



Educators' Perspective on the Progressivist Approach to Teaching Science Online

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ABSTRACT

Progressivism is the trend in the modern education system since it aims to focus on and develop the skills and abilities of the learners. Educators play a vital role in the learning setup because they facilitate learning in the class session. However, when most schools employ online learning, problems arise regarding how teachers can make every session student-centered. This qualitative study aims to provide ways teachers can make online classes more interesting and engaging for students. The teacher respondents mentioned that giving group works to students and letting them engage in collaborative learning is beneficial since the objectives are being met and the learners enjoy it. It is also recognized that the internet connection is the main problem in this setup, while it was also mentioned that games help maintain the interest of these learners.

INTRODUCTION

The Progressivist approach in education is an idea where exploring one's abilities is the center of the learning activity. [Southern Illinois University-Edwardson \(n.d.\)](#) pointed out that progressivism focuses on what is considered needs and aims to maximize learners' skills. Provoking students' thoughts and providing skills to solve problems that can be encountered make up the learning session in this setup.

This idea came from the mind of Jean Jacques Rousseau, and he manifested this in his work in 1762, where he is a believer in the educational right of both men and women to reach their full potential. John Dewey, another renowned educational philosopher, noted in his work (1938) that a meaningful learning session should include activities that tap into developing students' social skills. [Williams \(2017\)](#) argued that most schools today exhibit the traditional way of education and noted that Dewey insisted that the young learners are not suited to be under the traditional classroom setup. Now that the world is facing uncertainties in the education sector, countries such as the Philippines suddenly shift to online remote learning, per the report from [Malipot \(2021\)](#).

The Commission on Higher Education suggested that these methods of learning can be implemented on a long-term basis. However, these changes are challenges not only in the methods but also in the implementation. For example, a study by [Gurung \(2021\)](#) revealed that many teachers see the difficulty of getting the students' attention in an online learning session as compromising their development. According to the same study, this is due to various reasons that hound the entire remote learning process. Therefore, this study aims to discuss the views of faculty members on addressing the problems encountered above in online learning. In addition, this study also aims to provide ways by which a synchronous online session can be more on a student-centered approach.

Literature Review

Teacher's approach to teaching science online

Teachers have their way of going through learning sessions online during this pandemic, although these are very limited activities. If face-to-face classes resume, the online class system will still be integrated, so everyone should adapt ([Dickler, 2020](#)). A study by [Babincakova and Bernard \(2020\)](#) mentioned that most of the teachers who participated in particular research mentioned that they still utilize pictures and videos even in an online session, in addition to the demonstration they are doing to supplement the lecture session. Getting the students' full interest and attention is also a major obstacle. A study by [Arrieta, Dancel, and Agbisit \(2020\)](#) acknowledged this idea and stated that the nature of asynchronous online learning contains a limited number of strategies that can be suitable for this method. It was also implied that the teachers' prerogative made every learning session interesting and enjoyable for the students. Lastly, it was also mentioned that keeping everyone involved in the discussion makes them more engaged and, therefore, can learn more during the session. Meanwhile, a study by [Campbell, Melville, Verma, and Park \(2021\)](#) stated an interesting notion that the moves a teacher can do during the synchronous sessions are very tight since the learning institution also issues guidelines that need to be followed. For the students' part, [Barrot, Llenares, and Del Rosario \(2021\)](#) revealed that one of their main obstacles is the situations in their respective homes. In addition, the lack of socialization setup was also eyed as one of the factors of students' difficulties. [Chaturvedi, Purohit, and Verna \(2021\)](#) highlighted the importance of teachers adapting to the need to be technologically versed in these times. According to them, this equipment provides a direction the educators should follow to acclimate themselves to the developments in the education sector. As implied in the same study, these technological advancements dictate the pedagogical model implemented in online synchronous classes.

