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Online Distance Learning (ODL) in COVID-19 Era: Students' Perceptions towards the Quality of Online Education in Science Teaching

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ABSTRACT

The growing concern during the pandemic in the distance learning modality particularly on the Online Distance Learning of the Department of Education in the Philippines was the idea of creating a system that ensure the quality of online distance learning in every school. Several studies have focused on the perceptions of teachers and administrators, so there has been an insufficiency of research conducted on students' perceptions toward the quality of online distance learning education. This study utilized qualitative methods to investigate the perceptions of students from both academic track and technical-vocational and livelihood track in their science subjects of the Senior High School of Don Marcelino National High School, regarding the quality of online distance learning modality based on their own online learning experiences. Interviews and observations were conducted with six students as participants in the study. Purposive sampling was used to identify the participants of the study. Various documents were collected, digital and printed. Positive and negative experiences of students were examined. Factors that contribute to those experiences were also identified. The findings of this research revealed that flexibility, cost-effectiveness, ease of connection to the Internet, and familiarity of teachers were students' positive experiences. The students' negative experiences were caused by delayed feedback from instructors, unavailable technical support from instructors, lack of self-regulation and self-motivation, the sense of isolation, and monotonous instructional methods. The findings can be used by instructors to understand students' perceptions regarding online learning, and ultimately improve their online instructional practices.

KEYWORDS: *Online Distance learning, Student's positive experiences, Students' negative experiences*

INTRODUCTION

Rationale

The first COVID-19 cases had been observed and recorded in Wuhan China in the last month of year 2019. However, the emerging reports of the increasing numbers of infected individuals with the same virus from different countries outside the city had alarmed and pose a global health threat around the world. This situation urges World Health Organization to declare COVID-19 as a global pandemic in March 2020 and called every country to take actions and make a comprehensive strategy to prevent the spread of the virus (World Health Organization, 2020). The existence of COVID-19 pandemic indeed had affected every aspect

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of everyone's lives around the world. It has limit people to travel, meet physically and even be afraid to go outside their houses thinking they might get infected. Thus, it could be viewed that this pandemic has constraint people from doing freely the things they used to do.

The education system is one of the sectors that is greatly affected with the existence of the pandemic. This had forced many schools around the world to temporarily close with more than billions of learners being not able to attend to schools for months or years (UNESCO, 2021). With the unexpected and sudden closure of many schools worldwide, it had interrupted the academic calendar and caused changes to the educational system around the world. According to Muthuprasad (2021), this situation has made the educational institutions to experiment new ways and generate creative approaches that would still continue the educational instruction which consequently directed to the shift of different teaching modalities which are now considered as the "new normal" (Avila et al., 2020). In many cases, the current situation made an abrupt transition to online educational techniques and provided a significant boost to "digital transformations" (Markova, 2021).

In the Philippines, schools had been closed for physical interaction since the declaration of the Public Health Emergency throughout the country in March 2020 as it intensifies the government's response toward COVID-19 threats. With it, the country's educational institutions as well had made major adjustments to carry on the delivery of quality instruction in the midst of a public health threats. Even with the closure of schools and in the absence of face-to-face classes, the Department of Education had never stopped the quest to deliver quality education despite all the hardships. Hence, in response to this situation, the department has come up with the guidelines to implement different learning modalities to ensure the safety of its learners (Sarmiento et al., 2021).

Distance learning as a way of teaching and learning was found to be already available even before the pandemic (Ferraro et al., 2020). It is a way of teaching and learning where there is a physical separation of teachers and learners and that utilizes wide range of technology and tools that would facilitate the learning experience and teacher-student communication (Armstrong-Mensah et al., 2020). Together with the advances of Information Technology, it enables online distance learning to be feasible in the midst of pandemic. According to Khan et. al (2021), the information technology is serving solutions for the ongoing learning process through innovate leaning management systems and has gained its momentum in this trying time. Nowadays, with the use of advance technologies, distance learning had become an important part of the educational program as it has practically offered indispensable advantages (Pinar, 2021).

However, according to Avila (2020), there are numerous issues that had been faced by the teachers and the learners in relation to the quality of education with the sudden closure of schools and abrupt transition of learning modality from face-to-face to online distance learning. Hussein et al., (2020) cited distractions and inability to focus, heavy amount of course works from different teachers, internet connectivity issue, inadequate support from teachers is few of the backlash about the use of online distance learning.

Although research on online distance learning is expanding, there are still few researchers especially in the country that relates to the quality of education using the online distance learning as a teaching and learning modality from the students' point of view. Thus, it is interesting to investigate how senior high school students perceived the online distance

learning as a teaching and learning strategy and the quality of education they are receiving during the pandemic time. It is also a good time to know both the advantages and disadvantages of using online distance learning in delivering quality education from students' point of view in the light of the pandemic. Hence, the purpose of this study is to collect information and examine students' perceptions towards the quality of education in science teaching among the Senior High School learners of Don Marcelino National high School-Senior High.

