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CHAPTER 4

Using Motivation Theory and Research When Teaching Information Literacy Online

Nick Faulk and Alan Carberry

Introduction

Whether using a learning management system to reach students in online courses or deploying web or video to offer just-in-time assistance, librarians can use motivation theories and evidence-based practice to engage students and maintain their attention. A small but growing body of evidence investigates motivation in online information literacy instruction specifically, while a considerable wealth of literature explores motivation in the online context more generally. This chapter covers that library-focused material while providing an overview of particularly relevant literature from the areas of educational psychology, instructional technology, and e-learning. Through this review, three key themes emerge: the importance of instructional and visual design to shape a learner's sense of immediacy with the material and level of motivation, the power of interactivity to sustain learner attention and inter-

est, and the influence of communication and feedback on learner motivation in both synchronous and asynchronous learning scenarios.

Librarians need to pay particular attention to synchronous and asynchronous learning for off-campus students because, as of fall 2015, 29 percent of higher education students were enrolled in at least one distance learning course, with about 12 percent of students taking distance learning courses exclusively.[1] Students enrolled in online education programs tend to be older than their peers enrolled in face-to-face programs, with undergraduate students over the age of thirty being four times as likely as their peers under the age of twenty-three to be enrolled in a program exclusively taught online.[2] In one study, about one out of three online-education-enrolled students expressed a low sense of self-efficacy with information literacy concepts, and between one quarter and one-third of students in online programs expressed interest in a range of workshops on several information literacy topics.[3] There was relatively little difference in the desire for workshops in high self-efficacy students and low self-efficacy students, suggesting that some of the students who most need information literacy instruction online lack active interest in it.[4]

Tutorials, online guides, and self-guided courses are common modalities for reaching both online and face-to-face students that provide an alternative to the embedded librarian model or a for-credit course. While learners in low-pressure scenarios such as these report a reduction in learning anxiety, the lack of extrinsic motivation to complete self-directed e-learning lessons makes it difficult for some learners to prioritize an extensive or long-running lesson.[5] This makes attention to motivation a concern that extends to unmediated teaching scenarios as well as more formal online teaching scenarios.

In their Self Determination Theory (SDT), Richard Ryan and Edward Deci distinguish between intrinsic and extrinsic motivation types, based on the different reasons that lead to action.[6] "Intrinsic motivation relates to an individual doing something because they find it enjoyable, while extrinsic motivation refers to doing something because it leads to a separable outcome."[7] According to Ryan and Deci, intrinsic motivation results in high-quality learning and creativity, with optimal challenges, feedback, and freedom from demeaning evaluations contributing to this motivation type.[8] According to Ryan and Deci, intrinsic motivation will only occur for activities that have intrinsic interest for the individual. Outside of this, individuals are impacted by extrinsic motivational factors. "Given that many of the educational activities prescribed in schools are not designed to be intrinsically interesting, a central question concerns how to motivate students to value and self-regulate such activities, and without external pressure, to carry them out on their own."[9] Ryan and Deci offer a continuum of motivational types that ranges from amotivation, or the state of lacking intent to act, toward self-determina-

tion and interest.[10] Key to moving toward self-determination is the movement away from externally regulated factors toward those that are self-regulated or autonomous.[11]

The work of Carol Kuhlthau may give us insight into the affective domains around extrinsic motivators, particularly in the information-seeking habits of students. Kuhlthau's Information Seeking Process (ISP) model outlines five stages of information seeking and details affective, cognitive, and physical domains along the process.[12] Kuhlthau's ISP model outlines a journey toward ownership and possession in the process of seeking information that leads to clarity and sense of direction and confidence, as well as increased interest in both process and research product.[13] According to Kuhlthau, students expect to become more interested in their research topic as the search for information progresses.[14] This suggests that intrinsic motivation generally develops later in the information-seeking process.

