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Exploring the Impact of Online Discussion Forums in an EdD Program

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<https://www.williamwoods.edu/academics/mje>Kelly M. Torres¹ and Aubrey Satti²**Abstract**

This paper seeks to explore the potential impact of online discussion forums in an online EdD program. Using survey data, this study investigated the perceptions and experiences of students regarding the effectiveness and value of online discussion forums in higher education. This study additionally explored the types of activities students prefer for weekly class interactions. A comprehensive literature review and theoretical framework based on the constructivist approach to higher education learning are presented to frame the study. Findings indicate that students value the peer and faculty interactions of discussion forums and prefer that discussions take place every other week. Participant feedback indicated the number of required posts as being the primary challenge to discussion interactions in the online setting.

Keywords

online discussion forums; online EdD Programs; discussion forum effectiveness

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Introduction

Online discussions have become increasingly prevalent in higher education as a means of facilitating student engagement and collaborative learning. Numerous studies have explored the effectiveness of online discussions in higher education settings (Aljawarneh, 2020; Cole et al., 2019; Wei & Chou, 2020) and the findings consistently highlight their positive impact on student learning outcomes (Goggins & Xing, 2016; Lin & Gao, 2020; Paulsen & McCormick, 2020). One key benefit of online discussions is their ability to promote active participation and equal opportunities for all students to share their ideas, ask questions, and engage in meaningful dialogue. Ragan et al. (2020) indicated that increased participation fosters a sense of ownership over the learning process and encourages students to take responsibility for their individual learning.

Furthermore, online discussions facilitate the exchange of diverse perspectives and ideas. Students from diverse backgrounds and with varying experiences can come together in a virtual space to share their viewpoints, challenge assumptions, and engage in critical thinking. Wei and Chou (2020) found that this exposure to diverse perspectives enhances students' comprehension of complex topics and helps them develop a more comprehensive and nuanced understanding of the subject matter. This study seeks to obtain student feedback regarding the value and benefits of discussion forums in the online classroom as well as consider potential alternatives to the traditional discussion format.

Objectives

Engaging in online discussions equips students with the necessary skills to express themselves articulately in a digital environment, navigate and critically evaluate online information, and engage in respectful and constructive online dialogues. While online discussions offer numerous benefits, it is important to consider the design and facilitation of these discussions to ensure their effectiveness. Clear guidelines, strong instructor presence, and appropriate assessment strategies are essential to maintain focus and depth in the discussions (Martin et al., 2019). Additionally, fostering a supportive and inclusive online learning community is crucial to promote meaningful engagement and active participation.

Online discussions can be valuable for fostering communication and exchanging ideas, but they also come with several disadvantages. One of the most prominent drawbacks is the potential for miscommunication and misunderstandings (Goh & Wen, 2020). Without the benefit of non-verbal cues and tone, participants may misinterpret posts, leading to conflicts and breakdowns in communication. Additionally, the lack of personal connection in online discussions can result in participants feeling disconnected or disengaged from the conversation, leading to less meaningful interactions (Perrotta & Bohan, 2020). Moreover, the sheer volume of information and messages in online discussions can be overwhelming for larger classes making it challenging for participants to keep track of conversations or contribute effectively. Finally, Turnbull et al. (2021) underscored the importance of how technical issues and connectivity problems can disrupt the flow of discussion, leading to frustration and hindering the effectiveness of the interaction. Therefore, this study investigated the following research questions: 1. What are the perceptions and experiences

of students regarding the effectiveness and value of online discussion forums in higher education? and 2. What types of activities do students prefer for weekly class interactions? Survey data were utilized to explore student feedback in a mixed-methods format.