RESEARCH QUESTIONS

To attain the purpose of this investigation on students' perceptions towards the quality of online education in science teaching in Don Marcelino National High School-Senior High School Department, this study sought to specifically answer the following questions:

1. What are the experiences of the SH students on online distance learning modality in Science?
2. How do they perceived the quality of online distance learning modality from their experiences?
3. What factors that have shaped students' online distance learning modality experienced? How do these factors contribute the quality of online education?

THEORETICAL LENS

The study is anchored on the following theoretical concepts in relation to students' perceptions on the use of online distance learning on the quality of education in time of the COVID-19 era.

According to Ally (2004), e-learning, virtual learning, computer assisted learning and distance learning are some of the terms used for describing online learning which implies the same thing, that is learners and teachers are separated from one another and that learners are using different technologies to access the learning materials, connect with the lesson, teachers and other learners and to gain support during the learning process to acquire knowledge.

The use of online distance learning is underpinned to Anderson's Online Learning Model as shown in Figure 1 that illustrates two major human actors in the learning process, the teachers and the learners as well as their interaction with each other with the content. In here, learners can interact directly and spontaneously with different content in different formats in the web however many of these learners opted to have their learning be directed and guided with the help of the teachers through a formal education system and these interactions can happen in a community of inquiry using varied tools in a synchronous or asynchronous way. These environments are exceptionally rich which allow for the development of social skills, collaboration, and personal ties among participants. The community, on the other hand, ties

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learners in time, and hence regular sessions are needed–or, at the very least, group-paced learning. Community Models are also often more expensive because they cannot be expanded to serve a larger number of learners hence the second learning model (on the right) depicts the planned learning tools related to independent learning (Anderson, 2011).

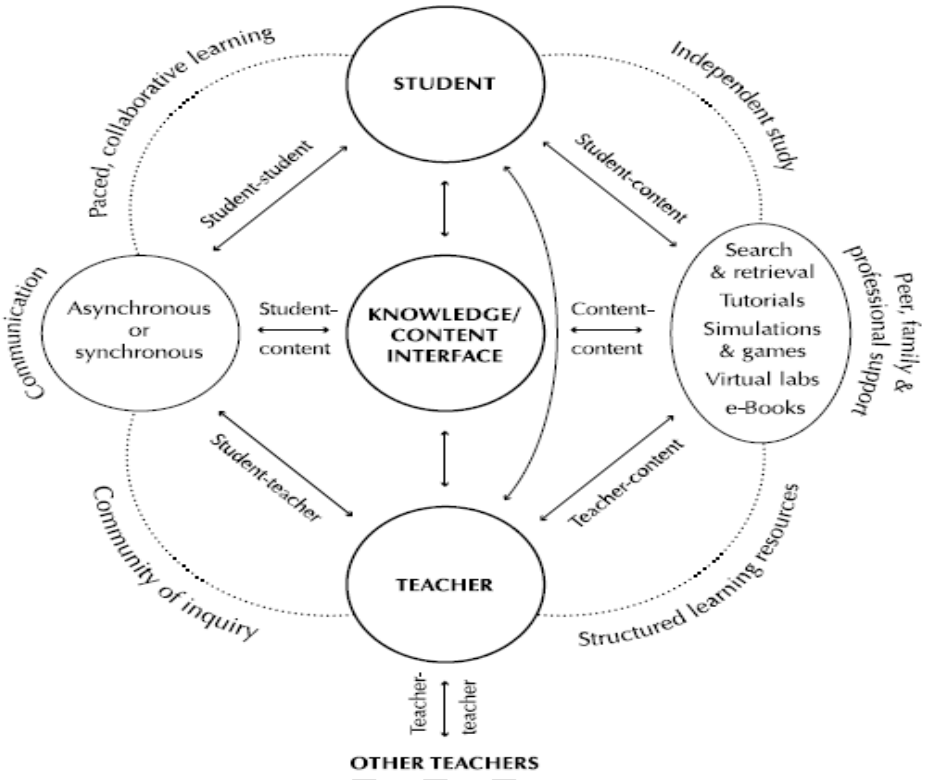

Figure 1. Anderson's Online Learning Model. Reprinted with permission by Anderson, T. (2011). *The theory and practice of online learning*. (2nd Edition). Edmonton, AB: AU Press.

The outbreak of COVID-19 and the threat it has brought worldwide causes major paradigm shift to the education system around the globe. To continue the education of the learners in the light of pandemic, educational institutions had shifted their academic programs online (Barzani & Jamil, 2021). Thus, distance learning had become widely used in the present time with the advances of technology together with the various advantages it has offered. However, according to Hodges et al., (2020), different research suggested that efficient online learning derives from rigorous instructional design and planning, as well as the use of a systematic methodology for design and development and these processes have impact on the instruction's quality. But it is this rigorous instructional design and planning that are mostly not applied during the call of emergency shift just like this time. Although this modality continues to grow rapidly, it is still considered to be at its early stage of development and that curriculum developers of online learning has to better understand how students perceived and react to the different elements of this modality as their perceptions and attitude towards it are critical to their motivation and overall learning (Smart, 2006).

