

# **BeaconFlex Report**

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## **Introduction**

BeaconFlex modality, also known as HyFlex, allows students to attend class sessions either in-person or remotely. A small number of professors required students to identify which modality they would be using throughout the semester while others allowed students to choose session by session. While this choice between modalities accommodated students and instructors who could not attend class due to quarantining and/or having COVID, it was not limited just to those situations. For example, faculty reported that sometimes students would remote in for the first few minutes while taking the T to campus and then attend the rest of campus in person.

In order to do this well requires certain technologies so that students and professors can all see and hear each other regardless of modality. Because this technology was limited, instructors had to apply and be accepted to teach using the BeaconFlex modality. For Fall 2021, instructors did not find out whether or not they had gotten accepted until a few weeks before the semester began. Since instructors did not have much time to plan and because some of the technologies such as microphones and web cameras were not available immediately, the findings in this report are very much preliminary.

## **Methods**

In order to investigate the effectiveness of BeaconFlex classes, I attended three learning community sessions which are twice a month meetings of the BeaconFlex faculty, I observed a BeaconFlex class, and I surveyed the BeaconFlex faculty and students. Six out of eleven faculty responded to the survey. Two hundred and forty-eight students responded.

## **Results**

### *Types of Classes*

The faculty who responded to the survey taught large (over 100 students) classes except for one who taught a class of less than 30 students. While students represented more diversity in terms of class size, the largest number of respondents (42%) attended large classes (over 100 students) with medium (30-100 students) and small (less than 30 students) garnering around 15% of the respondents each.

Lecture was the primary mode of instruction for all but one faculty member and the majority (52%) of students with some (2 faculty; 20% of students) also having whole class discussions. While half of the faculty who responded used breakout groups with one using cross-modality groups, seventeen percent of the students reported their classes had breakout groups and only 7% had cross-modality breakout groups. Assessments included projects, essays, tests, and quizzes.

### *Attendance*

While one instructor indicated that the ratio of remote to in-person fluctuated greatly from class to class, the rest of the faculty survey respondents said that the number of students attending remotely increased over the course of the semester. This was supported by statements made during the learning community meetings. By the end of the semester, all but one instructor indicated that approximately 75% attended remotely and 25% in-person. Less than 10% of the students stated that they never attended remotely.

Students were in agreement that they liked having the option of attending class remotely if they could not go in person, with 77% reporting that they had attended at least one class remotely that they would not have been able to attend otherwise. The biggest factors were time (time of day and commuting time were the two most cited), health and safety (health and covid concerns were 3<sup>rd</sup> and 4<sup>th</sup> most cited), and obligations—both family and work (5<sup>th</sup> and 7<sup>th</sup>).

### *Cameras*

While two of the faculty recorded the class and 38% of the students reported that their classes were recorded, no faculty who responded to the survey required students to have their cameras on and only three students stated they were required to keep their cameras on. During class, all faculty reported that almost none of their students had their cameras on, although 6% of the student respondents said they always had it on and almost 60% of those reporting that they attended remotely reported they almost always had it off. One student justified having it off because they had a profile picture. Another said that other students having their cameras on was distracting because of activity in the background. Another said that they didn't want to be the only one with their camera on. During the learning community meeting, most faculty agreed that students with cameras off were less engaged, however, 56% of the students felt it did not make a difference in their engagement level both in terms of having their own camera on and other students having their cameras on. One faculty member stated that all of her remote students did have their cameras on. She described her class as a seminar class that consisted of whole class discussions.

### *Chat feature*

Faculty responding to the survey reported that only a few students used the chat feature however, 93% of students reported that they used the chat feature. None of the students said they used it to private message a friend. They used it to ask questions, respond to others, and make comments. One faculty member had a shy student who came to class but used the chat feature in zoom to participate.

### *What works*

Faculty reported finding success with recorded videos, take-home exams, consistent groups with groupwork, and online activities. One student stated, "I felt like I learned just as well from home as compared to in person." One faculty member remarked:

*There was one time for a lab meeting (smaller group of about 8 people), we all opened up zoom so we could interact more directly with the people online. It was pretty amazing and really made the people who could not make it feel as if they really were present with us. I would use this model for smaller or graduate only classes.*

Another faculty member discussed taking the “temperature” of her students at the beginning of each class session to see how they were feeling and tailoring class to that. She used JamBoard but there are other ways to get feedback from students by encouraging them to use the emotion emoticons in Zoom, by using the Zoom or other polling tools, and by having students use the Zoom chat feature. Taking advantage of asynchronous options worked well for faculty for student presentations, active learning, and conveying content. I noticed in my class observation that the professor specifically asked for questions from “students in Zoomland.” Two faculty members remarked that the students who attended remotely had higher grades than those who attended in-person while one faculty member said the opposite.

