

RESEARCH

Impact of COVID-19 on Asynchronous Learning for Higher Education Administration Graduate Students

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Abstract

Online courses can be isolating experiences, as many students need a high level of discipline and structure to complete coursework. The impact of COVID-19 caused major disruptions to higher education particularly for teaching and learning in early 2020. Teo and Williams' (2005) framework for effective online learning was applied to this study to learn of its utility for asynchronous graduate student learning. Eight students taking courses in an online asynchronous graduate program in higher education were interviewed for this study. The findings indicated that not all of Teo and Williams' sub-environments described students' asynchronous learning experience during COVID-19, with additional ones more applicable to the non-traditional population of students in the program. Engagement and success depended on discussion board importance to instruction, environmental and cultural impacts on learning, need for support, and faculty communication. Students were less impacted by the evaluative and collaborative components of the framework, likely due to being accustomed to these approaches with little transition from pre- and post-COVID teaching and learning practices.

Keywords: Asynchronous learning, graduate students, higher education program, online learning framework

Introduction

This study began as a problem of practice: Why did the level of engagement for asynchronous graduate students suddenly change at the onset of the COVID-19 pandemic? The study that follows shares the learners' experience in ways that the asynchronous modality supported and challenged the learning for graduate students in an online education program.

Background

As greater numbers of non-traditional, adult students attend higher education, negotiating school responsibilities while holding down a job and other family commitments, the convenience of asynchronous learning method of course delivery has become prevalent. However, such modality is not without challenges, which compromises student learning and classroom community (Jorgensen, 2003) and contributes to isolation, lack of motivation, and declines in English language proficiency for ESL learners (Karkar-Esperat, 2018).

The recent impact of COVID-19 caused major disruption to higher education in March 2020 as it shifted all courses online in either a synchronous or asynchronous teaching model. Anecdotal feedback from online faculty reported delays in turned-in assignments, completion of

course requirements, reports of mental health challenges, and increased learning disruptions due to changes in the working and home life environments.

Studies have already begun to document the mental health and motivational impacts on college students. Araújo et al. (2020) shared that those uncertainties and the intensification of information flow increased rates of anxiety and depression, with loneliness impacting education and psychological pain and suffering. Additionally, Meo et al. (2020) discovered that both male and female quarantined medical students felt emotionally detached from family, peers, and friends, which decreased their overall work performance and study periods. In some cases, students dropped out of the course and program. The literature for school-aged children suggests that internalizing mood and anxiety disorders are less responsible for this occurrence, with externalizing factors such as substance abuse, attention disorders, and disruptive behavior more closely linked with drop out (Esch et al., 2014). However, there is less research on how COVID-19 impacted the asynchronous learning experience of graduate students in a higher education administration program. By delving into this topic, we glean recommendations for key components of the learning environment that are crucial to student success.

Online Asynchronous Learning

Rhim and Han (2020) discussed some of the foundational concepts of online asynchronous learning that have been found to be particularly important to the success of online learning, such as the cognitive, social, and teaching presence in the course to engage learners in the content of the course. Online learning modalities are not as simple as recording lectures and posting them online for the learner to watch (Rhim & Han, 2020). Online learning modalities have unique challenges for both the learner and the educator. Jorgensen (2002) provided an excellent summary of the challenges and benefits of asynchronous learning. Some of these challenges include the cost of course setup, faculty investment, and technology. Transitioning an on-site course to an online platform can be costly in terms of faculty workload. As the dependence on computer technology is vital for this approach, there can be frustration and additional costs to update and maintain the technology infrastructure for the course. Technical problems, when they occur, can become extremely frustrating for both the learners and the faculty. Additional challenges include higher drop-out rates compared to traditional classes, students falling behind, and difficulty in maintaining a sense of community. Many students attracted to these online learning modalities are attracted by the independent nature of the coursework that can fit into their work and family life schedules. Many online students also tend to be first-generation students, which amplifies these challenges. Walsh (2021) found that, when compared to in-person learning, remote learning overwhelmingly reduces student motivation.

Jorgensen (2002) also illustrated several benefits of this modality, including an enhanced academic community and a rich, student-centered collaborative atmosphere. She reminds us that in a collaborative learning environment that is Vygotsky-constructed, the learner actively co-creates knowledge. Students rely on each other to share resources, reflect, and reach learning

outcomes together (Palloff & Pratt, 1999). They further share that the success or failure of online learning is dependent on the ability to foster this collaboration.

