

The Advantages and Limitations of Remote e-learning for ESL classes

ESLクラスでのリモートEラーニングの長所と短所

William Brooks

ウィリアム ブルックス

Faculty of International Communication, Aichi University

E-mail: brooks@vega.aichi-u.ac.jp

Outline

1. Introduction	93
2. Ramifications of Pandemics and Socioeconomic Responses	94
3. Advantages of remote e-learning	95
4. Disadvantages of remote e-learning	97
5. Methodology	99
6. Results	100
7. Discussion	102
8. Conclusion	103
9. References	104
10. Appendix A	107
11. Appendix B	107
12. Graphs	115

Keywords:

Asynchronous learning network (ALN)

Face-to-face (F2F)

Hybrid classes (combining remote online with in-person classes)

Information Technology (IT)

Online platforms (Zoom, Microsoft Teams, Google Classroom, Edmodo, Moodle, etc.)

Pedagogical Content Knowledge (PCK)

Synchronous learning network (SLN)

The feeling of mission out (FOMO)

Vertigo (loss of balance, dizziness)

Abstract

The sudden impact of having to switch from traditional face-to-face (F2F) teaching practice to remote e-learning techniques amidst the onset of the COVID-19 pandemic forced students and instructors to swiftly readjust their learning and teaching styles in a short time span. Remote e-learning platform companies hastily introduced their solutions to support customers worldwide, and despite the purported benefits of remote e-learning, the need to address its limitations is equally important. Instructors have had to tailor their online teaching techniques in order to acquire the near equal student output they enjoyed in F2F classes. Meanwhile, users should heed the physical and psychological short and long-term health ramifications of e-learning software in order to properly assess its overall efficacy.

This paper addresses the struggles university students and instructors faced while having to expeditiously revert back and forth from traditional F2F to remote e-learning teaching/learning techniques amidst mandated shutdowns resulting from the COVID-19 pandemic. In addition, it examines which platforms are favored the most, the physical and mental ramifications of their over usage, and how instructors have tailored their online classes to acquire maximum student output in the absence of traditional F2F classes. The paper includes quantitative survey results from students and instructors to better assess the strong and weak points of remote e-learning and its potential usage post COVID-19.

Covid-19の大流行が始まり、従来の対面教育からリモートEラーニングへの切り替えという喫緊の状況により、学生と講師はごく短期間で学習・教育方法を調整する必要に迫られ、デジタル学習ソフトのプラットフォーム各社は、世界中の顧客をサポートするソリューションを火急的に導入しました。リモートEラーニングには大きなメリットがある一方で、その限界に対処する必要性も同様に重要です。講師は、学生が対面授業とほぼ同じ成果を得られるよう、オンライン教育技術を整える必要性に直面しています。これらの課題に加えて、ユーザーはEラーニング全般の長期的な有効性を評価すること、リモートEラーニングによる短期、長期的な身体的・精神的健康への影響に留意しなくてはなりません。

この論文では、リモートEラーニングの長所・短所を述べるとともに、Covid-19の大流行により一時的に学校が閉鎖される中、従来の対面授業からリモートEラーニングへの可及的速やかな導入に際し、学生と講師が直面した困難・苦勞について述べています。更に、リモートEラーニングによる短期、長期的な身体的・精神的健康への影響と上記の状況に対してどのように対応してきたかについて考察します。この論文には、リモートEラーニングの長所と短所を評価するための、主に中部地方在住の学生と先生達に対する定量的調査とインタビュー結果が含まれています。

1. Introduction

Remote work and e-learning platforms steadily increased in companies and educational institutions since the 1990s with the advent of the Internet and World Wide Web (Aeron et al., 2018). They were especially helpful for users in need of distance learning, meetings, and support during natural disasters and pandemics when it became difficult to meet in person. Goyal (2012) defines e-learning as the science of learning without using instructional printed paper material and utilizes telecommunication technology to deliver information quickly for education and training purposes. Liu and Wang (2009) claim that the features of remote e-learning processes are primarily based on the internet, global sharing and learning resources, information broadcasts, knowledge through network courses, and flexibility of learning as computer-generated learning environments created to overcome issues of distance and time. Teaching and learning imply a specific pedagogical content knowledge (PCK), mainly related to designing and organizing to acquire better learning experiences and creating distinctive learning environments with the help of digital technologies (Botturi et al., 2020).

Remote platforms have allowed users to continue their work and studies in isolated environments to avoid catching or spreading diseases such as the COVID-19 virus while curtailing transportation costs and commuting times. However, Kawohl & Nordt (2020) note that research also indicates remote work and e-learning exacerbate the frustration of being unable to unplug from work and studies, leading to isolation, loneliness, depression, the potential for domestic violence and, in some cases, suicide. In addition, remote e-learning can also impede the amount of exercise people would otherwise get from commuting to and from work, schools, and gyms, thus leading to a decline in physical health (Grant et al., 2013).

The recent impact of having to switch from face-to-face (F2F) teaching practice to remote e-learning or remote/hybrid (online/blended) across all education levels has been both exciting and daunting for users. Moore & Hodges (2020) claim that it has abruptly forced students and instructors to readjust their learning and teaching styles overnight as remote platform companies hastily introduced their products to worldwide users after the outbreak of COVID-19. Instructors have had to find ways to tailor their teaching techniques using e-learning software in an attempt to acquire the same student output as they enjoyed with F2F classes (Bularca et al., 2020). Research regarding online learning and teaching practices indicates that they are effective only if students have consistent access to the internet, computers, and mobile devices, and if teachers have received targeted training that supports online instruction (Garcia & Weiss, 2020). The complications stemming from these issues should be addressed in order to better assess

the long-term efficacy of remote e-learning.

2. Ramifications of Pandemics and Socioeconomic Responses

The COVID-19 pandemic has become a global health crisis in addition to causing considerable employment and economic loss (WHO, 2020). Government mandated lockdowns to curtail the spread of the virus have resulted in unprecedented challenges for management, employees, medical personnel, government officials and people in education (OECD, 2020). Anseel et al. (2020) claim that populations of shutdown-mandated employees were turned overnight into work from home, essential or life-sustaining workers, while others were laid-off and seeking unemployment benefits. Meanwhile, Lalani & Li (2020) recall that education institutions were faced with massive closures, forcing students and teachers to hastily learn online software platforms and instruct from homes or venues where they could avoid crowded places. Fishcher (2020) argues that it is not unfeasible to expect future historians to remember the year 2020 as the beginning of an era of transformative change, having realized the consequences of how we have organized our economic systems and engaged with nature while committing to a decisive shift towards sustainability. From a historical perspective, Barberis et al. (2019) remind us that the COVID-19 pandemic is not so different from those which also wreaked their share of havoc on societies and workplaces over the past few centuries. The Spanish flu, for example, which occurred between 1918 and 1920, infected about 500 million people (or one-third of the world's population), and caused an estimated 50 million deaths among victims between the ages of 20 and 50 years worldwide (Spreeuwenberg et al., 2018). In response, many countries adopted policies to improve healthcare and work conditions, such as providing employer-based insurance programs in the U.S. or universal health care in Europe (Anseel et al., 2020). The effects of the COVID-19 pandemic have resulted in a rapid production of state-of-the-art remote e-learning platforms, online shopping technology, eWallet payment programs, and food delivery services that have assisted individuals and institutions in counterbalancing the spread of the pandemic. These programs and services are expected to continue post COVID-19 (UNCTAD, 2020). Meanwhile, Reno (2021) contends that until vaccines are thoroughly distributed and administered across the planet with variants of the virus contained, people will not feel comfortable returning to the same lifestyles they enjoyed pre-COVID-19, with many continuing to wear masks, distancing themselves from others, and choosing remote work and e-learning options over F2F office and classroom routines.

