

THE CHALLENGES OF SCIENCE TEACHERS ADAPTING HYFLEX MODALITY: A PHENOMENOLOGICAL STUDY

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ABSTRACT

The COVID-19 pandemic greatly affected and changed the teaching and learning process in the education sector. Higher education and basic education limit in-person classes to avoid the spread of the virus. In response to this, the Department of Education (DepEd) established different distance learning modalities to ensure continuity of learning in response to the COVID-19 pandemic in the Philippines. In the study's locale, in-person classes were discontinued and for the last 2 years, online learning was implemented. For the School year 2022-2023, the school administration piloted a new learning modality, which is the Hyflex mode of learning. In this modality, students can attend and participate in class sessions either in a regular classroom or online. The study's objective is to provide pertinent data for a better comprehension of the many difficulties that science teachers face while implementing the Hyflex modality. The study utilized a phenomenological design with in-depth interviews and survey questionnaires as data-gathering techniques. There were 4 essential themes generated based on the experience of science teachers. As a result, this study suggests revisiting the procedures in adapting the Hyflex modality, including the proper training for the teachers in troubleshooting problems with regards to the use of the devices that are prerequisites on the said modality.

Keywords: Challenges, ECQ, Hyflex, in-person class, phenomenology

INTRODUCTION

The outbreak of the human coronavirus in 2019, also known as HCV-19 or hCoV-19, has caught the world by surprise, and as the World Health Organization declared it a pandemic, governments worldwide were alarmed (Cereda, 2016; WHO, 2020).

In reaction to incidents brought by the COVID19 pandemic, the Philippine government

issued a 'Community Quarantine' for Metro Manila from March 15 to April 14; the quarantine was made much stricter by including the entire Luzon (Amit et. al, 2020). The "enhanced community quarantine (ECQ) was enforced by the third week of April 2020 in Metro Manila and other provinces. More strict policies were implemented under ECQ - large gatherings, offices were run with a skeletal workforce, and businesses were

shuttered, except for a few that provide essential goods and services, mass transportation was halted, and school and university classes were suspended (Hapal, 2021). Closures of schools result in actual learning loss outbreaks (Donnelly, Patrinos & Gresham, 2021) and will have a lasting effect on the education and development of children (Santos, 2021). These unexpected occurrences brought the largest crisis in learning and teaching in a century. (World Bank, 2021).

The COVID-19 pandemic greatly affected and changed the teaching and learning process in the education sector. Higher education and basic education limit in-person classes to avoid the spread of the virus. In response to this, the Department of Education (DepEd) established distance learning modes to guarantee learning continuity in response to the COVID-19 pandemic in the Philippines (Yang & Beam, n.d). Schools were forced to shift from in-person classes to different learning modalities, such as online, modular, or blended learning. These modes required everyone, including teachers, and students, to engage with online learning practices, like the utilization of various learning management systems and online applications. According to Oztok (2013), “online learning can take the form of synchronous, real-time lectures and evaluations of time-based outcomes, or asynchronous, delayed-time activities, such as pre-recorded video lectures and self-paced assessments”. The transition from an online learning environment has altered how students interact with course material, peers, and professors. (Kohnke & Moorhouse, 2021).

In the study’s locale, in-person classes were discontinued by the time the area was placed under enhanced community quarantine (ECQ), and for the last 2 years, online learning was implemented. This year, as the mitigation efforts of the national and local government contained the virus, the resumption of classes was allowed with preventive measures. However, students who are still unable to attend class due to mandatory quarantine, being situated in different provinces or countries, or out of fear of the virus should have an online option

to pursue education. As a result, the school administration decided to pilot a Hybrid-Flexible (Hyflex) modality of learning this school year 2022-2023. A student-directed, multimodal learning experience is provided in the HyFlex course design (Beatty, 2019). In this modality, students can attend and participate in class sessions either in a regular classroom or online. This modality is also seen to be beneficial to teachers as they only need to deliver the lesson once, instead of delivering it separately for the online and in-person classes (Kohnke & Moorhouse, 2021).