Theoretical Framework

Constructivism plays a pivotal role in higher education due to its emphasis on active learning, critical thinking, and the development of lifelong skills. As a learning theory, constructivism recognizes that students construct knowledge and meaning through their own experiences and interactions with the world. Dewey (1938) shared that learning is considered a social activity that is completed collaboratively in which individuals interact with each other rather than an abstract concept. Further, Vygotsky (1978) believed that community has a vital role in the process of creating meaning. In higher education, where students are transitioning into independent thinkers and professionals, constructivism fosters an environment that promotes engagement and self-directed learning. By encouraging active learning, constructivism promotes student-centered classrooms that value inquiry and exploration. Instead of passively receiving information, students are actively involved in constructing their knowledge by engaging in discussions, projects, and hands-on activities. This approach cultivates a deeper understanding of the subject matter as students grapple with real-world problems and seek solutions (Lam et al., 2021). When applied to online interactions, constructivism takes on a unique dimension, leveraging the digital landscape to facilitate collaborative learning and knowledge construction.

Online interactions offer a wealth of opportunities for learners to engage with diverse perspectives, cultures, and experiences from around the globe, enriching their learning journey. Discussion forums also enhance students' abilities to apply theoretical concepts to practical situations, preparing them for the complexities of their future careers (Han & Ellis, 2019). Additionally, the asynchronous nature of online discussions allows learners to reflect on their ideas before sharing them, fostering deeper understanding and thoughtful contributions. To optimize online constructivist interactions, Archbault et al. (2022) recommended that educators must design well-structured learning environments that promote active participation, encourage collaboration, and provide timely feedback. As a result, the purpose of this study was to focus on gaining insight into online students' perceptions of asynchronous discussion forums.

Methods

This mixed-methods study was conducted at a private, not-for-profit university that offers both fully online and on-ground programs. However, only online EdD students partook in this study to provide program faculty further insight into curriculum design approaches. Survey methodology was used to gain a better understanding of students' perceptions of asynchronous online discussions. Specifically, survey data were collected from 37 participants who completed both forced choice and open-ended items. The survey response rate for this study was 61%.

We developed survey items that focused on students' perceptions of the effectiveness, benefits, and disadvantages associated with asynchronous discussion forms and potential alternative

activities that could be provided instead of weekly discussion interactions. Forced choice items were analyzed using descriptive statistics [e.g., How do you prefer to receive feedback or evaluation on your contributions to the discussion board (select all that apply); What challenges or difficulties have you encountered when using the discussion board (select all that apply); What benefits do you perceive from participating in discussions on the discussion board? (select all that apply)]. Open-ended items were analyzed using manual coding and identifying and summarizing the central themes and patterns for each survey item (e.g., In a seven-week course, how often do you prefer to have discussion boards included as assignments; What alternatives to discussion forums do you feel would contribute more to your learning). This format of survey allowed for both qualitative and quantitative responses and the opportunity to hear the voice of the participants as well as to determine overall satisfaction rates and preferences.

Findings

While feedback in some areas included diversity in perspectives and experiences, the findings of this mixed-methods study are broken down into the following themes: effectiveness of online discussions, benefits associated with traditional discussion forums, challenges associated with traditional discussion forums, and discussion forum feedback and alternatives. In addition to the open-ended responses received, the statistical results also supported these themes, as further described below.

Effectiveness of Online Discussions

Many online programs incorporate discussion forums to encourage connections among students and to check for comprehension of course objectives. Therefore, participants were asked to rate their perceptions of the effectiveness of online discussions and interactions and how they contribute to meaningful learning. On a scale from 1 to 10 (1 = not effective to 10 = very effective), participants rated discussion forums as being mostly effective with an average rating of 7 among participant responses for this item. When participants were questioned about their comfort level of interacting in discussions, the overall majority rated this item at 8.5% out of 10 (1 = very uncomfortable, 10 = very comfortable) demonstrating that they are relatively comfortable completing these types of online assignments. For example, Respondent 2 shared that discussion forums are a “welcome break from the larger assignments.” Additionally, Respondent 6 shared that, “I believe that the discussion board supports my learning because it forces me to take the content that I have learned and reapply it in my own words.” Further, Respondent 12 explained that “From my perspective, the discussion board is important to help us broaden our ideas through the critical analysis with peers. It provides an additional layer to understanding topics on a local, national, and international level.” Another participant, Respondent 30 shared, “I look forward to the discussion posts more than the assignments. I feel that I engage well with them, and they help me to feel connected in an online modality.” These results indicate that students find online discussion forums to be effective and valuable.