3. Advantages of remote e-learning

Leading distance learning institutions in the US in 2020, by number of students taking exclusively distance learning courses

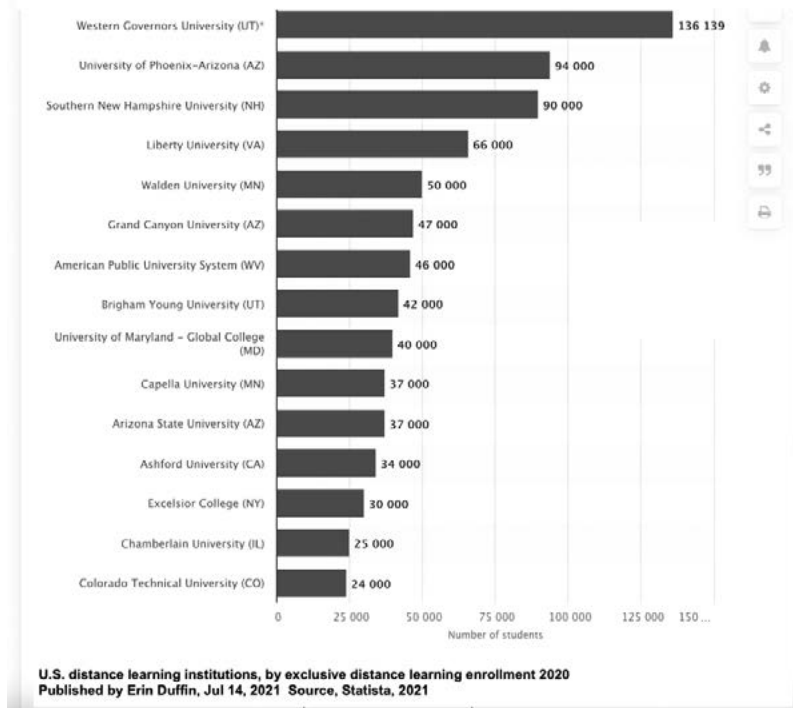


Figure 1

As information technology (IT) has progressed in recent years, so has the speed of remote e-learning tools which facilitate modern education (Figure 1) (Anseel et al., 2020). Even before the coronavirus, Lalani & Li (2020) contend that there was already a steady growth in e-learning technology, with global e-tech investments reaching US\$18.66 billion in 2019, and the overall market for online education projected to reach \$350 billion by 2025. The obvious advantages of remote e-learning include liberating interactions between learners and instructors from limitations of time and space through the asynchronous learning network (ALN)¹⁾ and synchronous learning network²⁾ models (Sun et al., 2008). As the IT era progressed, Henry (2002) warned that traditional univer-

1) A form of remote teaching and learning approach where learners communicate with each other from a distance in a structured way

2) A form of remote teaching and learning approach that allows students to engage with class materials at the same time as their peers as long as they can connect to the internet without the worry and stress of travel

sities had to compete with other educational providers to adapt to the needs of learners as they developed over time in hopes of attracting and retaining students. Fry (2006) stated that colleges, universities, and other institutions of higher learning continued to rapidly advance their online course capability in the cyber education market. Remote e-learning has grown in importance as the expansion of its tools has been initiating several changes in higher education institutions, particularly when it comes to educational delivery and support processes (Dublin, 2003). Whether it is virtual tutoring, video conferencing tools, language applications, or online learning software, there has been an extraordinary increase in remote e-learning usage since the onset of the COVID-19 pandemic (Lalani & Li, 2020).

While the pandemic caused tremendous anxiety and frustration for students, instructors, and businesspeople alike, Coman et al. (2020) argue that it has also forced users to swiftly enhance their computer software knowledge and skills to effectively use e-learning software platforms, allowing them to continue working or studying in venues where they are free from crowds and the susceptibility of contacting COVID-19. Gautam (2020) states some of the advantages to e-learning include:

a. Efficiency

In cases where students are already online, they have immediate access to videos, podcasts, the internet, email, Microsoft office files, pictures, movies, etc. Teachers and students can use these tools as part of their lessons and immediately save their work to their computers, I-pads or other devices while avoiding unnecessary printing and copying fees.

b. Easy access of time and place

Students can attend classes in the comfort of their homes or any other venues of choice as long as they have Wi-Fi access. This should help increase the percentage of attendance as students will have little excuse for tardiness due to public transportation or forgetting their assignments at home.

c. Cost effectiveness

Students can attend classes from any location of their choice, cutting transportation time and cost, and allowing institutions to expand their network of students instead of being restricted to certain areas. By recording online classes, instructors can use those lectures several times over and students can access those lectures as many times as they find necessary.

d. Improved attendance

In addition to points stated in number two above, perhaps the most important aspect is that remote e-learning allows students to join classes despite natural calamities, pandemics, or in cases where they live too far away from their institution, which should

result in a higher percentage of attendance.

e. Suits a variety of course learning styles

Finally, instructors can tailor their classes to students' learning styles and needs. For conversation or presentation classes, online teaching allows instructors to lecture, observe student reactions, and receive feedback or questions as opposed to on-demand classes. Some students may be better visual learners opposed to reading or writing, so instructors can cater their lessons in order to acquire maximum student output.

4. Disadvantages of remote e-learning

Despite the slow, steady increase of remote e-learning software platforms in recent years, the pandemic outbreak forced students, employees and instructors around the globe to hastily master various remote software platforms in an extremely short time span in order to curtail the spread of the virus (Wright, 2020). This, however, caused learners and instructors great stress (Gao & Zhang, 2020). Teaching staff from all backgrounds and ages have had to prepare and deliver classes with all the practical and technical challenges remote e-learning software platforms entail, and often without proper technical support (Hodges et al., 2020).

