Lights, Camera, Action? A Reflection of Utilizing Web Cameras during Synchronous Learning in Teacher Education

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Abstract

The onset of the COVID-19 world pandemic caused an unanticipated transition from face-to-face to virtual teaching in higher education. This health crisis impacted teacher education professors and students alike, as education classes shifted from in-person instruction to synchronous digital instruction. However, a significant observation was made during this transition: some education students elected to turn-on their web cameras during synchronous instruction, while others chose to turn theirs off. Therefore, an issue in digital teacher education arises. What are the advantages of students turning on their web cameras? What are the disadvantages of expecting students to turn them on? To address this critical issue, two doctoral education students reflect on their personal experiences during the virtual learning shift. Implications are also shared on the benefits of student choice in teacher education. The reflections are concluded with a call to action for research needed to address this notable research gap in digital teacher education.

Keywords: digital teacher education, synchronous learning, web cameras

The Covid-19 world health pandemic forced a sudden shift to online instruction in teacher education. This unprecedented crisis caused teacher educators to rearrange their face-to-face instruction to digital overnight. With this adjustment, teacher educators had to transition their instruction to be either asynchronous, synchronous, or a hybrid format. Asynchronous digital learning refers to education that does not occur in the same place or same time. Teacher educators were expected to learn online resources to create pre-recorded lessons and digital curriculum materials, whereas education students accessed the pre-recorded lectures through video platforms and responded through email, discussion boards, and collaborative documents. Collaboration and learning did not take place within a specific time frame (Ajabshir, 2019).

The alternative digital instruction in teacher education is synchronous learning. Synchronous learning is known as the more traditional approach in virtual instruction. It is defined as the method of online learning that happens in real time. The teacher educator and the education students interact in a specific virtual place, through a specific digital platform, at a specific time. Methods include live video lectures, chat boxes, small break-out discussions, and interactive polls. An advantage of synchronous learning is class engagement and connection to the learning community (Wang & Wang, 2020). The professor and students can view each other and interact with the usage of web cameras installed on computers. However, during this sudden shift to online synchronous instruction, a significant observation occurred that was likely experienced by the reader: some students had their web cameras turned on during synchronous instruction, whereas others chose to turn theirs off. The purpose of this article is to reflect upon our own experiences as doctoral students; one who chose to utilize the web camera during synchronous learning and one who did not. We also reflect on the benefits of providing student choice. We are education doctoral students who experienced this phenomenon as we completed university courses during the sudden shift to online synchronous learning caused by Covid-19. This reflection was spurred by our observations while we were in classes. For example, we observed an inconsistent web camera usage that depended on the characteristics of the synchronous class. Smaller class sizes typically had more students access their web cameras, while larger classes had fewer. Time was also an important characteristic for webcam usage. At the start of COVID-19 virtual learning in March of 2020, more students had their web cameras on, but then more students started to turn cameras off as the semester progressed.

Therefore, we bring the issue of student web camera usage in digital teacher education to the discussion. We guided our reflections with the following questions: How does utilizing the

web camera during synchronous lessons influence learning experiences? What are the advantages of students turning on their web cameras? What are the disadvantages of expecting students to turn them on? Following a brief literature review, we have provided each of our reflections about student web camera usage in digital teacher education.

Literature Review

The debut of personal computers, along with the internet, has revolutionized higher education and dynamically affected nearly every aspect of teaching and learning. As advanced technological features available on personal computers and general internet access become more widespread, the teaching and learning community is arguably becoming more connected than ever. Professors, researchers, and students no longer need to rely on the static presence of the university library, classroom, or office to conduct their studies, but rather use the internet as a tool that places knowledge, literary resources, and opportunities for collaboration at their fingertips. The introduction of web-cameras into personal computers and corresponding video conferencing platforms (e.g., Zoom, WebEx, Skype) grant further access, allowing users to meet instantaneously regardless of location, setting, or time zone. As a result, distance education research inevitably indicates that instructional formats other than in-person classes are increasing (Lewis et al., 1999; Parsad & Jones, 2005) and synchronous web-camera based courses have the potential to become a powerful part of a university's teaching repertoire. By extension, the use of web-cameras has the potential to enrich student experiences, especially when used for student reflection (Jefferies & Hyde, 2009). Yet, during the COVID-19 pandemic, web-cameras and video-conferencing platforms unexpectedly became an integral part of overall university survival.

