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Teaching Techniques to Facilitate Time Management in Remote and Online Teaching

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Abstract: The 2019 coronavirus disease (COVID-19) pandemic has caused a host of personal and professional complications for faculty across academia, as well as the students they teach. While the severity of these complications vary at the individual level and look different for everyone, one area COVID-19 has presented enormous challenges in academia is time management. Both faculty and students have been forced to adjust their schedules due to consequences of the pandemic (this includes school and university closures, employment issues, and even the virus itself). Such changes create major challenges for both groups, particularly those converting traditional daytime face-to-face courses into online and hybrid formats. This paper offers three specific techniques to facilitate time management: asynchronous teaching, chunking, and micro-learning. Research findings have led to the support for each of these techniques. The authors explain how each technique facilitates time management via remote and online teaching and make suggestions about each technique in their own courses to contextualize their usage. Recommendations are also noted with the goal of enabling faculty to preserve one of their and their students' resources during and after a pandemic: time.

Keywords: online instruction; time management; asynchronous teaching; chunking; micro-learning.

Introduction

The arrival of the 2019 coronavirus disease (COVID-19) pandemic in 2019 and 2020 led to rapid changes in education. As the pandemic worsened in the United States, schools closed and many instructors rushed to shift their delivery to hybrid/blended or all-online formats. This included courses that typically rely upon face-to-face delivery, such as sciences, nursing, mathematics, or various labs in which students may engage in hands-on learning. As a result, many instructors did a rapid overhaul of their courses for the remainder of the spring semester 2020. Both popular and academically-oriented publications reassured instructors that quality instruction was possible and that "universities shouldn't just reach for makeshift solutions," but some faculty members still expressed concern that the rapid shift to online delivery had the potential to diminish the overall quality of instruction (Arum & Stevens, 2020; see also Johnson, 2020; Marcus, 2020; Smith, 2020; Trovato, 2020).

After several months of exclusively online delivery, faculty members once again were asked to facilitate a gradual return to more familiar instructional approaches. They have been asked to engage in various delivery formats, including in-person (with various precautions in place), completely online, or hybrid delivery in various formats, including a different approach, HyFlex. HyFlex instruction responds to several safety considerations and assures physical distancing; it may also include elements of both in-person and distance learning. In HyFlex learning, students are given a choice as to whether they wish to attend classes in person or via online delivery. As such, it differs from hybrid learning in which the instructor decides whether in-person course activities or online formats will be the most

effective. The HyFlex format is praised for its flexibility in responding to student needs and preferences, but it also raises new concerns for faculty. Some faculty members are concerned about the perceived demands that HyFlex instruction raises (are instructors being asked to deliver in formats that will be effective for all learners without regard to the effort needed to accomplish such varied approaches?). Particularly concerning for at least one author was that "it's impractical to expect that most professors can build fantastic blended courses that can be delivered both online and in person by fall, especially given workload issues" (Lederman, March 2020; Lederman, May 2020).

Both faculty and students have adjusted rapidly, changing their schedules due to consequences of the pandemic (reacting individually to school and university closures, to employment issues, and even to the virus itself). This creates major challenges for both groups, particularly for those altering their traditional daytime face-to-face courses. The combination of potentially varied instructional formats and the unpredictability of the ongoing health crisis presents a significant challenge for instructors and students alike. The perennial flurry of activity to prepare courses and materials for a new academic year is now compounded by the additional requirements relating to each institution's pandemic response. As well, instructors' experience with different instructional formats is varied. Although some instructors have experience in developing online courses, few are accustomed to teaching exclusively online. The introduction of hybrid or HyFlex models—each of which offers a combination of in-person and distance learning—adds further to the ways in which each instructor might approach and develop their course delivery. With so many unforeseeable factors involved, the most valuable asset that instructors can gain is time. To that end, instructors should consider three techniques to facilitate time management: asynchronous teaching, chunking, and micro-learning. These methods may be most useful for people newer to online/hybrid course delivery, but they should serve as a reminder to all who struggle to revise course delivery in the context of the pandemic.

Literature Review

Asynchronous teaching, chunking, and micro-learning are all well-established methods of instructional delivery. Each of these methods has been considered in relation to face-to-face instruction, but the transition to distance education encourages a reconsideration of these methods in light of the new concerns raised by the COVID-19 pandemic. Faculty and students alike have expressed concerns about their educational experiences and the quality of a mostly-online instructional format (Lederman, 2020; Trovato, 2020). To refine approaches to continuing pandemic-related challenges, a reconsideration of some effective strategies may provide faculty members a means of adjusting their approaches to online instruction.

