



Hyflex Learning in a Higher Education Institution: The DLSU Experience

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Abstract: The pandemic posed challenges in teaching and learning for all student levels. In line with the Commission on Higher Education CMO No. 4, s. 2020 and as preparation for the “new normal” of flexible learning post-pandemic, De La Salle University pursued the implementation of hyflex learning model with the goal of achieving meaningful combination of in-class and online experience. Data was collected via an online survey to examine student perspectives on various aspects of their Hyflex learning experience. Top box results suggest Excellent evaluation of HyFlex learning, except for the level of interactivity of online students (43.8%) and level of interactivity between on-site and online students (42.8%). Themes from open-ended responses point to the benefits of the technologies in the hyflex classrooms on interaction. On the other hand, infrastructure and participation issues, as well as technology challenges by the faculty, also emerged as themes. Overall, the majority of the students expressed that their hyflex learning session were as good (39%) or better (60%) than fully online learning sessions, with them planning to join another Hyflex learning session in the future (87.6%). Suggestions and additional support needed to help improve Hyflex learning implementation are discussed.

Key Words: Hyflex Learning, Online learning, Flexible learning

1. INTRODUCTION

Positive and challenging aspects of DLSU online distance learning have emerged, specifically in favor of face-to-face classes for certain types of coursework. Differences were observed between students and teachers with regards to the factor of physical presence. Students expressed how online learning is not the same as face-to-face classes, and as such they are more open to potential classroom set-up. On the other hand, as teachers have adjusted by having good adoption of the various online tools and developing their online best practices, coupled with their higher anxiety, they prefer (synchronous) online learning. These results suggest exploring a model that recognizes the advantages of both face-to-face and online learning modalities and combining them in a viable way.

This combination needs to be achieved in relation to the physical gap in the virtual classroom environment. The potential classroom set-up should

not be seen as simply a technology solution for the need of physical presence, or a better approach in achieving the learning outcomes. The potential classroom set-up needs to be contextualized in a whole school approach since putting up a classroom does not by itself enable students to achieve desired program/course learning outcomes. Guidelines related to pedagogy, course design and instruction in relation to the potential classroom set-up need to be articulated. The classroom set-up should be a means of advancing transformative learning approaches instead of merely reinforcing a transmission mode of learning. Simply put, the design of this classroom in the new normal cannot be synonymous to traditional pre-pandemic academic settings.

In this regard, DLSU embarked on Hyflex learning, where students have the choice to attend their classes either online, face-to-face, or asynchronously (Liu & Rodriguez, 2019). Although varied research findings can be found in relation to the HyFlex learning model, no definitive research yet as far as hybrid instruction in tertiary education. This



serves as the gap that the study wants to respond to.

1.1 Hyflex Learning

One model of combining the face-to-face with online learning that has been explored is the concurrent classroom model. Tucker (2021) defines concurrent classrooms (aka "hybrid" instruction) as an instructional model where teachers are meeting students' needs in two different learning landscapes (i.e. in classrooms and online). In a differentiated or concurrent model, both these groups interact together and are taught simultaneously (Spencer, 2020).

The Hyflex set-up has emerged in response to the pandemic and has been adopted by some universities (e.g. Kohnke & Moorhouse, 2021; Ensmann et al., 2020). In Hyflex learning, students have the choice to attend their classes either online, face-to-face, or asynchronously (Liu & Rodriguez, 2019). Synchronously, online students can watch the classroom session while at home. Asynchronous, students at a distance can be given asynchronous activities instead of watching the livestream.

Beatty (2019) stated four values and corresponding guiding principles for HyFlex Course Design, as follows: (1) Learner Choice: Provide meaningful alternative participation modes and enable students to choose between participation modes daily, weekly, or topically; (2) Equivalency: Provide learning activities in all participation modes which lead to equivalent learning outcomes; (3) Reusability: Utilize artifacts from learning activities in each participation mode as "learning objects" for all students; and (4) Accessibility: Equip students with technology skills and equitable access to all participation modes.

1.2 Impact of Hyflex Learning

The advantage of Hyflex learning is that the option of taking the class online allows students to participate in classroom activities even if they are not able to physically attend due to various reasons (e.g., sick, travel restrictions, public transportation interference, mental health problems, etc.; Malczyk, 2019). Additionally, it allows students (and parents)

to choose what mode they want to attend classes based on how anxious/fearful they are of surrounding dangers (i.e., COVID-19; Bohatyrets, 2020).