Motivation Design

Relatively little literature explores the motivational opportunities and challenges created by online teaching situations. The question of motivation as it relates to online, for-credit information literacy courses was tackled by Trudi Jacobson and Lijuan Xu as a chapter in their 2004 book, *Motivating Students in Information Literacy Classes*.[15] Their work draws attention to the importance of fundamental facets of motivation online, such as clarity in course design and incorporation of activities for different types of learners.[16] They also note that instructors can encourage active or problem-based learning as a technique for enhancing motivation, just as an instructor would in a face-to-face course.[17] Even in 2004, the work noted the need for additional research on motivation in the online information literacy sphere by encouraging readers to share and publish their own techniques for motivating students online.[18]

Despite the ongoing lack of scholarship dedicated to motivating students for online information literacy instruction, a growing body of literature pays some attention to online learning within the context of motivating students during information literacy instruction in general. These works provide lessons that are easily transferable to an exclusively online context. For example, Motivation Design through the ARCS (Attention, Relevance, Confidence, and Satisfaction) model of instructional design can empower librarians to incorporate motivation into their information literacy instruction regardless of a teaching scenario's modality.[19] Amanda Hess's literature review found that librarians can and should promote extrinsic motivation through lesson design, as students may lack intrinsic motivation for information literacy lessons incorporated into their program of study.[20] Using the ARCS model, Hess

notes that an instructional designer can start by developing design objectives and then identify motivation techniques that align with those objectives and the teaching situation.[21] Hess also notes that, in 2015, research on motivation in online information literacy instruction is absent in a variety of its permutations, including the embedded librarian model and information literacy modules embedded directly into a course's structure and schedule.[22]

When incorporating motivation design into online courses, the instructional librarian might pay particular attention to the needs of older students, given their large population in distance education programs.[23] Adult learners, in particular, are looking for immediacy, engagement, and praxis in their learning.[24] These needs create numerous opportunities to design for motivation through student engagement, such as allowing students to co-create their learning opportunities with their instructors and providing them with the opportunity to bring their learning to action and see the implications of their choices first-hand.[25]

Librarians creating online learning objects should pay particular attention to visual design techniques as a method of sustaining learner attention.[26] Repetition of visual elements such as color and the location of navigational elements, thoughtful consideration of proximity of visual elements to those that are logically related, alignment of visual elements along an (invisible) grid, and use of contrast through color or shape are four considerations of visual design that help sustain attention.[27]

The influence of design choices on student motivation also figures heavily into education literature more generally. Maggie Hartnett's monograph-length case study, *Motivation in Online Education*, provides considerable insights into the motivational characters of students in online, for-credit classes.[28] Hartnett cites Ryan and Deci's self-determination theory, which places students' ability to establish motivation to learn on their sense of autonomy, sense of competence for the tasks they are asked to complete, and the relatedness of the learners to the broader social surrounding.[29] The relevance or importance of a learning activity both to professional and personal contexts is important for establishing autonomy, as are instructional techniques that center the meaningfulness of student choice.[30] In developing relatedness, the key factor is that students develop a relationship with both the instructor and other learners.[31] In applying this research to teaching and design scenarios, Hartnett's guidance is multi-faceted. Part of supporting autonomy means acquainting oneself with a learner's unique circumstances and using that knowledge to limit their constraints.[32] Thoughtful instructional design around a clear narrative can eliminate barriers that undermine a student's sense of competence.[33] To support relatedness, strive to develop a sense of community among all learners with techniques such as online discussion and synchronous sessions.[34]

Interactivity

Students in self-directed e-learning situations such as tutorials, online guides, and self-paced courses can face some specific challenges that differ from those in the classroom setting, and a key to maintaining motivation in those scenarios is interactivity.[35] Learners reported media-based interactivity such as "animations..., simulations..., and drag-and-drop quiz(zes)" as key to sustaining their engagement and attention, while the lack of human presence in self-directed learning was an impediment for users from academia but not necessarily users from industry.[36] As most study participants from academia were in their thirties and forties, adult students may experience motivation loss during self-directed learning in the academic context, even if they are also professionals.[37] The e-learning situations used by study participants also allowed for a high level of learner control, such as the ability to choose which lessons are most relevant to their needs and to complete a course at their own pace, something which learners reported as a factor that increased their motivation.[38]

In developing an interactive, online information literacy tutorial, Dominique Turnbow and Amanda Roth looked for strategies to embed engagement techniques into their instructional design process.[39] Turnbow and Roth used several pedagogical theories to inform their practice, including the Cognitive Theory of Multimedia Learning by Richard Mayer.[40] This informed their choice to use graphical representations of information when possible as opposed to text and audio alone.[41] Further, they found interactivity to be an important component of tutorial design, which influences their choice of instructional technology.[42]