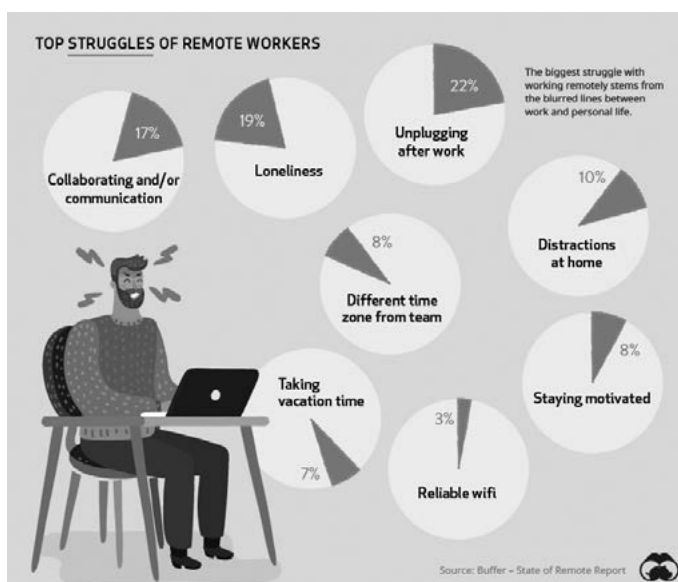


Figure 2

From DataStream (2020). *The Top Struggles of Remote Workers..*
<https://www.visualcapitalist.com/top-struggles-of-remote-workers/>

The impact on learners and instructors has been overwhelming, causing 1.5 billion students worldwide from primary to tertiary level to avoid schools while many institutions temporarily closed from April, 2020 (UNESCO, 2020). Another significant challenge for university instructors has been their lack of pedagogical content knowledge (PCK) (Shulman, 1987) necessary for teaching online. Such PCK includes the pedagogical foundations and knowledge of principles needed to design and facilitate meaningful online learning experiences (Buttery et al., 2020). An example would be an instructor with PCK who addresses students' prior conceptions about a particular subject and explains that content as effectively online as s/he would in a F2F lesson using all means available.

Although mandated lockdowns helped reduce viral spread, work/study commuting time, transportation expenses, and subsequent pollution from vehicles (Adams et al., 2021), they have also led to the loss of jobs, increase in economic recessions, and exacerbation of mental and physical health issues. These include loneliness, depression, isolation, the breakdown of relationships, and domestic violence (Toscano & Sappala, 2020). Studying from home, write Toniolo-Barrios & Pitt (2020), often makes it harder for students and instructors to concentrate due to ambient distractions such as ringing doorbells, noisy pets, and interrupting children. The inability to unplug and disconnect mentally from one's job can lead to lower productivity, lessened motivation, increased stress, and decreased mental health (Barrios and Pitt, 2020). Another struggle is separating work from personal lifestyle. Respondents in a recent survey (Routley, 2020) stated that the biggest challenges of working and studying from home include: the inability to unplug after hours, a decrease in motivation, and difficulties of collaborating and communicating with colleagues. Remote e-learning users with younger children struggle to maintain work productivity in unsuitable spaces alongside their kids (Gorlick, 2020). The author conceives that tight living quarters in Japan, Taiwan, Korea, and other Asian countries also exacerbate stress among inhabitants. As for limitations of online instruction, some software platforms may entail higher costs, inadequate visibility, and more obstacles in preparing breakout rooms than others. Gautam (2020) claims that some of the biggest challenges of online learning include:

a. Inability to stay focused on screens

The first element to heed is the struggle to focus on screens for long periods of time or blue light that may damage viewers' eyes. Students may also become easily distracted by emails, social media, and videos, among other issues.

b. Technology issues

Students living in rural areas may have less Wi-Fi access or slow connections, which hinder their learning processes. This can lead to a lack of continuity and motivation. Other issues involve the high costs of using 4G or 5G access where students cannot

find Wi-Fi access and have limited screen visibility with cell phones versus larger computer screens.

c. Sense of isolation and loneliness

Students tend to feel more fulfilled while learning F2F in classrooms where they can interact with peers and instructors. On-demand and online classes exacerbate feelings of isolation and loneliness.

d. Lack of teacher training

Depending upon the learning institution, instructors and students were required to use specific online software platforms and master them overnight. For part-time instructors who teach at several universities, this challenge intensifies as it takes valuable time away for classroom preparation to master different platforms for each institution. In many cases, instructors have only basic knowledge of the latest technology. They may not have the necessary resources to conduct online classes, let alone instruction on how to use it. To combat this, institutions have had to invest enormous amounts of money into training programs while updating instructors and students to ensure classes run smoothly.

Nevertheless, for millions of students and educators worldwide, not having to commute to educational institutions for F2F meetings or lessons versus staying at home to accomplish the same tasks has proven to be an effective alternative to combat pandemics, natural calamities and distance issues, which could otherwise impede educational goals and career development. Remote e-learning eliminates barriers of time and space and provides users with access to a wide range of information while facilitating collaboration (Arkorful & Abaidoo, 2014). Simultaneously, users must heed physical and psychological disadvantages in order to maximize remote e-learning benefits as platform technology is expected to continue evolving post-COVID-19 (Fleming, 2021).

5. Methodology

The author conducted a survey entitled “Your experience with in-person, on-demand, and online classes/work,” for which 65 Japanese and foreign university students, teachers, and businesspeople responded to. Most respondents were Japanese from the central Tokai area of Japan and ranged between their teens to over 70 years of age.

The survey assessed the advantages and limitations that respondents experienced while using remote e-learning software platforms, which ones they prefer to use the most, what struggles they had in mastering them, what physical and psychological issues they faced from their overuse, and how they overcame those issues. The survey included questions regarding the techniques instructors used in order to acquire near F2F class student output and whether or not (and how often) they plan to continue using online

platforms post COVID-19.

Respondents were given ten multiple choice and two short answer questions, and were allowed to check more than one answer. The multiple-choice questions included which class styles students and teachers prefer (F2F versus on-demand, online, etc.); which online platform(s) they used the most in the 2020 academic year; which platform(s) they are currently using throughout the 2021 academic school year; what struggles they had in mastering and using their selected platform(s); what physical or psychological issues they suffered from the most as a result of having to hastily learn and use the foregoing remote e-learning platforms, how they overcame those noted physical and psychological issues, and whether they will continue using online platforms post Covid-19.

Short answer questions included how instructors accommodated limitations with online classes, e.g., how they assessed eye contact and gestures for presentation classes, and how they predict work/education will change in the future due to the rapid, widespread development of remote work/e-learning platforms. The survey was conducted over several days using Microsoft Forms.

6. Results

Thirty-seven females (57%) and 28 males (43%) responded to the survey. 13% of the respondents were in their teens, 45% between 21 and 30; 2% between 31 and 40; 17% between 51 and 60; and 10% between 61 and 70; with 3% over 70.

Concerning profession (Figure 3), 37 (57%) of the respondents were university students, 19 (29%) were instructors or education faculty personnel, one was a company owner, one was an employee, and seven (11%) were retirees or part-time workers.

In terms of which class style(s) instructors and students prefer (Figure 4), 37 (57%) answered F2F, 10 (15%) responded on-demand only, 15 (23%) replied both on-demand and online (zoom, Teams, etc.), and nine (14%) noted online only. 30 (46%) replied "Other" (reference Appendix B).