Planning for virtual higher education courses can be a daunting task. Due to COVID-19, faculty suddenly assumed the unexpected task of designing online courses. Higher Education faculty face many challenges in this endeavor, especially while ensuring that courses are not only engaging, but also interactive (Hampton & Pearce, 2016). Yet, professional development regarding online instruction may not be provided, leaving university faculty with little guidance on how to transition and provide quality instruction within web-based platforms. Furthermore, many instructors may face a pivotal choice between providing asynchronous or synchronous instruction. In this decision-making process, there are many implications to consider. Asynchronous classes facilitate anytime and anywhere teaching and learning (Martin, 2012), allowing for greater flexibility for users to collaborate and complete course assignments on their own schedule. Despite the flexibility, it is possible that opportunities for authentic teachable moments and on-the-spot networking are potentially lost. This prospective loss of connection could thereby contribute to a weak and disjointed teaching and learning community, especially when considering the positive benefits of social learning through technology (Swartzwelder et al., 2019). Contrastingly, synchronous classes allow for flexibility in teaching and learning locations but require a specific time where instructor and participants are together on a virtual platform or "classroom" (Martin, 2012). Although synchronous instruction requires additional technological preparation and a great deal of organization on behalf of the instructor, the practices innately embedded in synchronous instruction (e.g., chat features, web-cameras, breakout rooms, polls) have the potential to allow for more authentic conversation, greater collaboration, and deeper learning among participants.

More specifically, Martin et al. (2012) posit that synchronous courses allow for improved facilitation of discussion and interactions than asynchronous courses, with the instructor's

personal teaching style leading to greater engagement with the content. Furthermore, Verneil and Verge (2000) note that students are successful in online courses when they are able to be active participants. As such, the added layer of web-camera usage during synchronous classes has the potential to yield great benefits (O'Steen, 2007). By crafting quality synchronous classes that highlight web-camera features, instructors can design classes that simulate in-person course experiences as closely as possible on a virtual platform. The use of additional video-conferencing features, including text chats and breakout rooms, allow for further personalization of instruction and increased opportunities for collaboration among course participants. As such, Mandernach (2005) asserts that high levels of interaction in online courses such as these are pivotal for increasing engagement and ensuring overall student success.

Reflection of Turning Camera On

Context

During the onset of the COVID-19 and consequential shift to digital instruction, I was taking doctoral education classes at George Mason University in Fairfax, Virginia. My classes included education research methodology, education policy, and special education courses. It should be noted that class content, size, and instructional delivery varied among my courses. However, I elected to turn my web camera on for most of my digital synchronous classes. By choosing to turn on the webcam, I experienced short-term and project long-term benefits for my academic career. Here are four reasons why I chose to access my web camera and encourage other education students to do the same:

1. **It reduces a feeling of isolation for remote learners.**

As human beings, we thrive on social and human interaction. This is especially true for the education community. Social interaction is at the core of teaching and learning. It plays an

essential role as instructors and learners interact with each other within the classroom. During the interactive education process, learners organize their thoughts, reflect on their understanding, and analyze the gaps in their reasoning. This is often done through purposeful in-person learner collaboration (Wang & Wang, 2020).