Collaboration is important to fostering a sense of community. Online discussions can contribute to that sense of community by enabling participation and engagement. Online discussions give learners the ability to both express their thoughts and ideas regarding the course subject matter and support the co-construction of new knowledge (Vonderwell, 2007).

Scholars widely recognize that a sense of belonging is related to academic engagement and success (Masika & Jones, 2015). Building community is also essential to collaboration in an online course. Some of the ways Jorgensen (2002) suggests building this community is by allowing students to moderate discussions and through consistent, regular feedback and interaction with the faculty member. This also includes increased regular communication and posting by students with their peers. Just as importantly, a lack of engagement or limited access to such a course creates a lack of community for students enrolled in these programs.

Theoretical Framework

Teo and Williams (2005) shared a conceptual framework for understanding online learning environments. Based on the principles of adult learning from Rodgers et al. (1994), Cross (1981), and Knowles (1984), they identified seven learning environment components essential to online learning success: the instructive environment; the situating environment; the constructive environment; the supportive environment; the communicative environment, the collaborative environment, and the evaluative environment. The instructive and situating environments relate to the content learned, where the learning occurs and how the learning is situated to the learner (i.e., multicultural & personalized, or monocultural). The constructive environment relates to how the online course uses certain pedagogy to aid students in the construction of knowledge; the supportive relates to both performance and cognitive support networks to aid in learning. Communicative and collaborative environments reinforce each other, describing how communicative both peers are with each other and with the instructor. The last component, evaluative, captures the mechanisms in place to help students evaluate their learning.

Methods

Ethical approval for our study was obtained from [Confidential] University [IRB-FY19-20-863]. This study examined the impact of COVID-19 on asynchronous learning for online Higher Education Administration graduate students. The researchers used a qualitative approach to obtain data that fit Teo and Williams' (2005) effective online learning framework. We hoped to answer the following research question: How did COVID-19 impact the asynchronous learning experience for graduate students in an online higher education administration program?

Sample & Setting

Students enrolled in a graduate online program in the Higher Education Administration were invited to participate in the study. Upon institutional review board approval, the primary researcher made invitations to all of his past course sections. The program is taught in a 4-week course sequence for approximately 10 months, for a total of 45 credit hours (10 courses). The program is designed to introduce students to higher education theory, leadership, and strategic management for administrative programs and student services, as well as ways to manage and implement change in dynamic environments (Generic University, 2022). The program is taught completely in an asynchronous online format. Students use a learning management platform, Blackboard, to complete and post weekly assignments, engage in online discussion posts with peers, and review lecture notes and interactive videos weekly. Students were required to post twice weekly to a set of discussion posts and respond to at least two peers' posts, to both facilitate a dialogue and learn of different work/life experiences related to the readings. A rubric was used to evaluate discussion posts based on evidence-based posting, critical thinking development, APA writing format, and contribution to a positive learning community. The instructor helped model posts and provided positive reinforcement feedback when an exemplar post was made. The instructor also posted public comments on students' initial posts and peers' responses. A guide for professional disposition and civility was posted in the syllabus to help maintain a constructive learning community.

Qualitative Data Collection & Analysis

Eight students who had taken courses with the instructor were invited to participate in the qualitative study. There were six women and two men. In terms of racial diversity, the group included one Black, one Asian, three Latina, and three White students. Prior to interviews the researcher initiated informed consent verbally and participants signed virtually through an online survey. The interviews sought to understand the students' experience during the beginning of the COVID-19 pandemic in early March 2020. Students reflected on an interview protocol developed from Teo and Williams' (2005) learning environment framework.

Interview protocols were semi-structured, with example questions including: "How has the online environment impacted your satisfaction and motivation to complete the subject/course?", "How have the class activities been inclusive to your culture and background?", "How important is communication with other peers and faculty to your learning during your class?", and "Have you found your courses collaborative, operating in a teamwork fashion with your other asynchronous peers? Why or why not?". All interviews were conducted virtually over Zoom, video-recorded, auto-transcribed, and de-identified prior to analysis. The length of interviews ranged from 45-60 minutes. Pseudonyms were used to protect the participants' identities.

