

# ASSESSING CONDUCT OF ONLINE LEARNING OF SENIOR HIGH SCHOOL STUDENTS OF COLEGIO DE SAN JUAN DE LETRAN-BATAAN

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## ABSTRACT

*The Coronavirus (COVID-19) pandemic has caused a shift in the educational system. It forced them to refer to online learning platforms to continue the academic learning of students. This research study aims to (1) identify the demographic profile of the respondents according to their sex, Senior High School strand, and Internet access, (2) determine the assessment of the respondents regarding the conduct of online learning using the variable of delivery of the lesson, student participation, classroom strategies, and usage of e-learning platforms, and (3) distinguish if there is a significant difference in the assessment of the respondents when grouped according to their demographic profile. The research instrument used in this study was an online survey questionnaire. Researchers have distributed the online survey questionnaire to Senior High School students of Colegio de San Juan de Letran-Bataan through email. 126 Senior High School students of Colegio de San Juan de Letran-Bataan responded. This research study has found that there is no significant difference in the assessment of the respondents when grouped according to their sex, and academic strand. However, there is a significant difference in the assessment of the respondents regarding student participation when grouped according to their academic strand. Lastly, researchers have found that there was a significant difference in the assessment of the respondents regarding the Delivery of the Lesson and Classroom Strategies when grouped according to their Internet access. Researchers have concluded that sex does not influence the online learning of Senior High School students. Researchers have also concluded that their academic strand (regarding student participation) and Internet access (regarding the delivery of the lesson and classroom strategies) do influence the online learning of Senior High School students.*

**Keywords:** *Online Learning, COVID-19, Senior High School Students, Assessment, Demographic Profile*

## INTRODUCTION

The Coronavirus disease (COVID-19) is a beta-coronavirus that can spread towards humans through intermediate hosts (Paules, Marston, & Fauci, 2020). It is a highly infectious disease that originated in Wuhan, China and has spread across the world (Shereen, Khan, Kazmi, Bashir, &

Siddique, 2020). The Philippine Department of Health confirmed its first case of the Coronavirus disease (COVID-19) in the nation involving a 38-year-old Chinese woman on January 30th of 2020. Later on March 7th of 2020, the first local transmission of the Coronavirus disease (COVID-19) in the

Philippines was reported (DOH, 2020). Most governments worldwide have established a similar goal of curbing the spread of the Coronavirus (COVID-19) by enforcing lockdowns, social distancing, preventing face-to-face classes, and immigration constraints (Gonzalez et al. 2020). As of the 12th of March, forty-six countries on five different continents declared the shutdown of schools and universities to limit the COVID-19 spread (Huang et al., 2020).

Education in an online setting refers to educating and gaining knowledge online, wherein teachers and students learn and teach correspondingly through the use of suitable learning platforms (Sun et al. 2008). They describe online learning as a learning process using multiple devices with Internet connectivity in synchronous or asynchronous settings. Students can learn and communicate with teachers and other students from everywhere by using these settings (Singh and Thurman, 2019).

Specifically, in the Philippines, despite the announcement regarding the shift of the opening of classes towards October 5, many private schools have started already their school year before the announcement. According to a news article published in Manila Bulletin, Education Secretary Leonor Briones stated that regardless of the school opening that has been moved to the 5th of October, private schools that have already begun can carry on with their respective school year (Hernando-Malipot, 2020).

Related to this, many research studies have explored the perception of students regarding online learning (Fedynich, Bradley, & Bradley, 2015; Hung & Chou, 2015; Martin & Bolliger, 2018). However, there are not many research studies that assess the conduct of online learning of Senior High School students regarding the online class. With the growing use of online approaches throughout COVID-19, assessing its usefulness regarding educating and learning from diverse participants is required (Schwartz et al., 2020).

This research study aims to (1) identify the demographic profile of the respondents according to their sex, Senior High School strand, and Internet access, (2) determine

the assessment of the respondents regarding the conduct of online learning using the variable of delivery of the lesson, student participation, classroom strategies, and usage of e-learning platforms, and (3) distinguish if there is a significant difference in the assessment of the respondents when grouped according to their demographic profile.