However, with the quick onset of the Covid-19 world pandemic, we were quarantined from our professional and personal communities. Teacher educators and education students were forced to work remotely from home. Therefore, it is no secret: working remotely can be isolating. I experienced this firsthand during quarantine and for this reason found turning on my webcam to be beneficial. Electing to turn-on my webcam reduced the feeling of isolation, as I was able to see my colleagues and professors. It made me feel like I was part of a classroom community. An education community of real people and not just profile pictures, avatars, or blank screens. I felt more comfortable engaging in whole group virtual discussions, collaborating in small break-out sessions, and emailing others when I needed help. I had built relationships, albeit not perfect, around trust when choosing to utilize my webcam. They had seen me, the real me… and often my mischievous cat for an added bonus.

2. **You remain accountable as an active listener.**

Turning on the webcam encourages the learner to be more engaged in the synchronous class. You can't as easily hide multitasks such as making dinner, cleaning your house, or attending to another conversation. Should there be flexibility during synchronous instruction for household responsibilities? Yes, of course. Learning remotely from home presents its challenges, as many have family responsibilities. However, with the webcam turned on, I found myself to be less tempted by nonessential household multi-task activities. I was more likely to be an active listener to my education professors and peers.

As a current K-12 English Learner teacher, active listening has always been crucial to my curriculum. It is who I am as an educator and learner. Active listening involves whole body communication and refutes the notion that multitasking is possible when engaging to another's voice. As a result of active listening, respect can be shared between participants when engaging in a meaningful discourse. This is essential to establish trust before any rigorous discussions take place (Spataro & Bloch, 2018). Rigorous discussions can be scary as they involve risk. Would I feel comfortable partaking in a controversial education topic for class if I felt like my voice was not being heard? Probably not. Therefore, with the webcam turned on during a synchronous class, I am held accountable to be an active listener while I simultaneously assess the digital classroom to see if others are doing the same.

3. Facial expressions are visible.

In conjunction with being an active listener, webcams allow faces to be visible during synchronous classes. When faces are visible, facial expressions are also. In synchronous classes, the majority of the class have their microphones muted. This does not allow for all participants to "read" the room. By electing to turn the webcam on, others can see my facial expressions and gauge how I am feeling. This is beneficial because others, including the education professor, can evaluate my emotions and predict my understanding of the content. For example, an education professor has just asked a pivotal methodological question to the class, but there is no response. Do the students need more wait time? Are they confused about the question and need more clarity? Or, are they just not comfortable answering the question? Being able to see virtual learners' faces may reduce this confusion. Discussions become far more engaging and productive when facial expressions are visible (Spataro & Bloch, 2018).

4. It allows for the shift from virtual to in-person learning.

Eventually, we anticipate for this total virtual teacher education model to come to an end after the pandemic. How will teacher educators and education students handle this shift? Will I be able to develop meaningful relationships in-person? Will I even be able to recognize my peers? While virtual learning does not provide the same education community as in-person (Wang & Wang, 2020), webcams still allow for participants to become familiar with each other. When the webcams are turned on for breakout sessions, I have learned a lot about other students: their personal experience, research interests, and opinions about education. As a result, I will be far more comfortable collaborating with my peers when we return to in-person classes. I will be more likely to remember their names, personalities, and interests due to our interactions on the webcam. Rather than trying to recall a granulated profile picture, I will have a sense of who they actually are. Therefore, I anticipate that utilizing webcams will not only have short-term benefits, but also include long-term benefits for when this shift occurs.

Reflection of Turning Camera Off

Context

The shift from in-person learning to synchronous, virtual learning occurred so suddenly that I felt that the implications for human rights, respect for accommodations, and ethical considerations fell to the wayside. Whereas conversations surrounding these topics may have been prevalent in face-to-face learning, students were suddenly forced to become self-advocates for accommodations that they may not have been aware of, yet needed, on virtual platforms. While many higher education faculty automatically set a precedent where camera usage was required, some demonstrated empathy, respect, and understanding by allowing and supporting the student's choice.

