

The Effectiveness of Online Classes to Engineering Students of Holy Angel University (HAU)

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Abstract: - The pandemic forces the education sector to conduct classes via online or electronic learning “E-learning”. This proposes a new challenge not only to the students but also to educators. An adaptation to online learning was seen in many schools in the whole world including many schools in the Philippines. This paper tackles about the effectiveness of online classes to engineering students of Holy Angel University. The researchers wanted to know in this study if the students are having a difficult time on understanding their lessons on the new mode of learning. The researchers used a descriptive method of quantitative research through the use of survey questions. Three major factors were considered in the questionnaire and a bar graph has been used to analyze the data that was gathered, this graphical representation was used by the researchers to compare the numbers or quantities of data. The researchers found out from the result that online classes or distant learning will be effective for those students who are willing to learn and willing to study every detail of the lesson being discuss in an online class setup. The pandemic introduced the education sector a new way of learning that requires more attention and adaptation in order for it to fully utilize the online platform and use the online learning as a convenient yet effective way to teach and impart knowledge to students around the globe.

Key Words: — *Online Class, Students, Engineering, Learning.*

I. INTRODUCTION

The world of the internet existed many years ago and it gradually became part of our lives as we start to rely almost everything to the online world. The ongoing COVID-19 pandemic has caused a lot of problems to the society and to the way we live our lives. The educational sector is one of the sectors greatly affected by this pandemic to the extent that many of the students were not able to enroll this school year 2020-2021 due to the lack of requirements needed by online classes.

The Department of Education came up with the solution of introducing online classes to the students this school year since physical face to face classes are prohibited by the government. This was a huge adjustment for all of the students as well as the teachers because online class is different, and it is a more complicated environment rather than the physical face to face class. Students and teachers will be exposed to devices or gadgets to conduct classes, and this might be a problem concerning their health and well-being.

A lot of things are needed to be considered in online classes, such as good internet connectivity, electronic devices to be used and software/applications that will be the foundation of the learning management system. Learning modules are provided to the students by the instructors to have a smooth flow of learning, quizzes and activities are also conducted to assess the learning capability of the students. Projects that require a lot of demand such as output based projects are discouraged, this is prohibited to protect the students and for

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their safety as well in this time of pandemic.

Holy Angel University (HAU) transitioned to the online learning scheme as provided by the Department of Education. A learning management system is used as a platform for the students and instructors to continue classes via online learning. This study aims to provide the researchers enough evidence to conclude whether online class is an effective way of learning or it just set back students to their learning.

Although we are in a state of pandemic, learning must continue. Online class may be a big step in our education sector, to the students and teachers, but this method of learning is encouraged to provide a continuous learning to the students despite the current situation. This study is conducted by the researchers to provide an estimate on how the online class impacts our students nowadays.

II. METHOD AND PROCEDURES

2.1 Research Design

The research design intended for the framework of this study is a survey research design. This type of design is chosen by the researchers because it is an effective way of getting the results needed for the conclusion of this study. Survey research is a quantitative method for collecting information from the respondents. The purpose of this study is to see whether online classes are really effective for the students in learning their subjects and lessons. Each student has a different learning progress, the aim of the researchers is to gather enough data that will conclude if online or distance learning is effective.

The primary step towards obtaining quick information is by using a questionnaire on how the respondents see online class as an effective mode of learning. A number of questions will be given to the students and they will be required to answer the questions based on what they experienced during their online classes. This will give the researchers the required data that will be analyzed and to give answer to the study on whether the respondents find online class as an effective way of learning.

The respondents of the study will be the engineering students of Holy Angel University. Data gathering will be conducted via online using a questionnaire that will be distributed to the respondents. Online survey is chosen by the researchers to gather data quickly and efficiently from the respondents. The

data collected from surveys is then statistically analyzed to draw meaningful research conclusions.

2.2 Locale of the Study

The study will be conducted at Holy Angel University (HAU) and the respondents are the engineering students under the Aeronautical Engineering department.

Online survey was chosen by the researchers to conduct this study since it is quick and efficient, the researchers cannot give the question physically to the students due to quarantine protocols brought by the pandemic.