Scholars have written extensively about asynchronous instruction. Courses that rely upon asynchronous instruction allow students to access course materials and to engage in various assignments, discussions, or presentations at a time convenient to the learner, rather than insisting that all students be present at a particular time each day. Many are familiar with aspects of asynchronous instruction that can be implemented even in a face-to-face format. Students can, for example, take quizzes or tests using a Learning Management System's testing options, sparing more in-class time for other course activities. Asynchronous online education has been studied, and several findings suggest that it is a suitable format when implemented in all-online courses. Bernard et al. (2004) found that asynchronous learning may encourage better results on some measures in distance education. In spite of the fact that learners must motivate themselves to carry out course tasks individually, additional scholarly findings show that students who participate in asynchronous online education formed communities of learners and performed effectively at various course indicators (Rovai, 2002; Skyler et al., 2005; Malkin et al., 2018). In short, many experts share the conclusion that

removing strict time constraints may offer flexibility to any course without sacrificing quality in the learner's educational experience.

Chunking has also earned accolades by many instructors. Chunking was introduced by George Miller (1956) in his article, "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." Miller (1956) emphasized attention span and the related challenge of "cognitive overload" for students. His study concluded that people can recall seven (plus or minus two) pieces of information at a time when they are exposed to new concepts (Miller, 1956). This led to the concept of chunking, or breaking coursework into smaller manageable pieces that would ease students' challenges with processing course content. More recent studies have revised the total number of informational tidbits that learners may be able to handle, but the concept of chunking has received additional empirical support in general (Warfield, 1988; Gobet & Clarkson, 2010). Richard Mayer added to this important work in a way that speaks to the struggles of online instructors. For Mayer (2009), it is important to develop a suitable combination of verbal, auditory, and pictorial information for learners since a "dynamic" collection of materials will complement learners' prior knowledge. Whether online or in person, then, chunking is a method that appeals to many instructors.

Micro-learning, also referred to as bite-sized learning, is an approach in which students are provided "nuggets that are just the right size for cognitive processing" in order to facilitate their learning process (Major & Calandrino, 2018). This approach complements the cognitive research offered by Mayer and others, which emphasizes simplifying content to improve learners' ability to process data (Moreno & Mayer, 2007). The concept of micro-learning builds upon Miller's (1956) concept of chunking since micro-learning delivers course content in brief, feasible doses for students to digest, but there is a significant difference, as well. Micro-learning encourages students to "solve a problem, direct their own learning, apply their knowledge, or connect with others" (Major & Calandrino, 2018). In this way, while students absorb course information in a way that makes the process of learning manageable, they also begin to learn while they pay attention to larger learning objectives. Studies have also shown support for the value of online instructional tools in enhancing collaborative learning and providing a catalyst for reflection, even in online instructional formats. Drawing on learning tools like modules, discussion boards, online lectures, and videos, instructors can guide students through the process of reflection and application (Kourieos, 2016; Shine & Heath, 2020). In these ways, micro-learning may enhance learners' independence and engagement with course content.

Implementation

Both academic and popular writing have identified the plaudits and the pitfalls of online education. While there are methods that may improve learners' experiences, an equally significant concern remains. In what ways can instructors make use of these approaches in order to maintain high-quality educational offerings, but without adding exponentially to their own workloads? Asynchronous instruction, chunking, and micro-learning may be used in both online and hybrid/HyFlex instruction. As a result, these methods reinforce approaches for which studies have shown positive results for students. However, they also may be useful to instructors who face time limitations of their own and may simplify course preparations for those with limited experience in online or hybrid instructional formats.

Asynchronous Instruction

As noted, research about asynchronous teaching has shown that the removal of formal dates or times for class meetings or assignments may prove beneficial to some learners (Rovai, 2002; Bernard et al.,

2004; Skyler et al., 2005; Malkin et al., 2018). Asynchronous instruction can still require deadlines since it is important to provide learners with periodic feedback and to determine students' mastery of key concepts at certain points in any course. Even so, allowing both instructors and learners to access course materials when they are able should enhance flexibility and will help to forestall inevitable conflicts of time, computer access, or other concerns. This may apply, for example, both to student households with multiple siblings or to faculty members with children who need to complete school work in the event of institutional closures. Asynchronous instruction may also improve accessibility for some students. Students whose families face limited financial resources may benefit—as long as they can make it to a campus—from its computer labs or WiFi hotspots in a way that limits the competition for scarce resources and accommodates a wide range of personal concerns. Finally, on a practical note, students in asynchronous courses may be able to enhance their reflection on course material since they can organize their time in a way that facilitates their own learning styles. In asynchronous courses, learners may engage with course components using a daily work schedule that is convenient for them, rather than participating on specific days and times. Over the same span of time, instructors may set firm deadlines at which key benchmark assignments allow for an evaluation of student progress, so students have some choice even as to the timing of those graded assessments. If possible, instructors can load many of the course materials and assignments into the course management system before the term begins. It may also help to set up some assignments with automatic grading, such as quizzes or multiple-choice tests. As a result, instructors can reduce their expenditure of time and effort when the course eventually begins.