On the other hand, the challenges in hyflex learning include the delivery, management, and maintenance of a HyFlex Class is much more demanding than traditional classes in terms of technical knowledge and pedagogy (Malczyk, 2019). Moreover, teachers will have to do double preparatory work (synchronous face-to-face and possible asynchronous distance materias). Moreover, there are criticisms surrounding the issue of equity in HyFlex learning in such a way that, how can we ensure that the learning experience of students in a face-to-face classroom is equivalent or at least comparable to those in the online set-up (Binnewies & Wang, 2019).

The study by Kohnke and Moorhouse (2021) on HyFlex found that some students preferred to learn face-to-face, and it allowed students to choose depending on how "risky" the situation was. This is similar to the results of a pre-pandemic study of Parra & Abdelmalak (2016), wherein the participant-students stated their appreciation for the choice and flexibility offered by the HyFlex setup.

The Hyflex model has been found to produce statistically equivalent learning outcomes when compared to the traditional classroom set-up, such as the case in an undergraduate Statistics course (Miller et al., 2013). Moreover, when comparing those who chose the face-to-face mode and those who chose the online distance mode, Lakhal et al. (2014, as cited in Malczyk, 2019) found that there were no significant differences in terms of academic outcomes between the groups.

Balter-Reitz & Boerboom (2019) expressed overwhelming positive feedback from HEI students. This stems from students being able to meet on-campus their classmates and being able to ask questions to the teacher in-person. Moreover, the flexibility of participation allowed students to plan ahead on choosing a week they could attend class; and reduced their anxiety about being a student.



1.3 Conceptual Framework

In developing the DLSU Hyflex learning model, existing data from Term 1 to Term 2 of SY2020-21, including the LMS Acceptance Survey, Faculty evaluation results and LMS Analytics were utilized. An initial survey on potential classroom set-up of teachers and students was also conducted to establish the need for Hyflex classrooms. Afterwards, key considerations and guidelines in the design and delivery of hyflex classrooms, including management, maintenance, and capacity building requirements were created. Finally, classroom redesign requirements for the Hyflex classrooms were made. This study is focused on the evaluation of the implementation of the Hyflex learning starting SY2021-22. Specifically, it aimed to answer the questions: (a) “What are the experience of students during their hyflex learning session?” and (b) “What improvements in hyflex learning implementation can be recommended?” (see Figure 1).

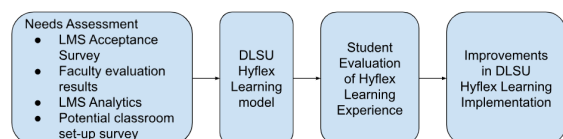


Fig. 1. Conceptual Framework for Hyflex Learning in a Higher Education Institution: The DLSU Experience

2. METHODOLOGY

2.1 Research Design

This study utilized exploratory research design aimed to investigate students’ attitudes, perspectives, and experiences with regards to the HyFlex setup, a descriptive qualitative and quantitative survey was given to participants in order to assess their attitudes, perspectives, and experiences. Second, direct observation of the HyFlex classes was conducted by the researchers.

2.2. Participants

Convenience sampling was used as the use of hyflex classrooms was limited to teachers who expressed intention to use and reserved the facility. In this regard, the 105 respondents were DLSU students that attended hyflex learning session and answered the experience survey. 41% of the participants are from the College of Engineering, 19% from the College

of Liberal Arts, 18.1% from the College of Education, and the rest from the other colleges.

2.3. Instrumentation

Student participants answered the HyFlex Experience Survey, which asked them to evaluate various aspects of their classes’ usage of the HyFlex classroom, including interaction, equitability, and technical aspects. Statements about the students’ hyflex learning session were rated using a 5-point Likert scale from 1 - Poor to 5 - Excellent. The items in the instrument were informed by a literature review on the usage of HyFlex classes in other institutions. The items in the experience survey were subjected to expert validation. Open-ended questions were also asked in relation to students’ other insights from their experience, as well as their suggestions and additional support needed to help improve Hyflex implementation.

2.4. Data Collection and Analysis

The HyFlex Student Experience Survey was sent out via Google Form. Quantitative data was described using frequency count and percentage of excellent ratings. Thematic analysis was used for the qualitative data from the open-ended questions. Relevant statements were clustered together into initial themes. Afterwards, the identified themes were verified by two experts to ensure inter-rater reliability.

3. RESULTS AND DISCUSSION

Table 1 presents the results of the Hyflex Student Experience survey. Top box results shows Excellent evaluation of HyFlex learning for majority of the statements. Highest rated items were the adherence to health protocols (68.57%) and attitude towards the Hyflex session (68.57%). The health protocol aspect was critical in the design of HyFlex classrooms as according to Zweig (2020), some public health experts have critiqued the hybrid or concurrent classroom model as a possible superspreader case.