The respondents for this study includes Senior High School students from all strands available in Colegio de San Juan de Letran-Bataan. Not only is there a lack of research study for Senior High School students, but it has involved none of them the students in online classes, only recently because of the Coronavirus Pandemic. A good deal of research studies have focused on examining the factors surrounding the strength or weaknesses of digital learning (Bolliger & Halupa, 2018). Considering the current situation where the Philippines is still affected by the Coronavirus (COVID-19), and the province of Bataan being on quarantine (Darryl John Esguerra, 2020). This study has potential limitations; the sample of this study where Senior High School students from the STEM track are more likely to be selected in a sample than others due to the low number of students enrolled in other Senior High School tracks.

Researchers will adapt questions from a survey questionnaire (Jones, 2013) wherein they significantly alter the survey instrument while also develop survey questions. The survey will be given to the respondents using an online platform. Researchers will use Google forms, an instrument that can collect data from participants through a survey, for easy access to both the researchers and the respondents.

The result acquired from this research study will make contributions towards Senior High School students and Senior High School teachers, future researchers, the Department of Education, and curriculum developers. This study will benefit students regarding what to expect in online classes for those who aren't knowledgeable and prepare them for the online learning platform. Teachers can benefit from this study by using this as a reference for helping them create

strategies to maximize the learning outcome of students in an online learning platform. While also can give Senior High School teachers an idea of how online learning is to Senior High School students so they could make adjustments and better effort in teaching.

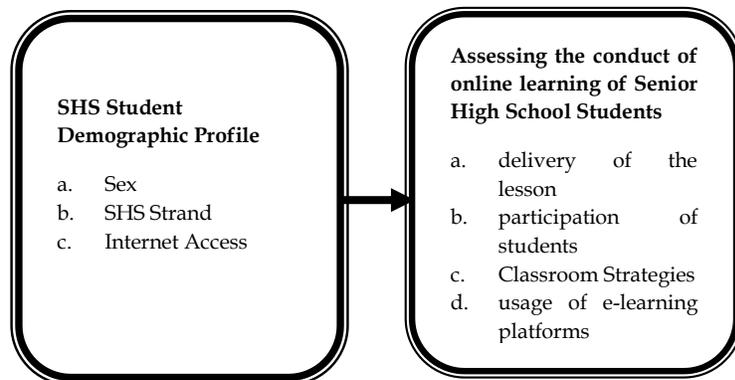
Furthermore, as for curriculum developers, this study provides statistical data that can be used as reference for future incidents which can suggest an alternative learning style of education of Online Teaching and Learning. Also, this study can provide data that will suggest better options to ease the online learning system. In this way, Curriculum Developers can make improvisation and adjustments that can benefit both students and teachers. The Department of Education can use this study for the benefit of students from many educational institutions other than Colegio de San Juan de Letran-Bataan. This study can bring awareness to the Department of Education regarding the online education of Senior High School students. It allows them to monitor and calculate the progress of learners and changes instruction accordingly.

Future researchers that will have similar studies can use this study as a reference and maybe improve the study furthermore. This study can serve as a guideline or source of citation for future studies in the same nature. This study can provide the facts and other useful information needed to compare or use towards their study during their respective time and usability. Lastly, this research study can provide the government with reference or information about the implementation of online learning and use it as a basis.

**CONCEPTUAL FRAMEWORK**

The framework of this research study is composed of two variables: four (4) criterion variables, and three (3) predictor variables. The criterion variables are the assessment of the conduct of online learning of Senior High School Students which consists of three (3): Delivery of the Lesson, Participation of Students, Classroom Strategies, and Usage of E-learning Platforms. The predictor variables are the

demographic profile of Senior High School Students which consists of three (3): Sex, Senior High School Strand, and Internet Access.



*Figure 1: Conceptual Framework*

This figure illustrates how the demographic profile of Senior High School Students affects the assessment of the conduct of online learning of Senior High School Students.

**LITERATURE REVIEW**

Across both teaching process and research institutions, assessment has been seen by people as a detrimental effect on learning and teaching, particularly when difficult choices are connected to the results of academic performance (Kaestle, 2013). In diverse ways, researchers have interpreted assessment. The most common definition implies that assessment is "authentication of performance" (William & Black, 1996). The rate at which an assessment is designed to operate, which includes differing location in "space and time" from the implementation of teaching and learning, has significance for how and how sure it can execute numerous acts of assessment, be it formative, summative, or determining the performance (NRC, 2003). This is also the situation that the various levels and purposes of assessment will suit theoretical perspectives on the basis of understanding and learning to various extents (Pellegrino & Hickey, 2006).