Asynchronous course delivery has its benefits; it tends to work most effectively when instructors prioritize, helping students to see what they need to do at any given time. For example, discussions may be organized with a specific deadline, permitting students to submit an initial post over a span of days and then encouraging replies to occupy a second round. Individual students can vary their contributions based upon their own temporal preferences. Instead of giving quizzes at a specific time of day, instructors may set the deadline for any time over the course of a day or two. For faculty members who provide readings or other course materials to students, it can help to unlock course materials in sequence so that students are following an established pedagogy. In some courses, students may be asked to sign up for presentations. They may sign up for times that are more convenient for them and make use of some tools (VoiceThread, narrated PowerPoints, short video clips) that allow them to create and refine a finished product. In each of these cases, students may access course material, reflect upon it, and submit their best work using a schedule that allows them to consider their own time constraints. Some deadlines, of course, may be maintained (for example, for a major assessment like a test, discussion, presentation, or paper). However, taking a more flexible approach in the day-to-day routine should mean that students can organize daily or weekly calendars in a way that minimizes difficulties with technology, competition for computers at home, or limited means in the household.

Consider in addition to the syllabus a simpler assignment check list that students may print or download—this should help them to focus exclusively on a list of what needs to be done, for example, on a week-by-week schedule. This may reduce the number of questions that can arise in online learning and can be a passive way of coaching students to engage in some self-regulation of their own learning. Some instructors also use options like removing a low grade out of an assignment group, or they offer more than one attempt on some coursework. In this way, students may stay engaged with course materials, allowing them to decide how much (or how little) time to devote to the course. Doing so may enhance content mastery for students, and yet will not increase the time commitment on the part of the faculty member. Finally, many instructors find that online course delivery sometimes results in more individual communication when the term begins. Removing some of the labor of course preparation up front should mean that when many course activities and assignments are set up on the

learning management system, instructors have the time to address the appeals for attention when it is most needed: during the learning process.

Chunking

Instructors are aware of the benefits of chunking as it relates to the learning process. Breaking course concepts down into workable components helps students to master different skills and to bring them together on a larger, later assignment (Miller, 1956; Warfield, 1988; Gobet & Clarkson, 2010). As noted, some of the course material may be assigned as asynchronous work, giving students time to reflect deeply upon the content and to build their understanding of larger concepts. Faculty can break assignments down to focus on those aspects, and they should explain how the different skills fit together. In one United States history survey course, an instructor identifies the separate skills that students have been developing and provides a summary description that describes the next steps in that process: "you have learned a bit about United States policies regarding American Indians, you have a handle on content (the actual data we use as historians). Now I want you to work on the skill of argumentation." In this sequence, students may take a quiz on a reading about American Indian policy; they can be referred to readings, prepared lectures, or websites about that subject. Finally, students may be asked to participate in a discussion where they are able to practice the skill of argumentation. Now we can see that chunking has taken place. Skills of writing, content mastery, discussion (perhaps more casual expression), and a more formal written assignment guide students through a process of developing key skills separately before they bring them all together on a larger assignment, such as an exam or a final essay. Interestingly, on an anecdotal note, students who develop an awareness of these policies sometimes comment on the comparison to United States foreign policy in the same period.

Some may see such a progression of activities and assignments as a grading challenge. It is true that grading may be more frequent, but because these items include smaller component parts, faculty can use some lower-stakes assignments (quizzes, discussions, practice sites) to help students prepare. These may be graded or not graded, provided that learners are aware of what they should be doing at any given time. For example, even if a practice site is not graded, a student may be encouraged to use it as a preparation for the higher-stakes assignments later. Many of these lower-stakes activities can be prepared before the course begins, and instructors may be even able to create a pipeline of these course elements. Because some of these course items may be automatically graded, it should also save more time for faculty to focus on a larger paper or project later on. For those assignments that require more formal evaluation, remember that a grading rubric can be a great help. Rubrics spell out assignment expectations for learners, and as such may help to clarify how to organize data or present material. Students who are provided with a rubric may begin to organize assignments in a way that reflects the rubric, and an instructor may use a simple copy-and-paste approach in writing comments about individual submissions. Not only is chunking an aid to student learning, but chunking course content where possible may also help faculty members to limit their expenditure of time and effort when the course begins.

