the one hand, it has provided a more flexible schedule, which has allowed me to pursue personal interests and take breaks when I need them. On the other hand, it has made it more challenging to stay engaged and motivated, and I have missed the social interactions that come with in-person learning.

Writer: How has your experience with remote learning changed since the pandemic began?

Priya: In the beginning, it was quite difficult to adjust to remote learning. There were technical issues, and it was challenging to adapt to new ways of learning and communicating with teachers and classmates. Over time, though, both students and teachers have become more comfortable with the technology and remote learning tools, so the experience has improved. However, I still miss the in-person interactions and the more structured learning environment that a physical classroom provides.

Writer: What is your opinion on remote learning? Do you see any advantages or disadvantages?

Priya: I believe remote learning has its advantages and disadvantages. One

significant advantage is the flexibility it provides, which can be helpful for students who need to balance school with other responsibilities or interests. Additionally, it can be an excellent option for students in remote areas or those with health concerns. The disadvantages are also quite clear. Remote learning can lead to feelings of isolation, and it can be challenging to stay engaged and motivated. Plus, not all students have equal access to technology and internet connectivity, which can create disparities in learning experiences.

Writer: Do you think remote learning should continue to be a part of education even after the pandemic subsides?

Priya: I think remote learning can be a valuable option for some students, but it should not replace in-person learning entirely. A blended approach that combines the best aspects of remote and in-person learning would be ideal. This would allow students who thrive in remote learning environments to continue benefiting from it, while still providing opportunities for in-person interaction and collaboration.

Writer: Thank you for sharing your experiences and thoughts, Priya. I appreciate your perspective on this important topic.

Priya: You are welcome! I am glad I could contribute to the conversation.

Fourth Interview: This is the interview conducted by the writer with a graduate student at Indiana University Bloomington (virtually via zoom). His name is Benjamin Dewes, and He is a senior in Computer Information systems. Below is the written interview script:

Writer: Good afternoon and thank you for joining us today. Can you please start by introducing yourself?

Benjamin: Hi, my name is Benjamin Dewes. I am a high school senior in graduate school at Indiana University Bloomington campus. My most classes are hybrid anyway but during my undergraduate I did have face to face classes more.

Writer: Since the pandemic has subsided, how has your remote learning experience evolved?

Benjamin: The remote learning experience has improved significantly since the pandemic began. Teachers and students have become more adept at using digital platforms, and there's been a more comprehensive understanding of how to make remote learning engaging and effective. The resources and tools available have also improved, making remote learning feel more seamless.

Writer: How has remote learning impacted your academic performance, particularly in terms of your grades?

Benjamin: Remote learning has had both positive and negative impacts on my grades. On one hand, the flexible schedule, and the ability to work at my own pace have helped me excel in some subjects. On the other hand, the lack of in-person interaction and the challenges of staying motivated have made it harder to perform well in other areas, particularly in subjects that require more hands-on learning or group collaboration.

Writer: In your opinion, what are the pros and cons of remote learning?

Benjamin: Some pros of remote learning include the flexibility it offers, the ability to work at your own pace, and the opportunity for students in remote areas or with health concerns to access education. It can also be more cost-effective for families and schools. There are several cons as well. Remote learning can lead to feelings of isolation, and it can be difficult to stay motivated without the social interactions and structured environment of a physical classroom. There is also the issue of unequal access to technology and internet connectivity, which can create disparities in the quality of learning experiences.

Writer: Based on your experiences, would you recommend remote learning to other students?

Benjamin: I think remote learning can be a great option for some students, but it is not for everyone. It is essential to consider each student's individual needs and learning style. Remote learning can be a good fit for students who require more flexibility, have health concerns, or live in remote areas. For those who thrive in a more structured environment or need the social interaction that comes with in-person learning, a traditional classroom setting might be more suitable. A blended approach that combines the advantages of both remote and in-person learning could be the best solution for many students.

Writer: Thank you for sharing your experiences and thoughts, Benjamin. Your perspective is valuable in understanding the impacts of remote learning on students.

Student: You're welcome! I'm glad I could contribute to the conversation and help others understand the nuances of remote learning.