2.3 Samples and Sampling Procedure

Volunteer sampling method was used in selecting the participants or respondents for the survey. Volunteer sampling is a form of purposive/non-random sampling where data is obtained from those who are willing to participate in the study. The survey was distributed among the 2nd year to 3rd year aeronautical engineering students. Data was gathered from those who willingly participated in the survey.

2.4 Respondents of the Study

The study sample consists of 100 aeronautical engineering students who are enrolled for the school year 2020-2021, utilizing online and modular learning system. Respondents from the survey range from ages 19 to 26 where majority are aged 20 and 21 years old. 68% are male and 32% are female. 28 are 2nd year students and 72 are 3rd year students.

2.5 Research Instrument

The gathered data presented in the study were both primary and secondary data. The primary data were gathered through surveys conducted on the students found on Appendix A. On the other hand, the secondary data were gathered from books, journals and other online references.

Meanwhile, the instruments used in obtaining and recording the data were the survey results, MS Word and Excel.

2.6 Data Gathering Procedure

Development of Questionnaire:

The researchers have allotted time and effort in developing the questionnaire to create suitable questions and to serve its intended respondents.

The survey consists of two parts: Part I was used to solicit the

respondent's profile such as email address, gender, current year while Part II consisted of three (3) categories namely: Speed and Availability, Time Management and Load of Work, and Conducive Learning Environment, all of which are related to the respondents' perception of the effectiveness of online classes currently being implemented in their university. The Likert scale was used to determine if the respondents agree or disagree in the five statements presented in each of the main parts.

Survey Distribution:

Acknowledgement and approval of the Dean of the College of Aeronautical Engineering was requested prior to dissemination. After which, the survey was distributed to the students using Google Forms and they were given enough time to respond. Google Form was used as it will gather data more efficiently than any other method.

Retrieval and Collation:

As required by the study, one hundred (100) survey responses must be completed. The data obtained will then be checked, tallied, interpreted and analyzed to come up with the research conclusion.

2.7 Data Analysis

There are different types of data analysis that can be used in the representation of the findings and results such as bar graph, pie graph, line graph.

In this specific study, survey forms were used to collect the data from the respondents and these data will be analyzed and represented using a Bar Graph. A bar graph can be defined as a chart or a graphical representation of data, quantities or numbers using bars or strips. Bar graphs are used to compare and contrast numbers, frequencies or other measures of distinct categories of data.

The heights or lengths of the bar are proportional to the values that they represent, and they can be plotted either vertically or horizontally.

III. RESULTS AND DISCUSSION

Three factors are involved in determining the effectiveness of distance learning. Each factor consists of five questions constructed positively. The following graphs indicate the results of the students on each question.