This research study aims to assess Senior High School students using these variables: delivery of the lesson, student participation, and the usage of e-learning platforms. The objective of the study is to also find if there is any significant

difference in the respondents' assessment when grouped according to profile.

#### *Delivery of the lesson*

The term lesson delivery can be described as the teacher's delivery of lessons to support language and content objectives with sufficient rhythm to the level of skill of students so that students can participate in the lesson approximately 90 percent to 100 percent of the class time (Jukil, 2011). A good lesson plan, including clear content and language goals, is required for the appropriate lesson delivery, as it is an important guide to the success of teaching and learning and the development of the whole lesson. In addition to this, these priorities should be accompanied by corresponding guidance (Vogt & Echevarria, 2008, as cited in Jukil, 2011).

It has been said that it is not enough to simply state the lesson intent to the students, there have to be opportunities for learners to interact with the lesson goal in a meaningful manner (Dick, Carey, & Carey, 2001). What the study is trying to suggest is that simply stating the purpose of the lesson to the students might not be sufficiently successful for the learning of the students, thereby requiring an interaction where the lesson is delivered/discussed in a meaningful way that contributes to the learning of the students. There are current lesson delivery models that do not meet the skills required to help the students, so the study focuses on the opportunity for students to interact well with the delivery of the lesson.

Moreover, to ensure that students understand the importance of the lesson taught, it is important to create a specific lesson aim, target objective, or learning mission (Fisher & Frey, 2014). Comparing this study with the previous one, this research focuses on establishing the main goal or objective of the lesson to ensure that students understand the lesson rather than the interaction on how the lesson is delivered which contradicts the previous study. This study notes that if the lesson has a clear purpose, objective, or learning mission of the lesson, then it is most likely that the students understand

the value of the lesson, regardless of the learners' engagement with the lesson.

In particular, online delivery can be a solution for several problems and issues, such as availability of time, distance, and a limited offering of courses in traditional environments (Perreault, Walman, & Zhao, 2002, as cited in Reisetter, Lapointe, & Korcuska, 2007). Whether or not this mode offers the same consistency as face-to-face settings, however, remains a major concern (Bernard et al., 2004, as cited in Reisetter, Lapointe, & Korcuska, 2007). Online delivery has indeed been a solution to a variety of problems, but when it comes to the students' understanding and learning of the lesson, this method of delivery may not provide the same experience and continuity as the traditional face-to-face delivery.

In the following studies, its component includes extending the content of activities and delivery approaches shared in e-learning teacher development to more campuses and thus training more educators to strengthen the level of competence in IT-supported teaching and learning approaches (Breault, 2013; Koellner et al., 2011, as cited in Kong et al., 2016). In this study, teachers undergo a constant process of developing, implementing, reflecting, and improving pedagogical strategies unique to such e-learning contexts in sustainable and scalable teacher growth activities. Without altering the core concepts after adaptation, these pedagogical methods can be further expanded and exchanged with more complex implementations in other e-learning contexts (Breault, 2013; Koellner et al., 2011; Looi & Teh 2015, as cited in Kong et al., 2016). In this part of the study, the researchers can see the process that the educators go through in developing and improving ways of delivering lessons or their teaching methods in an e-learning platform.

In addition, it is possible to categorize the distribution of lessons on an e-learning platform into two distinct methods which are the synchronous and asynchronous teaching methods. Synchronous learning takes place in real-time and allows students and teachers to

participate simultaneously (Romiszowski & Mason, 2004). On the other hand, asynchronous learning takes place over a delayed period and does not enable students and teachers to participate concurrently (Rovy & Essex, 2001; Sabau, 2005). The students view learning experiences independently, and learning is not coordinated over time. In this study, researchers can see the difference of both teaching methods wherein synchronous teaching is the real-time participation of both the teacher and students, while asynchronous teaching is the delayed time with no simultaneous participation from either side.

The delivery of lessons can also be done through the use of blended learning. The "third-generation" (Phipps & Merisotis, 1999) of distance education programs have been referred to as blended learning. Correspondence education, which used a one-way instructional delivery system, including mail, television, and radio, was the first generation. The second generation was singular-technology distance education, such as computer-based or web-based learning. Blended learning is the third generation, described as maximizing the best benefits of face-to-face learning and multiple learning technologies.

