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TEACHING REPORT

Flipping the Classroom in Project and Team-Based Learning: COVID made me do it!

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Abstract:

Forced to go online in the Spring of 2020 and then hybrid in Fall 2020 due to the COVID pandemic, this paper outlines the experiences, techniques, and lessons learned in team-based and project-based courses. After a brief overview of the fundamentals of team-based learning (TBL), project-based learning (PBL), and flipped learning, this paper then reflects on how transitioning from the in-class setting to an online or hybrid model impacts content and delivery in TBL and PBL classes. Considerations for future transitions to online or hybrid formats are outlined, as well as potential long-term impacts on future pedagogical practices.

Keywords:

Flipped Classroom, Team-Based Learning, Project-Based Learning, COVID, Online Teaching, Hybrid Teaching

The COVID pandemic that emerged early in 2020 impacted our lives in many ways. For teaching faculty across the globe, the abrupt transition to online teaching in the Spring and the turn to hybrid classes in the Fall created a great deal of confusion and stress but also provided an opportunity for pedagogical growth. For those who had no experience or desire to teach in a virtual environment, the need to reimagine the classroom and address technological issues in a very short period was a daunting task. Many turned to live synchronous lectures, voice-over-PowerPoints, or recorded videos to transfer information to students. As a college professor who teaches all project-based and team-based courses with numerous in-class activities, I felt like a swimmer being pulled away by a riptide struggling to keep my head above water. I would like to say that I did some quick research on best pedagogical practices for online teaching in project or team-based classes, but I did not. Instead, like many of us, I dove in, held my breath, and hoped for the best.

Drawing on two college-level project and team-based classes as case studies, this article discusses the choices and the lessons learned during the transition to online and hybrid formats. After a brief introduction to team-based learning (TBL), project-based learning (PBL), and the flipped classroom, the paper moves on to discuss how two specific courses were altered for these new environments. The paper continues with things to consider when transitioning to online, hybrid, or flipped classroom approaches in TBL and PBL classes and ends with some final reflections on the potential long-term impacts on teaching strategies.

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High Impact Teaching Strategies

Team and Project-Based Learning

TBL and PBL are distinct yet often related pedagogical approaches that have increased in popularity in recent decades. TBL allows faculty to create a small-class environment while students are part of a larger cohort, promoting greater student participation and engagement levels without requiring a small class size (Haidet & Fecile, 2006; Michaelsen et al., 2008). A critical component of this approach is recognizing the difference between working in 'groups' versus 'teams' and employing specific strategies to transform the students into high-functioning teams (Michaelsen et al., 2004). In a TBL approach, students are briefly introduced to course material and then asked to apply their understanding of the content, dedicating most class time to group work instead of content delivery. There are four key components to implementing TBL in the classroom: group creation and management, student accountability for individual and teamwork, frequent and timely feedback, and assignments designed to transmit content and cultivate group cohesion (Michaelsen & Sweet, 2008). A recent overview of the literature on TBL found evidence to support the benefits of team-based learning, such as supporting students who are struggling, promoting classroom engagement, improved teamwork skills, and transfer of knowledge to real-world applications (Haidet et al., 2014).

PBL is a type of inquiry-based learning where students learn by working through real-world problems centered in specific contexts (Al-Balushi & Al-Aamri, 2014) emphasizing a final product (Blumenfeld et al., 1991). When implemented effectively, PBL should lead to meaningful learning experiences (Wurdinger et al., 2007). Studies have shown that PBL improves critical thinking, collaboration, communication, and problem-solving skills (Du & Han, 2016). However, PBL can also have drawbacks; a 2014 study found that inequitable divisions of labor or a perceived lack of time to contribute to the project can lead to mixed learning outcomes for students in PBL classes (Gibbes & Carson, 2014). Concerns also are raised in a recent opinion piece published in Inside Higher Ed, where a graduate student argued that group work should not have been required during COVID as it was more difficult to hold teammates accountable in remote learning situations (Turner, 2020). From a faculty perspective, while TBL is often seen as an effective way for faculty to manage large classes, PBL is perceived as labor-intensive or difficult to manage due to the complexity of projects, the lack of control over some content, and difficulty in assessment (Du & Han, 2016).

