My Search for a Highly Flexible and Adaptable Course

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Before the spring of 2020, I was teaching in a flipped classroom style where students watched my prepared video lectures on YouTube, took a quiz on the material, and then came to class to work on an in-class activity as a group (3-5 students per group). The students then worked on homework/ALEKS to deepen their understanding and had some regular assessments outside of the classroom. As luck would have it, I was experimenting with no formal "exams" but regular completion of knowledge checks within ALKES during the 2019 – 2020 academic year. To help facilitate student learning, all in-class activities were posted to the online learning management system (Moodle). A single paper copy was provided to each group so they could complete the activity during their allotted class time. Therefore, with the switch to completely online/asynchronous learning in March of 2020, I was in a very good position. The students were already comfortable with initial content delivery through online videos, working on activities and being assessed through an online platform. The major changes that occurred that semester was the removal of synchronous learning and the completion of the activities becoming a predominately individual activity. I still encouraged the students to work with their group members, but this was not mandated. While this was a major shift for both the students and myself, I was thankful that the structure I was using allowed for minimal disruption, confusion or stress. Since all the lectures were already recorded and students were used to completing assignments online, the transition to fully online in this course was fairly straightforward.

As I began to shift into planning for the Fall of 2020 it became clear to me that there was a great deal of uncertainty surrounding this semester; including the potential of students moving in and out of the classroom (due to illness or quarantine), the potential of shifting modality in response to local pandemic conditions, and the threat of hurricanes. Coastal Carolina University is located in a coastal community that has experienced disruptions over the past three years due to hurricanes during the Fall semesters. These uncertainties require that my General Chemistry II course needs to be designed so that it can function well through a wide range of modalities and can enable relatively seamless shifting between modalities without compromising the student learning experience. My recent history has shown that these shifts can be temporary, such as in the response storm, or permanent as happened in the Spring of 2020. This is especially important as we continue to work our way out of a global pandemic. The potential to respond to modility changes both on the individual and course level appears to be staying with us for the forseeable future.

To this end, I simplified some of the in-class activities and coded them into Moodle. Much like what was previously done, students within the course were separated into groups of three or four. The challenge then became how to facilitate the traditional in-class activity with the potential of students not all being in the same locations. To solve this problem, I set up a course team in Microsoft Teams. Within this Team I was able to set up a collaborative notebook and also group channels which could facilitate virtual group work. Within this Microsoft Teams virtual environment, I was able to manage the course with either a hyflex or completely synchronous virtual modality. The Microsoft Teams in conjunction with the Microsoft OneNote provided a single location for students to keep their individual and group work, share additional information, and work and record problems/examples for the course. Within the hyflex modality all group members, both in the classroom and remotely, could collaborate to solve the in-class activity coded into Moodle. Using Microsoft Teams allowed me to start class with all the students simultaneously, and students could view the stream virtually and/or students could be in the classroom. This allowed me to share any announcements, work problems for the class, and answer questions. Then students would break into their individual groups within separate channels in Teams. I could then fairly seamlessly move between groups through the combination of moving around the socially distanced space and entering and leaving virtual streams. The use of the general channel within Teams also provided a method to record the start of class which was then posted within the OneNote for students to review later as needed or if students were not able to attend the class meeting for any reason, including illness or university related activities. I found this greatly reduced the students' stress, and I did not have any students emailing me to ask what happened in class. And with all formal assessment being individualized assessments in the form of the knowledge checks in ALEKS, students had a larger window of time to complete the assessment and hopefully lower student motivation to cheat.

As we begin to move out of the pandemic, it is expected that our campus is to return to "normal" operations. However, I have a feeling that while many students did not like or enjoy the mandated virtual environments, they did enjoy the flexibility that these modalities provided. I anticipate that they are going to expect some of the same options moving forward. This includes the option to have, at the very least, recorded lectures and to attend class virtually for a variety of other reasons. What I have found that worked well, and plan the continued use of, is the incorporation of Microsoft Teams, the online activities which provided instantaneous feedback, and a shift away from traditional exams. Over the last year or so I have seen and heard many accounts of students using a wide range of methods to cheat on exams. Along with some colleagues, I am continuing to investigate and explore alternative methods for student assessment. This will include both formative and summative assessments. This could include simple things like performance on comprehensive in-class activities or more formal assessments like scheduled knowledge checks with ALEKS. It is my goal to continue to develop a course that is engaging to students, highly adaptable in modality, and provides regular high-quality assessments.

Overall, the experiences of the last year have shown me that one of the most important things I can do for my students is provide a consistent learning environment. One in which,

regardless of what is going on in the world, they feel supported and in control of their learning. While I am sure this is possible within a large range of modalities and delivery methods, a flipped classroom that is supplemented with online learning systems such as ALEKS works best for me and my students. This type of learning environment allows for differentiation and flexability where students are supported by each other and myself while being responsible for their learning. Students have the ability to work on problems, develop solutions, and get immediate feedback regardless of location and can work individually or as a member of a group. This type of approach is very challenging on the instructor but I feel it is best for the students, and I think that this is the type of experience students will be expecting as we move into the post pandemic world, like it or not.