During COVID-19, I and many of my peers became some of the aforementioned students facing the precedent set on the other side of the screen. Although we each may have had varied reasons for our choices, it quickly became clear that there is often a negative connotation associated with being the "black box" in a synchronous class. Yet, it is important to note that even among high-performing students, the hidden reasons to keep the web-camera off can be profound. As COVID-19 began to disrupt daily life and we began the inevitable shift to online learning, I was taking doctoral education classes at George Mason University in Fairfax, Virginia. My classes included literacy, education research methodology, and international education. Faculty responded to the crisis using online formats, varied teaching methods, and supplemental resources. During that period, several personal implications became increasingly evident. As such, I faced making a conscious choice to turn off my web camera during certain courses based on a variety of factors. While I continued to experience the benefits of fully participating in rigorous and rich class experiences through other modes (discussion, chat functions, polls, discussion board posts), I also connected with peers who shared similar concerns and turned their web cameras off while still maintaining high academic performance. Here are three reasons that I have elected to turn the web-camera off, either completely or during portions of class sessions, during COVID-19. I present them here to offer previously shrouded explanations, to draw attention to several important points for consideration, and to be an advocate on behalf of those who may benefit from the privacy afforded in this accommodation.

1. **Don't take a student at "face" value.**

Every student that enters a classroom, whether the "room" is virtual or not, has value. When given the choice, most higher education students are capable of responsibly deciding what we think will be the best option for our growth, learning, and safety as individuals. When it

comes to high-performing students completing a doctoral program, there are typically intentional and carefully considered reasons for why one might elect or not elect to use their web camera. Regardless of choice, student engagement may still be high. Krause and Coates (2008) describe student engagement as the "effort and commitment that students give to their learning" (p. 1). Although I chose to keep my web-camera off during particular classes, I found that my class engagement and connection to my classmates was strengthened through the use of other platform features which have demonstrated potential for increasing student engagement, including social media (Heiberger & Harper, 2008), online collaborative work (Thurmond & Wambach, 2004), online discussion boards (Kahn et al., 2017), group texts, and breakout rooms. As such, effort and commitment can be observed in a variety of ways; a web-camera is not the sole predictor of overall quality of engagement within the digital space. Furthermore, Roache and Muschette (2020) posit that instructional design during online learning should be student-centered and continuously reviewed. Simply allowing choice is one way that faculty can embed a student-centered approach, reduce stigma, and demonstrate empathy and respect for the value that a student brings to class, whether they choose to show their face or not. Indeed, the value of a student's contributions should be determined by the quality of their engagement, discussions, and work products, rather than their "face" value.

2. **It acknowledges intercultural competence.**

Our globalized learning community is a wondrous place, full of students and faculty from different cultures, backgrounds, and belief systems. As such, intercultural competence is a hot topic within education and is defined as "the ability to communicate effectively, and appropriately in intercultural situations based on one's intercultural knowledge, skills, and attitudes" (Deardorff, 2004, p. 194). It allows us to demonstrate empathy and understanding for

those who walk through this learning experience with us. Yet, even in a virtual format, intercultural competence needs to be placed at the forefront and demonstrated for all members of the teaching and learning community.

There are many implications for intercultural competence and virtual learning, yet some essential understandings have unfortunately been left behind since the beginning of the COVID-19 pandemic. For example, within the traditional in-person classroom setting, my observation was that educators were open to explore and understand the many cultural practices that their students bring to school with them each day. One such increasingly common exploration surrounds students' eye contact, including its use, meaning, and interpretation. For many cultures, eye contact denotes different meanings and can demonstrate either a sign of respect or disrespect depending upon the culture and setting in which it is used. This cultural understanding seems to have disintegrated in the shift to virtual learning. Forcing students to have a web-camera on may cause distress for students who are discouraged from excessive eye-contact in their home cultures and for those who believe eye-contact with instructors denotes disrespect. Eye-contact itself may be a postcolonial cultural practice that, when forced, has been shown to hinder relationships and cause misunderstanding among many cultural groups, including Native American (Povenmire-Kirk et al., 2015), Turkish (Korkut et al., 2018), and Korean (Lee & Carrasquillo, 2006) students. It is essential that educators proactively learn about, reflect upon, and incorporate these intercultural understandings within their virtual platforms. Furthermore, it is important to note that eye-contact is just one example of a plethora of ways that consideration of intercultural competence (or lack thereof) can affect the choice of web-camera usage. Teacher educators can proactively demonstrate respect and cultural sensitivity at an even greater level by