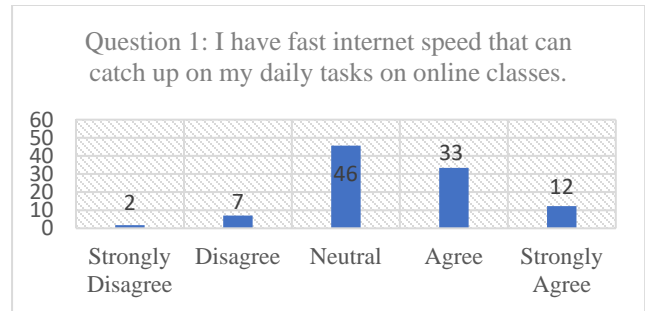


Fig.1. Bar graph result for question number 1

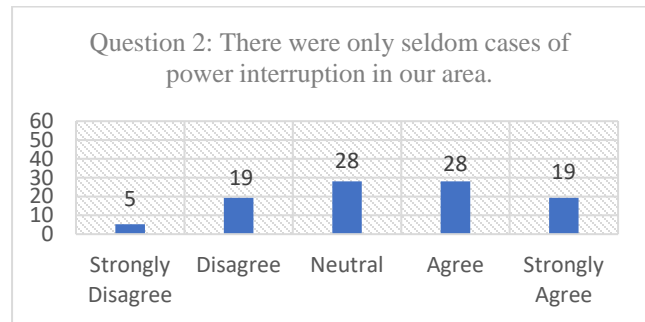


Fig.2. Bar graph result for question number 2

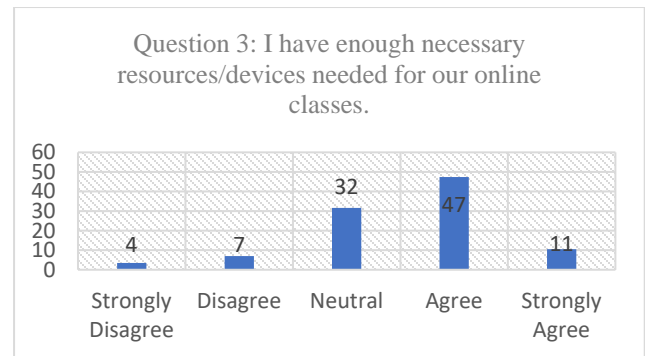


Fig.3. Bar graph result for question number 3

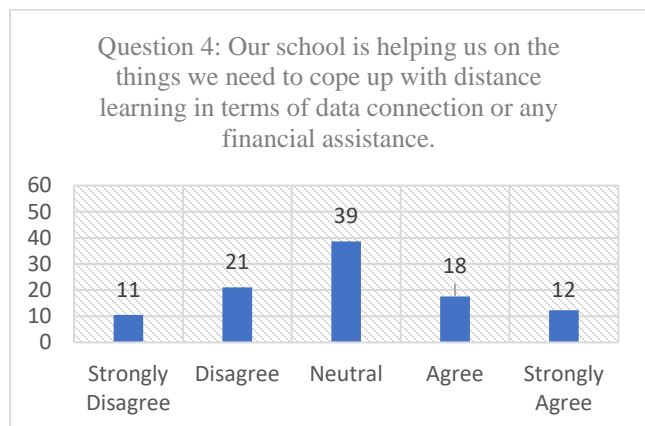


Fig.4. Bar graph result for question number 4

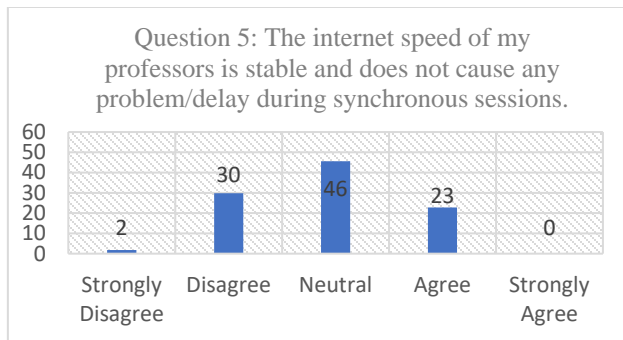


Fig.5. Bar graph result for question number 5

The first factor is composed of questions about the student's access and feedback on their internet speed and availability. On question 1, the majority of the responses are neutral about how fast their internet speed is on catching up on their online daily activities but more students agree that they have fast internet speed. On question 2, most students agree that there were only seldom cases of power interruption in their area but there are 24 students who did not agree. On question 3, the majority of the responses agreed that they have enough resources or the required devices for the online classes. Most students are neutral about question 4 and students who agree and disagree about the school's effort to help the students on distance learning are close but those who disagree are a bit higher. On question 5, majority of the responses are neutral but there are more students who disagreed that the internet speed of their professors is stable.