Flipped Learning

In the traditional classroom, the standard of practice has been for the teacher or professor to lecture and the students to be passive recipients of this knowledge. However, in the move to make learning a more engaging process and improve student learning outcomes, universities and educators are continually looking for new ways to make this possible (Brewer & Movahedazarhouligh, 2018). One strategy that has grown in popularity is flipped learning, or the flipped classroom (Bergmann & Sams, 2012; Talbert, 2017). It has been argued that flipped learning is not only a more efficient use of class time, but it also improves the transfer of information and learner retention (Estes et al., 2014). In a flipped learning approach, the teacher provides learning material to the students outside of the classroom and then uses class time to engage students actively and provide them with individual support (Hamdan et al., 2013). Studies have shown the benefits of a flipped classroom, such as improved scores (Aronson & Arfstrom, 2013; McLaughlin et al., 2013) and improved design skills (Love et al., 2014; Warter-Perez & Dong, 2012). Flipped learning also lends well to problem-based learning as students can spend more time in class practicing active learning. Additionally, flipped learning is associated with high-level skills such as critical thinking, creative thinking, self-managed learning, problem-solving, and communication skills (Yurniwati & Utomo, 2020).

Recent studies have also emerged on the positive use of the flipped classroom in an online setting during COVID (Gupta, 2020; Yurniwati & Utomo, 2020). For example, researchers found that while most students were unhappy with their online experience during the pandemic, the flipped learning approach improved their learning, attention, and evaluation of classes (Tang et al., 2020). Other researchers found that the flipped classroom was effective in an online platform, especially when it incorporated a combination of pre-class, during-class,

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and post-class activities (Yen, 2020). Finally, researchers specifically looked at TBL in an online environment (that used a flipped-classroom approach) and found that the most significant challenges they faced were difficulty monitoring student engagement and difficulties with online connectivity (Wong et al., 2020).

The sudden move to online and hybrid teaching due to the pandemic forced many educators into making fast, difficult, and often not fully informed choices about their teaching. These studies have shown that flipping the classroom may be an effective choice in approaching the online setting. Additionally, a flipped class may be an especially appropriate choice when working with team-based and project-based courses as it allows for the limited in-class or synchronous time to be dedicated to working with teams and individuals who need support.

This paper examines the shifts in implementing TBL and PBL from in-person to online (case study one) and hybrid classes (case study two) at a private, mid-size STEM college in the United States. Team-based and project-based learning are fundamental aspects of the school's two signature programs, the Great Problems Seminar (GPS) and the Global Projects Program (GPP). Drawing on the author's experience in adapting PBL and TBL classes to online and hybrid settings, the strategies and lessons learned are discussed.

Case Study One: TBL and PBL Online

The Global Projects Program oversees a semester-long, project-based requirement called the Interactive Qualifying Project (IQP), which students complete in their third year. The goal of this project is for STEM students to engage with the intersection of humanity and technology. At the beginning of the project period, student teams are assigned a sponsor, usually from outside the university, who provides the team with a problem or issue that they would like the students to address. Students take a course titled 'Social Science Research Methods in Preparation for the IQP' during the first seven weeks. In this course, the students work with an instructor, their project sponsor, and two additional faculty advisors to research their topic and develop a proposal. The course typically closes with a formal proposal presentation where students have to present and defend their proposed research project to an audience of students, faculty, and project sponsors. During the second seven weeks, the students tackle the problem directly through on-the-ground research[1]. Prior to COVID, 90 percent of the students traveled abroad to complete this project; due to the global pandemic, all projects were completed remotely between March 2020 and May 2021. During this time, over 1,300 students, working with 65 different project centers around the globe, prepared for and completed their projects virtually. This case study examines one online implementation of the course that prepares students for their research experience.

