The Post Pandemic Student and Education: Challenges and Implications[1]

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Abstract

The COVID-19 pandemic forced institutions, faculty, and students to use emergency remote teaching (ERT) in the early stages of 2020. All educational levels, as well as schools and universities around the world, were affected. Although ERT and online education are not necessarily synonymous (see Thorkelson, 2021), most classes were delivered online, demanding an increased use of online tools like learning management systems (LMSs) and applications Zoom*, Microsoft Teams*, and *Google Meet*, among others, to meet the educational needs of most students. Post-pandemic students and faculty had returned to face-to-face classes or a hybrid model of education that balances online and offline classes and content as the pandemic faded. (See Thorkelson, 2021). However, both teachers and students gained new skills while losing or weakening some more traditional classroom-related skill sets. To draw some conclusions and make recommendations for establishing a successful post-pandemic educational milieu, this paper examines some of these skills and the related factors as they could affect both students and faculty in the post-pandemic educational environment.

Resumen

La pandemia de COVID-19 obligó a instituciones, profesores y estudiantes a utilizar la enseñanza remota (ERT) de emergencia en las primeras etapas de 2020. Todos los niveles educativos, así como escuelas y universidades de todo el mundo, se vieron afectados. Aunque ERT y educación en línea no son necesariamente sinónimos (ver Thorkelson, 2021), la mayoría de las clases se impartieron en línea, lo que exigió un mayor uso de herramientas en línea como sistemas de gestión de aprendizaje (LMS) y aplicaciones *Zoom, Microsoft Teams* y *Google Meet*, entre otras. para satisfacer las necesidades educativas de la mayoría de los estudiantes. Los estudiantes y profesores posteriores a la pandemia habían regresado a clases presenciales o a un modelo híbrido de educación que equilibra las clases y el contenido en línea y fuera de línea a medida que la pandemia se desvanecía. (ver Thorkelson, 2021). Sin embargo, tanto los profesores como los estudiantes adquirieron nuevas habilidades y al mismo tiempo perdieron o debilitaron algunas habilidades más tradicionales relacionadas con el aula. Para sacar algunas conclusiones y hacer recomendaciones para establecer un entorno educativo pospandémico exitoso, este artículo examina algunas de estas habilidades y los factores relacionados que podrían afectar tanto a los estudiantes como a los profesores en el entorno educativo pospandémico.

Introduction

The author of this article has previously stated that "the answer to the future of higher education is a mixture of remote and online education incorporating, at least, some aspects of the prevalent models" (p. 66) in a paper on the clarification of remote versus distance learning during the pandemic. The best chances for success came from building on the achievements of blended learning, for instance, and transitioning from a flipped classroom to a flex or hybrid approach. (Thorkelson, 2021). However, just as faculty and students were unprepared for the sudden and often chaotic transition to entirely online classes necessitated by the COVID-19 pandemic, many post-pandemic students have not recovered from their pandemic experiences, posing unique challenges when entering or reentering offline or hybrid classes. According to Malesic (2022), "in my classes last fall, a third of the students were missing nearly every time, and it wasn't always the same students" (p. 6). Students buried their faces in their laptop screens, leaving my questions unanswered. Although my classes were small and there was nowhere to hide, some students openly slept through them

Malesic (2022) depicts both the worst and best outcomes of the pandemic. At the other end of the spectrum are students like: "… a sophomore at the University of Texas at Dallas... [who] said that in his first year, he could study more efficiently by watching lecture recordings on his schedule and at faster speeds." (p. 6). This is consistent with the findings of a 2019 survey of 1,500 online students, which identified the top reasons students chose online programs: affordability, the reputation of the school or program, and the speed with which the degree could be completed. (Duffin, 2020). However, universities were not always equipped to accommodate online classes, and many students desired to return to

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campus. According to one Indonesian survey in 2021, 78% of students wanted to return to face-to-face classes. Students preferred face-to-face classes 57% of the time because some subjects were difficult to understand, and they could not do some activities in an online class (Waseso, 2021).