Our data analysis used an iterative, spiraling process that proceeded from general to more specific observations (Creswell, 2018). Additionally, while the findings may be influenced by the questions asked, they were ultimately drawn from an analysis of the raw data. Transcripts were first uploaded as a Word document to a cloud file storage site and coded line by line into significant statements by the primary researcher using the "add comment" feature within the transcript. As a secondary validation for trustworthiness, another researcher not associated with the interviewing process reviewed and coded the transcripts as well; where a discrepancy arose, the two researchers discussed how each statement fit with the initial framework. Significant statements were collapsed into themes and meaning units to support, refute, or add to the existing theoretical framework (see Tables 1 & 2). The shared themes were then reviewed and member-checked by participants in the study to confirm their accuracy and validity.

Table 1. Themes and Meaning Units

Themes	Meaning Units
Discussion Board Importance to Instruction	Space for Voice Diversity of Opinions Class Size Groupwork/Collaboration
Environmental and Cultural Impacts	Inclusive Compartmentalized Learning Isolation Mental Health Applied Learning
Support	Social Support Inconsistent Advising & Coaching Intrinsic Motivation Faculty Guidance
Faculty Communication	Timeliness Accountability Expert Knowledge

Table 2. Interview Questions and Exemplar Student Quotes

Interview Question	Student Quote
Instructive Would you say that the class examples used helped you understand how to move from theory to practice?	“There is not a lot of feedback. You (the professor) can’t very well Zoom individually each student. Even if it’s written...that is a form of communication. And like I said if they would comment in the discussions, they would put more than one line. Especially, what was really helpful in their comments, you would get one point for some theory and they would lend their summation of it by giving their experience and knowledge which expanded what you had planned. That was useful also. So, their comments are important. Well, that’s the only thing we hear from them. That’s the only way they communicate.”
Constructive How has the use of discussion boards with your peers contributed to your learning?	“I was asked to put something on the discussion board. It really brought me out of my shell. Prior to Generic University I don’t think I would ever contribute to in class discussions.”
Situating What are some ways your courses have situational-based your learning?	“In order to be successful, it forced you to be more cognizantly aware of and in managing your time. I’d get off work at five o’clock and I’d go from five to nine doing the readings. Doing the reading...it motivated you because now you had a new base of information. I always wanted to do the readings, because without it I am basically nothing. I had a new base of knowledge that I can make decisions on and can partake in the discussion.”

Tell me about how, if any, your learning has been challenged during quarantine.

“The biggest challenge is again, the lack of motivation. I couldn't do it. I had to stop taking classes because I had no motivation. It's hard enough to be motivated to work from home and then to just switch hats and sit in the same spot for another four hours and do your homework was...I just didn't have it in me.”

Supportive

How has the online environment supported your ability to learn? Were there any particular tools that helped you learn?

“I had a success coach early on. It was somewhat helpful. I could have used it along the whole way, but the person just disappeared, and I said ‘ok’ the universe is telling me to figure out how to suck it up and do it on my own.”

What types of additional personal support is/was helpful to you during the quarantine?

“If it was not for him making that time in my day for me, I don't think I would have been as successful. I really valued that personal support. I am grateful that I had the personal support of my partner at the time because again I can see how people didn't have that and how it affected them.”

Communicative

How important is communication with other peers and faculty to your learning during your class?

“Every time we saw a response from faculty it was always uplifting and there was always really good information that was provided, and they were pretty much equal in that way towards everybody, so everybody got the same type of feedback.”

Findings

The findings indicated that not all of Teo and Williams' sub-environments described students' asynchronous learning experience during COVID-19, with additional ones more applicable to the non-traditional population of students in the program. Four overarching themes emerged from the student interviews. These included: a) the importance of discussion boards to the constructive and instructive environment, b) environmental and cultural impacts on situational

learning, c) the need for support, and d) faculty communication as vital for engagement and success.

Constructive and Instructive Environments-Discussion Board Importance to Instruction

The use of discussion boards with a diverse group of students and avid faculty responsiveness and participation created a situated learning environment where students were able to engage in the course curriculum. The participative nature of discussion boards gave quieter voices in the class space to participate and express their individuality in a way that is not commonly found in a traditional face-to-face course: "I was asked to put something on the discussion board. It really brought me out of my shell. Prior to Generic University I don't think I would ever contribute to in-class discussion" (Kiana).