The main findings of the survey are as follows the advantages of remote learning including flexibility in scheduling, ability to work at one's own pace, access to education for students in remote areas or with health concerns, and opportunities for collaboration and professional development.
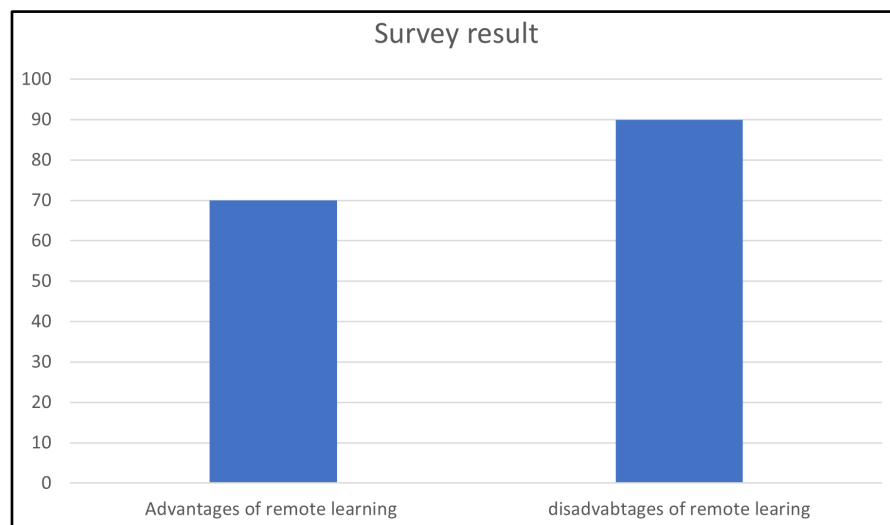

Figure 3. Advantages and disadvantages of remote learning.

As the disadvantages of remote learning, difficulty in maintaining student engagement and motivation, feelings of isolation and lack of social interaction, challenges in providing individualized attention to students, unequal access to technology and internet connectivity, not suitable for hands-on learning or group collaboration, and decreasing productivity. The bar chart in Figure 3 shows the ratio of advantages and disadvantages of remote learning:

Overall, the participants acknowledged both the advantages and disadvantages of remote learning. They emphasized that remote learning can be beneficial for some students, but it is not suitable for everyone. A blended approach that combines the best aspects of remote and in-person learning could be the ideal solution for many students, providing flexibility and opportunities for interaction and collaboration.

8. Conclusion

In conclusion, remote learning has significantly impacted the educational landscape, particularly during and after the COVID-19 pandemic. The COVID-19 pandemic led to a rapid rise in remote learning as schools and colleges closed globally. This shift presented both opportunities and challenges, with increased accessibility and innovative teaching methods but also highlighted the digital divide. Remote learning saw significant growth in enrollment, reaching 189 million, and gained global acceptance. The pandemic revealed the benefits of remote learning, leading many institutions to integrate it into their long-term plans. It has presented both advantages and challenges, such as increased flexibility, access to resources, and opportunities for global collaboration, as well as concerns about the digital divide, decreased social interaction, and the impact on student-teacher communication and academic performance. As we move forward, it is essential to strike a balance between remote and in-person learning, leveraging the potential of technology and online platforms while addressing the challenges and disparities they present. A blended approach that combines the best aspects of both remote and traditional learning could lead to more inclusive, adaptive, and effective education systems, better preparing students for a rapidly changing world. The overall impact of remote learning on student grades compared to traditional face-to-face learning is multifaceted and depends on various factors. Some students may benefit from the flexibility and accessibility of remote learning, leading to improved grades. However, others might struggle with the lack of in-person interaction, time management challenges, and limited access to resources, resulting in lower academic performance. The effectiveness of remote learning for individual students often depends on their learning style, self-discipline, and access to necessary technology and support systems. The rise of remote learning has transformed the educational landscape, offering new opportunities and challenges for students and educators alike. Data from various articles and studies suggest that while remote learning can be effective in improving student performance and increasing access to education, it also high-

lights the need for addressing issues related to student engagement and digital inequalities. As remote learning continues to evolve, further research is needed to ensure that its potential benefits are maximized, and its challenges are effectively addressed.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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