simply offering the choice of web-camera usage, and/or by asking students if they have a preference. They may be surprised by the cultural responses.

3. **It offers equity and privacy.**

The issues of equity and privacy are inevitable when inviting web-cameras into our private homes. There are several underlying and valid concerns stemming from these issues. One common concern is that many people simply are not comfortable showing their physical environment and other valuable material goods in their web-camera background. Yet, consideration is rarely given in conversation about sensitivities for students from inequitable backgrounds: those whose homes may not look like the typical American family home. It cannot be assumed that all students, even at the doctoral level, come from equitable backgrounds nor that all are comfortable showing differences, albeit indirectly, on a virtual platform. Furthermore, it cannot be assumed that all doctoral students are immune to the digital divide. COVID-19 has highlighted these issues of accessibility, access, and conducive learning environments (Du Preez & Le Grange, 2020), all of which can potentially impact learning quality during real-time web-camera usage. Indeed, we all have unique situations, living arrangements, and privacy preferences that deserve respect.

The sudden shift to virtual teaching and learning during COVID-19 has also reconfigured our definitions of "presence". Although we may initially think that having a camera on during class denotes "presence" in class, virtual presence often carries a different weight than in-person settings and has the potential to become a source of anxiety. For instance, rather than a student walking into a traditional classroom, sitting in rows or at a small group station and facing the instructor, a student is suddenly forced to face everyone in class, every minute of the class session, without knowing who is looking directly at them at any given time. The pressure placed

on individuals (including those with anxiety) surrounding such experiences can be debilitating. The uncertainty of being "on stage" via technology to numerous unknown individuals can be a hurtful trigger and one that has the potential to distract a student from instruction completely. Sun et al. (2012) affirm that when anxiety is attributed to technology, student performance and satisfaction can be negatively impacted. This can be especially true for students who are trauma survivors and may potentially be triggered by their own reflection (such as a front-facing web-camera), resulting in negative emotional responses, thoughts, and dissociative states (Borgmann et al., 2014). Furthermore, these negative impacts on learning can be amplified by the required projection of self-images to others in a seemingly uncontrolled setting. Although faculty are often empathetic and kind when it comes to student accommodations, it is exceedingly difficult for many students who have experienced anxiety or trauma to advocate for themselves in a COVID-19 environment. In the instance that a student is currently experiencing trauma or an abusive situation, finding a safe and private place to express their needs via phone-call or video conference with a professor to explain their situation can be an immensely challenging situation to navigate.

Furthermore, it is essential to acknowledge that many students may worry about their physical environment not only in terms of their material belongings, but also about the people, actions, and events that may make an appearance during web-camera usage. Unfortunately, the lack of control around privacy can be a strong trigger for many students who struggle with insecurities surrounding their home lives. Some students are fortunate to be able to choose healthy, positive, and supportive environments in every sense, while others experience an inequity that they may feel needs to be hidden or disguised. It is not uncommon for students to wonder about the potential opinions of their peers, including questions like "Will they think my

house is messy?", "What if my house looks different from others?", or "What if _____ comes into the room again?" before turning on their camera. Although many students may turn on their cameras without a second thought, for others, clicking "video" may be a concession that is made upon a foundation of worry. As such, Roy et al. (2020) offer a simple, yet meaningful reminder: during the pandemic, many students are enduring emotional distress. The same could be said for all within the teaching and learning community. Providing choice in web-camera usage is one small step to address this potential issue and support students.