### *Pros*

All faculty and students who responded to the open response questions used the word “flexibility” to describe the advantages of BeaconFlex. One faculty member stated:

*Beaconflex is the way to go!! If a student is sick, if there is bad weather, if a student is under duress from personal conflicts: Beaconflex allows students flexibility and allows each student to work at their own pace. I have seen great success with students. From my point of view, students appreciate this option.*

Two faculty survey respondents remarked that BeaconFlex is the “future of higher education”. Students remarked on being able to spend more time with their kids and getting chores done at home.

### *Cons*

Both in the learning communities and on the survey, instructors reported that the remote option was not ideal for “academically immature students,” although one also noted that they found attendance issues about the same whether face-to-face or remote. One instructor lamented the lack of networking opportunities for remote students although it was not rated as a factor among students (only 1%) and some instructors, but not all, reported less engagement from the remote students. While one student did remark on technical issues, the rest who responded to the open-response said there were no cons to BeaconFlex.

### *Changes*

Faculty plan to make new rules and expectations around some unanticipated situations such as the student who was driving while remoting into class. Two faculty members surveyed and faculty in the learning community sessions mentioned that they want to improve group discussions, particularly with remote students. All of the students, however, who responded to the prompt about what could be done to make it better said “nothing.”

### *Advice*

The main advice to new instructors was to play around with the technology in the room well-before class begins. Seeking feedback from students was also mentioned. Having back-up plans was also seen as important. One survey respondent emphasized that the technology should serve the learning outcomes, not the other way around. Some faculty felt it would be better to present the remote option as “for emergency use only.” In the final learning community session, a faculty member emphasized the importance of setting expectations and establishing norms. To do so, she suggested on the first day to break students into small groups or partners and having students introduce themselves to one another

then requiring that they report out what their partner said in order to set and practice the expectation that students interact with each other.

## Findings

When looking across all sets of data, some major themes emerged.

### *Technology*

BeaconFlex modality relies on technology. While all the technology is important, faculty and students reported that some are more essential than others.

In order to implement BeaconFlex, the university needs infrastructure capable of handling large volumes of students using wi-fi. One story that repeatedly emerged was of a professor teaching a large class in the newest building on campus who instructed all his students—in-person and remote—to do something online. Having all his students do this caused an internet outage for that building that lasted several hours. However, this could have happened even if all students were in-person. If the university is going to schedule classes this large, it must have the infrastructure to handle all the students using the internet at once. This is amplified when instructors want to have cross-modality groupwork which some found difficult because of bandwidth issues. One instructor remarked on the survey that consistent groups throughout the semester made groupwork easier for students. If students are choosing class to class whether or not to attend remotely or in-person, this necessitates cross-modality groupwork. In addition, for professors to use more active learning through technology tools such as Padlet and JamBoard, the bandwidth issues must be solved, as mentioned on the survey and in the learning community sessions. One student stated, “I would have [my camera] on, but with the volume of people I keep it off so the connection stays stable for everyone.” Clearly better bandwidth would make it possible for instructors to increase the engagement level in their BeaconFlex classes.

High quality microphones that can transmit what everyone in the class is saying without also transmitting background noise are essential. Obviously, all students need to hear the professor so that microphone needs to be of the highest quality. Microphones strategically placed so that the remote students can hear the in-person students, particularly for classes with whole class discussions, is key to engagement. If students cannot hear each other, they cannot interact effectively. While the chat function can serve as a means of backchannel communication, for class discussions to take place, students must be able to hear each other. Students can be expected to bring in their own set of headphones for cross-modality groupwork, but high-quality microphones need to be supplied by the university. As one instructor stated:

*The class microphone: absolutely essential-students have small timid voices because they are not so confident speaking. That fact, plus the masks, it is absolutely essential to have a working mic for the professor and a classroom microphone These items are not optional.*

Well-placed high quality web cameras are also necessary for remote students to see the instructors, but it would be ideal if cameras also were able to capture the in-person students. Document cameras to show all students hard-copy documents and other items are, in most situations, a “nice-to-have” but may be a necessity in classes that use physical objects in class.

Tech support was praised as many faculty mentioned Zack Ronald and his team as being responsive. That being said, there are aspects of support that lie outside their purview. For example, one instructor emphasized the necessity of Blackboard support. Others mentioned the need for T.A.s to monitor chat communications and to run breakout rooms. Faculty were very appreciative of the support they found in the learning community sessions.

### *Groupwork*

While students did not mention groupwork, groupwork was universally discussed by faculty as difficult. Some faculty members avoided it. Others tried to use breakout groups but found that students ended up working individually and not interacting with the others in the breakout rooms. All agreed that it was much easier to do groupwork with the in-person students. One faculty member suggested designating a student facilitator per group who would report out and awarding them participation points for doing so.