The current situation and the wide use of online distance learning in instruction has led to different perceptions among the teachers and learners. Some of the participants' positive experiences with the use of online distance learning were influenced by the students'

convenience and the ability to stay at home, time and cost-effectiveness and availability of electronic research (Khan et al., 2020; Hussein et al., 2020). However, there are also negative experiences that resulted to the unfavorable use of online distance learning such delayed feedback, poor communication and inaccessible technical support from the instructor, lack of self-regulation and self-motivation, sense of isolation, monotonous instructional methods, poorly planned course content, overwhelming workloads and poor internet connectivity (Yang and Cornelius, 2004; Baticulon et al., 2020; Hussein et al., 2020).

SIGNIFICANCE OF THE STUDY

The presence of COVID-19 pandemic hits educational institutions and force most of them to shift from traditional to new modalities of teaching and learning. Despite the growing numbers of research about online distance learning, there are still few researchers that relates online distance learning to the quality of education based on the students' perspectives.

The study is conducted to collect information and examine students' perceptions towards the quality of education in science teaching among the Senior High School learners of Don Marcelino National high School.

This will benefit the educational system of the different school as it provides information from the learners live experience and perceptions on the quality of education they are receiving with the use of online distance learning in the time of pandemic. The results of the study could be a baseline knowledge for possible adjustments to be made in using online distance learning in the future. And, lastly it would be useful for the future researchers as it would serve as a reference for their future studies relating to the quality of education via online distance learning modality.

DELIMITATIONS

There were six (6) students who participated in this study from Grade 11 of Don Marcelino National High School for first semester of the School Year 2021-2022. Students from both academic track and technical-vocational track was identified as participants in this study. The study focuses only the Science subjects for the semester such as Earth and Life Science and Physical Science. The students were identified through the official list of bonfide students of the senior high school and who are actively participating the online class in their science subjects. There were different types of performance task utilized to present the online instruction. Two classes of both tracks used synchronous learning like google meet and google classroom platforms. Afterwards, students are given formative and summative assessments.

METHODOLOGY

RESEARCH DESIGN

This research study used a qualitative design that included interviews, observations, and documentations. Rather than identifying cause and effect, qualitative research gives an insight of a situation or event that tells the narrative (Fraenkel & Wallen, 2003; Glesne, 1999). Qualitative research techniques include observations, interviews, and document

analysis. Triangulation, or combining several sorts and bits of information, might help you better understand or evaluate a situation. Studies that utilize only one technique are more prone to mistakes associated with that method than studies that combine several methods and cross-data validity checks. Only two elements of such procedure are interviews and observations. It is not necessary, but preferable, to supplement the information gathered through observations and interviews with additional data (Stake, 1995). Structured and unstructured online interviews, observations, and documentations were utilized to collect data for this study.

DATA COLLECTION

Information was gathered through interviews, observations, and records online. Researchers will be able to validate and cross-check conclusions by gathering data from several sources. As extra study resources, documents were acquired and evaluated. Each participant in this study had two interviews. An unstructured interview online followed the structured interview. Two observations were conducted in order to collect more qualitative data. The observations took place in the same environment where participants normally did their activities in an online distance learning. All participants were asked to provide documents. These documents consisted of printouts and other material used to back up facts gathered and witnessed throughout the observation and interview procedure. The data was examined to answer the study objectives and to compare and contrast the individuals' similarities and differences. Interviewing is a crucial method for validating the accuracy of a researcher's perceptions gleaned via observation, according to interviews.

A virtual interview is conducted with prepared questions, a procedure or interview guide, or as an unplanned event to follow health protocols. Each question helps the researcher to have a better knowledge of the phenomena. The participants in this study were asked to express their opinions of the quality of online distance learning based on their own experiences using a range of questioning strategies. Unstructured and structured interviews were conducted with each participant. The unstructured interviews' questions were based on what was seen and didn't notice throughout the observations. Both the participants and the researchers were given plenty of opportunities to ask and answer questions spontaneously.

OBSERVATIONS

Observations were conducted in September and October of 2021. Observations are an important element of qualitative research because they allow the researcher to see if what the participant mentioned in the interview is carried out throughout the online distance learning experience. When coupled with interviews and document analysis, participant observation "provides a firsthand perspective of the scenario under research, allowing for a comprehensive understanding of the phenomena under investigation." Field notes were taken and transcribed during the observation procedure. Photographs of the setting of the participants' usual work area for online classes were also taken.

DOCUMENTATION

According to Fraenkel and Wallen (2003), documents relate to any sort of information that exists in some type of written or printed form, is intended for private or public consumption,

and is available for examination by the researcher. As a result, data sources included pictures, participants' email messages, a printed version of the class layout, and participants' submitted assignments, as well as the class schedules.