Differentiated instruction in the form of an interactive tutorial can provide an opportunity to enhance student motivation. One study on the impact of differentiated instruction on students saw gains in students' level of motivation regardless of the level of motivation with which they started.[43] Despite those gains, a student's motivation before beginning a differentiated instruction tutorial does influence their interaction with it. Students who began their online differentiated instruction tutorial with higher levels of motivation spent more time reviewing the course materials.[44]

Library-produced videos are a common tool deployed both within online courses and as learner resources on a library's website or how-to guides. While it might seem counterintuitive to associate interactivity with a video, emerging and existing technologies create opportunities to create such learning objects. Designing a video with a responsive e-learning tool is one example of a method to raise a video's interactivity and with it a learner's engagement with the content.[45] E-learning production software such as Articulate Storyline allows designers to create multimedia course modules featuring

an unmediated slide deck with regular pauses for quizzes, branched learner paths, and other interactive features.

Communication and Feedback

With online courses offering numerous opportunities for synchronous and asynchronous communication, Bas Giesbers led a research study into how students' motivation influences their participation in those communication modalities.[46] Students who took advantage of synchronous communication in the form of a live video chat with their instructor were more likely to participate in asynchronous communication—and participate with higher quality posts—than their peers who did not participate in the synchronous communication.[47] This finding held up for students with both autonomous and control-oriented motivation profiles.[48] Meanwhile, students with an autonomous motivation profile are more likely to participate in asynchronous communication than their control-oriented motivation peers, suggesting that the participation in synchronous communication was transformative for the control-oriented student who chose to participate in them.[49] To quote Giesbers et al., "synchronous communication afforded control-oriented learners to be equally engaged in knowledge construction as autonomy-oriented learners."[50] This research suggests that synchronous communication is an effective tool for librarians to use in engaging online students regardless of the students' specific motivation profiles.

Instructors should take advantage of their online settings by making their presence known to students through consistent messages on matters of process and expectation and by designing discussion board activities such that they include faculty feedback.[51] Guidance and constructive feedback along with clear expectations for the learner were key influencers on motivation due to those practices' role in reinforcing learner competence.[52] Intentional planning for feedback can help address the need for regular communication in support of competence.[53]

When it comes to engaging learners in online environments, William Cuthbertson and Andrea Falcone demonstrate that creating a community is essential to student success in online information literacy courses.[54] Creating space for students to interact informally with one another is one method for fostering this community, something that a librarian teaching a semester-long course might do with initial icebreakers and regular prompts for students to share their interests.[55] The authors also suggest that instructors allow students to take ownership of discussion board topics and consult with one another on assignments, practices reminiscent of Cooke's call for co-created learning.[56]

Even asynchronous learning provides numerous opportunities for motivating communication in the form of automatic feedback. Turnbow and Roth found that Gagné's Events of Instruction gave them a framework through which to analyze their tutorial, even though it was taught asynchronously, a choice which influenced the use of communication in their tutorial.[57] This framework allowed the authors to establish the ways that their tutorial would gain learner attention—in this case, through an audio component spoken in a casual tone—and provide feedback. Here, feedback would be embedded directly into the tutorial through regular quizzes.[58] Related instructional videos can be paired with short quizzes to provide learners with the instant feedback to enhance learners' sense of competence.[59]

Conclusion

The online environment creates numerous opportunities for the librarian looking to inspire students learning information literacy skills and dispositions. This review highlights several key instructional strategies the instructor may employ to increase motivation of students online. Librarians can design with motivation in mind through attention to the instructional and visual elements that shape a learner's sense of immediacy. Adult learners, in particular, seek engagement and praxis in their learning scenarios, leading to increased motivation. Interactive and engaging learning environments are important to sustaining learner attention and interest. Finally, effective communication and timely feedback positively impact learner motivation in both synchronous and asynchronous learning scenarios. Librarians use a wide range of tools and techniques to teach students online, creating many opportunities for further experimentation, research, and review on best practices at the intersection of motivation and information literacy.

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