Following the pandemic, a Cengage survey conducted in North America discovered similar levels of student preference for online or hybrid classes. "...nearly three-quarters of students, or 73%, said they would prefer to take some of their courses entirely online after the pandemic... [and] 68% of students preferred a combination of in-person and online courses" (Kelly, Para. 1 2021). However, according to the same survey, "...only half of the faculty (53%) felt the same way about teaching online... [However], 57% said they would prefer to teach hybrid courses after the pandemic, slightly more than those who preferred to teach entirely online" (para. 2).

Because of their experiences with pandemic education, both students and educators have changed their views and preferences regarding both online and offline class options. They appear to have also overcome at least some of the trepidation they felt when confronted with mostly online classes over the last two years or so.

The return to the classroom has become a reality, but this reality has changed for educators and students as a result. For this reason, the following research questions were formulated: Question 3 was addressed in a previous paper (see Thorkelson, 2021), but it will be discussed briefly in this article as well:

> *1) What changes occurred in students and educators during the pandemic that influenced their education positively or negatively because of the abrupt transition to online education?*

> *2) What are the implications of the changes in students and educators for post-pandemic education, particularly if all those affected return to traditional schools and classrooms?*

> *3) Is hybrid or blended education a better post-pandemic education option for these participants?*

Changes to the Educational Landscape during and Post-Covid

E-books usage

According to Melissa Jacobs, director of the New York City Department of Education School Library System, "the use of e-books and digital content has quadrupled, if not more, across the board, because students couldn't get into physical buildings to use materials." (Ofgang, 2021, para. 6) A similar study of e-book usage on various platforms conducted at the University Library in Kyushu, Japan, before and during the pandemic discovered that "the total access counts in 2020 were higher than those in 2019 on all platforms." (Kodama et al., 2021, p. 474) JSTOR had the highest rate of access count growth, with an 846% increase. "Both before and during the pandemic, e-books on mathematics, medical science, and programming languages were in constant use. During the pandemic, e-books in law and economics began to be used. These results suggest that the pandemic created a new demand for e-books in specific fields" (p. 475). E-books are likely to remain popular after the pandemic has passed, or at least become endemic, because they provide both the utility of a textbook and the extra advantages of virtual tools and links to other materials. If trends continue in this direction, publishers will probably take note and produce more of them in a variety of fields and disciplines as a result of the increased interest in and usage of e-books over traditional textbooks, which will benefit both students and educators.

Other learning materials access

According to a report from the Department of Higher Education and Training (2020) in South Africa, 26% of students did not purchase any of the required textbooks, compared to 74% of students who did. (p. 21) Of those who didn't purchase textbooks, 19% had no access to any of them, and of the remaining population, "... 68% used electronic means to access books (29% through sharing or downloading illegal copies, and 23% downloaded textbooks through open access channels)" (p. 24). When asked if they had any additional learning materials, "90% of respondents said they did. These materials mostly included summaries of lectures (81%), study guides (66%), online videos (66%) quizzes or other activities (54%), and tests from previous years (41%)." (p. 26). The importance of the textbook is probably waning for many courses, and when combined with the information above about the use of e-books, there will be more interest in and pressure to create both internal and external tools to support faculty and students as the pandemic continues.

Student maturity and success

According to Adams et al. (2018), graduate students differed from undergraduate students in that "postgraduate students easily understood the basic functions of a computer and laptop, and they... use e-mail and MS Office software consistently and frequently for communication." (p. 247) It's interesting to note that they preferred blended learning to the standard teaching and learning strategy. "Postgraduate students are therefore more mature and independent learners and have a higher understanding of and proficiency in using information technology" (p. 247). Yu (2021), discovered comparable preferences: "Undergraduates did not think that online learning was a satisfactory method of instruction because they gave teachers and course materials higher ratings than they gave the online videos." (p. 12) They were subjected to visual stimulation distractions such as [unrelated] online videos o They did not devote enough time to watching online videos to acquire knowledge. They entertained themselves by surfing the Internet or chatting with their friends. However, postgraduates with stronger self-regulation may have been more resistant to... external disturbances and able to control their learning behaviors. They preferred online learning over traditional learning, resulting in higher learning outcomes than undergraduates.