Benefits Associated with Traditional Discussion Forums

Interactions in the online class provide many benefits that include expanding student knowledge to building classroom community. For the survey item focused on discussion forum benefits, participants could select as many choices as they perceived were beneficial aspects of interacting on discussion boards (Table 1). When participants were questioned about how they perceived the benefits of their discussion forum assignments, they responded positively, indicating that these activities provide academic gains through peer-centered learning. As outlined in Table 1, over half or almost half of respondents also perceived discussion forums as contributing to their engagement in critical thinking and analysis, developing their writing communication skills, increasing their rapport, and learning from their instructor, and building a sense of classroom community. Although participants valued their interactions in discussion forums, the overall majority ($n=30$) recommended a preference for discussion assignments every other week in online courses. They also rated the audio and video discussions as being enjoyable with an overall participant rating of 8 out of 10.

Table 1

Benefits of Discussion Forums

Perceived Benefits	Frequency	Percent
Enhancing understanding of the course material	21	57
Engaging in critical thinking and analysis	20	54
Learning from peers' perspectives and experiences	33	89
Developing written communication skills	19	51
Building a sense of community in the class	20	54
Building increased rapport and learning from my instructor	19	51

In the open-response section of the survey, participants provided feedback on what they enjoyed most about traditional discussions. Students noted the value of using discussions to better understand class concepts. For example, Respondent 2 shared, "Response to the reading materials to help understand it all together." Respondent 19 shared, "I think all discussions are unique and have their own strength that encourages collaboration between education and different forms of technology." Notably, students often responded with their preference for "real" or applicable discussions, providing feedback noting enjoyment of "the [discussions] that we can apply to real life" (Respondent 18). Further, participants expressed the benefits of seeing their peers' responses, noting, "Being able to learn how my peers understood the material is very helpful as you get different perspectives" (Respondent 11). Responses indicate the value in practical application as well as peer feedback, and product creation in traditional discussion forums.

Challenges Associated with Traditional Discussion Forums

Although most participants outlined several benefits of engaging in online discussions, they also voiced challenges associated with these assignments as well. For instance, participants shared that the biggest challenges were the number of required posts and limited robust participation from other students (Table 2). Other reasons for discussion forum challenges resulted from the time required to complete these assignments and feelings of uncertainty in the assignment directions. However, nine participants did not experience any challenges with completing discussion forum assignments in their online courses. Like the item focused on discussion forum benefits, participants could select as many item choices as they perceived as appropriate.

Table 2

Challenges of Discussion Forums

Challenges Experienced	Frequency	Percent
Lack of clear instructions or guidelines	9	24
Limited participation from other students	17	46
Difficulty expressing thoughts or ideas in writing	5	14
Technical issues or platform usability problems	3	8
Overwhelming due to the amount of required posts	18	49
Overwhelming due to the amount of time required	11	28
I have not experienced any challenges or difficulties	9	24

While the benefits of discussion forums were apparent in the responses, so were comments regarding a dislike of traditional discussions. Participants conveyed the lack of meaningful engagement when students focus on meeting the reply requirement. For example, Respondent 13 voiced, “I feel that discussion boards do not enhance the learning experience as many times they are forced to meet the requirements.” Respondent 33 shared that “Not all students give meaningful responses. I feel forced to find 3 peers to respond to even though I may not necessarily have anything meaningful to add to their posts.” Respondent 32 replied, “sometime[s] it just feels like another check on the checklist.” Additionally, Respondent 29 explained that “Requiring responding to maybe one or two peers as sometimes it gets redundant or difficult to find something new to add.” These responses indicate the missing component of engagement that is the general goal with online discussions and a factor that instructors and course designers should focus on when creating discussion prompts.