This is consistent with Jewel (2005), who found that the use of discussion boards allowed for quieter, non-native speakers, and those easily distracted to proofread and share their thoughts with peers. Further, Eddy et al. (2017) found that men tend to be more participatory during in-person class discussions. The discussion boards provide an outlet for multiple voices. This allowed a shyer female student (Kiana) to participate. The emergence of the quieter voices in the class also led to a greater sense of diversity in learning: "Every student's background and especially in the discussion boards, we get to kind of hear where everyone's coming from and cultural background and even just like work experience has been very inclusive" (Andrea).

The nature of asynchronous course participation and the use of discussion boards as a primary learning method creates an environment that heavily favors students with strong reading and writing abilities. The effectiveness of the discussion board is reliant on the participation of both faculty and student peers. The following quote captures how George views the importance of faculty participation in an online course:

There is not a lot of feedback. You (the professor) can't very well Zoom individually each student. Even if it's written...that is a form of communication. And like I said if they would comment in the discussions, they would put more than one line. Especially, what was really helpful in their comments, you would get one point for some theory and they would lend their summation of it by giving their experience and knowledge which expanded what you had planned. That was useful also. So, their comments are important. Well, that's the only thing we hear from them. That's the only way they communicate.

Conversely, if there are not enough learners to actively participate, the discussion board as an engagement and learning tool is rendered ineffective: "The last two classes I had a person that had just begun the program. They weren't getting their work in on time, so I had no one to interact with" (Missy).

Situational Environment-Environmental and Cultural Impacts

Learners' intrinsic motivation to participate and engage in the course work is key to online learning success (Keskin & Yurdugül, 2020). This was reflected in George's feedback:

In order to be successful, it forced you to be more cognizantly aware of and in managing your time. I'd get off work at five o'clock and I'd go from five to nine doing the readings. Doing the reading...it motivated you because now you had a new base of information. I always wanted to do the readings, because without it I am basically nothing. I had a new base of knowledge that I can make decisions on and can partake in the discussion (George).

Rawell (2023) found that for teachers teaching online from home during the pandemic, there was a breakdown in the differentiation between professional and personal roles, which created additional burdens and stresses. Jonathan spoke to this:

The biggest challenge is again, the lack of motivation. I couldn't do it. I had to stop taking classes because I had no motivation. It's hard enough to be motivated to work from home and then to just switch hats and sit in the same spot for another four hours and do your homework was...I just didn't have it in me.

The COVID-19 pandemic and subsequent quarantine gave some learners the space to learn or attend the program that they otherwise would not have had the ability to attend. While some learners suffered from the quarantine in terms of motivation and participation, other learners expressed that the change in their work situations gave them the time to participate in coursework in a way that was not possible before the pandemic. "It probably had the opposite effect for a lot of other people," Dulce noted. "I just had more time." This is similar to Aczel et al.'s (2021) study that found that some academic researchers were more efficient at home than they were before the pandemic. They surmise this is more related to independent activities such as writing and learning versus team and group work, which is consistent with this study and the students' lack of interest in doing collaborative projects.

Supportive Environment-Support

Asynchronous online learners engage in the course material independently and can feel very isolated when challenges arise. Achieving success in this domain depends on whether students have not only personal support systems, but also cognitive support from the university system in terms of navigating the curriculum. In fact, students felt that such cognitive support mattered more than having access to technology and assistance with said technology. Many of the participants expressed that they did not have many technology problems, due to being acquainted with the online learning modality before the start of the pandemic.

Students instead noted that personal support systems played a key role in their success and in navigating their education.

If it was not for him making that time in my day for me, I don't think I would have been as successful. I really valued that personal support. I am grateful that I had the personal support of my partner at the time because again I can see how people didn't have that and how it affected them (Jonathan).

Similarly, Samantha highlighted the role of her sister in her continued academic success during COVID-19:

There was a strong family commitment that I was going to do this. There wasn't going to be any stopping. Then COVID-19 hit and I am thinking how I am going to do all this again. I have a very strong champion (sister) who kind of took over that role when my mom passed away five years ago.