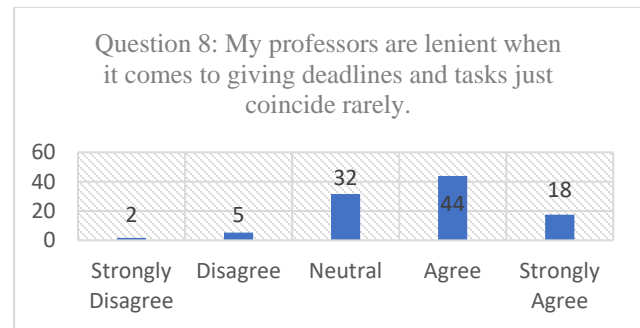


Fig.8. Bar graph result for question number 8

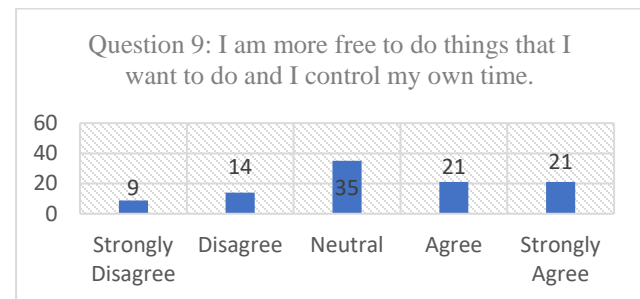


Fig.9. Bar graph result for question number 9

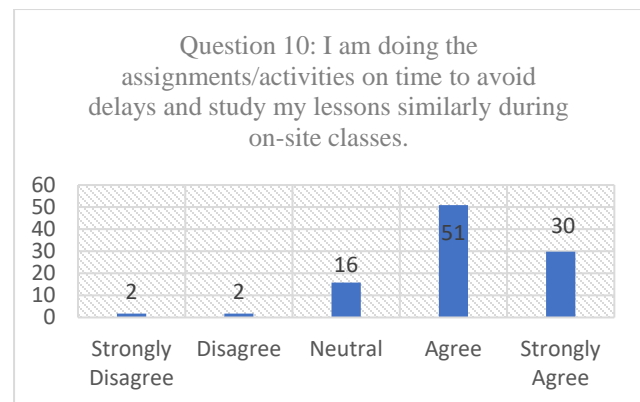


Fig.10. Bar graph result for question number 10

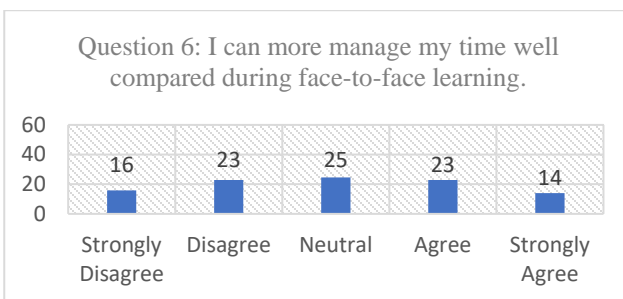


Fig.6. Bar graph result for question number 6

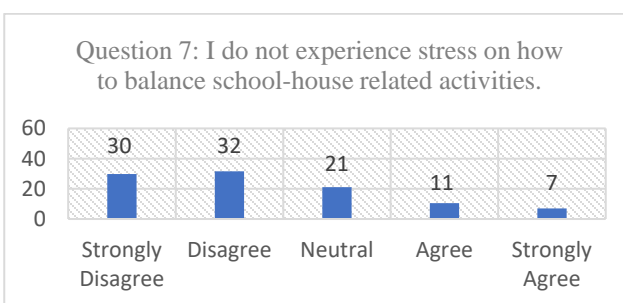


Fig.7. Bar graph result for question number 7

The second factor is about the time management and load of work or activities of the students which is also consisted of five questions. The responses on question 6 are close to one another where neutral responses are the highest about their ability to manage their time during distance learning, then the same answers for those who agree and disagree and then strongly agree being at the last. On question 7, majority of the students boldly answered that they disagree that they do not experience stress on how to balance school-house related activities. Most of the students agreed that their professors are lenient when it comes to giving deadlines on question 8. On question 9, most students' response is neutral then many agreed and strongly agreed that they control their own time.

Lastly, on question 10, majority of the responses agreed that they are doing their assignments or activities on time.

