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Title: Big and Small: Active Learning in Online and Face-to-Face Courses

Presentation Format: Poster

Short Abstract (60 words): Drawn from the literature and the experiences of two faculty members, this presentation will highlight a variety of opportunities to promote active learning in online and face-to-face courses. Although some options may require substantial adjustment in pedagogical and logistical approaches, they will demonstrate how even small changes in a course can result in big improvements in student engagement and success.

Description (800-2000 words, plus references):

This engaging presentation will provide a brief history of the results of research conducted on active learning. It will feature the efforts of two presenters who teach a variety of face-to-face and online courses to encourage active learning in their courses by incorporating pedagogical, logistical and technological tools and approaches. The goals for the presentation are that attendees will have a more comprehensive understanding of all of the opportunities for promoting active learning in face-to-face and online courses and they will be able to identify some small and large changes that they can make in their own courses. In terms of major logistical adjustments requiring funding, participants will be able to advocate more effectively for new technologies and reconfiguration of learning spaces. Photographs of active learning spaces showing how engaged students are will be included in the presentation and participants will receive examples of the presenters' materials.

Although support for and recognition of the benefits of active learning have been increasing over the past few years, it has seemingly burst upon the scene as the current “hot topic” in higher education, even though a journal titled *Active Learning in Higher Education* is now being published as Volume 18 in 2017. It is important to note that there are many facets to active learning, which means that there are many different ways to incorporate active learning in courses. Bolliger and Des Armier (2013) define active learning as “a ‘learning by doing’ approach that encourages students to actively engage with course content.” As described by Covill (2011), active learning approaches can provide meaningful learning experiences for students as they perform hands-on activities that allow them to process course materials and communicate newly acquired knowledge that they obtain in class. Active learning can also encompass self-assessment, peer review, group work, collaboration and the reconfiguration of formal and informal learning spaces. Although new classroom spaces, furnishings and technology can be expensive, even small changes that encourage active learning can bring big improvements in student satisfaction and success.

One of the major initiatives with respect to active learning is redesign of formal and informal learning spaces. However, moving into an active learning classroom means that faculty members may have to grapple with rethinking how they deliver course content and how they can use newly redesigned spaces to their best advantage (Petersen & Gorman, 2014; Ferreri & O’Connor, 2013; Baeppler & Walker, 2014). Indiana University has embarked on an ambitious initiative called Mosaic to reconfigure a number of its classrooms, with some classrooms incorporating the latest and most sophisticated technology and others with flexible furniture that is moveable to facilitate small group discussions and offer a more intimate atmosphere. One of the presenters was selected as a Mosaic Fellow as part of this initiative. He met with other Mosaic Fellows throughout the fall and immersed himself in the pedagogy and technology that support active learning. This semester, he is teaching in a SCALE-UP classroom, which is a major change from a classroom with students sitting in rows of long tables. As part of the presentation, he will share his experiences teaching in an active learning classroom. Informal learning spaces are also an opportunity for active learning. The other presenter obtained a campus grant to create an informal learning space for the students in her program. This new space is used for group study, group projects, and tutoring and is nearly at capacity during a typical day. Both presenters will provide photographs of these learning spaces to demonstrate that students are much more engaged in activities and that these spaces create a sense of community and common purpose, which is a particular challenge because of the nature of their campus.

Perhaps the most important aspect of promoting active learning is how students view it as well as whether students believe that increased engagement has a positive impact on their learning, particularly as compared with traditional lecture-based courses. In a study by Lumpkin, Achen and Dodd (2015), students engaged in a variety of in-class and out-of-class exploratory writing assignments along with pair and small group discussions that were interspersed with short lectures. As they report, both qualitative and quantitative data revealed that students valued their participation in engaging learning activities and affirmed that it had a positive impact on their learning. (p. 121) Likewise, the results of research by Freeman and colleagues (2014) indicated that active learning increased student performance in science, engineering and mathematics. As they note, the results supported active learning as the preferred, empirically validated teaching practice in regular classrooms.