According to a study of (Hayes, 2001), there are four sub-categories on the factors impinging upon lesson preparation and delivery which are: (1) quality of communication, (2) time factors, (3) knowledge of pupils, and (4) flexibility in planning. In this study, it suggests that four factors have an effect or impact upon the lesson delivery and preparation which is the quality of communication, time factors, knowledge of pupils, and flexibility in planning which all contribute to the lesson delivery and preparation of educators to their students.

#### *Student Participation*

Participation can be described as an active phase of student interaction featuring classroom preparation, involvement, ability to participate in classroom discussions, social and communication skills (Dancer & Kamvounias,

2005). Oral Engagement, such as asking and answering questions, offering feedback as well as providing constructive criticism, are equally valuable as Non-oral engagement, that includes letting students interact and pay attention to class discussions (Schultz, 2009).

Online participation enables students to establish comprehension skills, evaluate course content, and enhance their capability to perceive information and knowledge (Bliss & Lawrence, 2009). It is frequently assessed as the engagement amongst students, and with their instructors (Hrastinski, 2008). Participation in online discussion forums is a major indicator of student results such as perceived learning (Jiang & Ting, 1999), student performance within the course (Cheng, Paré, Collimore, & Joordens, 2011), and student diligence (Morris, Finnegan, & Wu, 2005).

Observing the participation of students in an online setting poses a great challenge. Online Classroom presents long-distance learning by separating pupils and educators, which offers a new learning environment that is different from face-to-face classes (Falloon, 2011). Participation of students in online classroom discussions can be seen as an important aspect of engagement, driven by theoretical considerations that learning outcomes are determined by participation in discussion boards and interaction among other students (Cheng et al., 2011). Students participating in online classroom discussions called active participation are mainly associated with text-based engagement such as posing questions (Kim, 2013).

Sex is a significant feature that influences the online learning of students, with certain research results indicating that men have much more positive impressions. A research study, for instance, explored gender differences in behavior towards computers. It concluded that men have many favorable perceptions of computer usage and used computers far more often than women (Kay, 1992). Whereas younger women claimed that they liked computers about as much as younger men, older women were less confident in their perspectives (Comber et al., 1997). Two research studies on

student participation in an online computing program indicate that men have greater self-efficacy in internet technologies than women however women have greater levels of passive and active participation than men (McSporran & Young, 2001; Yukselturk & Top, 2013).

Moreover, there is another significant feature that influences the online learning of students which is age. Online learners, including younger students who are well knowledgeable in virtual social activities, and older professionals with full-time employment and families, have significant age diversity (Ke & Kwak, 2013). Research indicates that older individuals are more self-directed learners than their younger peers, so they do better in the world of online learning.

The claim is that asynchronous online courses encourage self-directed and autonomous styles of learning by offering more flexibility in organizing their learning around work and family obligations (Bourdeaux & Schoenack, 2016). However, there is a rebuttal that older people are less inclined to interact because they have lower levels of self-efficacy on the online platform and have difficulty using online resources because of poor cognitive skills and less experience engaging online (Chu, 2010).

Furthermore, a research study was conducted by Stephanie M. Aguillon along with other researchers the study entitled "Gender Differences in Student Participation in an Active-Learning Classroom" (2020). This research aims to examine the essence and strength of student participation in graduate, online classrooms, and how participation differs across the demographics of students. Over two semesters, researchers of this study observed student participation in an introductory biology course at a large research-intensive university, and they have categorized it into seven categories to identify gender gaps. Researchers have observed 40 lecture sessions over two semesters to record and document student participation in class. Two observers sat at different locations in the classroom and observed the participation of students during the entirety of each lecture session.

They have also collected student grades and addressed a post-course survey that evaluated student scientific self-efficacy and prominent gender identification. The outcome of this research shows that men participated more than women in most categories. Men were strongly overrepresented involuntary responses after small-group discussions across both semesters. Women in this study were reported to have lower scientific self-efficacy and are less prominent in gender identification.