Approaches to teaching science online

Teaching science online must address not just the needs but also the challenges that come with it. It will be achieved if the students are involved in the learning process. A study by [Ng and Nicholas \(2010\)](#) showed that learners engaged in activities such as research-supported discussions among themselves with different topics enhance the motivation of the students to learn, therefore, revealed to be effective in improving one's class performance. These methods, also mentioned in this study, were also appreciated by the students. The importance of the utilization of appropriate visual aids is highlighted by [Hew, Jia, Goanda, and Bai \(2020\)](#). According to the published study, the student's interest should be prioritized. Hence, using different materials that suit their needs and enhance their skills without "boring" them is vital. The same study also reminds us that learners should be taught how to use the online apps necessary for a remote learning session. In addition, it should avoid technical problems that can occur during the learning session. [Arrieta, Dancel, and Agbisit \(2020\)](#) supported the claims above, citing that an online session can be more beneficial and fruitful if proper materials and channels are used. The study also gave attention to the underlying problems with online classes. The directions of this study lead to the idea that incorporating the 5E approach in the learning session would be the most effective way to pull through with the online classes. Another perspective was given by [Tan and Chen \(2020\)](#), stating that there should have in-between breaks during an online session. Students must have time to cope with the lessons they are having. In addition, the students should feel no difference in terms of the experiences between online learning and face-to-face session. The collaboration will be a key factor, especially in addressing questions regarding problem-solving situations brought about by the class discussion.

Pedagogical models of progressive education

Ideas about how progressive education should be applied are rampant, but most educators are not keen on applying these concepts. [Webber and Miller \(2016\)](#) highlighted the importance of interdisciplinary approaches in the pedagogy of progressive education. According to the paper, teachers should know how to incorporate the lessons into the real-life situations of the learners, considering the learners' experiences. [Nager and Shapiro \(2007\)](#) provided another view in formulating a progressive pedagogical model, suggesting that teachers should acknowledge the learners' abilities to identify the competencies that should be targeted in student-centered teaching. [Papong \(2014\)](#) indicated that

Dewey's influence on the Philippine education system was manifested by the implementation of the K-12 curriculum in the year 2012. The study also highlighted that inquiry-based learning is the foundation of the utilization of this type of curriculum.

METHODS

Research design

This study used a qualitative approach, specifically a descriptive approach, to gather and present the data. [Silverman \(1997\)](#) indicated that qualitative research is a way to understand further people's perceptions and experiences of a certain phenomenon. [Nassaji \(2015\)](#) mentioned that descriptive research design aims to explain how circumstances arise. The research above designs was utilized to completely note the experiences of educators in their respective classes and gather their ideas that will be compiled to provide a framework for a progressive classroom session.

Sample

The study employed 20 respondents, all teachers currently affiliated with an institution employing online learning sessions. The respondents came from a private school in Caloocan City. The respondents were selected thru purposive. The sampling method was employed since the data collection procedure was conducted during the pandemic. The respondents handle science subjects from the junior and senior high school departments, and all use online classes as the primary modality for learning.

Data Collection and Data Analysis techniques

The data will be collected thru interviews & Focus group discussions conducted via google meet. In addition, teachers will be interviewed individually and via group to understand ideas about the topics on hand clearly. The data collection process started on October 26, 2021, and ended on November 29, 2021. After the time frame, the data gathered were analyzed via thematic analysis.

Ethical Considerations

The researchers adhere to the ethics that should be observed in research. Therefore, the elicited responses will be used solely for this study. In addition, the profile of the respondents shall remain anonymous. The respondents were informed of their right to withdraw from this study whenever they wished to do so. This study intended no harm to the participants, and due to the ongoing pandemic, health and safety protocols were observed and followed throughout this study.

RESULTS & DISCUSSION

The ways employed in ensuring your student's participation in an online class.

The initial part of the discussion highlighted how the respondents handled the class in an online session, thus safeguarding the involvement of every group member. Most of the responses are focused on group collaboration works while giving simulations of the class. One of the respondents even noticed that the learners find these activities fun and engaging. Another response pointed out that asking questions and letting the students have peer-sharing sessions can also be beneficial since every member of a particular group will provide their insights about a topic. In addition, one respondent offers another reason for using grouping activities. More than the group per se, the entire class benefits from these types of learning sessions since the ideas of a particular group will be shared with the entire class. It is also a way to reach every member of a class section. Other responses include brainstorming, graded recitations, using different lecture technologies, and visualizing ideas. [Tullis and Goldstone \(2020\)](#) mentioned in their study that asking questions to a group show improvements for every member. It is due to the learning activity wherein the learners who initially did not know the correct answer to a particular question ended up knowing the right response.

