Instructional Design Considerations to Foster Student Engagement in Higher Education

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Introduction

As higher education institutions have been forced to pivot to online learning in 2020, discussion on student engagement in virtual learning environments is warranted. Much research exists on the topic of virtual learning environments, and utilizing research-based practices can enable instructors, administrators, instructional designers, and educational technology consultants to build virtual learning environments that are learner-centered (Bransford 133) and focused on the academic, behavioral, cognitive, and affective engagement of the student.

Student engagement is central to student success and satisfaction, and regular student engagement is a fundamental part of the learning process (Lang 31). Vygotsky's theory of learning emphasizes the role of the social and cultural influences on our thoughts and language. The concept Vygotsky created called ZPD, the "zone of proximal development," explains that learning takes place when learners solve problems beyond their actual developmental level (but within their level of potential development) under instructor guidance or in collaboration with more capable peers (Barak 285). Instructors should support the learner not through the hand holding of behaviorism, but in finding the ZPD (also known as scaffolding) and provide the tools needed for the student to advance and eventually independently achieve the intended goal (Harasim 70). This can be described as a guided learning experience, and can enable students who are not self-sufficient learners to be able to transfer course content in a meaningful way.

Research provides evidence that students take control of their own learning through active learning (Bransford 12, 67). Active learning means encouraging students to participate and act, such as conducting a real experiment or producing an artifact, rather than learn passively, such as listening to a lecture or reading a book (Harasim 71). This is also called metacognition and it happens on the highest tier of Bloom's Taxonomy (Bloom) when students produce new or original

work. In order for students to reach this higher-order level of thinking, students must participate in active learning. One way students can use metacognition and active learning is engagement - with the course materials, with the instructor, and with their peers.

The following provides a literature review of research-based best practices and recommendations for student engagement with course materials, student engagement with instructors, and student engagement with peers.

Engagement with Materials

Framing online instruction to center on student engagement (Karchmer-Kline) can be achieved through the consideration of how the students engage with the course materials. The link between online course architecture and student engagement is inextricable. Clear course design along with access to materials is a non-negotiable step towards student engagement. Course content organized into a time-based navigational structure that students can navigate easily creates a foundational course framework through which students can engage (Berkow). A time-based navigational structure with consistent due dates (for example, assignments are always due on Sunday nights at 11:59pm) can help students know inherently how to pace themselves through course content.

Module Overviews. Research tells us that transparent, well written, student-centered learning objectives are a necessary component of a successful online learning environment (Acevedo 8). Using a learning management system, online learning environments can be designed to provide module overviews that highlight the learning objectives and goals for that specific module and provide a transparent rationale for how the content aligns with the learning objectives for the entire course. Module overviews are also an opportunity to utilize the principles of Universal Design for Learning (UDL) by providing options for how an instructor might deliver the

overview. The instructor could use text, video, audio, images, digital tools, or a combination to let students know what to expect in the coming module or scaffolding on how to make connections with the learning objectives or other course content.

Content Delivery. Prioritization of materials is essential to maintain student engagement. If an instructor provides too many reading choices, research shows that students are less likely to do any reading and will therefore not be prepared for discussions (Ladd). Choosing instead a carefully curated list of mandatory preparations (for example, a short video, one article, and one contemporary example) and including additional optional resources will make students more likely to come to a discussion prepared (Ladd).

Module content can be delivered in various ways that best serve the needs of the students. If video lectures are used, instructors should carefully consider how they are implemented. Researchers at MIT performed a large-scale study that included data from 6.9 million video watching sessions, and they learned about what types of videos work best for student engagement. One of their top recommendations was that videos should be 6 minutes or less to maintain student engagement (Guo 2014). Another study from researchers at the University of Wisconsin concluded that videos in online courses should be no longer than 15 minutes (Berg 2014). Chunking longer topics into shorter videos while interspersed with other content material delivery types will help to avoid students becoming disengaged with the course material. Additionally, low-stakes assessments (like a short written or recorded audio/video response) completed after the viewing of each required video helps students actively engage with the course content, which assists with the metacognitive functions of thinking about the content and applying it to a context (Lang 57).