### *Time*

Faculty expressed the need for time — time to plan, time to try out the technology before the semester begins, and time to test the technology before each class session. Because multiple people use the university equipment, faculty would come into class to find that settings were changed and equipment was moved around. If a class was scheduled immediately before a BeaconFlex class, faculty did not have time to test and fix the equipment. Faculty also need to have any training well before planning their syllabi so they can make any necessary changes before students have access to the syllabus.

### **Recommendations**

Instead of finding that BeaconFlex was “the best of both worlds” or that it was Shavian Reversal—an offspring inheriting the worst characteristics of each parent, whether or not teaching with BeaconFlex modality was successful has an “it depends” answer, just like with in-person and online teaching. While many factors go into the conditions behind the “it depends” including technology, pedagogy, and time for planning, the largest factor of all is who you ask. If you ask the students, it was a resounding success. In fact, faculty worried more about equitable experiences than students did. Students appreciated the flexibility and the extra time it afforded them to spend with their families and getting chores done around the home. They felt like they learned the same whether in class or at home, camera on or camera off. They hunger for more flexibility in their education and would love to see BeaconFlex expanded.

If you ask faculty, they were more reserved in their responses. While they recognized it is what students want and is likely the “future of education,” they encountered difficulties in making it run smoothly, felt like remote students engaged less, and felt less connected to remote students. While faculty recognized there are things they could do to ameliorate these issues, many of the problems they cited can be addressed by the university. These include:

- 1) **Improve wi-fi bandwidth.** This was the highest priority. Improving bandwidth would allow faculty to use technology tools to promote more active engagement among students.
- 2) A corollary to the above is **reducing the class size of the super large classes** so that professors can have both in-person and at-home learners use technology to interact with each other and with the content of the class without having to worry about “breaking the internet”. Smaller

class sizes would also make it more manageable for T.A.s to monitor the chat feature and manage breakout groups.

- 3) **Better equipment.** Better microphones will help increase interaction between in-person and at-home students. Better cameras and better placement will allow remote students to see the instructor, students, and class materials better.
- 4) **Keep the Tech Support.** Faculty were very appreciate of Zack Ronald and his team for the technical support they provided.
- 5) **Keep learning community meetings.** Faculty were grateful for the space to seek support, share advice, and learn from each other. They were also grateful for Carol Sharicz and Suha Ballout for making these happen and leading them.
- 6) **Have T.A.s for BeaconFlex classes regardless of class size.** While large and super large classes are most likely to be assigned T.A.s, medium to small classes also have the need to monitor the chat and manage break out groups because instructors cannot perform those jobs and teach at the same time. Some instructors utilized students in the class to do these jobs. Not only is that not fair to those students, but those jobs are best done by someone who has some expertise in the subject matter so they can answer questions and know which questions that arise in the chat and the breakout groups should be brought to the instructor's attention. Small seminar classes can be run without a T.A., but any BeaconFlex class larger than a seminar could use a T.A. Faculty reported that students tended to work individually instead of with their breakout groups when the breakout groups were not monitored.
- 7) **Schedule undergrad BeaconFlex and in-person classes for the middle of the day.** Early classes and late afternoon classes ended up fully remote. Students were more likely to attend in person for middle of the day classes.
- 8) **Schedule BeaconFlex classes so that the room is free prior to the BeaconFlex class.** Faculty need more than ten minutes to be able to go into the classroom to make sure everything works. This is particularly important when using university equipment because other people using the room may have changed the settings. Faculty need enough time to be able to call in Tech support to fix anything they can't.
- 9) **Allow for flexibility** even for non-BeaconFlex classes. Have professors decide when it makes sense to hold a class remotely for pedagogical reasons, weather-related reasons, health/COVID reasons, or logistical reasons. This needs to be able to be done on the fly because unexpected situations crop up. For example, there was an instance where a faculty member tested positive but was able to hold a "reverse BeaconFlex" class where she zoomed in. Faculty need to be responsible for making any modality changes known to the students via UMB e-mail. An e-mail informing their department chair and admin in case students somehow miss the notification and go to the admin or department chair should suffice. It is more important for faculty to establish clear means of communication with students than to stick with a modality that isn't working just because that's what WISER says.

## Conclusion

In conclusion, there is overwhelming support from the students to keep BeaconFlex. Most faculty felt the same but also recognized that it could be better, particularly when it comes to groupwork. While students felt as engaged when attending remotely with their camera off, faculty worried they were not as engaged. This can be explained by the lack of feedback faculty get when students attend

class this way. One faculty member used JamBoard to explicitly solicit feedback from students. While not real-time, it was immediate and allowed her to react and adjust her teaching. While the feedback from students and from faculty indicate that BeaconFlex was a success, there are many ways enumerated above that could help improve BeaconFlex and ensure its success in the future.