Benefits of Student Choice in Teacher Education (Apathy vs. Autonomy)

It may come as no surprise that education students learn more when they are motivated. Student motivation is increased when students have control over not only the learning material, but also their learning environment. Yet, apathy remains a consistent challenge of student motivation. As such, learning environments should be inclusive of students deciding for themselves if they want to utilize their web cameras. By providing student choice, faculty can combat this ubiquitous challenge.

Furthermore, student choice for accessing web cameras combats apathy because it offers students autonomy. Hanover Research (2014) posits that student choice makes students active participants in their education, which results in increased participation in both in-person and virtual learning environments. When education students feel comfortable learning remotely from their homes, they will have increased participation. Contrastingly, forced web camera usage policies where students do not have autonomy over their virtual learning environment may lead to decreased participation. As such, if students are forced with web camera policies in teacher education, they may experience frustration and become disengaged with the curriculum, a factor that may lead to attrition. Instead, autonomy in learning is generally associated with a higher

sense of well-being, satisfaction in educational environments, and academic performance (Hanover, 2014).

By having autonomy over web camera usage, students can connect with their strengths while attending to their personal needs in their home environment. The choice of accessing web cameras gives students the power and control over their virtual learning environment, which may boost their intrinsic motivation. While this is a significant benefit of student choice in virtual teacher education, examples of other potential benefits include: (a) students engage in richer and deeper cognitive learning, (b) students' emotional and social needs are met, and (c) student learning is differentiated (Anderson, 2016). When considering the benefits, student choice is a powerful "best-practice" often embedded within in-person teacher education programs. Yet, it can also be easily incorporated into virtual synchronous learning through student choice in web camera usage.

Conclusion

In conclusion, the COVID-19 world pandemic created a sudden shift for all teacher education learning to occur online. As classes slowly transition back to in-person learning on campuses worldwide, a paradigm shift of virtual learning has occurred in teacher education; an increasing number of teacher education classes will be permanently offered in virtual settings. Therefore, it is imperative for more research to be conducted on the impact of student web camera usage for synchronous learning in higher education. There needs to be a call to action for researchers to analyze the effects of web camera usage during and after the COVID-19 world pandemic. In the meantime, there is no time to waste. Current education students enrolled in virtual distance learning need quality classes that support autonomy and equity. Teacher educators can craft supportive ways to build class engagement through synchronous learning,

with or without webcams turned on. Reflection of web camera usage is not only vital for education students, but equally important for teacher educators. In short, exercise caution; there are benefits for students turning their web camera on and off in online synchronous learning that extend far beyond their "face" value.

References

Ajabshir, Z. (2019). The effect of synchronous and asynchronous computer-mediated communication (CMC) on EFL learners' pragmatic competence. *Computers in Human Behavior*, *92*, 169–177. https://doi.org/10.1016/j.chb.2018.11.015

Anderson, M. (2016). *Learning to choose, choosing to learn: the key to student motivation & achievement.* ASCD.

Borgmann, E., Kleindienst, N., Vocks, S., & Dyer, A. S. (2014). Standardized mirror confrontation: Body-related emotions, cognitions and level of dissociation in patients with Posttraumatic Stress Disorder after childhood sexual abuse. *Borderline Personality Disorder and Emotion Dysregulation, 1*, 10. https://doi-org.mutex.gmu.edu/10.1186/2051-6673-1-10

Du Preez, P., & Le Grange, L. (2020). The COVID-19 pandemic, online teaching/learning, the digital divide and epistemological access. Unpublished paper.

Hampton, D., & Pearce, P. F. (2016). Student engagement in online nursing courses. *Nurse Educator, 41*(6), 294–298. https://doi:10.1097/NNE.0000000000000275

Hanover Research. (2014). Impact of student choice and personalized learning. http://www.gssaweb.org/wp-content/uploads/2015/04/Impact-of-Student-Choice-and-Personalized-Learning-1.pdf.