With learning tools interoperability, the module content of a course can be delivered in a fully self-contained learning environment. This means that students will not have to change tabs,

navigate to other windows, or flip back and forth between the module content and other ancillary resources. Using LTI to keep course content contained within the LMS can encourage student engagement because it helps students navigate content without getting lost (RisenHoover).

Breaking down complex tasks and major assessments into manageable pieces while providing scaffolding (like checklists or an overview of the entire process including deadlines and time for feedback built in) builds confidence and self-efficacy (Lang 43-44). This provides a guided learning experience that focuses on process and can enhance student engagement in an online learning environment. Including lower stakes assignments that build into a cumulative assessment would be a good example of this research-based practice.

Using compelling stories engage students with course content (Greene 10). Our world is filled with interconnected stories, and instructors that link course content to popular stories, personalities, and characters encourage student engagement. This transmedia learning is a "scalable system of messages representing a narrative or core experience that unfolds from the use of multiple media, emotionally engaging learners by involving them personally in the story" (How People Learn II 173). Using stories and narratives with relatable characters or engaging arcs (for example, case-based learning) can be a way to stimulate active learning and help students engage with the online course content.

Module Summaries. After the delivery of the content modules, including module summaries helps students know to stop learning and reflect on content, complete activities, or prepare for the next module (Berkow). Module summaries can also help instructors provide transition statements with information about reflective practice, next steps, and things to remember as they go forward in the course.

<u>Assessments</u>. Virtual learning environments should include assessments that are carefully and thoughtfully aligned with learning objectives. Meaningful work allows students opportunities for engagement throughout the completion of their assessments (Lang 30). Research shows that students want assessments that are relevant, challenging, and provide opportunities for multiple modes of representation following the principles of Universal Design for Learning (Berkow, Quirk). Giving students choices in how they complete assessments will enhance the value-added and relevance for students (Berkow). Research also shows that providing assessment retake options increases student engagement (Sullivan 204).

Engagement with Instructor

Instructor engagement is one of the most important considerations in creating a successful virtual learning environment (Donaldson 29214). When instructors actively and intentionally engage students, they will likely respond to that attention by working harder and immersing themselves in class content and activities (Lang 46). Providing multiple opportunities for engagement with the instructor will help students to monitor their progress (Lang 43) and metacognitive processes in a virtual learning environment.

<u>Communication</u>. To enhance student engagement with the instructor, instructors should communicate frequently with students (Berkow) and set expectations on how that communication will occur. Instructors should establish a method for posting announcements, participating in discussion threads, providing timely and multi-stage feedback (Lang 31, 43-44), writing/receiving emails, or a combination of these methods. Through this consistent communication, instructors establish an actively engaged presence in the course (Lang 103). The following table gives some examples of communication expectation questions that instructors can consider to enhance student engagement:

Should students communicate with instructors through email, through the LMS messaging system, or through another channel?
Should students put specific course information in the subject of their communications?
How long should the student expect to wait for a response? 24 hours? 48 hours?
How often/when should a student contact an instructor?
Will an instructor respond to student communication on the weekend?

Instructor biographies included in a getting started module help students perceive the instructor as human, reveal some level of their personality (Lang 90-91), and encourages students to stay engaged.

Instructor availability. The common phrase "office hours" in higher education is often used to communicate to students that the instructor is available to answer questions students may have about the course content. These hours can be regularly established or made by appointment. The name, when adjusted to "student hours" creates more learner-focused language. Student hours provide a space for students to meet together with the instructor outside of regular class time. These opportunities can help to foster student ownership of course architecture and course content (Starr-Glass 128). They also identify the student as the locus of instruction, closing the psychological and communication space as well as any misunderstandings that might exist between the student and the instructor (Starr-Glass 129). Student hours also accentuate social presence of the instructor and students by recognizing others in the class and human and relatable and is critical to student engagement (Starr-Glass 129). These sessions can also help students overcome loneliness and isolation, which can inhibit engagement (Starr-Glass 129). As students

check in regularly with their instructor, they are able to get a sense of how they are doing in the class (Lang 43).