Surprisingly, participants frequently indicated their dislike of or struggles with discussion forums outside of the university’s standard learning management system. Students often found them to be confusing and more difficult to navigate. For example, Respondent 35 noted, “I am very busy with work, family, etc. I prefer not to be forced to manage more than one platform for the same task.”

Respondent 3 explained, “No, it is an added step and log in to have to keep track of.” Additionally, Respondent 6 replied, “No, it is too difficult to navigate through Canvas, let alone additional resources.” Further, Respondent 5 shared, “I only used it for one or two of my classes. It was kind of frustrating for me since I was not used to using those.” Collectively, the survey results indicate negative impressions towards utilizing outside sources denoting that students prefer to utilize platforms they are familiar with and that do not require additional logins or experience in navigating.

However, not all participants felt the same. For example, of the 37 responses to the open-ended items that were specific to using platforms outside of the university’s learning management system, eight responded a like or appreciation of these additional options. Responses such as “Yes, they are fun and engaging” (Respondent 32) and “Yes! Love them all” (Respondent 16) indicated that some students prefer using outside platforms and enjoy the opportunity to work outside of the traditional format. An additional three participants expressed both a like and dislike for outside platforms. Respondent 9 shared, “Occasionally, yes. It provides more variety and interest too.” Another participant’s mixed feedback revealed,

While it is a good learning opportunity to use different platforms, creating free accounts is a hassle. One course can focus on using different platforms, but other than that, it is a little distracting, and the focus should be on the content, not about using different platforms. (Respondent 10)

Thus, results indicate mixed feedback regarding students’ perceptions of challenges with discussion forums, primarily due to busy work and family schedules and a personal preference for discussion-based learning. Because of the value of exposing students to a variety of platforms, we will discuss considerations for how to manage student concerns with innovative technology and how to best integrate these learning opportunities into the standard online classroom.

Discussion Forum Feedback and Alternatives

Participants disclosed that discussions are effective when there is strong instructor and student presence, yet too much emphasis on peer responses and points for these assignments can be frustrating. Feedback from discussions was perceived as valuable from both peer (45% of participants) and faculty interactions (84%) and was considered more meaningful than the graded rubric criteria (41%). This feedback item allowed students to select all that applied to their preference in discussion forum feedback and evaluation. When further questioned about what type of activities to include if discussions were removed with alternative assignments, overall participants ($n=33$) were unsure of possible alternative formats. Further, most participants noted they would not interact with their peers, if it were not for standard discussions. For example, one participant shared, “I don’t see another practical way” (Respondent 37) and another responded “It would be hard. This [traditional discussions] really helps” (Respondent 30). When asked if they would interact outside of formal discussions, Respondent 28 replied, “I probably would not. We are all busy professionals, so the discussions support that connection.” Respondent 22 shared, “If I were in a class without standard discussion forums I probably would not reach out to peers unless

I needed help or was otherwise assigned to.” Additionally, several participants questioned the need for discussion-based learning in the online format. One student pondered, “For a program of mostly working adults, I wonder (and maybe you have data on this) how much peer engagement or interaction or interaction is desired by your student body” (Respondent 26). Another shared,

Personally, I haven’t felt a need really to utilize discussion boards at this level of my education. I think it’s most useful for undergrad, masters, and maybe the first year of the doctoral program. I wouldn’t typically reach out to my peers if I don’t believe it is necessary. (Respondent 19)

Responses indicate that while most students find value in peer interactions, they also find it challenging to connect with peers outside of the traditional discussion format.

However, when further prompted about specific interaction tools, participants’ responses resulted in the themes of group projects and innovative technologies (e.g., blogs, social media, collaborative tools). For example, Respondent 3 shared, “I love when we have the discussion boards where we get to create a presentation. We can be creative and learn. I also really like the discussions that require us to find an article connected to the module content.” Another participant shared,

I really enjoyed using Perusall where I can make notes and comments as I was reading and even comment on what other peers or even the professor was talking about. It really led to insightful discussions and made for deeper understanding of the reading.
(Respondent 22)

Additionally, participants recommended the use of social media, in place of traditional discussion forums.