Similar trends were observed among students in their Islamic Religious Education programs at all levels, according to Sukiman et al. (2022), who also discovered that ineffective online education was frequently caused by poorly planned and prepared lessons, lacking or insufficient supporting materials, the abrupt shift of so many institutions and classes online, or even "...studies being conducted in areas or countries where the geographical, social-cultural, and economic aspects did not support on-line learning." (p. 251). They suggested modifying hybrid education at each level to better meet the needs of the students and the objectives of the program. They foresaw a completely revised program:

> The Bachelor Program... curriculum comprises 60% theoretical and 40% practical components. Meanwhile, … The Master's Program... prepares students to be academics with the necessary skills, cognition, and managerial abilities. Theoretical aspects dominated the master's program curriculum (80%), with the remainder being skilled... The doctoral program is designed to prepare students to become academics, researchers, and consultants who can develop, think philosophically, and discover new theories… Summarily, we should develop hybrid learning to follow the proportional composition of each educational level. (p. 251)

Students and their devices

According to Funda et al., (2022), students tended to use at most one or two devices to access their online courses "… most students used smartphones alone (52.2%), followed by television alone (15%), and computers alone (10.4%), when accessing their online lessons. Also, some students used multiple tools, with the most popular combination (5.5%) being a computer and a smartphone." (p. 52).

According to George Reyes et al. (2022), "virtual education caused 66% of university students to acquire between one and two devices to attend classes remotely." (para. 7) Tablets, smartphones, and laptops were the major purchases. Seven out of ten students also needed to upgrade their internet access. They reported that 78% of the students connected from their homes, 63% from their phones, 38% from the homes of friends or family, and 38% from public locations. So, most of the students, if not all of them, were then outfitted with the tools and infrastructure needed to effectively access online learning opportunities.

Apps usage

Males use the internet and other connected technologies for leisure, entertainment, and practical needs, while females use the same tools primarily for social interaction and communication, according to Menon (2022), who reviewed several earlier studies on application use concerning gender. By as much as 8%, females use their smartphones much more frequently than males do. Since educational apps are most likely to be accessed using a smartphone as the primary device as well as other secondary devices, these factors need to be considered in their design, function, and layout in particular.

George Reyes et al. (2022) reported that

> …students accessed their classes primarily through video conferencing tools like Zoom, Meet, or Teams (41%), and educational platforms, both commercial (33%), and institutional (17%). They primarily used social networks (28%), then instant messaging (31%), to communicate. Also, although to a lesser extent, they used formal communication tools like email (15%) or those found on educational platforms (16%). Automation tools like Microsoft Office and Google Drive were the most frequently used programs, followed by social networks and video storage services. The least used were, however, online educational platforms and libraries. (para. 8)

These results, however, reveal that students are moving away from the digital libraries and platforms that are favored by educational institutions like universities and colleges while simultaneously using applications and platforms more extensively for educational purposes. More faculty members are using learning management systems (LMSs) and e-books than before the pandemic, and this digital divide will cause issues unless both groups consider it when attending, accessing, and designing class content.

Study habits

Distance learning "...fostered new study habits such as self-training, time management, and the ability to use various technologies," (George Reyes et al., 2022. (para. 9)). Also, when asked about improvements in digital literacy... 83% of respondents thought that distance learning improved their ability to use technology, and 82% said their teachers had a thorough understanding of these tools. Both groups have undoubtedly improved their digital literacy during this time, and this will help them in their future academic and research endeavors - assuming the hybrid model is maintained rather than a complete turn back to traditional brick-and-mortar classrooms. However, for a variety of reasons, students also experienced difficulties during the pandemic.

According to Cannon et al. (2022), factors like "...the transitional class format, poor study habits, difficulties with instructors, shifting external pressures, and time management" (p. 6) made it difficult for students to adjust to the transition to online classes. While most of the students were eventually able to overcome these obstacles and succeed, the instructor's support played a significant role in their ultimate success or failure.

Socioeconomic status (SES) and access to online education during and after the pandemic

"Children from low-income households, children with disabilities, and girls were less likely to access remote learning because of a lack of electricity, connectivity, devices, and accessible technologies, as well as discrimination and social and gender norms" (para 7). According to a World Economic Forum (2022) report on education, skills, and learning, "…younger students were more affected by learning loss than older students and had less access to age-appropriate remote learning. Initial research indicates that learning losses are greater for girls, particularly in South Africa and Mexico, even though the gendered effects of school closures on learning are still being studied". (para 7)