Building instructor-inclusive community. Instructors should be an active part of the community they build in their virtual learning environments (Lang 104). In a virtual learning environment, there is no hallway to have those ad-hoc discussions before and after class, but an instructor holding synchronous sessions could prioritize opening the session a few minutes early and keeping it open a few minutes after class concludes. This can provide ad-hoc time that typically happens during face-to-face instruction and gives students and instructors time to engage with one another outside of class time..

Discussion forums provide a way for students to engage in discussion with other students, with the course materials, and with the instructor. Research shows that students highly value faculty interaction in online forums and the quality of faculty interaction can have a positive impact on peer-to-peer interaction and encourage critical thinking (Lang 40). These discussion forums can even continue after a particularly engaging discussion during a synchronous class. This will enable students who may have thought of another point the opportunity to further the discussion, and perhaps even more important, it will enable the introverts and those who were not able to share in class to still make their thoughts heard (Berkow). A summary of discussion forum topics pulled together by the instructor in each module can help point out what material is important and needs paying attention to in order to proceed with course content (Lang 45). This practice will also prompt students to go back and reread relevant content in discussion forums.

Engagement with Peers

Research shows the importance of developing social online presence for student engagement (Donaldson 2921). Community-centered learning environments (Bransford 144)

promote student engagement with peers, instructors, and course materials. In these

community-centered learning environments, students and instructors feel connected to the

classroom community, the school community, and the larger communities in the world. This is also

possible in online learning environments. When relationships between and with students are built

in an online learning environment, other areas of the course that might be lacking can be

overcome. These relationships give students the experience they are looking for, and is one of the

most important strategies instructors can use to foster engagement (Berkow). Students come to

higher education for self-discovery and to identify where they fit in the university and in the world.

Having a strong bond with their instructors and peers will help them with that process, especially

in an environment where finding that self-discovery in the residence halls is not an option.

Peer Feedback. Instructors should provide opportunities for peer feedback. This collegial

interaction between classmates furthers the process of learning for both parties and encourages

active learning (Karchmer-Kline 62). Instructors should design learning activities that incorporate

peer feedback using planning and scaffolding. This evidence-based practice aids in the

development of new ideas by presenting different approaches to the same course activities

(Karchmer-Kline 63). This process also helps to build community amongst classmates, which is

important for student success (Karchmer-Kline 62-63).

Discussion Forums. Discussion forums provide a way for students to engage in discussion

with other students, with the course materials, and with the instructor. The instructor can monitor

and support the engagement of students by taking the class pulse in these discussion forums. By

scouring class interactions for clues, instructors can know where adjustments need to be made to

achieve course learning objectives in an online learning environment (Lang 39). A question and

answer discussion forum can be a place for students to post general questions about the course and

assignments so that everyone benefits from the answer. Extra credit points can also be awarded to students who ask legitimate questions and the even more extra credit points can be awarded to the first student to post a correct response. This helps students to stay engaged with one another throughout the course. When students can help solve problems or provide new or supplemental sources of information, they are more likely to engage with their peers (Harasim 171). As students create community through discussion forums, they are utilizing the highest tier of Bloom's Taxonomy (Bloom) which promotes higher-order thinking and the metacognition that is required for transfer of course content in a meaningful way for the students. Requiring some level of peer-to-peer interaction through a course will foster student engagement.

Virtual Hallways. Instructors should have students introduce themselves, either in a getting started module for an asynchronous class or in person on the first synchronous class, or both. As students get to know their peers, they are more likely to engage with them. As the section on building instructor inclusive communities mentioned, the synchronous virtual hallways can be created to provide spaces for students to build community and engagement amongst themselves. Breakout rooms during breaks or small group work as well as opening video conferences spaces for a short time before and after class can provide opportunities for those ad-hoc discussions where students can engage with their peers and feel as though they are part of a community working toward a common goal.

Conclusion

Virtual learning environments are here to stay, even after the pandemic has passed. Therefore, higher education institutions must continue to hone their process of providing the highest value added virtual learning environments possible. Regardless of the body of research that exists, there is no one size fits all solution for designing effective online learning environments, as

student needs and instructor needs vary. However, research does support the importance of the questions that are asked about the design of online learning environments and provides a starting place that is focused on student engagement with course materials, student engagement with the instructor, and student engagement with peers.

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