Regarding which platform instructors used the most for their classes and meetings during the 2020 academic school year (Figure 5), 47 (72%) answered "Zoom," 24 (37%) replied "Microsoft Teams," five (8%) noted "Google Classrooms," three (4%) chose "Edmodo," and 13 (20%) selected "Moodle."

As for which platforms instructors have been using the most for their classes and meetings throughout the 2021 academic year (Figure 6), 47 (72%) indicated "Zoom," 15 (23%) noted "Microsoft Teams," four (7%) responded "Google classroom," three (5%) answered "Edmodo," and 12 (18%) replied "Moodle."

For the struggles instructors and students faced in mastering the aforementioned

remote e-learning platforms (Figure 7), 32 (49%) claimed: “it/they was/were rather easy to master,” 19 (29%) answered, “it/they was/were too confusing to use (at least in the beginning),” two (3%) responded, “it/they felt the platform(s) was/were too slow, old or cumbersome,” 11 (15%) noted, “it/they was/were somewhat difficult to master and use,” and seven (11%) chose “other” (ref. Appendix B). In respect to what physical or psychological problems respondents faced as a result of having to do online classes using software platforms (Figure 8), 16 (25%) responded “they often felt lonely or isolated,” 22 (34%) noted “they felt anxiety,” 14 (22%) claimed “they sometimes felt unable to break away from their work or studies,” 21 (32%) answered “they were fine and had no problems with remote learning/work platforms,” five (8%) indicated “they suffered stress as a result of not being able to break away from their computer,” and “they couldn’t find time to get exercise so they gained weight,” 13 (20%) responded “Other” (reference Appendix B).

As for how respondents overcame/improved their physical condition(s) from overuse of e-learning platforms, (Figure 9), 16 (25%) answered they “took a short nap after 30 minutes to one or two hours of online usage,” 14 (22%) noted they “got up and stretched after 30 minutes to one or two hours of usage,” five (8%) responded they “went for a walk or jogged after 30 minutes to one or two hours of usage,” eight claimed they “often used eyed drops, took aspirin or other medicine,” 20 wrote they “just kept going and didn’t stop until they finished their work despite being tired or stressed.” In regards to “other,” reference Appendix B.

Regarding how respondents overcame/improved their psychological condition(s) from overuse of e-learning (Figure 10), one noted they “went to the hospital or took medicine to relieve their stress, four people (5%) answered they consulted with someone after suffering from the feeling of mission out (FOMO), no one received medical attention from depression, 12 (18%) answered they “consulted with someone due to loneliness,” no one suffered from domestic violence or bad family relationships, 38 (58%) responded they “didn’t do anything in particular, just continued their work despite being tired or stressed,” and 18 (28%) noted “other” (reference Appendix B).

When asked if instructors/students plan to continue using online platforms even after the pandemic disappears (Figure 11), 50 (77%) answered “yes,” 15 (23%) responded “no,” four (6%) stated “it depends on the situation,” and 33 (51%) replied “other.” For “Other” responses, refer to Appendix B.

Regarding the short answer to question number 11, “What did you do to accommodate for limitations with remote e-learning classes, i.e., for presentations, to properly assess students’ eye contact, gestures, etc., did you do anything different than what you did in face-to-face classes?” refer to Appendix B.

Finally, concerning the short answer to question number 12, “How do you think work/education may change in the future as a result of the increase in remote work/education?” refer to Appendix B.

7. Discussion

Remote e-learning and work platforms have helped reduce the need for long-distance travel, thus curtailing commuter time, cost and pollution. On the other hand, they have exacerbated feelings of frustration, such as the inability to unplug from work and studies, leading to isolation, loneliness, depression, the potential for domestic violence, and, in some cases, suicide (Kawohl & Nordt, 2020). Several respondents to the author’s survey indicated they suffered from depression and loneliness. In addition, online e-learning has impeded the amount of exercise people would otherwise get if they commuted to and from work, schools, and gyms regularly, thus leading to a decline in physical health. Some survey respondents indicated they gained weight, got headaches, felt vertigo (loss of balance/dizziness), and sore eyes due to over exposure of blue light from having to look at screens for long periods of time and not having ample break time between lessons.

Sources indicate that online learning and teaching can only be helpful if students have consistent access to the Internet, computers, and mobile devices, and if teachers have received adequate training that supports online instruction. Long-term assessment of the negative physical and mental health issues from overuse of remote e-learning platforms is necessary in order to better ascertain the overall impact on users who expect to continue remote e-learning well beyond COVID-19.

Another aspect addressed in this study was how students and instructors readjusted their learning and teaching techniques overnight after suddenly having to switch from F2F to on-demand, online, or hybrid teaching. For many, this abrupt change proved to be a very daunting experience. The author’s survey revealed that instructors used various techniques to acquire similar results of F2F lessons, such as having students stand several feet away from their computer or smart phone cameras and use larger than average gestures while moving around their rooms during presentations to better assess their performance. Many instructors themselves noted they used more hand gestures, facial expressions, videos, and held-up signs or pictures during their lessons to enhance better comprehension of class topics and information.

The author’s survey results indicate that most respondents prefer Zoom as their favorite platform for the 2020 and 2021 school years because they feel it yields clearer visual images, better sound, and will automatically assign students into breakout rooms. Zoom also features automatic breakout room member change during sessions as opposed

to Microsoft Teams which requires cumbersome setup procedures for breakout rooms and does not allow automatic member changes after sessions begin. On the contrary, some respondents noted they prefer Teams over Zoom and other platforms because it offers class tasks and homework upload/download features in addition to live class viewing as opposed to Zoom, Moodle, or other platforms, which only boast one or the other features. In addition, the Microsoft Forms option allows for short test making, videos, and survey creation that competing platforms lack. It appears that with the current choice of online platforms, users will have to endure the limitations of each and compensate by synchronizing others which may result in lost time, confusion, and frustration. Until a remote e-learning platform is released that boasts state-of-the-art imagery, audio, automatic breakout room set up and participant changing, up/downloading of assignments and videos, and convenient survey application options all in one package, instructors will have to settle with mixing platforms in order to create near F2F environments that maximize student output.

Most respondents to the author's survey indicated that although they feel remote platforms may continue post-pandemic, they can never truly replace F2F meetings and lessons. Reasons stated included seeing and interacting with fellow humans using our five senses versus 3-D hybrid formats is simply too different.

It is expected that online platforms may significantly improve in the near future as investment in digital education is expected to double to US\$342 billion in 2025 (Duong, 2020), making it the next best thing to accommodate for long-distance, calamities, pandemics and F2F environments. However, many survey respondents confirm that human beings feel most fulfilled when they are interacting in F2F settings. Further research into how online platforms will evolve in the future and how human behavior may change towards them is necessary to better assess the long-term efficacy of their existence.

8. Conclusion

Remote work and e-learning software platforms have been steadily increasing over the past few decades and have proven to be valuable alternatives for live in-person class instruction, learning support, and meetings. They help alleviate long-distance commuting, cut public transportation costs and pollution, and allow users to participate in meetings and education sessions they may not otherwise be able to. On the contrary, the sudden impact of having to switch from traditional F2F to remote e-learning or hybrid teaching practice proved to be a daunting experience for many students, instructors, and businesspeople alike. Instructors were compelled to readjust their learning and teaching styles overnight in order to maximize student output and enhance class participation,

pair/group work, and presentations.