Meanwhile, a research study conducted by Isabel Ruthotto, along with other researchers of the study entitled "Lurking and participation in the virtual classroom: The effects of gender, race, and age among graduate students in computer science" (2020). Researchers have developed and tested their hypothesis regarding the demographic differences (gender, race, and age) in graduate student participation in online classrooms for a computer science degree program. They have selected the Piazza forum to gather discussion board activity logs from a sample of 1914 online computer science graduate students. Researchers used logistic regression to address the non-participation in online discussions, binomial regression to observe the amount of passive and active participation, and ordinary least squares regression to examine students that do not actively participate.

Related to this, researchers found that participation of graduate students varies differently by the demographic of students but does not vary in gender. The outcome of this research shows no gender effects regarding student participation in an online class, but age does, where older students participate more than younger students.

Both studies have focused on the participation of students but yielded different results concerning gender. In the research study conducted by Stephanie M. Aguillon (2020), the outcome of this research study shows that male students participated more than women while in another research study conducted by Isabel Ruthotto (2020), the outcome shows no gender effects in regards to participation of students in an online class setting. Meanwhile, this research study (Ruthotto,

2020), it claims that age does affect student participation, showing that older students in their research study participating more than the younger students.

However, a research study states that older students are less inclined to interact on the online platform, have difficulty using online resources, and have less experience engaging online (Chu, 2010). However, both research studies did not specifically focus on Senior High School students. Consequently, leading for both of these research studies not able to determine the participation of Senior High School Students according to their respective strands.

#### *Classroom Strategies*

At the start of the year 2020, the world has suddenly been swarmed by a deadly virus called the Coronavirus (COVID-19), causing panic towards every nation (Yuzar, 2020). The global spread of the Coronavirus (COVID-19) has caused a huge shift in all aspects of life; this sudden change also affected the learning process (Aji, 2020).

Originally performed face-to-face in class, the classroom environment has shifted to home learning using the internet platform or remote education through use of different available internet platforms. Studying at their household during the Coronavirus Disease (COVID-19) pandemic is completely distinct from the usual learning environment. According to Purwanto, et al. (2020), learning at home has its various benefits such as being able to save on travel expenses as well as relieving tension caused by traffic while having plenty of leisure hours. In spite of its advantages, learning at home still has its drawbacks (Nurhasanah & Sobandi, 2016). For instance, students procrastinate by playing games instead of finishing the activity assigned by the teacher. Thus according to Setyorini (2020), the learning process at their house isn't effective.

Due to the current circumstances, this is then anticipated that the teachers will implement concepts and strategies that establish a positive and favourable environment in which the learning processes take place effectively. The objective of each instructor is to have their students adapt and

digest any lecture taught to the highest degree (Macaraeg, 2020). They should lend aid by set the priorities of the school for allocating the skills needed to meet the optimal educational scenario (Figley et al., 2012). Experts quickly detect knowledge gaps and therefore encounter high levels of interest that inspire them to explore information and fill those gaps (Loewenstein, 1994).

However, students have different concentrations of curiosity, so educators need to use strategies to prime the pump of curiosity and generate an interest in education (Jeffrey et al., 2014). Thus, Hasan & Chumaidah (2020) stated that by incorporating a strategy, it helps run the process of learning effectively. The teacher applies classroom strategies both in organizing their pupils, equipment, methods and time so that the processes of learning are carried out well (Ragin et al., 2020). By incorporating strategies to help students with their studies, it will help their learning progress effectively (Hasan & Chumaidah, 2020).

In online classes there are certain obstacles, for instance online education system have the possibility of not being stable in terms of both access and quality of teaching (CNN, 2020). There are also other students who do not have access to laptops, or high-speed internet at home. As well as a lot of instructors being technophobic, lacking in confidence or being anxious when using computer hardware and software in class (Rosen & Weil, 1995). However, there are commentators who made assumptions that the spread of the Coronavirus (COVID-19) pandemic would bring benefit that will lead to more acknowledgement for online education (Hixon et al., 2012).

An example of teaching strategies used in classroom is the use of Socratic Dialogue. Socratic questioning in teaching has indicated the introduction of many forms of questioning to discussions, such as clarification of questions and asking of conclusion (Yang, Newby & Bill, 2005). The use of questions to teach has been an age-old drill and has been a major part of education for centuries (McComas & Abraham, n.d.). Educators ask questions to encourage students discover what

has already been taught, examine the subject in depth, and facilitate dialogue and peer-to-peer participation. A research study conducted by Delgehausen (2004) found that Socratic Dialogue enhanced the self-esteem in children and raised their mindfulness regarding the ethical issues in their associations with others. On the contrary, aside from positive results of similar research studies, recent research studies regarding the impact of Socratic dialogue that provided confirmation are lacking.