All participants were asked to bring in documents related to the online distance learning delivery. Learning material (SLMs), exams, study notes, reflections, and emails were among the documents. Printouts from each participant's course site made up the majority of the papers received from the participants. The objective of adopting observations, interviews, and documentation was to ensure that the data was trustworthy and accountable. The researchers wanted to see if the individuals' behaviors and interview replies were consistent. The researchers looked at how well the participants' statements and observations in the interview matched what transpired in typical online distance learning environments.

PARTICIPANTS

Six students enrolled in an online distance learning program served as the sample for this investigation. The participants received online distance learning modality from Don Marcelino National High School- Senior High School Department. Purposive sampling, according to Fraenkel & Wallen (2003), is founded on the idea that one must "choose a sample from which they believe will give the finest knowledge of whatever it is they desire to investigate." However, purposive sampling was used in this study. This research included three male and three female students. Three of the six were TVL students, and three were Academic Track students. These students were all enrolled in online distance learning that focused on Earth and Life Sciences and Physical Science.

PROCEDURES

The selection of research participants was the first phase in the method. Because the researchers knew the individuals, purposive sampling was used. Interviews and observations with participants were then performed in September and October of 2021. Separate structured interviews with the individuals were performed initially. During the whole interview process, conversations were taped. Two weeks later, the participants took part in unstructured interviews. A virtual interview may be done with prepared questions, a method or interview guide, or as an unexpected occurrence to follow health protocol. The data was organized and preliminarily evaluated when the interviews were finished. Following the participants' agreement, the first observation was planned to examine how they functioned for the online distance learning mode. A week later, participants were observed again to see if their habits had changed as they got more familiar with the study procedure. Various documents were gathered throughout the first and second observations processes. Photographs were taken to capture the physical context of the participants' online surroundings.

DATA ANALYSIS

The analysis of data is an important part of qualitative research. Transcripts of audiotaped interviews were compared to the original recordings for accuracy. Data collection and analysis were carried out at the same time. Researchers did extensive coding of the interview and observation transcripts. To evaluate qualitative data from various sources across time, the constant comparative technique (Glaser & Strauss, 1967) was employed. The data was

grouped around each study topic, which focused on the experiences of students who took online classes and the factors that influenced their experiences.

The researchers looked for parallels and discrepancies in the interviews, observations, and archive data. The following research questions were answered as a result of data gathering and analysis: (1) What is the experience of students who are receiving online distance learning? (2) How do students perceive the quality of online distance learning from their experiences? (3) What factors shaped the students' online distance learning experience? How do those factors contribute to the quality of online distance learning modality?

MAIN THEMES	CORE IDEAS
EXPERIENCES on ODL	
Positive Experience and contributed factors	• Flexibility • Cost-effectiveness • Ease of connection to the Internet • Familiarity of the teacher

Table 1.1 Students' Positive Experiences on Online Distance Learning Modality And its Contributed Factors

RESULTS AND DISCUSSION

The purpose of this study was to examine students' perceptions towards quality of online education in science teaching among senior high of Don Marcelino National High School based upon the online learning experiences they had. Students perceptions toward online distance modality based on their own experiences have been examined. The factors which shaped those students' online learning experiences have also been investigated.

The findings of this research are grouped in two clusters: students' positive experiences and negative experiences. The students' positive experiences were: flexibility, cost-effectiveness, electronic research availability, and ease of connection to the Internet. The students' negative experiences were identified as: delayed feedback from instructors, unavailable technical support from instructor, lack of self-regulation and self-motivation, and the sense of isolation. Factors that contributed to students' positive experiences were: flexibility of class participation time and self-paced study, cost-effectiveness of online class, electronic research availability, well-designed course layout, ease connection of the Internet, easy navigation of the online class interface, and familiarity with the instructor. Factors that contributed to student' negative experiences were: delayed feedback from instructor; unavailable technical support from instructor, lack of self-regulation and self-motivation, sense of isolation, monotonous instructional methods, and poorly-designed course content.

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A. Positive experiences and contributed factors

Flexibility

One of the advantages of online distance learning in the pandemic time is the flexibility. The most important factor that contributed to participants' positive experience in their science class was the flexible class participation time. All six participants in this study emphasized the convenience they enjoyed from not being required to go to the school, and plan their work and study at their own time. Flexibility with time was one positive experience found in this study. Students could log in to the online class at any time when they are available. *"It allows me to take to log on at will and view my assignments at will." "I don't have to worry about trying to find time to come to the school or a pointed pace to meet with the teacher." "One benefit of online distance modality is that you don't have to worry about trying to find time to meet as a whole class". "There is no hassle in trying to rush to get to class." "You're never late for class."* One of the non-traditional students reported that he had a work that was extremely demanding and the only option he had at that time was the online class. This student had strong emotions about the sacrifices that he perceived his family had made due to his pursuit of finishing his studies. He expressed anger towards the educational system for not making it easier to attend senior high school. *"More online class in science would have been a huge benefit…less time away from my family."* According to Picciano (2017), flexibility enhances the student's interest to know things and learned things according to its pacing. The learnings in the online distance more interesting because of the flexible time.