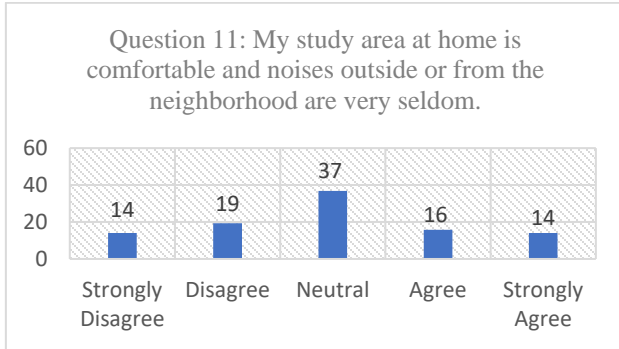


Fig.11. Bar graph result for question number 11

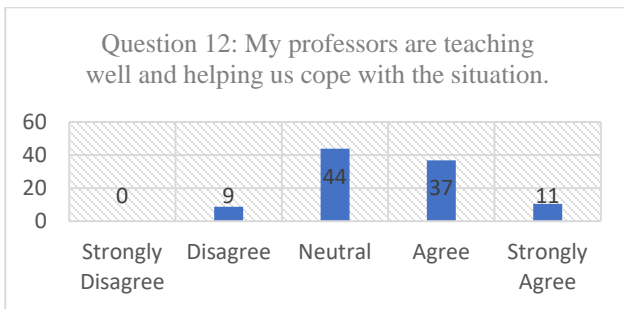


Fig.12. Bar graph result for question number 12

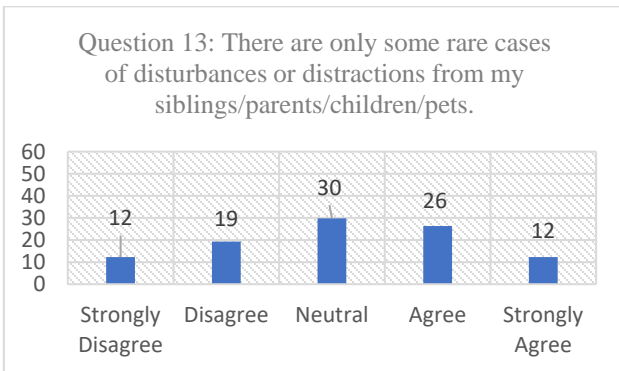


Fig.13. Bar graph result for question number 13

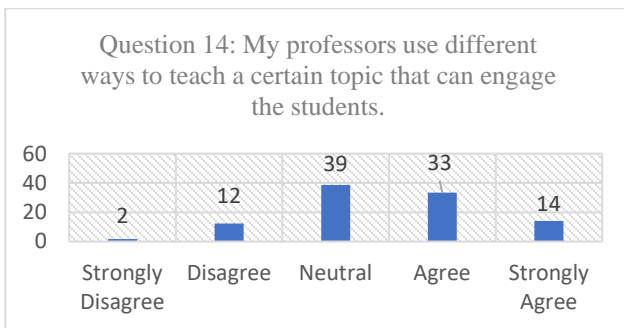


Fig.14. Bar graph result for question number 14

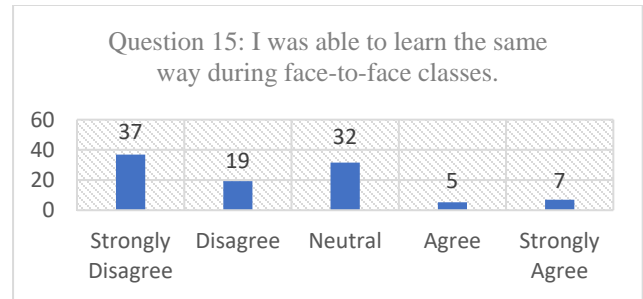


Fig.15. Bar graph result for question number 15

The third factor is about the conducive learning environment that the students are in. Question 11 asks if their study area at home is comfortable and noises from outside the house are seldom and most students answered neutral then followed by those who disagree. On question 12, the students are again neutral on about how well their professors teach but many of them also agreed that the professors do their job properly. Majority of students on question 13 answered neutral that there was only rare case of disturbances present during their online classes and the number followed by those who agreed. The same as the previous questions, most student chose neutral on question 14 which is about professors using different ways to teach the subject and engage the students and still many of them agreed that their professors are doing that. Finally, on question 15 there is a strong disagreement that students were able to learn the same way on online classes against face-to-face classes.