#### *Usage of E-learning Platforms*

The continuous growth of electronic devices has also drawn the rise of electronic learning. With the rise of electronic learning, it also draws the question if it is effective. Implementing an e-learning system has some challenges to it. Some of these challenges include (1) Cost and purchasing of e-learning systems, (2) Time needed to make e-learning systems (3) Comparison of E-learning systems against other learning systems. Many universities implement online learning for higher education.

According to a study in the Philippines, technology is currently being integrated within learning institutions, particularly in the education sector because; it has been proven to be effective. As the e-learning system continues to advance, colleges and universities strive to improve to further meet the needs of students, faculty, and staff (Doculan 2014). And according to another study, the e-learning system has been a recent trend providing students with internet access and learning content. What caused this trend is the changes in the 'demographics' of students in the delivery of education, conditions, and the innovation of technology in the modern times as well (Concannon, Flynn, & Campbell, 2005). But according to this study, many universities struggle in implementing e-learning due to the difficulty of achieving proper strategies to use, the delivery, effectiveness, and acceptance (Saadé, 2003).

According to another study, students are becoming more anxious about the quality of education they are receiving

due to the implementation of the e-learning platform. Students enrolled in e-learning implemented schools want to make sure that they are getting high-quality education from highly qualified instructors, which they won't be able to see face to face due to the implementation of the e-learning environment. Therefore because of the lack of visual and physical presence of guidance, unlike the traditional learning system, students will have to rely on their psychological and sociological stimuli (e.g diplomas, instructors, industry, background, instructors, research, publication, school accreditation, certification, etc.) to validate their perception of quality and efficacy (Malala, 2004). Academic institutions around the world have always been fascinated by The World Wide Web and how it can open a new way and form of education and deliver it towards people who are far away from the institutions through word, video, and text.

Moreover, the majority of Academic Institutions accepted the E-Learning system well and see close to none complaints as an alternative to the traditional learning system. Teachers and Professors have shown great interest in the online platform and showed great determination in discovering the complexities of Online learning as they invested time and resources for it. In another statement, numerous universities, teachers, and professors have found multiple ways to transform almost and maybe all learning materials into E-learning material. Online courses have been increasing in numbers, and not only universities have been making use of it for even Private Companies use it for their training courses. Online platforms have provided flexible ways of learning more efficiently because universities, colleges, and even private companies make use of the online platform. (Malala, 2004).

#### **METHODOLOGY**

This research study will be using the descriptive survey research design to fulfill the objective of this study. A descriptive survey research design seeks to evaluate the scope and distribution of certain social traits, profession, and venue,

and to find out how certain behavioral habits or perceptions can be linked to these factors. Researchers will use this research design to fulfill the objective of this research study. The aim of this research study is to identify the demographics of the respondents according to their sex, Senior High School strand, and their Internet access, conduct an assessment to the respondents regarding the conduct of online learning focusing on these variables: (1) delivery of the lesson, (2) student participation, (3) classroom strategies, and (4) usage of e-learning platforms, and to find if there is a significant difference in the assessment of respondents when grouped according to their demographics.

The respondents needed for this research study are of the following criteria: (1) Senior High School student, and (2) currently studying in Colegio de San Juan de Letran-Bataan. Those who do not fit within the following criteria are not qualified as respondents of the research study. To define the sample size, the Raosoft website was utilized to identify 152 Senior High School students as the respondents of this research study (Raosoft Inc., 2011).

This research study will be conducted in Colegio de San Juan de Letran-Bataan. Colegio de San Juan de Letran-Bataan is a private Roman Catholic Dominican institution of learning that has suddenly shifted to online learning curriculum due to the Coronavirus pandemic (COVID-19). The online learning curriculum has forced 258 Senior High School students in Colegio de San Juan de Letran-Bataan to adapt to the sudden transition.