Although potential employers of graduates from the degree programs in the presenters' school are anxious for students to have the requisite technology skills, they are perhaps even more eager for students to already have the "soft skills" that are necessary for success in the 21st century work environment. Thus, group projects and peer assessment are important components of the presenter's face-to-face courses. Such peer assessment encourages active learning because a student's participation and contribution directly determines his/her grade earned for the project. Zhang (2012) noted that the pedagogy of high education is shifting from passive to active and deep learning, while observing that the information technology (IT) industry and the Accreditation Board for Engineering and Technology (ABET) are demanding soft skills, such as integrity, communication skills, ability to work in teams, creative thinking, motivation and flexibility, to name but a few. Zhang designed two peer assessment tools for group projects and activities in her courses. As she concludes, "[o]ne of the indicators of quality in higher education is the extent to which active deep learning is nurtured" and one way to achieve deep learning is to judge the quality of one's own work and that of others subjectively, which is particularly important for IT professionals. (p. 76). Similarly, Ellis (2016) evaluated a number of issues with blended learning environments with respect to student characteristics, the learning context, student perceptions of that context and approaches to learning and their learning outcomes. His research suggests that differences in the quality of student experience and student success can be revealed by variation in the quality of approaches to inquiry and learning technologies and the integration of classroom and online contexts, noting that the results have implications for course design and teaching. As he observes, "successful learning in this study involved a deep approach to inquiry characterized by initiative and thorough research, complemented by a deep approach to technologies which involved an intention to spend time investigating the issues." (p. 20).

As indicated in the presenters' short abstract, even small changes in a course can encourage active learning and result in increased student engagement and success. Fortunately, technology makes it possible to try a number of approaches to doing this. One of the presenters provides a substantial podcast (Fireside Chat) as part of the weekly modules in her online courses. However, an article by Bolliger and Des Armier (2013) reported on the impact of integrating student-generated audio files (podcasts) into their courses as opposed to instructor-generated audio files. As they note in their article, producing a podcast is relatively simple and requires minimal technical skills and it is easy to upload podcasts into course management systems. A survey of students from a course taught by Bolliger measured student satisfaction, engagement, connectedness, learning and utilization. Results indicated that the integration of student-generated audio files fostered their engagement and involvement, assisted them in effectively connecting and communicating with peers, and increased their learning. (p. 201). Similarly, the presenters have experimented with a number of small changes in their courses to foster active learning and to help students take more responsibility for their own learning. The presenters use several techniques to provide opportunities for self-reflection and individual assessment in their courses. For example, they have developed an online mid-semester self-assessment questionnaire that asks students to reflect on their grades at that point in the semester, whether they have completed or missed assignments and whether they know what they will need to do to improve their final course grades. One presenter has also instituted an in-class instrument that requires students to rate their participation based on engagement, attention and behavior.

One of the presenters has been teaching online for many years and has taken many online courses herself. Throughout these years, she has insisted that there be regular instructor-to-student

and TA-to-student interaction, primarily through a weekly Discussion Forum wherein each student receives individually tailored feedback. This can be incredibly time-consuming in terms of grading and does not capture the student-to-student interaction that is a marker of high-quality online courses and is an indicator of student satisfaction and success. Moreover, because recent research results indicate that participation in weekly Discussion Forums directly correlated with final course grades, she looks for ways to encourage students to participate in Discussion Forums. Thus, she instituted a peer review process wherein students read and provide feedback to each other's responses to Discussion Forum questions. This has a number of benefits in addition to providing opportunities for student-to-student interaction that is so important in online courses. It encourages students to submit their responses earlier in the week, rather than just before the deadline, increasing their chances for feedback from peers. Providing robust and thoughtful responses increases the likelihood that more students will read and comment on a student's responses. Reading and that reading other student's responses not only reinforces the subject matter of the course, but also gives students exposure to additional insights and points of view. On the other hand, in comparing to individualized instructor feedback with having students assessing their own homework, Gibbs and Taylor (2016) found that there was no difference in learning between the two groups, nor were there any differences in student satisfaction with the course or the instructor. Thus, feedback from other students is essential.

In terms of how technology can allow faculty members to experiment with small changes simply and economically, Indiana University's Next.IU initiative allows faculty members to pilot a variety of new systems and tools in their courses. One of the presenters is pilot testing DropThought, a tool that is easy to add to a Canvas course site and provides the faculty member with an informal way to gather feedback on the course throughout the semester, rather than waiting for end-of-semester student evaluation data. Likewise, the presenter was part of a focus group to review and provide suggestions for Snapshot, which is a system that will allow faculty members and students to see their progress in courses. This system is particularly useful for "at risk" students because it clearly highlights which students are having the most difficulty or are the least engaged in their courses. It not only complements the FLAGS system, but may also provide students and faculty members with earlier and more consistent data on course performance. Thus, a student will not need to wait for a notice from FLAGS to know that he or she is at risk for not passing a course. Through Next.IU, there are several pilot projects that faculty can incorporate into their courses that encourage active learning in both online and face-to-face courses.

Over the years, the presenters have been willing to try almost anything to engage students, to provide real-world course assignments such as case studies and projects so that students develop meaningful skills that future employers are looking for, and to encourage students take responsibility for their own learning. Thus, the presenters are eager to hear from participants about what they do to promote active learning in their own courses.

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