Many studies have explored the teachers’ and students’ experiences with the asynchronous and synchronous types of learning. However, since Hyflex is a new and emerging type of learning modality, only limited research explored the experiences of teachers and students adapting this modality, and if Hyflex is a practical alternative for an in-person or online class. Hence, there is a need to assess, especially, the teacher’s experience, as they’re the ones delivering the course content, to ensure that the quality is still the same whether it is in-person, online, or Hyflex modality of learning.

OBJECTIVES OF THE STUDY

This endeavor aims to provide pertinent data for a better comprehension of the many difficulties that science teachers faced while implementing the Hyflex modality by generating complete documentation on their experiences. Also, the results of this study will help the authorities, in particular the Department of Education, by providing information that they may use to develop recommendations for applying the Hyflex modality of learning. This will also be beneficial to the school administrations as they will have a set of ideas on the challenges in implementing the Hyflex modality and have a course of action to mitigate these problems.

METHODOLOGY

Research design. This study used a qualitative research method with a phenomenological design. Qualitative research aims to gain an in-depth insight into a specific

phenomenon rather than a surface description of a large sample of a population (Data collection strategies II: qualitative research, n.d.). The rationale for using qualitative research is to investigate the experience of teachers using the Hyflex modality in science education. Moreover, this study aims to depict different challenges, ideas, and insights of the selected group of faculty members in adopting the Hyflex modality of teaching.

Phenomenological studies focus on people's experiences of phenomena and investigate the experiences they have. (Sasso, 2022). Furthermore, Harappa (2021) also discussed that this design highlights the specifics and identifies a phenomenon as perceived by an individual in a situation. Perhaps, the greatest advantage of phenomenological research is the ability to understand individual phenomena in depth and detail (Ayres, 2017). Hence, in this study, the researchers recognize the individual and unique experiences of a particular phenomenon.

Research Participants. The location of the study was chosen to be one of the schools in the Philippines. It involved 7 faculty members who served as participants. All participants have current experiences adapting the Hyflex mode of teaching. Purposive sampling is widely used to identify and choose cases with lots of relevant information about the phenomenon of interest (Palinkas et.al, 2015). Research participants were selected based on the following selection criteria: at least 1 year of teaching experience from the said institution; can share relevant and significant ideas and insight in adapting the Hyflex mode of teaching; Has already experienced challenges in dealing with Hyflex mode of teaching; and is willing to participate in the study.

Data Collection. Qualified research participants were selected using the purposive sampling technique. The participants were asked to sign the voluntary consent form as a statement of their acceptance of the terms stated in providing and sharing their information as required in the research project. The researcher then created a letter addressed to the participants for the conduct of the study through

in-person interviews with school administrators. The researcher also gave the participants access to the study's purpose and told them that their accounts of the difficulties they faced will be used to enhance how the Hyflex style of learning will be implemented in the future.

Ethical Considerations. Regarding the rationale of the participant's confidentiality, the researchers give assurance that all of their information and testimonies will be kept private. Also, the participants' experiences, strategies, insights, and ideas on the adaption of the Hyflex way of learning were the emphasis of the interview guide questions that the researchers employed. Moreover, the researchers made sure to record the participant's responses to their preferred method of answering whether it was through voice recording or written format. Also, the researchers continually questioned the participants to gather more insights into their experiences using the Hyflex mode of learning.

Data Analysis. The response of the participants was analyzed using thematic analysis. Thematic analysis is considered the most suitable for any study that seeks to discover using interpretation. In light of this, thematic analysis makes it possible to find and pinpoint characteristics or elements that affect any problem that participants create (Alhojailan, 2012). Therefore, this method fits well in understanding and explaining the participants' interpretation of the challenges encountered adapting to the hyflex modality.

RESULTS AND DISCUSSION

The study's methodology produced a significant amount of data that was important to this research work. In-depth interviews and the use of questionnaires were two methods used to collect the data. Cell phones were used to record the responses of participants who wished to be audio recorded. The responses of the participants were carefully transcribed and categorized to identify any emergent themes. The data acquired was utilized to identify the

challenges encountered by science teachers who were adapting the Hyflex modality.