Heiberger, G., & Harper, R. (2008). Have you facebooked astin lately? using technology to increase student involvement. *New Directions for Student Services, 2008*(124), 19–35. https://doi.org/10.1002/ss.293

Jefferies, A., & Hyde, R. (2009). Listening to the learners' voices in HE: how do students reflect on their use of technology for learning? *Electronic Journal of E-Learning, 7*(2), 119–126.

Kahn, P., Everington, L., Kelm, K., Reid, I., & Watkins, F. (2017). Understanding student engagement in online learning environments: the role of reflexivity. *Educational Technology Research & Development, 65*(1), 203–218. https://doi-org.mutex.gmu.edu/10.1007/s11423-016-9484-z

Korkut, P., Dolmaci, M., & Karaca, B. (2018). A study on communication breakdowns: Sources of misunderstanding in a cross-cultural setting. *Eurasian Journal of Educational Research (EJER), 78*, 139–158. https://doi-org.mutex.gmu.edu/10.14689/ejer.2018.78.7

Krause, K. L., & Coates, H. (2008). Students' engagement in first-year university. *Assessment and Evaluation in Higher Education, 33*(5), 493-505.

Lee, K. S., & Carrasquillo, A. (2006). Korean College Students in United States: Perceptions of Professors and Students. *College Student Journal, 40*(2), 442–456.

Martin, F., Parker, M. A., & Deale, D. F. (2012). Examining interactivity in synchronous virtual classrooms. *International Review of Research in Open & Distance Learning, 13*(3), 227–261. https://doi-org.mutex.gmu.edu/10.19173/irrodl.v13i3.1174

O'Steen, B. (2007). Expanding the learning environment: videoconferencing to open

classroom doors? The experiences of videoconference participants in the US and New Zealand. *International Journal of Learning*, *13*(12), 153–161.

Povenmire-Kirk, T. C., Bethune, L. K., Alverson, C. Y., & Gutmann Kahn, L. (2015). A journey, not a destination. *Teaching Exceptional Children, 47*(6), 319–328. https://doi-org.mutex.gmu.edu/10.1177/0040059915587679

Roache, D., Rowe-Holder, D., & Muschette, R. (2020). Transitioning to online distance learning in the COVID-19 era: A call for skilled leadership in Higher Education Institutions (HEIs). *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM)), 48*(1), 103–110.

Roy, D., Tripathy, S., Kar, S. K., Sharma, N., Verma, S. K., & Kaushal, V. (2020). Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. *Asian Journal of Psychiatry, 51*, 1–8. https://doi.org/10.1016/j.ajp.2020.102083

Spataro, S., & Bloch, J. (2018). "Can you repeat that?" Teaching active listening in management education. *Journal of Management Education*, *42*(2), 168–198. https://doi.org/10.1177/1052562917748696

Sun, P., Tsai, R. J., Finger, G., Chen, Y., & Yeh, D. (2008). What drives a successful eLearning? An empirical investigation of critical factors influencing learner satisfaction. *Computers & Education, 50*, 1183–1202. https://doi.org/10.1016/j.compedu.2006.11.007

Swartzwelder, K., Murphy, J., & Murphy, G. (2019). The impact of text-based and video discussions on student engagement and interactivity in an online course. *Journal of Educators Online, 16*(1), 1–7. https://doi-org.mutex.gmu.edu/10.9743/jeo.2019.16.1.13

Thurmond, V., & Wambach, K. (2004). Understanding interactions in distance education: A

review of the literature. *International Journal of Instructional Technology and Distance Learning, 1*(1), 9–33.

Wang, J. & Wang, Y. (2020). Compare synchronous and asynchronous online instruction for science teacher preparation, *Journal of Science Teacher Education*, *8*(1), 1–21. https://doi.org/10.1080/1046560X.2020.1817652