Flexibility with self-paced study is another positive experience found in this study. The participants had full control of when to study the required knowledge and content by teacher in the science class. *"You can pace your work at your own time and you don't have to listen to lectures by the teacher." "Basically, I get to work around my own time schedule." "It helps me to manage my time." "You have time to sit back and reflect your initial reactions to the discussion topics."*

Participants also perceived online learning modality as an enjoyable experience when studying with no pressure in science subject from the teacher and the other students, (Anderson, 2011). The participants felt convenience was also important because *"There is no distraction from your classmates", and "There is no one looking over your shoulder or checking your homework or forcing you to read." "You can pace your work at your own time and you don't have to listen to lectures by the instructor."*

Cost-effectiveness

During the interview online, all the six participants agreed to the cost-effectiveness of online education in the modality used by the school in pandemic time. Although they have to spend money for the load for the internet connection, but compared to the fare of going to school or making expenses of riding a motorcycle, they would rather take online classes to save those extra expenses. *"During this pandemic, I think online class save me money. I have less expenses to fare because I don't travel come back and forth to school." "I spend less on class materials, projects etc.,, because I fell online class require fewer requirements if any. I don't spend extra money on papers, school fees and science projects. I feel that I make more efficient use of my money while taking online class."* The online class for students help parents to spend money less in acquiring school fees and projects, and enable parents to monitor closely their childrens, Hussein, (2020).

Ease of connection to the Internet

The ease of connection to the Internet is the third positive experience found in this study. The easy access to computers and Internet stimulates students' interests to access their online classes quite often. Since they have access at home, they didn't need to travel to school to access their online class. *"With this online program available through internet, getting a understand the lesson in science was possible." "I have Internet access at home, I can access my subjects at any time, and it's so easy for me." "I am able to use Internet access more cheaper because of the promos offered by the network or the service provider".* According to Rawand, (2020), the pandemic brought every institution to expand their perspective on how students can still learn without having face to face interaction and improved the quality of teaching or instruction to the students. The internet was truly a good avenue for the students to continue to learn and be able to understand the important concepts in the lesson especially in science subjects. The pandemic is not the hindrance to reach the goal to achieve quality education and because of the internet connectivity it may address the problem of illiteracy.

Easy navigation of the online class using google meet and classroom

The well-designed online class such as synchronous learning made it easy for students to access and find the information they were seeking. In the distance learning modality of today's pandemic, two kinds of synchronous platforms were utilized by the participant. The six participants in the science class uses google meet and google classroom. Two students stated the easy access for the whole class design. *"The interface of the google meet and google classroom are very easy to use. I can easily access my task and assignments upload by my science teacher. "The amount of links, and information, everything is very simple and easy to understand the interface." Automatic grading for tests and assignments by the application was perceived as a good experience by one participant. "I can receive the results for the tests and assignments immediately after I took it."* A second participant also reported automatic grading by the application as a positive of the course. Stating that it was great to see not only your grade for a specific quiz or test, but to have a list of all grades received. Another participant did not receive automatic grading and reported long delays in reporting. The participant stated, *"We've already taken three quiz, but I still haven't gotten the result from my first test yet."*. The easiest way to access the a medium in the computer was the interface used by the platform. It is necessary for the platform that can be easily access by the students, so that the information and other task easily be downloaded by the students, (Markova,2021).

Familiarity with the Teacher

Being familiar to the teacher in an online class was quite interesting in the study. Moreover, one interesting phenomenon found in this study was the comfort level or familiarity with the teacher. One participant indicated that, *"I feel good about this class, because I know the teacher pretty well." When asked if this familiarity brought any effect on his perceptions towards the quality of the online class, the participant answer, "I believe this familiarity make me feel more comfortable since I already knew how the teacher behaved and his/her way of teaching."*

According to Smart,(2006), students are more eager to learn and interested in their subjects if they know better their teachers. The students are more engage in their activities online even

without seeing each other, because they know better their teachers, especially in science class, by giving activities that is relatable in the presents situation in the pandemic. Moreover, familiarity of the teachers, indeed shows more effective that any other means of knowing the subjects with students learning difficulties

MAIN THEMES	CORE IDEAS
Negative Experience and contributed factors	• delayed feedback from Teachers • unavailability of technical support from teachers • lack of self-regulation and self-motivation • sense of isolation • monotonous instructional methods

Table 1.2 Students' Negative Experiences on Online Distance Learning Modality And its Contributed Factors

B. Negative experiences and contributed factors

Delayed feedback from teacher

One of the main factor which shaped students' negative experience on quality of online distance learning was the delayed feedback from the teacher. Students expect to receive timely feedback from teacher on science discussion postings, exam or tests, and submitted assignments. *"The feedback from the teacher is not immediate. So far, I haven't received any feedback yet. I think there is a huge need for improvements as regards to the feedback from the teacher in science". "You must have feedback on exams, discussion postings, and main sources of communication on the regular basis." Students also expect the teacher to reply to email messages or voice mail messages promptly. "She/he didn't reply to my calls, or my email. I had no way to contact her/him." It normally took students a day, or several days to wait for feedback from the teacher. "I have to wait for his/her responses, it normally takes a day or so."* The document of science discussion postings of one class showed that the teacher only replied to students' messages during the first and second weeks of the semester, Arenque,(2020).