On the other hand, the level of interactivity of online students (43.8%) and level of interactivity between on-site and online students (42.8%) got the lowest top box ratings. These reiterate that putting up a HyFlex classroom does not by itself enable students to achieve desired program/course learning outcomes.



Guidelines related to pedagogy, course design, and instruction focused on interaction to be articulated. The HyFlex classroom should be a means of advancing transformative learning approaches instead of merely reinforcing a transmission mode of learning.

Table 1. Top box (Excellent) rating for the HyFlex learning session (n=105)

Experience	No. of Excellent rating	%
Appropriateness of the physical layout (e.g. equipment positions)	61	58.10%
Ease of use of Hyflex equipment	61	58.10%
Internet connection during the session	61	58.10%
Level of interactivity of on-site students	60	57.14%
Level of interactivity of online students	46	43.81%
Level of interactivity between on-site and online students on-site	45	42.86%
Level of interactivity between students and teacher	68	64.76%
Attitude towards the Hyflex session	72	68.57%
Learning experience between onsite and online students	65	61.90%
Session productivity	65	61.90%
Adherence to health protocols	72	68.57%
Overall experience	59	56.19%

Table 2 presents the themes from the open-ended questions. It points to the benefits of the technologies in the HyFlex classrooms on interaction. This suggests how the HyFlex classroom can be an alternative technology solution for the lack of physical presence in onsite classes.

On the other hand, infrastructure and participation issues, as well as technology challenges by the faculty, also emerged as themes. This resonates with Malczyk (2019) on the challenges in Hyflex learning in terms of its demand for teachers to be able to integrate their technical knowledge and pedagogy.

Table 2. Themes from open-ended questions

Theme	No. of Statements	Illustrative Quotations
Tech Issues	15	<i>Speakers for the TV because we watched a video from the presentation and we didnt hear much but our overall experience is awesome and very nice</i>
Interaction	9	<i>I was able to view via zoom some of my classmates in the room while reporting. Although I was not attended face to face, I observed that the prof and students were able to have an easy and good interaction on the topics that has been discussed.</i>
Tech Challenges by Faculty	7	<i>Camera panning is disorienting. it's weird that the prof has to turn his back towards the camera when trying to talk to students. low quality of camera's video stream makes it a little more challenging to read what the professor is writing, especially if the prof is using a thin marker.</i>
Better than Purely	7	<i>i was able to understand the lesson</i>



Online		<i>easily rather than online class.</i>
Infrastructure Issues	6	<i>Install an additional television at the back for participants' view. Putting up pods can also be helpful during group activities.</i>
Tech Benefits	6	<i>I liked how advanced the university is when coping up with technology to improve the way of teaching</i>
External to the HyFlex Setup	5	<i>Students going into the campus should already have an ID instead of using an eaf in order for a smoother flow of entry for the students to happen.</i>
Participation Issues	4	<i>It's also better if there are more than 15 on site students as there are others who still want to join.</i>

Overall, the majority of the students expressed that their hyflex learning session were as good (39%) or better (60%) than fully online learning sessions, with them planning to join another Hyflex learning session in the future (87.6%).

Observations done by the authors align with the results of the survey. In almost all of the sessions, faculty members had difficulty with using the camera. Likewise, they asked for help from either the students or contacted the support staff if they were having problems with the technology. It was also common for teachers to favor those students who were inside the classroom in terms of discussions, as the teachers sometimes forgot to check the chat or look at the camera when asking questions.

4. CONCLUSIONS

Based on the results of the study, the following conclusions are made: (1) Students had a positive experience with Hyflex learning (2) Technology and interaction issues emerged as the challenges in hyflex learning implementation.

Improvements in the hyflex learning implementation can focus on further enhancing the level of interactivity of online students and level of interactivity between on-site and online students. Specifically, teacher capacity building can focus on building their technological pedagogical knowledge (TPK) by using strategies to facilitate and promote these types of interactions. This can include assigning online students beadle roles; ensuring online students are called to participate; and partnering on-site and online students in collaborative tasks. Likewise, as the technologies in the hyflex classrooms help facilitate such interactions, improving the technology skills of teachers to use them is also essential. As teachers become more comfortable with technology, the more effective they become as an educator. Hyflex Learning provides an equitable alternative learning mode to cater to individual students need. May it be challenges on commuting due to traffic or weather disturbances, or having to stay at home due to sickness.

Finally, it is recommended to establish the psychometric properties of the hyflex learning experience survey for future use. The description of quantitative analysis is limited to frequency counts and percentages. Inferential analysis can also be explored to provide deeper insights about the experience, as well as other possible factors such as specific hyflex classroom venue used and type of course.

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