This specific course prepared a group of 24 students to conduct research projects with sponsors located in Switzerland. Each of the six projects had a different focus ranging from addressing the environmental impacts of packaging for cheese cultures used by small-scale dairy farmers in the Swiss Alps to incorporating artificial intelligence into otology research. On the first day of the course, students were placed into teams of four based on their project preference, skill set, and other additional factors that they identified to create the most effective team possible for the project. The team works together for the entire 14-week project experience. Because this course was taught early in the pandemic (March-May 2020) and the students were not scheduled to travel to Switzerland until the Fall of 2020, the class had to prepare them to be able to conduct research both virtually and in person, as it was unknown if travel would be permitted in the Fall. By the end of the course, students were expected to have a fully developed research proposal for the work that they would conduct over the next seven weeks.

Course Delivery: Online and Asynchronous

Due to the constraints of the pandemic, it was required that this course be taught online. In preparation for the class, a survey was sent to the students before the start of the term to get a sense of their living situation, the time zones, and access to the internet to help inform the set-up of the class. The majority of the course content (or lecture content) was provided asynchronously through a series of blogs and podcasts. The students

[1] *For a lengthier discussion of the program, also referred to the IQP, please see Elmes and Loiacono. 2009. Project-based service-learning for an unscripted world: the WPI IQP experience. International Journal of Organizational Analysis 17(1).*

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completed weekly online quizzes on the content, and the instructor met with the teams synchronously, treating the course much like a flipped classroom. The class as a whole met just once, for the first session, and then did not meet again. Instead of meeting with the entire class for four hours a week, the instructor met with each of the six teams for one hour weekly. During these weekly meetings, progress on the proposal was discussed; topics included background research, writing and revision, and data collection tools and strategies that the teams would be using the next term. While meetings were driven by the needs of the students and their specific project, time was allotted each week to review content that team members might have been struggling with based on their performance in the asynchronous quizzes and assignments. While the students technically received fewer 'contact' hours, faculty time interacting with students increased by 50%.

One challenge that arose in teaching this TBL course online was creating a sense of accountability among team members. Accountability is a crucial component of successful team-based learning but proved to be incredibly difficult to establish virtually. Students commented that their teammates were texting, playing video games, and talking to people off-camera during team meetings. Another common problem that they reported was that some teammates did not turn on their cameras during meetings, leading their peers to think that they were disengaged. One strategy used to address this problem was to encourage teams to have regularly scheduled meetings and require that they submit meeting minutes to a folder that both the faculty and their peers could review to help promote accountability.

While some students adapted well to the asynchronous setting, many students commented that they had difficulty planning their days and scheduling time to do work. In addition, a number of students felt that the asynchronous format led to a lack of accountability; as a result, they would leave assignments until the last minute. One student said that she just 'checked out' because she did not have regularly scheduled classes to attend and keep her focused. Others noted that while they liked the special team meeting time, they wished that there was structure in their day-to-day routines and commented that having regular class meetings would have helped them create a routine similar to what they had on campus. In reviewing student feedback on the course, one-third of the students commented in the open response section that they would have liked to have met as a class at least once a week instead of just having synchronous team meetings and the rest asynchronous.

Typically, an underlying goal of the class is to create a cohort of students who will 'look out' for each other once they are abroad. Since it was likely that the students would not be traveling this year, this was not emphasized. Based on student feedback, however, it appears that students would have appreciated a focus on cohort building despite not being on campus and the uncertainty related to travel in the Fall.