When students did not receive feedback from the teacher, they felt frustrated, worried, and less motivated. *"This miscommunication killed my motivation and I almost cancelled the class." "Sometimes it was very easy for me to get frustrated when I encounter something that I don't understand the lesson in science like earth and life." "He/she is probably busy, spending his/her day teaching traditional classes. Therefore, he/she doesn't have to read and respond to emails until after hours."* Arenque,(2020) stressed out that students then perceived

the time and response time is a drawback in all aspects of online education. During the conversation, the interviewee mentioned several times about the frustration he experienced because of delayed or lack of feedback from the teacher, such as "I hate this class, no feedback, no response." He shook his head, and sighed deeply when giving the above comment.

Unavailable technical support from teacher

World Health Organization (2020),when students have technical problems, they need someone to help them. The person that came to their mind first was the teacher, especially the subject Physical Science or Earth and Life Science was quite not easy. Thus, when the technical support from the science teacher was not available, negative experiences will be brought up. One participant mentioned that she and her classmates had no technology background, *"Many students have little technical background knowledge of google classroom or google meet". It was even difficult for her to explain the problems she experienced with modern technology. "Some problems or gray areas are hard to sum up in words. It is also difficult for the teacher to always know what the student is trying to say or describe." Thus, she said "I have to seek advice from friends, who were literate in some apps in the platforms about how to send and compose messages.*

Lack of self-regulation and self-motivation

While online learners enjoyed the flexibility and convenience of online education, they also needed to keep in mind that they had to take some responsibility for their own learning. Due to the freedom and convenient nature of online classes, self-regulation and self-motivation are highly expected for students to be successful. When students can't control him/herself, he/she might miss the due date for the assignments, or even the dates for the tests. One participant missed the deadline for one of his tests. He had to keep contacting the teacher for an opportunity to make up the test. However, he couldn't contact the teacher through any means, which also caused his negative experience due to this lack of connection. The participants stated, *"You must be really self-motivated and focused". "I am easily distracted and I put off things until the last minute". Sometimes they even complained about the freedom and independence they had enjoyed, "Independence and freedom can get you in trouble." "It is so easy to not to complete an assignment." "You don't have a specific time to do your work, so it's very easy to get off track and lose focus." "If I were in a traditional class, at least I can talk to classmates, and we may remind each other about the due dates for assignments and tests."*

Participants in this study spent their time on housework, or other activities. Because the class didn't meet, sometimes they forgot that they were taking online class. *"Sometimes I will forget my assignments." However, the participant realized that he needed to control himself, and motivate himself, "If I could have spent some time in preparing for the test, I wouldn't have gotten such a bad score."*

Sense of isolation

There are a variety of reasons that caused a sense of isolation for online learners in this study. One reason was the lack of interpersonal communication or interaction between teacher/student, and student/students. "You can't talk to teacher face to face on a regularly

basis if at all because of the pandemic." "You miss out hands-on experiences done in class, and you won't be able to interact with other students." The participant felt a strong isolation in the online class he was taking because he kept saying "I feel I am nowhere and live in a lonely island." Especially when there is no group work for online learners, they won't even have chance to talk to their group members. Consequently, students don't know the teacher, and don't know his/her classmates. "So far I don't know how many classmates I have, and who they are." "Although the teacher listed her number on the class page, but I can never reach her."

Monotonous instructional methods

Another reason that caused the feeling of isolation was the monotonous instructional methods used in the online class. Two participants in this study indicated that the message board was the only communication and interaction method used by their teacher. "We only communicated through discussion boarding. She (the instructor) won't reply to our email message. As far as the chatting room, we never used it in this class. If we can meet in the chatting room, it will be so much better." Hussam,(2020) pointed out that the monotonous instructional methods also included class materials the teacher prepared for students. Printed materials were solely used in the class. In the music appreciation undergraduate level class, sound files and graphics are also utilized as supplementary teaching materials. He added that the monotonous learning environment expressed his feeling and suggestion, *"Everything is printed. If we could have different material, such as audio, video, or even let us rent some video and write a report on it, I will feel better for my learning."*

RECOMMENDATION

In the light of the foregoing results, the following are being recommended.