According to a survey conducted by the author, respondents noted that they had experienced various physical and psychological ramifications from the sudden increase of long-term e-learning software usage. Many stated the inability to unplug from work and studies, which exacerbated isolation, loneliness, frustration, lack of exercise, and weight gain, while others noted chronic headaches, vertigo, sore eyes and backaches.

Research into online learning and instruction also indicates that it is only effective if students have consistent access to the internet, computers, and mobile devices, and that teachers have acquired adequate training that supports online instruction. These issues need to be further addressed to properly assess the long-term efficacy of remote e-learning.

Survey results also indicated that many instructors struggled to adjust their lessons in order to maximize student output. Some had students stand several feet away from their computers or mobile devices while recording or doing live presentations to better assess eye contact and gestures. Others used signs, pictures, and drawings to enhance further comprehension of topics covered in classes.

Although e-learning poses many challenges for students and instructors alike, the survey results indicated that most found the benefits of mastering them were well worth the effort. Respondents predict that e-learning platforms will become easier to use in the future and continue well beyond COVID-19. They also believe that e-learning platforms help them manage their time more effectively, while hybrid e-learning alternatives offer the advantages of F2F and online sessions simultaneously, solving attendance problems resulting from long-distance, calamity, and pandemics.

Despite the initial physical and mental hurdles of remote e-learning platforms, as technology improves and users become more accustomed to newly developed software packages, many more are expected to assimilate these platforms into their future education, meeting, and social agendas.

9. References

- Adams, K., Gulliver, J., Hansell, A., Jephcote, C. (March, 2021). Changes in air quality during COVID-19 'lockdown' in the United Kingdom. *Environmental Pollution*. Volume 272. <https://www.sciencedirect.com/science/article/pii/S0269749120367002>
- Aeron, P., Gupta, P., Mahapatra, D., Palvia, S., Parida, R., Rosner, R., Sindhi, S. (November 26, 2018). *Online Education: Worldwide Status, Challenges, Trends, and Implications*. *Journal of Global Information Technology Management*. Volume 21. (Issue 4) pp 233–241.
- Ang, C. (October 18, 2020). The Top Struggles of Remote Workers. *DataStream*. <https://www.visualcapitalist.com/top-struggles-of-remote-workers/>

- Anseel, F., Kniffin, K., Narayanan, J., Antonakis, J., Ashford, S., Bakker, A., Bamberger, P., van Vugt, M. (June 5, 2020). COVID-19 and the Workplace: Implications, Issues, and Insights for Future Research and Action. *Harvard Business School*. https://www.hbs.edu/ris/Publication%20Files/20-127_6164cbfd-37a2-489e-8bd2-c252cc7abb87.pdf
- Arkorful, V. & Abaidoo, N. (2014). *The role of e-learning, the advantages and disadvantages of its adoption in Higher Education*. *Int. J. Educ. Res.*2, 397–410.
- Barberis, I., Bragazzi, N.L., Gazzaniga, V., Martini, M., Gazzaniga, V. (March 29th, 2019). The Spanish Influenza Pandemic: a lesson from history 100 years after 1918. *Journal of Preventive Medicine and Hygiene*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6477554/>
- Botturi, L., Goodyear, P., Lourdes, G., Koole, M., Rapanta, C. (July 7, 2020). Online University Teaching During and After the Covid-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Springer Nature*. <https://link.springer.com/article/10.1007/s42438-020-00155-y>
- Chricaden, K. (October 13, 2020). Impact of COVID-19 on people's livelihoods, their health and our food systems. *World Health Organization (WHO)*. <https://www.who.int/news/item/13-10-2020-impact-of-covid-19-on-people%27s-livelihoods-their-health-and-our-food-systems>
- Coman, C., Laurent, G.T., Mesesan-Schmitz, L., Stanciu, C., Bularca, M.C. (November 7th, 2020). Online Teaching and Learning in Higher Education during the Coronavirus Pandemic: Students' Perspective. *Multidisciplinary Digital Publishing Institute (MDPI)*. <https://www.mdpi.com/2071-1050/12/24/10367>
- COVID-19 educational disruption and response. (2020). *United Nations Educational, Scientific and Cultural Organization (UNESCO)*. <https://en.unesco.org/covid19/educationresponse>.
- COVID-19 has changed online shopping forever, survey shows. (October 8, 2020). *United Nations rences on Trade and Development (UNCTAD)*. <https://unctad.org/news/covid-19-has-changed-online-shopping-forever-survey-shows>
- Duffin, E. (July 14, 2021). U.S. distance learning institutions, by exclusive distance learning enrollment 2020. *Statista*. <https://www.statista.com/statistics/944304/us-distance-learning-institutions-by-exclusive-distant-learning-enrollment/>
- Duong, V. (October 20, 2020). The New Normal of Digital Learning Post COVID-19. *SAVVYCOM*. <https://savvycomsoftware.com/the-new-normal-of-digital-learning-post-covid-19/>
- Fleming, N. (January 23, 2021). After Covid, will digital learning be the new normal? *The Guardian*. <https://www.theguardian.com/education/2021/jan/23/after-covid-will-digital-learning-be-the-new-normal>
- Fry, K. (2001). *eLearning Markets and Providers: some issues and prospects*. *Training and ducation*, 43(4), pp. 233–239.
- Gao, L.X., Zhang, L.J. (September 15, 2020). Teacher Learning in Difficult Times: Examining Foreign Language Teachers' Cognitions About Online Teaching to Tide Over COVID-19. *Frontiers in Psychology*. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.549653/full>
- Garcia, E. & Weiss, E. (September 10, 2020). COVID-19 and student performance, equity, and U.S. education policy. Lessons from pre-pandemic research to inform relief, recovery, and rebuilding. *Economic Policy Institute*. <https://www.epi.org/publication/the-consequences-of-the-covid-19-pandemic-for-education-performance-and-equity-in-the-united-states-what-can-we-learn-from-pre-pandemic-research-to-inform-relief-recovery-and-rebuilding/>
- Gorlick, A. (March 20, 2020). The productivity pitfalls of working from home in the age of COVID-19.