Course Content: Virtual Challenges

It also had to be determined how online, primarily asynchronous delivery would influence the content and grading of the course. While converting the lecture content to an online format was straightforward, a large percentage of the students' grades were traditionally based on presentations and participation in various in-class activities. Fully aware that it would be impossible to replicate the classroom experience, but still wanting students to do more than be passive learners, decisions were made about what could be transformed to an online setting and what should be eliminated or altered. Since this was a social science research methods class, a number of the smaller in-class activities were converted to brief homework assignments. For example, instead of interviewing a classmate and filling out a brief worksheet, students interviewed someone with whom they were in lockdown. Anticipating that the students would be conducting their research remotely the next term, assignments related to conducting qualitative research in a remote setting were added. In one assignment, students had to compare conducting an in-person interview with conducting an interview remotely via zoom. Many of these activities were converted with moderate success; however, it did create more work for the instructor as there were now a large number of homework assignments to evaluate.

Another challenge was the significant emphasis that the course traditionally placed on in-class presentations. The ability for students to physically stand in front of a group

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and communicate their ideas to a general audience clearly and confidently has always been a central component of the course; this experience is fundamentally different on zoom. As a result, the decision was made to eliminate formal presentations as part of the students' grades and instead emphasize expressing and sharing information visually via infographics. While the students still presented their research regularly in weekly meetings, it was no longer a formal component of the class.

Table 1

Differences in in-class versus online course structure, content, and delivery

	In Class	Online
Structure	Met with the whole class	Met with teams only
Content	Presentations Traditional research methods	Infographics Virtual research methods
Delivery	Mini lectures In-class activities No Quizzes	Blogs and pod-casts Homework assignments Quizzes

Case Study Two: Hybrid TBL and PBL

This case study examines a team-taught, writing-intensive, semester-long course for first-year students in the Great Problems Seminar (GPS). The GPS program provides an opportunity for students to tackle complex problems from an interdisciplinary perspective. Taught over two terms (14 weeks) with two professors from different disciplines, the students engage in topics related to food, shelter, and energy, among others. At the end of the two terms, students participate in a public poster presentation to share their work with the larger community.[2] During the academic year of 2020-2021, all of the GPS courses were taught either online or in a hybrid manner providing 309 first-year students an introduction to TBL, PBL, and their college experience. In this context, hybrid refers to teaching a class where some students attend in-person while others are either entirely remote or are remote for portions of the term due to being placed in quarantine.

The iteration of the GPS program discussed in this case study combines anthropology, humanitarian architecture, and design. It is co-taught by an anthropologist and an architect. This hands-on class had 35 in-person students, two entirely remote learners, and several students placed in two-week quarantine during the term. During the course, the students are tasked with a long-term, team-based project in which they have to design a shelter. The end of the course is typically celebrated with a large poster exhibition which brings together hundreds of students from all of the different iterations of the course being taught that term. The student teams and their posters are evaluated by outside judges, including students, faculty, alumni, and professionals. Due to the pandemic, this final event was converted on an online format, using a combination of Padlet and Zoom, carried out over several days instead of a single three-hour poster exposition.

Course Delivery: Hybrid and Socially Distanced

Due to the hands-on nature of the course and the fact that these were first-semester freshmen, it was important to meet the students in person as much as possible. Usually, the class would meet twice a week for two hours each meeting; class time would typically be a combination of mini-lectures and group work. However, given the space limitations associated with social distancing, it was impossible to meet with all of the students simultaneously. Instead, half the class met on one day, and the other half of the class met on the other day, essentially breaking the class into two sections and repeating the content on those days. While in the classroom, the students worked on projects in teams of four that rotated every few weeks and included those

[2] *For an in-depth overview of the program and conducing project-based learning with first year students please see Wobbe and Stoddard eds. (2019) Project-Based Learning in the First Year: Beyond all Expectations. Stylus Virgina.*

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physically in class and students attending virtually. This rotation allowed students to get to know one another in preparation for creating the final groups for the course, where students work together in teams on a single project for nine weeks.

Fortunately, the university was able to support this organizational strategy with space, technology, and resources. The class was held in one of the newer active learning classrooms and given special permission (given COVID) to arrange the tables into blocks where the students in teams of four could all sit six feet apart while still facing one another. The large, open floorplan room had movable tables, wireless projection technology, speakers, microphones, and cameras so students zooming into class could both see and hear the classroom, as well as be seen and heard by their peers. At the beginning of class, remote students would generally zoom into the larger group to get oriented to the day's activity and then go into a separate zoom call with their team.