1. Challenges encountered by Science teachers adapting Hyflex modality
Essential themes core ideas

Table 1
Challenges encountered by Science teachers adapting Hyflex modality Essential themes core ideas

Essential themes	Core Ideas
Lack of teacher-student interaction	<ul style="list-style-type: none"> Teaching in an online set-up is somewhat not new, and of course, teaching in a face-to-face class is very common, but Hyflex mode is new to me this school year. You are accommodating both students who are with you in a classroom and who are attending virtually. There are times that you – not really- neglect the online group but my focus is on the students who are with me. (P3) Teaching in the classroom is difficult to keep up with the kids at home online. Sometimes, the inquiry of students in the classroom is more prioritized than those of students at home. (P5) Due to the difficulty of monitoring the students online, those students experience difficulty in understanding and answering activities. (P4, P7, P3) Weakened relationships between students and teachers (P6)
Readiness	<ul style="list-style-type: none"> Hyflex mode should be properly prepared such as having adequate equipment, facilities, and a strong internet connection, and the most important is that teachers should be properly oriented on the said modality. (P5) School should invest and set enough budget to buy the necessary devices for the modality (P3) Provide training for teachers to cope with this mode of learning. (P7) The downside of the Hyflex mode is the need to develop curricula for multiple platforms. This makes it very labor-intensive for the teachers. (P6)
Teaching Strategy	<ul style="list-style-type: none"> The major challenge I am still trying to overcome is the teaching strategies that can cater to the online group and the in-person group/ there are some lab work activities that are difficult to do with limited materials at home. (P1) Some significant challenges to adapting the Hyflex mode of learning include the expenses on technology, technological concerns, and the need to adapt content for blended learning. (P6) There are some activities that might be unfair to those attending the classes physically. This makes the teachers think of 2 separate parallel activities that will cater to online and in-person groups. (P3)
Technical Issues	<ul style="list-style-type: none"> These are the big challenges: internet connectivity, and technical problems with your gadget. (P2) If the gadgets of the teachers are not good enough including internet connections, the flexibility of this setup is worthless. (P3) Teachers should be exposed more to the set-up to master how to make it easier to manipulate the gadgets while simultaneously discussing the lesson and letting the students understand and comprehend it easier. (P2)

1. Essential themes of the challenges encountered by the science teachers adapting Hyflex modality

Figure 1 shows the essential themes generated through content and thematic analysis. The participants’ responses were grouped and came up with the following themes, such as readiness, teaching strategy, technical issues, and lack of teacher-students.

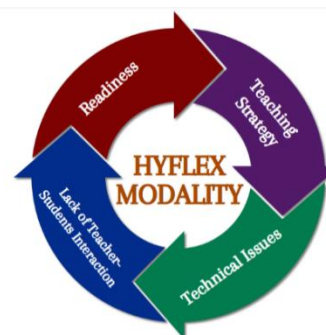


Figure 1. Four Essential themes of the challenges encountered by the science teachers adapting Hyflex modality

1.1. Lack of Teacher- Student interaction

Interaction between a teacher and a student is one of the most important things for learning and growth. Establishing a positive teacher-student relationship aids a student's cognitive, social, and emotional growth and enhances their mental well-being (Sen, 2021). A positive interaction has also a significant impact on students' academic self-concept, boosting their motivation and success. Further, Nugent (2009) found that teacher-student interaction is very crucial to students' success. However, a lot of teachers suffer from challenges brought on by the chosen learning modality.