Problems being observed that hinder students' participation in online learning

The next part of the study shows what possible problems the teachers observed in their students hinder their participation in an online learning session. The majority of the respondents pointed out that the internet connection of the students is the biggest limitation in them taking part in active online

class discussions. One of the respondents explained that "learners cannot follow the discussion because of frequent lagging." Another informant explained that this problem leaves students from the discussion.

Another hindrance that hounds students are the distractions in their household or wherever they are conducting the online session. One response noted that "most of these learners face household chores and tasks on their house, reasons why the focus of the students are not solely on the lesson." Another teacher mentioned that aside from the chores, students tend to be tempted to play games or do "leisure stuff" while the class is ongoing due to unsuitable learning methods employed by the teachers. One informant also recognized that most of the students, given these obstacles, have difficulties in multitasking. Other responses about the obstacles encountered include the nature of distance learning and online platform, the student device, and not enjoyable topics. [Winter, Cotton, Gavin, and Yorke \(2010\)](#) acknowledged that it is very challenging for learners to juggle tasks while conducting online classes. According to the published study, students are easily distracted when facing simultaneous activities, some academic and some not.

Ways to get the learners more involved in an online learning activity, considering the challenges that have been mentioned.

The last part of the study is where the respondent teachers suggested ways to make the students focus more on the online session, knowing there are obstacles. Most respondents acknowledged that gamification would play a very important role in maintaining the students' attention. One teacher stated, "games are prepared, and the students will get rewards after the activity." One informant explained that these games "are necessary to lead the students in the direction where the objectives will be met." In addition, another respondent suggested that teachers should "engage in an activity during offline sessions." Though games can be useful, one respondent said, "Make sure they will be interested in the games or activities I have prepared." [Nieto Escamez and Tapia \(2021\)](#) explained that there are several ways in which gamification can be applied in an online classroom setup. Primary examples are using games for quizzes. These researchers also note that games, generally used for entertainment, if applied to learning activities, motivate the learners more. The collaboration these games bring, as also mentioned in the study, promotes the development of interpersonal skills among these learners. It is advantageous to Science teachers and learners because much software is created for Science, Technology, Engineering, and Mathematics courses. Other responses include: -the utilization of chat boxes in teleconferencing apps - using social media to promote healthy discussions -usage of videos in lessons

CONCLUSION

This study aims to discuss how teachers manage the online classroom setup, particularly when it to the participation and engagement of learners. Teachers should ensure that the learning session is fruitful for the learners when online platforms are used. Today's generation of students is known to have a short attention span. Being stuck in a modality wherein online sessions are the primary way makes it more challenging for both the learners and the students. Thus, this paper also wishes to provide ways to solve the obstacles with distance learning. The study interviewed Science teachers and got their views about the topic above. It was stated that dividing the class into groups makes it easier for everyone to learn and promotes collaboration between the group and the entire class. It was also noted that the primary concern for the students hinders their participation in the situation in their locations, specifically, the connectivity problems. Lastly, the respondents acknowledged the benefits of applying the concept of games in learning activities. It promotes not just critical thinking but collaboration among the class members.

Recommendations

Concerning the findings of the study, the following recommendations were made:

1. Knowing that the attention span of the learners is short, teachers are suggested to employ teaching methods that not just suit the needs of the students but also get their attention. For example, letting the learners recite regularly or giving tasks in between discussions will drive them to participate since instructions will be given orally.

2. Using game sites such as Kahoot can be vital since students will come alert in answering the questions. In addition, mixing the principles of games in online learning will entice the students to participate more, especially if the reward system is also placed.
3. Looking from the perspective of the students is necessary. Understanding their needs is important, but teachers should also take note of their interests in achieving a free and student-centered learning environment.

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The authors declare no funding and conflicts of interest for this research.

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