- Stanford News*. <https://news.stanford.edu/2020/03/30/productivity-pitfalls-working-home-age-covid-19/>
- Goyal, S. (2012). *E-Learning: Future of Education, Journal of Education and Learning*. Vol.6 (2) pp. 239–242.
- Henry, P. (2002). *Learning enters the boardroom: making the connection between strategy and enterprise-wide learning*. *Industrial and Commercial Training*, 34(2), pp. 66–69.
- Hodges, C., Moore, S., Lockee, B., Trust, T., Bond, A. (March 27, 2020). The Difference Between Emergency Remote Teaching and Online Learning. *Educause Review*. <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning>.
- Lalani, F., Li, C. (April 29th, 2020). The COVID-19 pandemic has changed Education forever. This is how. *World Economic Forum*. <https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/>
- Liu, Y., & Wang, H. (2009). *A comparative study on e-learning technologies and products: from the East to the West*. *Systems Research & Behavioral Science*, 26(2), 191–209.
- Moore, S. & Hodges, C. (March 11, 2020). So You Want to Temporarily Teach Online. *Inside Higher Ed*. <https://www.insidehighered.com/advice/2020/03/11/practical-advice-instructors-faced-abrupt-move-online-teaching-opinion>
- Reno, J. (January 30, 2021). COVID-19 Caution: Even With Vaccines, It May Be Too Early to Have Small Gatherings Again. *Healthline*. <https://www.healthline.com/health-news/covid-19-caution-even-with-vaccines-it-may-be-too-early-to-have-small-gatherings-again>
- Routley, N. (June 3, 2020). 6 charts that show what employers and employees really think about remote working. *World Economic Forum*. <https://www.weforum.org/agenda/2020/06/coronavirus-covid19-remote-working-office-employees-employers>
- Shulman, L. (1987). *Knowledge and teaching: Foundations of the new reform*. *Harvard Educational Review*, 57, 1–22.
- Spreeuwenberg, P., Kroneman M., Paget. (December 2018). “*Reassessing the Global Mortality Burden of the 1918 Influenza Pandemic*”. *American Journal of Epidemiology*. Oxford University Press. 187(12): 2561–2567.
- Sun, P.C., Tsai, R.J., Finger, G., Chen, Y.Y. & Yeh, D. (2008). What drives a successful e-Learning? *An empirical investigation of the critical factors influencing learner satisfaction, Computers & Education* 50: pp.1183–1202.
- The territorial impact of COVID-19: Managing the crisis across levels of government. (November 10, 2020). *Organization for Economic Co-operation and Development (OECD)*. <http://www.oecd.org/coronavirus/policy-responses/the-territorial-impact-of-covid-19-managing-the-crisis-across-levels-of-government-d3e314e1>
- Toniolo-Barrios, M. & Pitt, L. (October 5, 2020). Mindfulness and the challenges of working from home in times of crisis. *U.S. National Library of Medicine National Institutes of Health*. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7535863/>
- Toscano, F. & Sappala, S. (November 6th, 2020). Social Isolation and Stress as Predictors of Productivity Perception and Remote Work Satisfaction during the COVID-19 Pandemic: The Role of Concern about the Virus in a Moderated Double Mediation. *Sustainability*. <https://www.mdpi.com/journal/sustainability>

Wright, J. (April 6, 2020). Change, Worry, and Covid-19. *Springer Nature*. <https://link.springer.com/article/10.1007/s42438-020-00169-6>

10. Appendix A

Quantitative Research Questions

- 1) Specify your gender.
- 2) Specify your age category.
- 3) Specify your profession.
- 4) Which online platform(s) did you use the most for your classes/meetings in the 2020 academic year?
- 5) Which online platform(s) have you been using the most for your classes/meetings in the 2021 academic year?
- 6) What struggle(s) did you have in mastering the online platform(s) you had to use for your classes/meetings?
- 7) What physical or mental issue(s) did you face as a result of overuse of remote learning/work?
- 8) How did you overcome/improve your physical condition(s) as a result of e-learning overuse?
- 9) How did you overcome/improve your psychological condition(s) as a result of e-learning overuse?
- 10) Do you plan to continue using on-demand or online platforms after the pandemic? Why? Why not?
- 11) What did you do to accommodate for the limitations with remote e-learning classes? e.g., for presentation classes, you assessed students' eye contact, gestures, etc. differently than in F2F classes?
- 12) How do you think work/education may change in the future as a result of the increase in remote work/education?

11. Appendix B

Quantitative Research Answers

- 4) **Which remote e-learning platform(s) did you use the most for your classes/meetings in the 2020 academic year? (Figure 5)** Zoom, Teams and Moodle.
- 5) **Which remote e-learning platform(s) have you been using the most for your classes/meetings in the 2021? (Figure 6)** Zoom, Teams and Moodle.

6) What struggles did you have in mastering remote e-learning platform(s) for your classes/meetings? (Figure 7)

- 1.It wasn't possible to practice the platforms before classes started, therefore, we had to learn entirely from watching online tutorials which were helpful but did not effectively simulate real classroom situations.
- 2.I haven't learned all of the options available.
- 3.Moodle is too old fashioned with far too many clicks to get things done, whereas Google Classroom is far superior.
- 4.We had to learn step by step, which was very time consuming having to figure out how to use the platforms while attending to students' needs and assignments at the same time.
- 5.I don't like Teams because you always have to reboot it to get the latest results; it's an outdated system.

7) What physical or psychological issues did you suffer the most from using remote e-learning platforms? (Figure 8)

- 1.I got vertigo (loss of balance) due to switching from large to small monitors, then having to pay attention to about 40 students' faces.
- 2.Constant moving about among monitors while being on Zoom (sometimes as much as 10 hours a day) was extremely tiring, resulting in occasional vertigo and headaches.
- 3.Working on the computer 18 hours a day, especially at the beginning, was exhausting and hard on my family and marriage.
- 4.I put on a lot of weight due to being stuck in front of the computer so long; I wasn't moving about as much as I usually would in normal life.
- 5.I got sore eyes and chronic headaches from the overuse of online platforms.
- 6.I just kept going and didn't stop my remote usage, but I tried to get six hours of sleep at night. I was obsessed with checking emails from students informing me about errors that occurred while they were working on assignments, I uploaded to LMS.
- 7.I went for short walks every several hours. Otherwise, I just stretched or exercised every hour or so. I sometimes used eye drops & blue light cutting glasses.
- 8.I got up every 30 minutes to one hour. I didn't set a timer. I got up when I felt I needed a break.

8) How did you overcome/improve your physical issues resulting from overuse of e-learning? (Figure 9)

- 1.I started running in the morning and afternoons to strengthen my muscles.
- 2.I drank coffee and endured the drowsiness.
- 3.I took longer breaks.
- 4.The eye drops I used were too irritating, so I used Kao's hot eye mask.

5. I didn't do anything, and the stress kept building up. I just endured it.
6. I used Sunte PC eye drops, which help with fatigue caused by blue light.
7. For headaches, I took Eve and Loxonin medications.
8. I used Smile 40 EX eye drops and Ibu A tablets for headaches.
9. I felt like vomiting and had a headache all day everyday for a week. I took aspirin, anti-nausea drugs, and used eye drops. I slept all day and I finally recovered.
10. I used eye drops every day.
11. Since I have dry eyes, I used eye drops more often than I did when doing face-to-face classes. To refresh myself, I took lunch in my garden and stretched lightly between classes.
12. Online classes and assignments forced me to stay at home, which caused insomnia due to the disruption of my daily rhythm, so I took sleeping pills which contain zaleplon.
13. Lack of exercise caused me stress, so I often took walks about two to three hours a week.
14. I rested my eyes by taking naps more often.
15. I slept a little between class sessions, went for walks outside, and so on.
16. At times, I had a sore neck & shoulders. I used heat patches to relieve the pain.
17. I drove around in my car and did my favorite hobbies.
18. Instead of playing outside, I called my friends more often.
19. I couldn't see my good friends, I couldn't look forward to class, and I couldn't directly ask for help with assignments I didn't understand, which was very difficult.
20. I talked with my wife a lot & friends online.
21. I met and talked with my good friends regularly.
22. I missed my friends, so instead I talked to them on the phone at night for one to 1.5 hours at a time.
23. I went to the hospital for headaches and stress.
24. I didn't feel so lonely because I used apps like line and instagram with my friends to keep in touch.
25. I talked to my classmates about what I didn't understand about the classes and assignments, and about things.