This support extended to the benefit of family pets in reducing loneliness and mental health impacts as seen in Ratschen et al. (2020): "That cat, he's been a natural support system," Missy said. "I really don't like cats. But this cat saved my life more times than I can say during the pandemic."

The challenges faced by the learner as they navigate the educational system are varied and the support or lack thereof for the learner is keenly noted. Tippetts et al. (2022) uncovered a strong positive relationship between persistence and meeting with an academic advisor. This can be seen in Missy's statement: "I had a success coach early on. It was somewhat helpful. I could have used it along the whole way, but the person just disappeared, and I said ok the universe is telling me to figure out how to suck it up and do it on my own." Conversely, with poor advisor availability and little rapport, attrition in an online asynchronous program can be observed:

My advisor has switched twice since I started the program. I would email her every month saying you know take me out of this course. The next month would roll around and there would be a new class added and I would have to send the same email. I finally was like you have not reached out to me once to check in on me. You keep loading classes and now my educational plan is completely out of whack. The way the school is run, I definitely feel like a number, not a student (Jonathan).

Communicative Environment-Faculty Communication

Overwhelmingly, the students' interviews illustrated that faculty engagement in the discussion boards and the timeliness of feedback played crucial roles in their learning and positivity surrounding the course work. This is consistent with past research regarding the impact

of faculty responsiveness in asynchronous learning (Blignaut & Trollip, 2003; Dennen, 2005). “How quick a teacher is to respond or to give feedback? I feel like for the most part it’s been pretty quick, especially since these courses move pretty quickly” (Andrea). Likewise, Bliss and Lawrence (2009) reinforce the need for faculty to model communication, but not overpower the discussion board postings inequitably:

Every time we saw a response from faculty it was always uplifting and there was always really good information that was provided, and they were pretty much equal in that way towards everybody, so everybody got the same type of feedback (George).

Discussion

The original theoretical framework from Teo and Williams (2005) shared seven key environments for online learning success. The findings of this qualitative study suggested that four key areas affected learning during the COVID-19 pandemic including, a) the importance of discussion boards in the constructive and instructive environments, b) environmental and cultural impacts on situational learning, c) the need for support, and d) faculty communication as vital for engagement and success.

While the findings support the use of discussion boards as an effective and engaging learning tool, the participative nature of discussion boards is the real key to their success. The increased interactivity and engagement in discussion boards can be linked directly to higher course performance by the learner (Dumford & Miller, 2018). This is consistent with Osborne et al. (2018), who learned that students appreciated that asynchronous discussion boards deepened their understanding of the content by offering alternative perspectives. Using the discussion board as a mainstay of asynchronous online learning allowed some learners to escape mental health challenges and participate in online learning during the COVID-19 pandemic. The connection and interaction between learners and faculty were able to provide an outlet for communication in the framework of learning.

The less relevant dimensions of the theoretical framework included collaborative and evaluative environments. For this group of students, the idea of collaboration included group work, which was not seen positively. The collaborative environment as described by Teo and Williams (2005) includes collaborative group work wherein students synergize their learning. In the asynchronous learning environment, none of the participants expressed positivity toward collaborative learning, indicating that perhaps the asynchronous online environment draws those who prefer to individualize their learning. Alternatively, perhaps the use of collaborative group work as a teaching and learning method in online learning environments should be an area of further study for the higher education community.

The evaluative environment involves the use of formal and informal assessments. The participants seemed to struggle with discussions of the evaluative environment, indicating that there may be some gaps in students' understanding of it in relation to asynchronous online learning.

Implications for Practice

This study reinforces and departs from Teo and Williams' (2005) theoretical framework for online learning. The key takeaways related to their proposed framework include:

- 1) To build increased community and engagement in an asynchronous environment, we suggest that instructors encourage intentionality when developing an optional synchronous component. This could be accomplished through a participant's suggestion for drop-in "coffee hours" to check in with the instructor on any issue (both academic or personal) and to physically see class peers.
- 2) To build and sustain peer support and collaboration, instructors may offer extra credit for "helpers" – similar to Jorgensen's (2003) suggestion to foster peer-to-peer support with content.
- 3) Asynchronous program learning seems to benefit populations of working professionals who may have more limited time or more introverted students who lack the self-confidence to voice their opinions in a normal face-to-face classroom setting.
- 4) Students need validation through timely feedback to monitor their course progress.
- 5) Having a social support network—both informally through family and friends, or more formally through the university, such as advisors and mentors—is crucial to student engagement and success.
- 6) Faculty must encourage students to compartmentalize their learning spaces (i.e., designated study space), particularly when they may be working in their home space to work or have additional distractors such as family commitments.