One of the most important resources that we had for making these smooth transitions and managing the technology in the classroom were our Peer Learning Assistants (PLAs). Prior to teaching the class in a hybrid setting, PLAs supported the class by holding office hours, grading homework assignments, and providing students with CAD and 3-D printing support. In a hybrid environment, their roles shifted as they helped manage the classroom technology and provided online support to the students. During class time, they held open office hours for the section of students who were not physically present. They also held additional online office hours outside of class time to support the students in writing, research, and CAD. PLAs were also able to help identify teams that were struggling in either understanding the course content or with issues related to team dynamics.

In-class time focused on hands-on activities in a socially distanced manner. Some of the skills emphasized were presenting, critical thinking, accepting feedback, and teamwork. During the first term, almost every class meeting had a design challenge (which students had prepared for by completing a related homework assignment ahead of time). Teams were given 45 minutes to an hour to develop and present their solution to the design challenge. In one design challenge, teams were tasked with addressing water shortages at a specific refugee camp. Teams were given some limiting parameters but had complete freedom in how to approach the problem. Most teams focused on water collection strategies, but one team decided to look at reducing water usage and the possibilities of using greywater at the camp. Their classmates applauded this unique approach. In this exercise, the students provide each other with feedback on their ideas, presentation skills, and visual representation of the concept. This feedback loop, combined with instructors' in-class review of their work, requires students to think critically about their own design choices and recognize alternative visions. This fast-paced, hands-on approach challenges students in many ways, including speaking in front of their peers and learning to incorporate feedback from both the faculty and other students. The regular informal presentations also help students get comfortable speaking in front of the group and prepare them for the more extensive project presentations.

Another critical aspect of the hybrid context was the interaction between remote and in-person students. As the class progressed, there was an increasing number of students zooming into class due to being in quarantine. Teams that actively engaged and paid attention to the remote students created a much better learning environment for their virtual peers. For students who were zooming into class or team meetings, it was crucial that they had an in-person buddy or advocate to make sure their voice was heard by the rest of the team. When this was not practiced, the remote students revealed that they felt isolated or 'left out.'

Course Content: A Flipped Approach

With only half of the regular contact hours, the most significant decision was how to best use the in-class time with the students. To make facetime as interactive as possible, a flipped-classroom approach was employed. All 'lecture' content was placed online in blog posts, videos, and podcasts. Students were expected to familiarize themselves with the material and complete a weekly online quiz based on the content before coming to class that week. There was also a series of graded homework assignments that primed students for conducting in-class activities.

Another adjustment was organizing the class so

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students were working on a team project from day one. Prior to this iteration of the course, the first five weeks of the class consisted of several smaller one-off assignments that the students completed individually or with a random group of peers. These were generally low-stakes assignments that students sometimes interpreted as busywork despite laying the foundation for vital research, writing, and teamwork skills. This year the class took a different approach. Instead of several smaller assignments, the students completed two mini projects (2-3 weeks each) and one long project for the class. The smaller projects created COVID bubbles so there was less interaction with different classmates outside of class, but it also allowed students to interact and connect, a very important yet difficult thing for first-year students due to the social distancing rules on campus. Over 25 percent of the free-response comments in the course evaluations mentioned how much they appreciated working with different groups during the class to get to know a variety of their peers.

All the in-class activities, homework assignments, and mini-projects provided scaffolding for the larger team project. In addition to providing additional continuity for the students, the team-based structure also functioned as a counterpoint to the reduced in-person time the students were experiencing and the struggles with time management students had revealed in course evaluations during the all-online courses in the Spring of 2020. While it was not enforced, students were encouraged to meet as teams during the two hours of scheduled class time that they were not in the classroom. Many teams reported that they did meet regularly with their peers during this time. The PLAs also offered online office hours during this time slot to provide additional support for the students.