There were also four participants who thought that having live sessions would be valuable. For example, Respondent 15 shared, “I feel [discussions] are a great way to enhance the effectiveness, but I would also like moments of real-life activity on Zoom.” Additionally, Respondent 17 explained, “Live discussion board meetings should be arranged even if it is only one per term.”

While the feedback is mixed in some areas such as the effectiveness of alternative discussions and the benefits of using outside platforms, students expressed a general understanding of the role and uses of traditional discussions in the online classroom. There was a clear range of preferences for these benefits though. The following discussion will explore the potential to provide innovative discussion formats for students, allowing engagement and faculty-to-peer and peer-to-peer interactions and engagement in the online classroom.

Discussion

Incorporating discussion forums in online classes is a pivotal aspect of modern education, offering numerous benefits that enhance the learning experience. These virtual platforms serve as a hub for meaningful interactions and knowledge exchange among students and faculty (Han & Ellis, 2019;

Vlachopoulos & Makri, 2019). One of the primary advantages of online interactions is the promotion of active learning. Through asynchronous discussions, students are encouraged to engage in thoughtful reflections and respond to their peers, fostering deeper comprehension and critical thinking skills. Survey responses indicated the importance of keeping discussions innovative. For example, one student shared, “Variety in each class is important to keeping these fresh and valuable--- not just the type- although varying the types of discussions in courses can help too” (Respondent 9). This same respondent went on to share, “That's the issue- forums are very useful, they just need more creativity and variety to keep them interesting.” Additionally, Respondent 23 provided feedback that, “There needs to be more variety, possibly creating a discussion board that is designed like a blog, game or survey, or jam boards or murio.” Thus, instructors, subject matter experts, and instructional designers should partner together to keep course content relevant and engaging.

Utilizing student feedback, such as end-of-course evaluations as well as reflection-based assignments are vital in considering student preferences and experiences with course materials. Further, faculty professional development focused on practical applications of technology are useful in assuring the course developers and instructors are aware of current engagement tools and learning opportunities for students. Additionally, as indicated by student feedback regarding the use of outside platforms, course developers and specifically instructional designers should be mindful of how these platforms are integrated into the current learning management system to ensure a positive user learning experience. Moreover, instructors should be proactive in providing resources and visual examples for how to use new platforms and should provide individualized troubleshooting for students struggling to use the new technological tool.

The flexibility of online discussion forums is another key advantage. Learners can participate at their convenience, accommodating their busy schedules and time zone differences. This asynchronous nature can also encourage more thoughtful responses, giving students time to research and formulate their ideas effectively (Gronseth & Bauder, 2022). Participants frequently voiced their hesitancy in live discussions due to it being “difficult to find time due to work and other commitments” (Respondent 10). Therefore, the traditional format of asynchronous discussions appears to work best for most students. If faculty wanted to diversify the discussion experiences, results indicate a preference for class discussions every other week in the course. Course developers may also want to consider assigning original posts during the first week and then reply posts the following week and utilizing this back-and-forth process throughout the course. This format allows for weekly discussions and the opportunity for student engagement but does lessen the time demands for students. For example, one participant shared,

I understand the rationale for discussion board posts, but more and more, it feels like busy work and while instructors do a great job of making them meaningful and provide a lot of useful feedback, the DB post is not adding to increased knowledge of understanding. Instead, it's detracting from my other work and my ability to dig into assignments in more depth. (Respondent 26)

Therefore, the two-week discussion format focused on one topic, would allow students to explore a deeper level of the material and move beyond rote discussion responses to peers and instead use a more advanced approach in discussion engagement with course concepts.