Micro-learning

As literature has demonstrated, students may benefit from micro-learning (Moreno & Mayer, 2007; Major & Calandrino, 2018). This system of applied learning may give a glimpse to students of some elements of the professions they want to join and encourages them to take responsibility for the individual tasks they must complete. For example, an instructor may ask that small groups consider different articles about a particular topic. Each group may communicate about their article, working

together to prepare for a larger discussion, which will expose students to a broad range of scholarly interpretations about the topic, thus contributing to a body of knowledge. Alternatively, students may use the discussion to compare the merits and liabilities of different approaches to the problem being discussed. In this case, an instructor will have to devote time to finding short reading materials (or a suitable book that compares differing viewpoints). However, students adopt some of the responsibility for their own learning, often coming together to compare results or to consider outcomes as a class. Not only does micro-learning provide students aspects of ownership of their learning, but this approach may also give faculty the breathing room they need for other challenges. Since faculty are still responsible for evaluating the finished products, consider using a rubric that may double as a grading sheet. In this instance, a faculty member saves the grading sheet and attaches it to the course grade to provide feedback. Using grading materials with formulaic comments not only saves time on grading, but it also helps ensure a systematic approach to evaluation of graded assessments.

Another example of micro-learning that may help instructors to manage time is to employ some self-regulated learning opportunities. For example, a faculty member may assign to individual students a citation (or an article housed in the course's resources). Students then come together to engage in a discussion in which they report on their results and compare their findings. In one of our criminal justice courses, students who read different opinions about capital punishment discovered (contrary to popular belief) that the death penalty over time proves to be more expensive than life without parole. Others found that capital punishment overall does not offer the deterrent effect that some feel it does. In this case, while there is some work involved prior to the course (selecting and loading articles to the course management site), when the course begins, the faculty member can enjoy a respite while students work to prepare discussions, papers, or other projects that may result from their self-regulated learning experiences.

Conclusions

Asynchronous learning, chunking, and micro-learning have all been evaluated as effective strategies to enhance student learning. However, instructors who consider their implementation in courses constrained by pandemic-related demands may find that there are benefits for doing so. While there are several potential benefits to consider, there are also potential limitations that should be noted. First, remember that these methods will still require some time prior to the start of a semester to prepare course materials and perhaps to organize courses differently. Because these examples integrate well with approaches that help students to learn, the effort may pay off well for several faculty, especially once the term begins. They may also allow faculty to use existing course plans and then to alter slightly the grading breakdown rather than having to engage in a wholesale course revision. This is not only a COVID-related problem. Many faculty members feel a sense of guilt between the amount of time that they wish to devote to courses and the amount of time that they can actually dedicate to their teaching. Consider ease of application as you decide how to move forward. In other words, you may not have to change everything, so focus on the tasks that will allow you to diminish your effort once the term begins.

A second point to consider relates to communication. Offline and hybrid formats sometimes require greater expenditure of effort in one-on-one communication with students. Consider using VoiceThread (or other tools that permit some narration), prepared announcements (loaded before the semester begins), or narrated PowerPoints to add instruction if you notice that students have similar questions. A muddiest point open discussion thread can help, too; just remember to keep checking that course area, and ensure that notification settings provide you with the reminder that occasional questions may arise. Because many institutions allow at least some face-to-face course delivery during the pandemic (and most of them hope for more of it later), consider your syllabus and revise elements

of students' coursework based on what you think is practicable. Provided that instructors communicate clearly to learners, it should be possible to make some changes that will guide students through a class and improve time management for instructors.

Epilogue

These methods may appear to be mostly reactive, and to an extent they were borne of necessity as the pandemic's diagnosis rates surged dramatically. Yet instructors should consider the ways in which these methods may still be used in the future. The decline in diagnosis rates is a welcome change, yet that does not mean that past pivoting to online instruction should be forgotten. For example, individual students face personal challenges with illness or a family situation that sometimes makes it difficult for them to come to campus for their courses, and they request special help. As well, weather emergencies occasionally cause a significant disruption in the functionality of campus facilities and course offerings. At the time of publication, just as the pandemic diagnosis rates began to decline, a massive winter storm caused power outages, heavy snow, and impassable road conditions for many across the United States. Regardless of the reasons that such disruptions take place, instructors confronted with a shift to online instruction may benefit by thinking about how to chunk their material; prioritizing how to facilitate online delivery and discussions; and by allowing asynchronous engagement with course material or assignments.

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