To be able to obtain and gather information needed for the analysis of this research study, Researchers will adapt questions from surveys, and previous research study (Jones, 2014; Mease, n.d.; Fedynich, Bradley, & Bradley, 2015; Agung, Quinones & Surtikanti, 2020). The demographic of the respondents are included in the first part of the survey questionnaire. After the researchers got permission from the principal of the Senior High School department to conduct the research study in Colegio de San Juan de Letran-Bataan that involves the Senior High School students, the survey

questionnaire will be administered and distributed amongst the respondents.

Researchers are to send the survey to the respondents through online means in order to adapt to the current situation due to the ongoing coronavirus pandemic (COVID-19). Researchers will use Google forms, an instrument that can collect data from participants through a survey, for easy access to both the researchers and the respondents.

Researchers will make use of the Statistical Package for the Social Sciences (SPSS) version 25 so that the researchers are able to analyze the outcome of this research study. To conclude the significant relationship between variables, a significance level of 0.05 and the confidence level of 95% will be used. To acquire the 5% probability chance of being incorrect, a significance level of 0.05 will be used (Potter, 1994).

The researchers will send out a permit letter to the principal of the Senior High School. The permit letter asks for permission to conduct the research study in Colegio de San Juan de Letran-Bataan that involves Senior High School students as they are needed so researchers will be able to acquire data for the output of this research study. After the permit letter is signed by the principal of the Senior High School department, researchers will then hand out consent forms towards the parents of students. The consent letter informs the parents that the answers of the respondents will only be used to gain data for research purposes and that identities of these respondents will be confidential between them and the researchers. The research instrument of the study entails a consent form for the respondents, informing them the objectives of the study, and that their participation to the study is both voluntary and confidential. Both letters inform the principal, the parents of the respondents, and the respondents themselves the procedure of the research study.

**RESULTS**

Table 1. Demographic profile according to sex

Sex	Frequency	Percent
Male	51	40.5
Female	75	59.5
Total	126	100.0

Among the total number of 126 respondent who agreed to participate and answer the survey questionnaire, 59.5% of the overall number of respondents are Female Senior High School students which is equivalent to 75 while the remaining 40.5% of the overall number of respondents are Male Senior High School students which is equivalent to 51. The data of the overall number of respondents who participated in this research study are shown above.

Table 2. Demographic profile according to strand

Strand	Frequency	Percent
STEM	99	78.6
ABM	12	9.5
HUMSS	11	8.7
ICT	3	2.4
HRS	1	.8
Total	126	100.0

The table above showcases the demographic profile of the respondents according to Senior High School Strand, 99 out of 120 of the total number of respondents are STEM students that is equivalent to 78.6%, 12 out of 120 of the total number of respondents are ABM students which corresponds to 9.6%. 11 out of 120 of the total number of respondents are HUMSS students, equal to 8.7%, while 3 out of 120 of the total number of respondents are ICT students, which corresponds to 2.4%. The remaining 1 out of 120 of the total number of students is HRS student equivalent to 0.8%.

Table 3. Internet connectivity

Status	Bandwidth Connection	Percent
Stable or fast internet connection	69	54.8
Weak or slow internet connection	42	33.3
Intermittent internet connection	15	11.9
Total	126	100.0

The table shown above displays the Internet connectivity of Senior High School students. There were 54.8% of the overall respondents, which is equivalent to 69 respondents, who have Internet connection at their respective household that are stable or fast; meanwhile, there are 33.3% of the overall respondents, which is equivalent to 42 respondents, who also have Internet connection at their homes but are weak or slow. The remaining 11.9% of the overall respondents, which is equivalent to 15 respondents, have Internet connection at their homes but is intermittent. It is common here in the Philippines to have unstable Internet connection; according to the report from Manila Bulletin (Leyco, 2020), 57% of Filipino households, which corresponds to 12.2 million Filipino families, do not have complete access to the Internet while those who do have access experience sluggish download speeds.