Similar to the previous study, Narulhudha et al. (2021) examined the effect of socioeconomic status on learning during COVID-19 and found that "...gender and year of study were found to be significant, while…residential area and family income are not significant." (p. 4)

The hybrid model, therefore, appears to be the most effective because it can be tailored to meet the needs of students at all levels of education by more effectively balancing online and offline content and resources, considering SES and maturity while concurrently addressing the learning objectives for theoretical and practical subjects. To ensure that they stay on task and achieve the learning objectives while avoiding most or all of the pitfalls of online education, such as the propensity to become easily distracted, students will still need instruction in how to use the tools and platforms effectively as well as supportive management by the instructor. Following the pandemic, both students and faculty have become more confident and capable of succeeding in an online learning environment. They are also more technologically savvy, have the necessary infrastructure and devices in place, and are aware of both the advantages and disadvantages of online learning. However, they may have lost some of the traditional skills for interacting with face-to-face classes at the same time.

Communication during the pandemic

Along with the previously mentioned factors, the pandemic years also presented a potential communication challenge between educators and their students, as well as between those same groups and their institutions. In a survey of academics, students, and researchers, Hurajova et al. (2022) discovered that:

> when speaking about the form of delivery or communication with students, in 2021, compared to 2020, an online lecture, seminar, training, e.g., via Zoom or Google Meet, dominated and one-on-one consultations via e-mail, chat, and social networks happened more frequently. The following methods of reaching out to students predominated more in the first year of the pandemic, in 2020: sending materials… with a shift from often to occasionally, sharing one's video/audio recordings…rarely, sending assignments …occasionally, and making online or telephone calls, which occurred occasionally. (pp. 6-7) Also, in the second year of the pandemic, 2021, academic staff satisfaction with how the workplace handled the pandemic was higher. (p. 6)

This is likely one of the most significant issues, along with digital literacy and dependence affecting both online and post-pandemic education, along with the significance of the instructor as a factor in students' success or failure while online during the pandemic (see Cannon et al., 2022).

Implications for post pandemic education

Snelling and Fingel (2020) list the following ways to handle online teaching during a long pandemic:

Ensuring digital equity

- *Providing clear expectations to staff and parents*
- *Establishing daily schedules*
- *Choosing the right tools and sticking with them (...limiting the number of tools, apps, and platforms and keeping online instructions short, simple and clear);*
- *Providing robust learning;*
- *Designing independent learning that does not require extensive support...; and*
- *Addressing the emotional toll.* (para. 1.)

No matter how diligently educators and their respective institutions may have tried to meet the needs of their students during what was likely the pandemic's peak, as the above section quite demonstrates, they were bound to fall short in some or even most of the areas listed by the ISTE. There is no doubt that the effects on education now and in the future need to be considered and addressed. In a related article Thorkelson (2022) dealing with five aspects of post-pandemic students noted when students returned to fully offline classes at their university in the spring of 2022, this author discussed a few of these more anecdotally.

1. *Generally, students were thrilled to be back on campus.*
2. *Compared to the pre-pandemic, students are even worse at completing their homework and meeting deadlines.*
3. *Many students view a COVID absence as an extra vacation.*
4. *The dependence on digital devices and potential distractions are at an all-time high.*
5. *Many people, including students, are acting as if COVID is over. (paras. 2-9)*

The ideas from these sources will be supplemented and expanded upon in this section by discussing some related issues and adding a few others that are noteworthy based on the first section of this paper and the author's experiences during online and offline classes during and after the pandemic.

Hybrid education

For a hybrid education to be balanced and tailored to everyone's needs, institutional support for faculty and students' class-related activities is first and foremost necessary. The LMS has become the central location for informing students of information via announcements, organizing the primary course materials into folders, or posting links to videos or other resources that can be used to supplement the material already covered or being covered in class. In a survey of undergraduate students in a range of majors conducted by Subashini et al. in 2022, it was discovered that "...roughly two-thirds of the study population was familiar with the E-Learning concepts and LMS. However, approximately 44% of the study group had never heard of online conferencing. However, only about a third of them were formally trained to use e-learning platforms." (p. 9) Therefore, universities need to focus more on educating students on various e-learning platforms. Students' digital proficiency does not always imply their capacity to deal with the obstacles of online education without support in using the selected LMS and other applications.