For faculty, discussion forums offer valuable insights into students' understanding and progress. By monitoring the quality and depth of students' responses, faculty can gauge a learner's grasp of the course material and identify areas that require further clarification or support. Further, faculty interaction and feedback on the discussion forums are paramount. One participant shared that,

The quality of the discussion board largely depends on everyone's participation. When the instructor has a strong presence in the discussion board, it really helps me learn the course materials deeply. When the instructor or the teaching assistant provides minimal and rather generic comments and questions, it is disappointing and not helpful. However, I can still learn a lot if peers' posts are thoughtful.
(Respondent 10)

In addition to engagement during the discussion, feedback on the discussion interactions is also important. As Respondent 10 further explained, "I think whatever [discussion] alternatives, the program should make sure that students receive meaningful feedback." Graded rubrics and comments summarizing the student's contributions as well as relating the discussion to resources or other assignments in the class provide an additional meaningful connection with the student, after the discussion has ended.

Additionally, course developers should be intentional in their design of discussion questions and utilize a format that allows students to make clear connections to the course materials. Respondent 14 shared that, "More often times than not I don't see the tie-in to that week's lesson." To maximize the benefits of online discussion forums, it is vital that students can visualize the association between concepts, assignments, and resources in the course. Therefore, instructors should be purposeful in not only designing effective discussion questions but also demonstrating a clear link from materials, other assignments, and discussion prompts.

Although participants provided limited alternatives to discussion forum activities, collaborative platforms can be used to enable students to work together on shared documents in real-time. Faculty can create collaborative assignments or discussions, allowing students to contribute simultaneously and see each other's input, facilitating active collaboration. Utilizing private or closed social media groups can further create a sense of community within a class (Manca, 2020). Gamification elements can also be incorporated into the learning process through tools to encourage active learning, problem-solving, and friendly competition among students. For example, Yu et al. (2023) discovered gamification elements positively impact learner gains in online environments. Course developers may consider the opportunity for virtual scavenger hunts, student debate formats, and the inclusion of game-based platforms to create a more innovative and engaging learning environment for students.

Conclusion and Scholarly Significance

The inclusion of discussion forums holds significant scholarly importance as they foster a dynamic and interactive learning environment that complements traditional teaching methods. These online platforms provide students with an opportunity to engage in thoughtful, peer-to-peer exchanges beyond the constraints of the classroom. One of the key scholarly benefits of incorporating discussion forums is the enhancement of critical thinking skills (Giacumo & Savenye, 2019). Through active participation in online discussions, students are exposed to diverse perspectives and are encouraged to analyze, evaluate, and respond to their peers' ideas, thus promoting deeper understanding and the ability to think critically about the subject matter. Additionally, Alghasab et al. (2019) discussed the utility of discussion forums in promoting collaborative learning, allowing students to co-construct knowledge collectively.

As students share their thoughts, insights, and resources, they contribute to a rich pool of information that benefits the entire class. This collaborative approach stimulates intellectual curiosity and encourages students to take an active role in their learning process, ultimately leading to greater retention and application of the material. Furthermore, discussion forums provide a platform for faculty to assess students' understanding and progress. By observing the quality of students' contributions, faculty gain insights into areas where additional support or clarification may be necessary, allowing for timely intervention to enhance learning outcomes. Still, there are many other online tools available that can achieve these same results. As a result, faculty should carefully consider the purpose of the assignment and the best instructional approach to achieving it.