An emphasis on teamwork skills became even more critical as COVID restrictions made it more difficult for team members to interact socially outside of class. Class time was used to help the students get to know one another before diving into their projects through activities such as asset mapping and discussing areas where students want to improve skills related to their projects, such as writing, researching, and CAD. When teams were in crisis, they were directed to the SWEET center on campus, which provides guidance for teams struggling with working together successfully.

Despite all of these efforts, however, it was much more challenging to get to know the students and for the students to get to know one another than in a typical in-person classroom setting. Between being masked and only seeing students for two hours a week instead of four, the instructors struggled with getting a good sense of the strengths and weaknesses of the individuals in the class. It was difficult to connect a name to a face (or mask)! Similarly, team dynamics issues were harder to identify. The lack of time with each group and difficulty reading facial expressions most likely also played into this challenge. It was not until students did their first round of team evaluations that it was revealed which teams were struggling. Compared to previous years, more students noted that it was difficult to hold their teammates accountable and that their peers often seemed distracted during team meetings, would show up late, or would not be prepared.

Table 2

Differences in structure, content & delivery for in-person and hybrid teaching

	In-Class	Hybrid
Structure	Met with the whole class Teams for the last half of course No Zoom Limited PLA office hours	Met with half the class In a team the entire course Zoom for remote students PLA office hours during class time
Content	Multiple assignments Design challenges	Three team projects Socially distant design challenges
Delivery	In-class lectures No quizzes	Blogs, podcasts, recorded lectures Quizzes

Lessons Learned

Drawing on these two examples, there are three areas of TBL and PBL that deserve special attention in an online or hybrid setting: team dynamics, structure and contact hours, and connection and inclusivity. While team dynamics are always a focus in TBL, it appears that teams need special attention in an online or hybrid environment as team dynamics can be more challenging to manage when there is less contact between team

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members and between teams and faculty. Creating accountability between team members, a key component of TBL (Michaelsen & Sweet, 2008), appears to be more challenging than when teaching and learning in a face-to-face setting. Team dynamics issues are also more difficult to identify and address when they arise due to this lack of accountability observed in a virtual environment.

Additionally, the students forced into online and hybrid environments have different needs than those who traditionally take online classes, whom studies have found tend to be more intrinsically motivated (Stewart et al., 2010). While some students enjoyed the freedom and flexibility of being online, many struggled with time management and requested that classes be synchronous. These students sorely missed the structure that came with being on campus with days full of classes, club meetings, and sports practice. The shift from being overscheduled to having virtually no schedule was a difficult transition for many who struggled to deal with all of the 'free time' they experienced. In planning online or hybrid PBL and TBL classes, it is crucial to provide a structure students can use to organize their time and to gauge their need for contact hours and face time with both faculty and their classmates. Telling students how often they should meet with their team and asking them to provide a weekly schedule and minutes of their meetings reinforces the importance of meeting, social contact, and accountability.

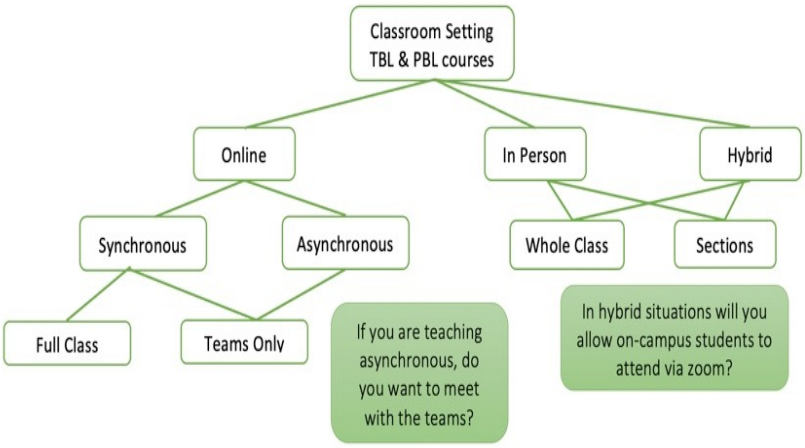
Finally, building a sense of community and creating an inclusive environment for all students is particularly important for online TBL and PBL courses. This becomes especially apparent with remote students in a hybrid setting; the connection and support from their peers on campus are key for their success as they, too, are looking for that grounding and connection to what is happening on campus even though they are not physically present. A lack of connection in this context can be particularly damaging for TBL.