To keep students focused and on task during class as well as outside of class when they are working on their homework or studying, educators must be constantly aware of what students are doing and use a variety of strategies. Distractions in social media and the numerous apps and platforms are diverse and encroach on students' ability to concentrate.

Learning management systems (LMS)

There are now more communication channels available than just email and text messages. More integrated and user-friendly platforms have been developed and will continue to be created, including chat programs, online meeting apps, and others. Hanyang University, South Korea, the author's university, switched to a hybrid LMS of Canvas and a local LMS that did not have the same functionality, so they used

it only for messaging, announcements, and posting files. Blackboard LMS was used for announcements, messages, online tests, and exams during 2020. Exams and tests were transferred to an outside website (https://www.easytestmaker.com), where they still are today. The LMS took the place of text messaging, save for emergencies like a last-minute change in the classroom. However, email was still the most popular method of communication with students outside of the classroom.

Class	Number of Announcements	Categories
Critical Thinking and Reading I	20	News Links: 8; Class Information: 3; Homework: 4; Other: 5.
Presentations Class	10	News/Advice: 4; Class Information: 2; Homework: 4
Acting Class	11	News: 3; Class Information: 5; Homework: 3
Global Business Communication	23	News/Advice: 8; Class Information: 5; Homework/Quizzes: 6; Other: 4

Table 1: Class announcements posted on the LMS by number and category

The author of this paper did not use the LMS before the pandemic, but as the table above shows, it was then another method for informing students of all classes of crucial information. While the LMS served as a central platform for posting files, exchanging crucial information about classes, and allowing students to message their professors if and when they are unable or unwilling to email them, all the listed classes were 100% face-to-face in the spring of 2022.

Digital literacy

Both students and instructors now possess a higher level of digital literacy, and it is important to maintain and use these skills to further their education both inside and outside of the classroom. As was previously mentioned, digital literacy does not always equate to the capacity to pay attention in class or on assignments. The number and frequency of potential distractions increase with interconnected devices and the frequent use of multiple devices simultaneously, and older students are generally better able to ignore these distractions than less mature students (see Adams et al. 2018; Sukiman et al., 2022). Face-to-face classes may be affected by these interruptions as well, given that these same devices are more frequently used in the typical classroom to access e-books or PDFs of textbooks. Both teachers and students need to be aware of these distractions and make every effort to reduce their negative effects.

Positive and negative experiences

Online learning can now be more than just a substitute for students who prefer non-traditional learning styles; it can now be a valuable and effective addition to more conventional classes for every student. Because of the pandemic, students had both positive and negative experiences with online learning. With an understanding of the benefits and drawbacks based on personal experience, students and faculty are now better able to decide whether to learn and be educated through offline or online methods, as well as a hybrid program version. If this is designed and used properly by everyone, this enables more flexibility and a more equitable educational process and system for all students.

Social and mental health benefits

It is important to acknowledge the social and mental health benefits of education for students of all ages. Education is about more than just knowledge acquisition; it is also about providing a secure environment where children can make friends, learn social and other life skills, or even eat a few meals they might not otherwise have. Clubs at school and resources like gyms and libraries are crucial to fostering students' growth and development while receiving support from a dedicated faculty and staff. Aldeman (2021) estimates that job losses in public education (K-12) and public higher education in the US reached 8% and 11%, respectively. However, this is not entirely the result of the firings or layoffs. Instead, it was partially caused by unfilled positions such as "...substitute teachers, bus drivers, cafeteria staff, janitors, or other employees" (para. 14), who are presumably only required when schools and classes are typically attended in person. On the surface, it might not seem to matter, but teachers are asked to do more than usual, seemingly on their own, because they cannot rely on people like administrators or librarians for help and support.