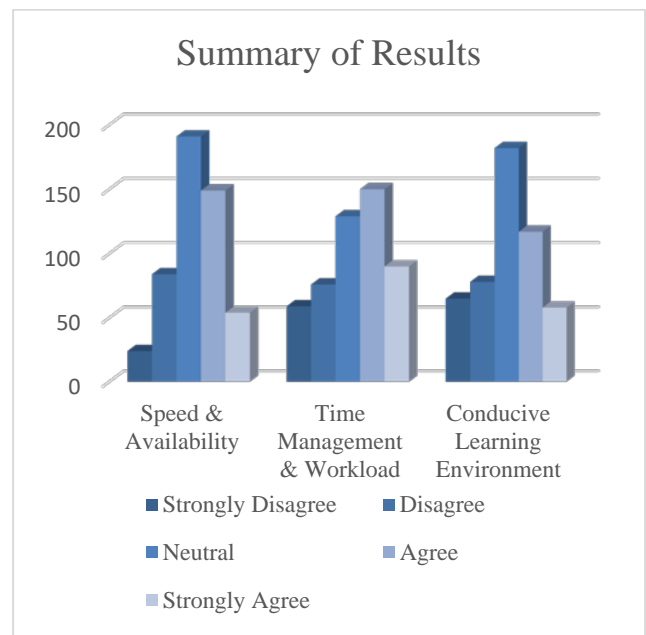


Fig.16. Bar graph result summary

The results of the Speed and Availability factor showed most of the respondents have the necessary gadgets/devices needed in online learning. Although most of the feedback is neutral and percentage of those who agreed is greater than those who disagreed, there are still concerns due to poor streaming, limitation in network quota and reception. This, however, is considered normal given the current internet infrastructure of the country. Though this might not be the case in the other far-flung areas in the country do not have roads or electricity, let alone access to computers and the internet.

In terms of Time Management and Load of Work, it is evident from the results that most of the respondents are able to control their time more with the online training setup and the teachers are inclined to be more lenient and understanding, which then contributes to accomplishment of their assignment/activities on time. However, the neutral responses tell us that they could not identify if online learning is better compared to the face-to-face classes they've been accustomed to.

The third factor results in terms of Conducive Learning Environment showed that the respondents are mostly neutral when it comes to the comfortability in their study area at home. Though they agreed that there were only rare cases of disturbances present during online classes, which is a good thing. Majority are also neutral on how well their professors teach but many of them also agreed that the professors do their job properly, even trying different ways to engage the students in studying. However, there was a strong disagreement that students were able to learn the same way on online classes against face-to-face classes. This could be due to the social integration and peer culture in a "virtual" classroom. Evidently, the lack of human interaction in the learning process affects the student's comprehension of the lesson.

Though the reactions are mixed, in general, most responses are "Neutral" and "Agree" in all the given factors. This means that the respondents, although challenging, have adjusted and adapted the current learning arrangement. However, for online learning to succeed in the Philippines, issues like connectivity problems, education instructions concern, management of student performance, support policy and programs for online classes, among others, need to be addressed.

IV. CONCLUSION

The study focuses on the effectiveness of distant learning among students by means of online learning. Based on the research and results of the survey conducted by the researchers we can see that a lot of students are neutral among the questions asked.

Based on the results of the research the conclusion is the online classes conducted needs to be observed in a longer-term period. And needs to have a lot of respondents not just only for a certain organization, because in the results of the conducted surveys we can see that a lot of students are neutral in position whether the online classes are effective. The study needs to scope a lot of students and also other departments and it will be helpful if the research will cater two or more universities conduction online classes, but on a smaller scale the researchers concluded that online classes and learning is always based on the willingness and capacity of the students to learn. Students can cope up with the advancement of technology now a day and there are a lot of ways to learn. So, the researchers conclusion, online classes or distant learning will be effective for those students who are willing to learn and willing to study every detail of the lesson being discuss in an online class.

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