1. Further research may be conducted to examine the effectiveness of online teaching by all learning areas.
2. Further research to pointed out the level and quality of communication between students and between students and teacher during online distance learning modality.
3. Future research could be done with a homogeneous group of students, using a larger sample size; including more schools in the district or division in the study.
4. Online learner may need to change their own behaviors such as lack of self-motivation, spending too much time on the phone, or not being an active and constructive learner.
5. More research need to be conducted in the area of improving communications and utilizing multi-media to enhance the on-line educational experiences of students in regard to both academic track and technical-vocational livelihood track.
6. More importantly, the administrator should provide sufficient supports (training, administrative, and promotional), hire qualified teachers in Science, and motivate teachers to provide effective online teaching.

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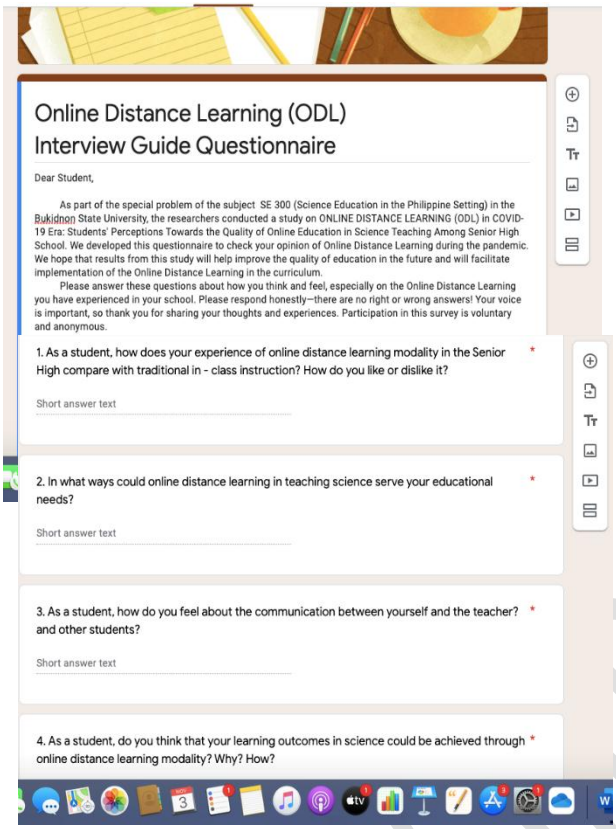
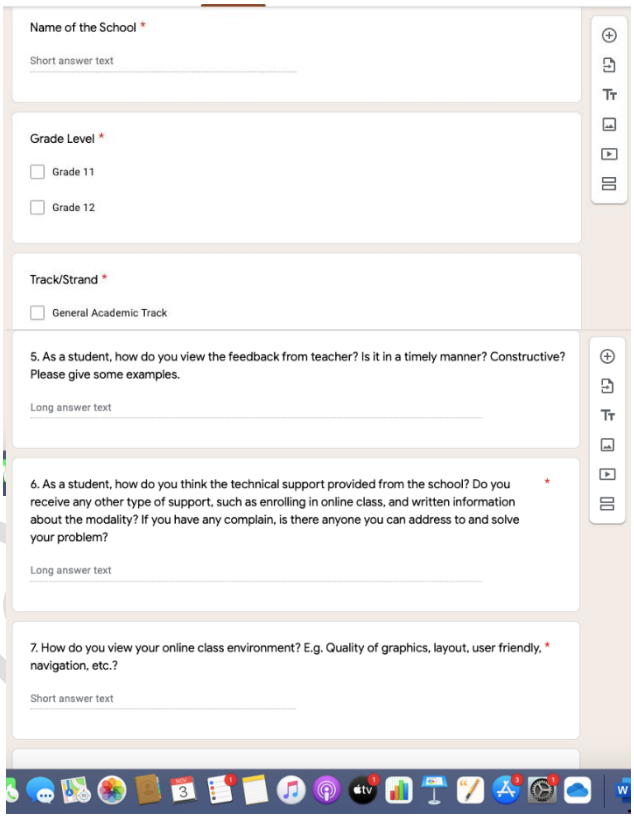
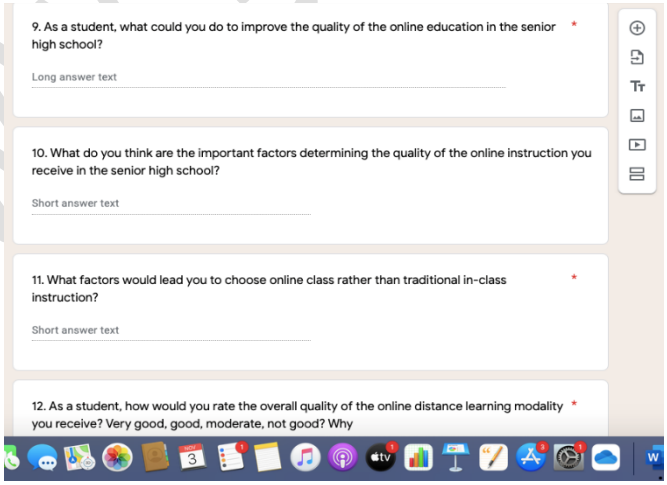
APPENDICES