In other words, from educational and other perspectives, the institutional- level community of learning may have suffered the most during the pandemic years. This is not to say that creating a community of

learners was impossible while learning online; it just means that the other elements outside of the classroom environment were either weak or nonexistent. In a community of learners, teachers and students work together to share knowledge about a subject (Agopian, 2022). Teaching is a shared responsibility between the teacher and the students. Students use a variety of resources to learn about a subject, and teachers provide a forum for them to discuss what they have discovered with one another. The pandemic required the development of strategies to establish an online learning community where students could share knowledge and do so using technology. If teachers used all the resources they had at their disposal and if the students had the infrastructure and skills to access them properly, the pandemic may have allowed for a substitute classroom learning community, but the other members of such a community were undoubtedly largely, if not entirely, absent. Even educators, though, have occasionally succumbed to the pandemic years' uncertainties and pressures. According to Lambert (2022), "the Bureau of Labor Statistics reported that approximately 600,000 teachers in public education in the United States resigned between January 2020 and last February... The largest union in the country, the National Education Association, conducted a membership survey in January...more than half of the union's members said they were thinking about leaving their jobs sooner than expected." (para. 26) At least 90% of respondents cited pandemic-related stress and burnout as serious issues. To paraphrase an idiom, it takes an entire school or university to offer the proper support to educate students effectively, and that was largely lacking during the pandemic.

In conclusion, these post-pandemic effects on education may, in most cases, have already been felt within the educational system. According to Donaldson-Pressman et al. (2014), contemporary students are unable to read a book for more than a few minutes or comprehend a few paragraphs in a more traditional textbook because they have grown accustomed to relying too heavily on their digital devices for instant gratification. Also, parents are frequently unable to assist their children with their homework because of the widespread adoption of digital assignments, research, and tutorials, which can take several stressful hours to complete. To the detriment of the overall sense of community that face-to-face education has always helped sponsor, the pandemic simply served to accelerate the evolution of students' reliance on technology and devices. However, as they return to more conventional brick-and-mortar classrooms or get used to a more balanced and practical hybrid model of education, post-pandemic students and educators have emerged from the past two years with improved skills as well as more obvious weaknesses. The system has been altered and weakened, but it has also highlighted the issues that must be resolved for it to resume performing its duties as a means of educating students and fostering the development of their skills in a variety of other areas, such as social skills, planning, and scheduling, following instructions, meeting deadlines, and reintegration into the larger school community, among others. To better serve the needs of all of their students, institutions and faculty must decide whether to develop a better and more adaptable hybrid education system or attempt to return to the face-to-face classroom dominance that existed before the pandemic. This would likely be a step backward because it disregards the lessons learned and the infrastructure and tools developed to help the entire educational system survive the abrupt switch to online classes during the pandemic in better shape than might have been anticipated.

References

Adams, D., Sumintono, B., Mohamed, A., & Noor, N. S. M. (2018). E-learning readiness among students of diverse backgrounds in a leading Malaysian higher education institution. *Malaysian Journal of Learning and Instruction, 15*(2), 227-256. https://doi.org/10.32890/mjli2018.15.2.9

Agopian, T. (2022). Online instruction during the Covid-19 pandemic: Creating a 21st century community of learners through social constructivism. *The Clearing House: A Journal* of *Educational Strategies, Issues, and Ideas, 95*(2), 85-89, https://doi.org/10.1080/00098655.2021.2014774

Aldeman, C. (2021, 2 March). During the pandemic, 'lost' education jobs aren't what they seem. *The Brown Center Chalkboard.* https://www.brookings.edu/articles/during-the-pandemic-lost-education-jobs-arent-what-they-seem

Cannon, R. L., Clance, L. R., Correia, K. M., Morrison, B. H., Nelson, M. T., & Henning, J. A. (2022). Undergraduate surveys reveal that instructors are key in students overcoming classroom struggles during the COVID-19 pandemic. *Frontiers in Education, 7.* https://doi.org/10.3389/feduc.2022.841060

Department of Higher Education and Training (2020). Student's access to and use of learning materials: Survey report 2020. *Department of Higher Education and Training, Republic of South Africa.* https://www.usaf.ac.za/wp-content/uploads/2021/02/DHET_SAULM-Report-2020.pdf

Donaldson-Pressman, S., Jackson, R., & Pressman, R, M. (2014). *The learning habit: A groundbreaking approach to homework and parenting that helps our children succeed in school and life.* TarcherPerigree.

Duffin, E. (2020). *Leading distance learning institutions in the United States in 2018 by several students taking at least one distance learning course*. Statista.