Future Decisions

Looking at the future of higher education globally, it is clear that online teaching will continue to have a strong presence long after the COVID pandemic has passed. Some will continue to teach online, while others will transition back to in-person classes. No matter the context, the previous year of online and hybrid teaching that occurred due to COVID in 2020-2021 has left its mark on academia and faculty's pedagogical practices across the globe. For those considering transitioning TBL and PBL courses to an online or hybrid setting, or simply considering adopting a flipped-classroom approach for in-person classes, there are a few things to consider: what kind of classroom setting will you have, how will the format change impact your content, and what is the optimal format of content delivery for your course?

Figure 1

Factors in considering the classroom setting



Classroom Setting

The first decision is to determine the setting. Will the project or team-based class be online, in person, or a hybrid format? What considerations need to be taken into account to make this choice? Issues such as personal safety, space restrictions, impacts on team dynamics, and available technology should be considered. Are your students all in the same time zone? Is it best to meet the whole class, sections of the class, or would it be the best use of your time just to meet with teams?

Flipping the Classroom *continued*

Content

Another consideration is what content is most appropriate for the classroom setting? On what skill sets do you focus? What information is essential for the course? What can you let go? For example, in case study one, we saw that the faculty were unsure how to evaluate presentation skills in an online environment, so the focus shifted to the visual representations of data. When considering how to adapt your project-based or team-based syllabus to a hybrid, online, or flipped setting, here are four questions to ask:

1. What skills and content are most important?
2. Can the assignments be adapted for remote students, an online setting, a flipped environment?
3. How will this change the grading breakdown?
4. Will you need to adjust or alter your expectations? If so, how?

With these questions in mind, review the content of your syllabus as well as assignments. Consider how much flexibility you have over the content of your course. What changes can you make? Can you adjust your grading to meet the needs of a flipped classroom or an online setting? Can you shift emphasis away from one skill set that is difficult to replicate online and replace it with one that is more appropriate for the given context?

Delivery

Hand-in-hand with considering the classroom setting and content is determining the mode of delivery. If you are teaching in-person, hybrid, or in a synchronous online class, how do you want to use the facetime that you do have with the students? While not the only options, the two choices considered here are the traditional lecture style and a flipped classroom approach. The traditional lecture will be the most straightforward transition but may not have high levels of student engagement. With a synchronous lecture, technology may create difficulties with information transfer.

The flipped approach is more work upfront and may not work for all content but is associated with higher levels of student engagement in-person and online (Tang et al., 2020). From an organizational standpoint, teaching a flipped class means that class materials must be available and ready for the students at least a week in advance. Writing blogs, recording podcasts and videos, and creating effective online quizzes in preparation for a hybrid or flipped environment is time-consuming, even when a class has been taught previously.

Table 3

Considerations for flipped learning

Considerations before flipping…
• Do you have time to prepare the materials for a flipped classroom?
• Does the material you are teaching lend itself to hands on learning?
• What kinds of resources are already available and what do you have to create from scratch?
• What activities would you do during class time if not lecturing?

The COVID pandemic disrupted higher education across the globe. Instead of focusing on the negative impacts (and there were many), it is also important to recognize the possibilities that emerged during this difficult time. Understanding the lessons learned and how these challenges have altered our approaches to teaching and learning are the first steps in transforming this experience into a learning opportunity. The increased adoption of a flipped classroom and other high-impact teaching practices is just one possible outcome that we can hope emerges from this experience.

Flipping the Classroom *continued*

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