References

- Alghasab, M., Hardman, J., & Handley, Z. (2019). Teacher-student interaction on wikis: Fostering collaborative learning and writing. *Learning, Culture, and Social Interaction*, 21, 10-20. <https://doi.org/10.1016/j.lcsi.2018.12.002>
- Aljawarneh, S. A. (2020). Reviewing and exploring innovative ubiquitous learning tools in higher education. *Journal of Computing in Higher Education*, 32, 57-73. <https://doi.org/10.1007/s12528-019-09207-0>
- Archbault, L., Leary, H., Rice, K. (2022). Pillars of online pedagogy: A framework for teaching in online learning environments. *Educational Psychologist*, 3, 178-191. <https://doi.org/10.1080/00461520.2022.2051513>
- Cole, A. W., Lennon, L., & Weber, N. L. (2019). Student perceptions of online active learning practices and online learning climate predict online course engagement. *Interactive Learning Environments*, 29(5), 866-880. <https://doi.org/10.1080/10494820.2019.1619593>
- Dewey, J. (1938). *Experience and education*. Collier Books.
- Giacumo, L. A., & Savenye, W. (2019). Asynchronous discussion forum design to support cognition: effects of rubrics and instructor prompts on learner's critical thinking, achievement, and satisfaction. *Educational Technology Research and Development*, 68, 37-66. <https://doi.org/10.1007/s11423-019-09664-5>
- Goggins, S., & Wing, W. (2016). Building models explaining student participation behavior in asynchronous online discussion. *Computers & Education*, 94, 241-251. <https://doi.org/10.1016/j.compedu.2015.11.002>
- Goh, E., & Wen, J. (2019). Applying the technology acceptance model to understand hospitality management students' intentions to use electronic discussion boards as a learning tool. *Journal of Teaching in Travel & Tourism*, 21(2), 142-154. <https://doi.org/10.1080/15313220.2020.1768621>
- Gronseth, S. L., & Bauder, B. K. (2022). A synergistic framework for curriculum flexibility in online collaborative learning. *Distance Education*, 43(2), 221-238. <https://doi.org/10.1080/01587919.2022.2064822>
- Han, F., & Ellis, R. A. (2019). Identifying consistent patterns of quality learning discussions in blended learning. *The Internet and Higher Education*, 40, 12-19. <https://doi.org/10.1016/j.iheduc.2018.09.002>
- Lam, P. L., Hilary, K. Y., Tse, A. H., Lu, M., & Wong, B. Y. (2021). eLearning technology and the advancement of practical constructivist pedagogies: Illustrations from classroom observations. *Education and Information Technologies*, 26, 89- 101. <https://doi.org/10.1007/s10639-020-10245-w>
- Lin, X., & Gao, L. (2020). Students' sense of community and perspectives of taking synchronous and asynchronous online learning. *Asian Journal of Distance Education*, 15(1), 169-179. <https://www.asianjde.com/ojs/index.php/AsianJDE/article/view/448>
- Manca, S. (2020). Snapping, pinning, liking, or texting: Investigating social media in higher education beyond Facebook. *The Internet of Higher Education*, 44. <https://doi.org/10.1016/j.iheduc.2019.100707>
- Martin, F., Ritzhaupt, A., Kumar, S., & Budhrani, K. (2019). Award-winning faculty online teaching practices: Course design, assessment and evaluation, and facilitation. *The*

- Internet and Higher Education*, 42, 34-43. <https://doi.org/10.1016/j.iheduc.2019.04.001>
- Paulsen, J., McCormick, A. (2020). Reassessing disparities in online learner student engagement in higher education. *Educational Research*, 49(1).
<https://doi.org/10.3102/0013189X19898690>
- Perrotta, K. A., & Bohan, C. H. (2020). A reflective study of online faculty teaching experiences in higher education. *Journal of Effective Teaching in Higher Education*, 3(1).
<https://doi.org/10.36021/jethe.v3i1.9>
- Turnbull, D., Chugh, R., & Luck, J. (2021). Transitioning to E-Learning during the COVID-19 pandemic: How have higher education institutions responded to the challenge? *Education and Information Technologies*, 26, 6401-6419. <https://doi.org/10.1007/s10639-021-10633-w>
- Vlachopoulos, D., & Makri, A. (2019). Online communication and interaction in distance higher education: A framework study of good practice. *International Review of Education*, 65, 605-632. <https://doi.org/10.1007/s11159-019-09792-3>
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.
- Wei, H. C., & C. Chou (2020). Online learning performance and satisfaction: Do perceptions and readiness matter? *Distance Education*, 41(1), 48-69.
<https://doi.org/10.1080/01587919.2020.1724768>
- Yu, Q., Yu, K., & Li, B. (2023). Can gamification enhance online learning? Evidence from a meta-analysis. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-023-11977-1>