9) How did you overcome/improve your psychological issues as a result of overuse of e-learning? (Figure 10)

1. I was lucky that I had family to talk to during these times. I didn't get any help from professionals and it worked for me.
2. I sometimes called or face timed a friend just to talk and relieve stress.
3. I made sure I got some alone time to do what I wanted (such as watching movies or playing video games) for 2-3 hours each week to help me relax.
4. I called my friends on the phone.
5. I took longer breaks.
6. I went for lunch or dinner with my friends.
7. I often met with my good friends and spoke with them.
8. When I couldn't meet with my friends, I spoke with them for one or 1.5 hours on the phone.
9. I spoke with my friends using line, twitter, Facebook or Instagram among other SNS applications, so I didn't feel lonely.
10. I sometimes went to the hospital when had stress or headaches
11. When I couldn't meet or speak to a friend, I often called my mother.
12. I went for a drive and did things I enjoy doing.
13. I talked with my wife a lot & friends online.
14. I often emailed or texted friends or family about how they were doing.

10) Do you plan to continue using on-demand or online platforms after the pandemic dies down? Why? Why not? (Figure 11)

1. Yes. It is easier to be present for meetings/classes than having to commute all the time.
2. Yes. I realized the benefits of a hybrid approach to teaching.
3. Yes. I felt that online classes would allow me to use my time more effectively.
4. No. F2F classes are more interesting and fun.
5. Yes. I can teach students in an uncrowded environment.
6. Yes. Simply because a meeting without having to be physically present is much easier to organize, especially for minor meetings it's a great timesaver.
7. Yes. I thought it added a lot of functionality for students who missed F2F classes.
8. Yes. I want to study with my grandson who is away from my house.
9. Yes. It is helpful and convenient
10. No. Teaching English works better when teachers can meet and directly talk to students.

11. Yes. Online learning has many benefits which can supplement the regular classroom. For example, assignments can be submitted regardless of whether students are absent or not, so absence can't be used as frequently as an excuse for not submitting homework. The vast volume of information and material available on the internet supports a variety of assignment choice and flexibility for educators.
12. Yes. I will continue making all my teaching materials available online even if we are back in the classroom and also setting all homework online. Staff and student meetings were also much more convenient online.
13. Yes. On-line requires participation on a different level- good to level the playing field and get all students interacting.
14. Yes. I go to the school from my parents' house, which is a long distance away, so I would like to be able to choose online classes especially during the early class periods.
15. Yes. I can take classes on days where there are typhoons or snowstorms.
16. Yes. There are more assignments than in a regular class, but this allows the class to proceed when I want it to.
17. No. Face to face is easier to understand facial expressions and words.
18. Yes. I don't have any plans to ever teach face to face again. I will only teach one to one private students and it fits in well with my lifestyle. I envisage being able to go abroad and continue working if I choose to. It should be pointed out that I only started teaching again full-time since the pandemic started. It has not been possible to pursue my other non-teaching related work. After the pandemic there is a good chance, so I will continue teaching online probably part time.
19. Yes. Edmodo, for example, is an excellent way to share materials with students and colleagues.
20. No. Better class atmosphere in person.
21. Yes. You can learn at your own pace, and you can watch the lesson(s) over and over again if necessary.
22. Yes. Online platforms allow people living far away/overseas to participate in meetings/classes or when they have busy schedules.
23. No. Because F2F classes are more tense and motivating.

11) What did you do to accommodate for the limitations with remote e-learning classes? (e.g. for presentation classes, did you assess students' eye contact, gestures, etc. differently than in F2F classes).

1. For presentation classes, students had to look left and right for the instructor to check eye contact and to use gestures as much as they would in F2F classes.
2. I accepted the limitations and focused on other aspects such as diction, tone, pause, engagement of audience, etc.
3. I asked students to record and upload their presentations to Moodle or line so that all other students taking the class could watch them.
4. I increased the number of written assignments and decreased the grading weight for presentations.
5. Instead of only judging our eye contact, we had to use online chat more.
6. We tripled the number of questions such as "Do you have any questions thus far?"
7. For typing tests, online screenshots which included the date located at the lower right corner of the computer screen were used to check scores.
8. For speaking tests, more enunciation and stress were used in a rubric so that students could read their screens which had examples of speech patterns. This was done because it was difficult to know whether they were looking directly at the camera or only their computer desktop.
9. For on demand conversation classes, I used a lot of dialogue writing which many students enjoyed.
10. Students had to submit videos employing various presentation techniques as well as using a variety of props from photos to cooking demos.
11. I made students increase their gestures more than in F2F class presentations.
12. I did fewer presentations and discussions in my online classes and more textbook exercises.
13. Memorizing students' names, calling on them to contribute equally and in a variety of ways, giving constant feedback, etc. were ways I was able to keep students on their toes and stay focused in online classes.
14. F2F lessons allow us to ask questions directly as opposed to on-demand classes, so I prefer F2F.
15. It's hard to grasp the reaction of listeners, so I was conscious of the screen and paid attention to various students' reactions as much as possible.

16. I made students use more hand expressions, hold up signs or pictures, and used more videos to foster comprehension.

17. I used more written signs to show online students, used bigger gestures, and made participants stand several feet away from their computers and look around the room and include body movement to assess eye contact and gestures when giving presentations.

12) How do you think work/education may change in the future as a result of a predicted increase in remote e-learning platforms?

1. Online classes will continue even after the pandemic because they are convenient and eliminate troublesome commuting to venues.
2. Some people may choose online courses, but we naturally desire physical contact with others. F2F classes will continue as a hybrid component.
3. More people are able to do multi-tasking when they participate in online versus F2F classes.
4. With more options for activities using the Internet, it is expected that PC platforms will increase throughout society with the next 10 years.
5. Digital lessons will become the norm, and when this happens, the difference in education will be reduced by connecting smaller, urban schools via the Internet.
6. We won't need schools anymore; everything will be done online.
7. Studies and meetings will be done more online and people will spend less time commuting.
8. There is a place for remote education and work because of better access to meet people. Unfortunately, remote work/education will be overused because of the cost saving benefits rather than being evaluated for its efficacy.
9. Educators might use more advanced technology in the future, but I feel F2F will be around for a long time.
10. The use of our five senses is reduced when doing online classes/meetings, so our senses will become duller.
11. Less commuting means the efficiency of work will improve, but we will feel more lonely.
12. Online education is here to stay.
13. Since teachers have learned to use software more effectively, more useful apps will become available in the near future.
14. Thanks to remote work/study, we can live & work anywhere in the world!
15. I hesitated to use platforms prior to the pandemic--only to input grades, making syllabi, or accepting late assignments. Now it's clear that assignments can be submitted, graded and comments made using platforms like Google Classroom and projects can be done together online.
16. Hopefully platforms will become more flexible and offer further online/hybrid options to both students and teachers.
17. I think it will cause "Hanko culture" in Japan to disappear.