George Reyes, C. E., Glasserman Morales, L. D., Ruíz Ramírez, J. A., & Rocha Estrada, F. J. (2022, 14 June). Post-pandemic study habits in university students. *Edu Bits.* Retrieved on 15 July, 2022. https://observatory.tec.mx/edu-bits-2/post-pandemic-study-habits-in-university-students

Hasançebi, F.., Yavuz, M., Kayali, B., Hasançebi, M. Tutal, Ö., & Özkiliç. (2022). Students' views regarding instruction during the pandemic process. *Journal of Learning and Teaching in Digital Age, 7(1)*, 51-63. https://doi.org/10.53850/joltida.980931

Hurajova, A., Kollarova, D. & Huraj, L. (2022). Trends in education during the pandemic: Modern online technologies as a tool for the sustainability of university education in the field of media and communication studies. *Heliyon, 8*(5). https://doi.org/10.1016/j.heliyon.2022.e09367

Kelly, R (2021, 13 May). 73% of students prefer some courses to be fully online post-pandemic. *Campus Technology*. https://campustechnology.com/articles/2021/05/13/73-percent-of-students-prefer-some-courses-be-fully-online-post-pandemic.aspx

Kodama, M., Ishita. E., Watanabe, Y., & Tomiura, Y. (2021). Usage of e-books during the COVID-19 pandemic: A case study of Kyushu University Library, Japan. In K. Toeppe, H. Yan, & Chu, S. K. W. (Eds.), *Diversity, divergence, dialogue. 16th International Conference, iConference, 2021, Beijing, China, March 17-31, Proceedings, Part II* (pp. 475-483). Springer.

Lambert, D. (2022, 2 June). Covid challenges, bad student behavior push teachers to limit, out the door. *EdSource.* https://edsource.org/2022/covid-challenges-bad-student-behavior-push-teachers-to-the-limit-and-out-the-door/673124

Malesic, J. (2022, 13 May). My college students are not OK. *The New York Times*. https://www.nytimes.com/2022/05/13/opinion/college-university-remote-pandemic.html

Menon, D. (2022). Uses and gratifications of educational apps: A study during COVID-19 pandemic. *Computers and Education Open, 3.* https://doi.org/10.1016/j.caeo.2022.100076

Ofgang, E. (2021, 21 May). Student ebook reading surges during the pandemic. *Tech & Learning.* https://www.techlearning.com/news/student-ebook-reading-surges-during-the-pandemic

Snelling, J., & Fingel D. (16 March, 2020). *10 strategies for online learning during a coronavirus outbreak*. https://iste.org/blog/10-strategies-for-online-learning-during-a-coronavirus-outbreak-2

Subashini, N., Udayanga, L., De Silva, L. H. N., Edirisinghe, J. C., & Nafla, M. N. (2022). Undergraduate perceptions on transitioning into E-learning for the continuation of higher education during the COVID pandemic in a developing country: A cross-sectional study from Sri Lanka. *BMC Medical Education*, *22*(521)*.* https://doi.org/10.1186/s12909-022-03586-2

Sukiman, Haningsih, S., & Rohmi, P. (2022). The pattern of hybrid learning to maintain learning effectiveness at the higher education level post-COVID-19 pandemic. *European Journal of Educational Research, 11*(1), 243-257. https://doi.org/10.12973/eu-jer.11.1.243

Thorkelson, T. S. (2021). Online versus remote learning: Past, present, and potential future. *Korea TESOL Journal, 16*(2). 59-76. https://koreatesol.org/sites/default/files/pdf/KTJ16-2-Thorkelson.pdf

Thorkelson, T. S. (2022, June 16th). An EFL teacher's guide: The post pandemic student. *EFL Magazine.* https://eflmagazine.com/the-post-pandemic-student

Waseso, R. (4 January, 2021). Survei KPAI: 78% Siswa menginginkan pembelajaran Tatap muka [KPAI Survey: 78% of Students want face-to-face learning]. *Kontan.co.id.* https://nasional.kontan.co.id/news/survei-kpai-78-siswa-menginginkan-pembelajaran-tatap-muka

World Economic Forum (16 January, 2022). The global education crisis is even worse than we thought. Here's what needs to happen. *World Economic Forum.* https://www.weforum.org/agenda/2022/01/global-education-crisis-children-students-covid19

Yu, Z. (2021). The effects of gender, educational level, and personality on online learning outcomes during the COVID-19 pandemic. *International Journal of Educational Technology in Higher Education, 18*, 14-19. https://doi.org/10.1186/s41239-021-00252-3