A teacher's biggest issue in a face-to-face lesson is getting the students' attention. On the other hand, it can be quite difficult to teach a class of pupils both face-to-face and online. A report showed that one of the foremost difficult and problematic areas in adapting the Hyflex modality in teaching is the lack of teacher-student interaction. One of the participants claimed that although she doesn't purposely ignore the students participating virtually, there are instances when she focuses only on the students who are with her. Other participants also stated that the inquiry of students in the classroom is more prioritized than those at home. Interaction with students is a necessary side of teachers' work, but doing this at the same time with a student's online and face-to-face classes weakens the teacher-student relationship and makes it harder for the students to absorb the lesson. Hence, teacher-student interaction in the Hyflex modality is an important factor affecting students' learning performance. Communicating with students who were not physically present is the main drawback of Hyflex (Koskinen, 2017).

1.2. Readiness

The most important thing that teachers must do to properly deliver their lessons is preparation. Some study shows that readiness to use new modalities in teaching science is very important. There are four main steps to have a good implementation of Hyflex modality; Redesign the pedagogical teachers' skills for your online courses, be prepared from a technological

perspective, Guide and help teachers to adjust to online teaching, and prepare your students. In addition, to adopt this mode of learning, the school needs to learn from their personal and outside experiences concerning remote learning (4 Steps to Implement Hyflex Learning, n.d.) Lack of preparation will result in unsuccessful outcomes.

On the other hand, data showed that lack of suitable equipment was the main problem in implementing Hyflex Modality. Each school that wants to adopt this kind of learning modality should invest in proper equipment like computers, internet software, and a strong and stable internet connection to accommodate the needs of the online group accordingly. Other studies suggest that poor internet connection in remote learning will result in poor academic performance of the students. Furthermore, training and seminars for teachers are important to guide them on the proper procedure of the modality.

1.3. Teaching Strategy

The teacher is the most important member of Hyflex Modality. Teachers' teaching strategy is the key point in the adaptation of this kind of learning modality. In the study of Bouslog (2022), the use of teaching tactics in the classroom is essential. Without a plan, teachers would be carelessly projecting information that doesn't relate to or interest students. which will make it more difficult for them to understand the lesson. One of the challenges that the teachers trying to overcome is the teaching strategy that can cater to the online group and the in-person group in some lesson and lab work activities. Further, some activities might be unfair to those attending the classes physically as the weight of the activity is different for those in the online group. With that, teachers need to think of two separate parallel activities that will cater to these groups.

2.4. Technical Issues

Challenges due to technical issues were the last major theme to emerge, reflecting teachers' experiences with online learning. Participants shared that this was one of the big challenges they needed to overcome every day. Technical problems with internet connectivity are



another drawback of taking classes online. This is a big issue if you're pressed for time and you need to finish the lesson. Our country, the Philippines, has the slowest internet speed in the entire Southeast Asian region (Internet Speed in Southeast Asia, n.d.) and this is one of the barriers to conducting online classes effectively.

Additionally, other participants claim that the flexibility of this modality is useless if the teacher's technology isn't appropriate for online learning. Good tools enable teachers in online classrooms to save valuable time and increase the effectiveness of their teaching techniques (Collison, J. (2022).

CONCLUSION

The findings of the study revealed that the challenges experienced by science teachers affect their instructional competence and also impact the academic performance of the students. Most science teachers have difficulties in establishing connections with the students in the online group because it is easier for them to address the inquiries of the students who are with them than in the online group. As a result, the online group was partially neglected thus following instructions, and doing tasks became difficult for them. Further, teachers also claimed that collaborative work between students became difficult and resulted in a weakened relationship between students. In addition, Science teachers have also difficulties operating some of the devices that are prerequisites in conducting the Hyflex mode of learning such as setting up the computer, webcam, TV settings, and wireless microphone. With that, teachers are asking to have proper training in troubleshooting these kinds of problems.

RECOMMENDATION

With all of the problems that teachers encountered in Hyflex modality, they still believe that these challenges are opportunities for them to continuously improve their pedagogical skills as they can think outside of the box in preparing lessons and activities for the students in both online and in-person groups. Consequently, this

research would serve as an avenue for the administration to revisit the procedures for adapting Hyflex modality. This study also advises that quantitative research be done in a similar context by future researchers. Also, additional analysis may be carried out by identifying the difficulties that the students who used the Hyflex modality had and comparing them with the findings of this study.

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