ONLINE INTERVIEW GUIDE QUESTIONNAIRE







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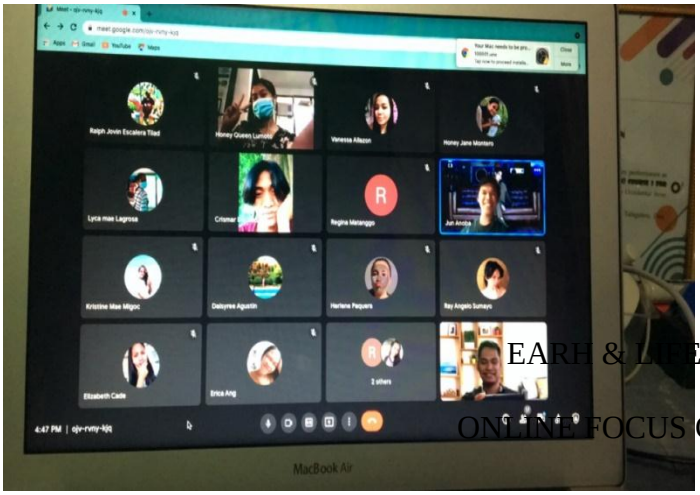

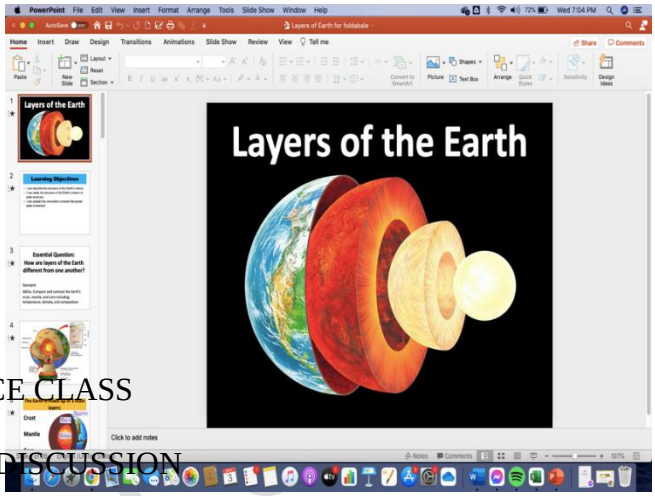

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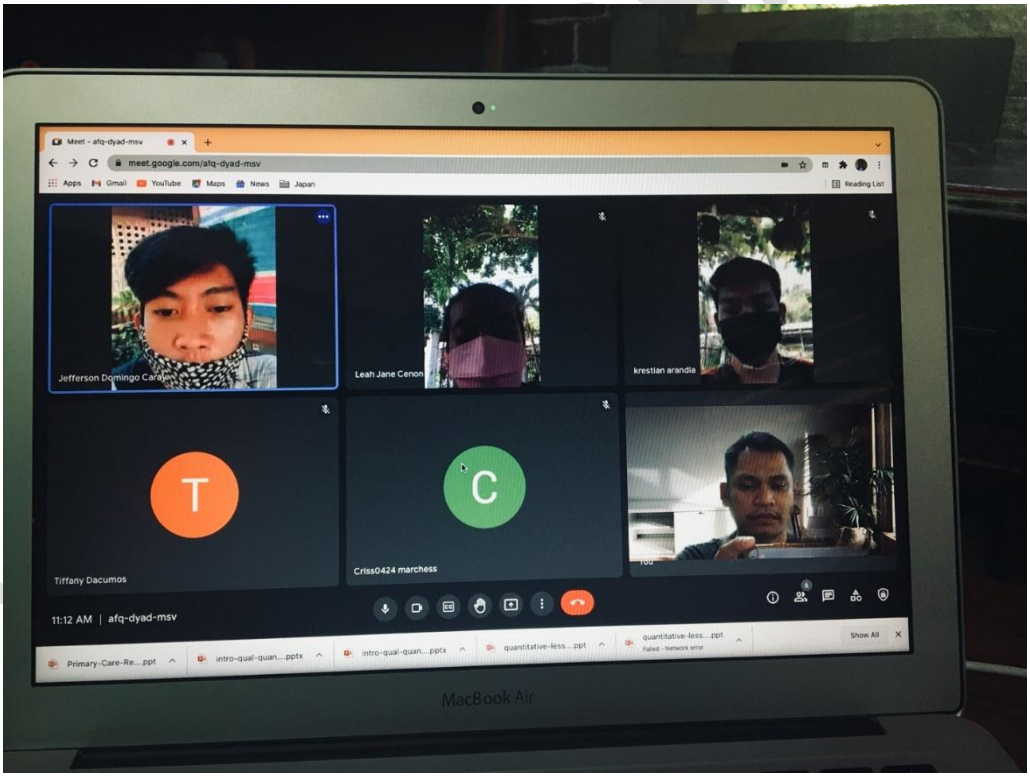
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