Limitations and Recommendations for Future Research

This study focused on the experiences of non-traditional-aged graduate students. The experience for first-time or younger students may be different, particularly in connection to their psychosocial development and how this factors into the discussion board component and engagement.

A synchronous-based learning experience presents an opportunity for faculty and students to physically view each other, which increases engagement and a sense of community. Discussion board-based learning may not be as important in a synchronous environment that provides opportunities for face-to-face group discussions.

Lastly, it might be important to test these findings with other master's level programs that require in-person requirements, such as programs requiring licensing and clinical or practicum

hours. Nursing and counseling students may find the most important learning takes place in these face-to-face interactions with patients/clients.

Conclusion

Graduate-level asynchronous programs should consider the importance of several environmental factors to ensure student success. We suggest focusing on the importance of discussion boards, considering students' environmental and cultural backgrounds, encouraging the use of both personal and staff support, and ensuring that faculty communication is timely and engaging. These factors seem vital in an asynchronous learning environment, beyond any shifts in teaching pedagogy due to the COVID-19 pandemic.

References

- Aczel, B., Kovacs, M., van der Lippe, T., & Szaszi, B. (2021). Researchers working from home: Benefits and challenges. *Plos one*, 16(3), e0249127. <https://doi.org/10.1371/journal.pone.0249127>
- Araújo, F., de Lima, L., Cidade, P., Nobre, C., & Neto, M. (2020). Impact Of Sars-Cov-2 And its reverberation in global higher education and mental health. *Psychiatry Research*, 288, 112977. <https://doi.org/10.1016/j.psychres.2020.112977>
- Blignaut, A. S., & Trollip, S. R. (2003). Measuring faculty participation in asynchronous discussion forums. *Journal of Education for Business*, 78(6), 347-353.
- Bliss, C. A., & Lawrence, B. (2009). From posts to patterns: a metric to characterize discussion board activity in online courses. *Journal of Asynchronous Learning Networks JALN*, 13(2), 15-32. <https://doi.org/10.24059/olj.v13i2.1665>
- Chan, R., Bista, K., & Allen, R. (2021). *Online teaching and learning in higher education during COVID-19: International perspectives and experiences*. Routledge.
- Chien-Yuan, S., & Guo, Y. (2021). Factors impacting university students' online learning experiences during the COVID-19 epidemic. *Journal of Computer Assisted Learning*, 37(6), 1578-1590. <https://doi.org/10.1111/jcal.12555>
- Cross, K. P. (1981). *Adults as learners*. Jossey-Bass.
- Dennen, V. P. (2005). From message posting to learning dialogues: Factors affecting learner participation in asynchronous discussion. *Distance Education*, 26(1), 127-148.
- Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, 30, 452-465. <https://doi.org/10.1007/s12528-018-9179-z>
- Eddy, S., Brownell, S., & Wenderoth, M. (2014). Gender gaps in achievement and participation in multiple introductory biology classrooms. *CBE- Life Science Education*, 13(3), 478-492. <https://doi.org/10.1187/cbe.13-10-0204>
- Esch, P., Bocquet, V., Pull, C., Couffignal, S., Lehnert, T., Graas, M., Fond-Harmant, L., & Ansseau, M. (2014). The downward spiral of mental disorders and educational attainment: a systematic review on early school leaving. *BMC Psychiatry*, 14(1), 237. <https://doi.org/10.1186/s12888-014-0237-4>
- Jewell. (2005). Continuing the classroom community: Suggestions for using online discussion boards. *The English Journal*, 94(4), 83-87. <https://doi.org/10.2307/30046465>
- Jorgensen, D. (2003). The challenges and benefits of asynchronous learning networks. *The Reference Librarian*, 37(77), 3-16. https://doi.org/10.1300/J120v37n77_02
- Karkar-Esperat, T. (2018). International graduate students' challenges and learning experiences in online classes. *Journal of International Students*, 8(4), 1722-1735. <https://doi.org/10.5281/zenodo.1468076>
- Keskin, S., & Yurdugül, H. (2020). Factors affecting students' preferences for online and blended learning: Motivational vs. cognitive. *European Journal of Open, Distance and E-Learning*, 22(2), 72-86. <https://doi.org/10.2478/eurodl-2019-0011>
- Knowles, M. (1984). *Andragogy in action*. Jossey-Bass.