18. Homework and remote lessons will increase. It is a good option for people who cannot go to school for various reasons.
19. Platforms will reduce world travel which is environmentally friendly.
20. Teaching and business should become more efficient, so hopefully people will have more time to pursue other activities.
21. There surely has been an improvement in peoples' technical skills and this will benefit every aspect of work and education
22. Remote will continue to some extent but it will never replace F2F. There are too many limitations to remote e-learning
23. Work/education will see more efficient and effective remote platforms in the future
24. There may be cost reductions for textbooks and work may become more efficient, but it will also have negative effects on people's health because it leads to poor eyesight and lack of exercise

12. Graphs

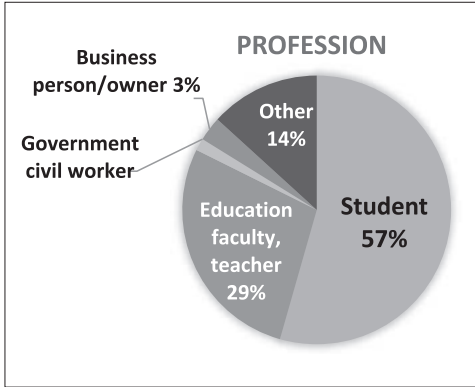


Figure 3

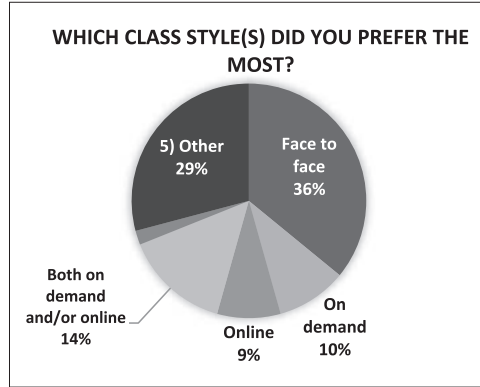


Figure 4

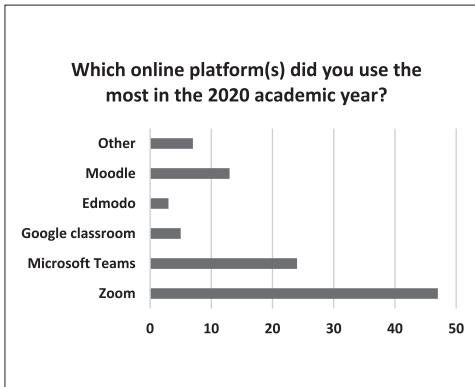


Figure 5

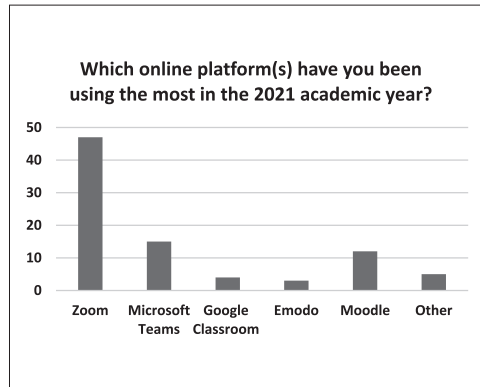


Figure 6

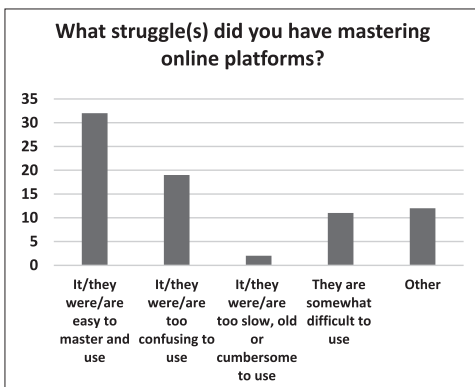


Figure 7

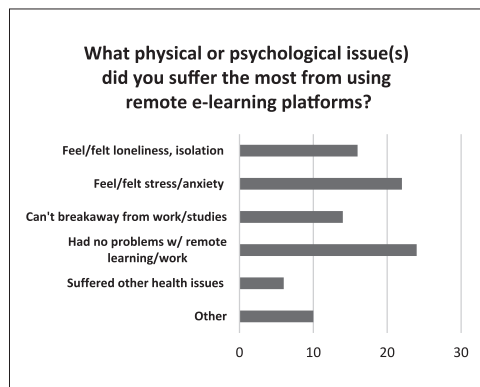


Figure 8

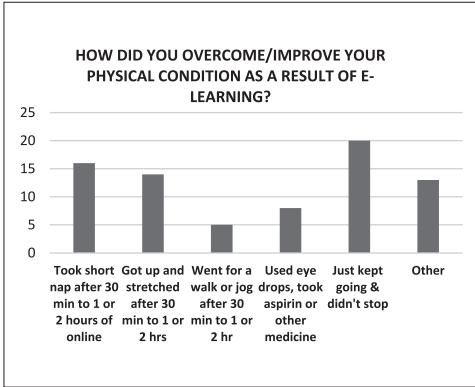


Figure 9

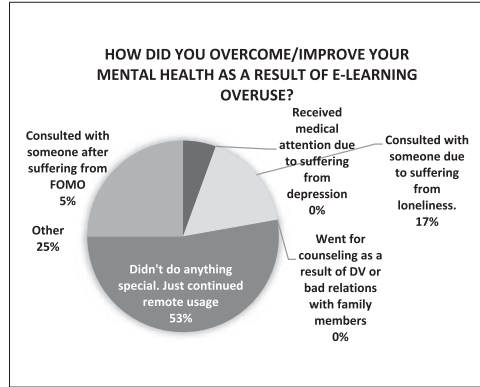


Figure 10

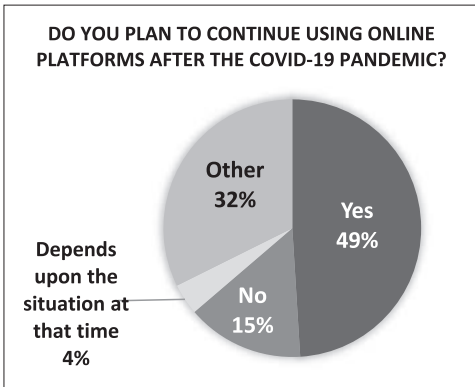


Figure 11