- Masika, R., & Jones, J. (2016) Building student belonging and engagement: Insights into higher education students' experiences of participating and learning together. *Teaching in Higher Education*, 21, 138-150. <https://doi.org/10.1080/13562517.2015.1122585>
- Meo, S., Abukhalaf, D., Alomar, A., Sattar, K., & Klonoff, D. (2020). COVID-19 pandemic: Impact of quarantine on medical students' mental wellbeing and learning behaviors. *Pakistan Journal of Medical Sciences*, 36(COVID19-S4), S43-S48. <https://doi.org/10.12669/pjms.36.COVID19-S4.2809>
- Osborne, Byrne, J. H., Massey, D. L., & Johnston, A. N. B. (2018). Use of online asynchronous discussion boards to engage students, enhance critical thinking, and foster staff-student/student-student collaboration: A mixed method study. *Nurse Education Today*, 70, 40-46. <https://doi.org/10.1016/j.nedt.2018.08.014>
- Palloff, R. M., & Pratt, K. (1999). *Building learning communities in cyberspace: Effective strategies for the online classroom*. Jossey-Bass.
- Ratschen, E., Shoesmith, E., Shahab, L., Silva, K., Kale, D., Toner, P., Reeve, C., & Mills, D. S. (2020). Human-animal relationships and interactions during the Covid-19 lockdown phase in the UK: Investigating links with mental health and loneliness. *PLoS One*, 15(9), e0239397–e0239397. <https://doi.org/10.1371/journal.pone.0239397>
- Rawal, D. M. (2023). Work-life balance among female school teachers [k-12] delivering online curriculum in Noida [India] during COVID: Empirical study. *Management in Education*, 37(1), 37-45. <https://doi.org/10.1177/0892020621994303>
- Rhim, H. C., & Han, H. (2020). Teaching online: Foundational concepts of online learning and practical guidelines. *Korean Journal of Medical Education*, 32(3), 175-183. <https://doi.org/10.3946/kjme.2020.171>
- Rogers, C. R., & Freiberg, H. J. (1994). *Freedom to learn* (3rd ed). Merrill/Macmillan.
- Shim, T. E., & Lee, S. Y. (2020). College students' experience of emergency remote teaching due to COVID-19. *Children and Youth Services Review*, 119, 105578. <https://doi.org/10.1016/j.chillyouth.2020.105578>
- Teo, S. S., & Williams, J. B. (2005, October 1). *A theoretical framework for effective online learning*. U21Global Working Paper No. 009/2005. Available at <https://ssrn.com/abstract=1614626> or <http://dx.doi.org/10.2139/ssrn.1614626>
- Tippetts, M., Brandley, A. T., Metro, J., King, M., Ogren, C., & Zick, C. D. (2022). Promoting persistence: The role of academic advisors. *Journal of College Student Retention: Research, Theory & Practice*, 24(2), 526-547. <https://doi.org/10.1177/1521025120924804>
- Vonderwell, S., Liang, X., & Alderman, K. (2007) Asynchronous discussions and assessment in online learning. *Journal of Research on Technology in Education*, 39(3), 309-328, DOI: [10.1080/15391523.2007.10782485](https://doi.org/10.1080/15391523.2007.10782485)
- Vygotsky, L. (1986). *Thought and language*. Massachusetts Institute of Technology Press.
- Walsh, B. A., Woodliff, T. A., Lucero, J., Harvey, S., Burnham, M. M., Bowser, T. L., Aguirre, M., & Zeh, D. W. (2021). Historically underrepresented graduate students' experiences during the COVID-19 pandemic. *Family Relations*, 70(4), 955-972. <https://doi.org/10.1111/fare.12574>