Table 4. Delivery of the lesson

How much does the provided information help you learn in various subjects?			
	Median	IQR	Interpretation
1. The topic list or syllabus provided was...	2.5	1.5, 3.5	Moderately helpful
2. Learning goals describing knowledge and skill you are learning were...	3	2, 4	Very helpful

3.	Lecture notes or materials written specifically for each subjects were...	3	2, 4	Very helpful
4.	Video Materials provided or pointed to by the teachers were...	3	2, 4	Very helpful
5.	One-on-one interactions with the teachers in other social platforms outside of online classes were...	3	2, 4	Very helpful

*\*Note: 4 - Extremely helpful, 3 - Very helpful, 2 - Moderately helpful, 1 - Slightly helpful*

The table shows that for the 1st question there was a median of 2.5 and an IQR of 1.5 and 3.5 which resulted to 'Moderately Helpful'. As for the 2nd, 3rd, 4th, and 5th questions they had a quartile range with a Median of 3 and had an IQR of 2 and 4 which resulted to 'Very Helpful'. The Table above shows if the Senior High School students will find the Delivery of Lessons in an online classroom setting to be of help. In Questions No. 3 and 4 students mostly responded with 'Very Helpful' regarding their Lecture and Video Material provided to them, and this supports the study by (Dale & Pymm, 2009; Ramlogan et al., 2014) that states the benefits of Video Lectures includes being in control, convenient, and flexible allowing students to interact with their learning material and it is also stated by another study (Hughes, 2009; Jones, Naugle, & Kollof, 2008; Reisetter & Borris, 2004) that videos add a presence and that it provides interaction and a social presence.

Table 5. Classroom strategies

<b>To what extend did classroom strategies help you learn in this course?</b>				
		<b>Median</b>	<b>IQR</b>	<b>Interpretation</b>
1.	Lecture presentations in online classes were...	3	2, 4	Very helpful
2.	Socratic Dialogues (i.e. instructors teaches class by constantly asking questions) were...	3	2, 4	Very helpful

3.	Discussions about why material is useful, important, or interesting were...	3	2, 4	Very helpful
4.	Questions and/or Activities posed during online classes were...	3	2, 4	Very helpful
5.	In-class activities in groups using worksheets or other sources were...	3	2, 4	Very helpful
6.	Demonstrations, animations, or simulations shown by teachers were...	3	1.75, 4.25	Very helpful
7.	Discussions before, during, and/or after the demonstrations were...	3	2, 4	Very helpful
8.	Help from the teachers during online classes were...	3	1, 5	Very helpful

*\*Note: 4 - Extremely helpful, 3 - Very helpful, 2 - Moderately helpful, 1 - Slightly helpful*

Table 5 displays the interpretation of students regarding classroom strategies. Questions 1, 2, 3, 4, 5, and 7 regarding classroom strategies have a median of 3 and an IQR between 2 and 4. Meanwhile Question number 6 also has a median of 3 but has an IQR between 1.75 and 4.25 while Question number 8 also has a median of 3 but has an IQR between 1 and 5. Based on the result of this table, it revealed that Senior High School students find these classroom strategies very helpful in terms of learning. This result supports the conclusion that by implementing strategies that aid students with their studies, it boosts their progress of learning effectively (Hasan & Chumaidah, 2020).

The result of this table shows that Senior High School students find Question 1 very helpful, this supports the results of a research study conducted by Corbeil (2007) where it showcases that students prefer PowerPoint presentations rather than textbooks. Ozaslan & Maden (2013) concluded that students grasp the course material better if it was demonstrated through use of visual tools. The table above also shows that Senior High School Students find Questions 2 and

4 Very Helpful, this supports the conclusion from a research study conducted by Pihlgren (2008) where clear improvement in skillfulness was equally found amongst children between ages five to sixteen during Socratic seminars over three years. Furthermore, a two-year research study conducted by Griessler et al. (2004) concluded that there was a clear instance of augmenting perception in terms of subject comprehension and associating with its numerous aspects. The majority of its respondents said that they had been given the chance to enhance their skills in interpersonal communication. It encouraged them to listen to their dialogue partner, refer to the arguments from different people, and comprehend and tolerate the opinion of others.

Table 6. Student Participation

Indicate how often you do the following during online classes	Median	IQR	Interpretation
1. Speaking during an online class discussion	2	1, 3	Seldom
2. Reading aloud in online class discussion when given the chance	2	1, 3	Seldom
3. Sharing my opinions and/or thoughts orally during online class	2	1, 3	Seldom
4. Sharing my opinions and/or thoughts through online evaluation provided by teachers	3	2, 4	Often
5. Participating in an online classroom discussion	3	2, 4	Often
6. Commenting, asking questions, or giving answers during online classroom discussions	3	2, 4	Often

\*Note: 4 - Always, 3 -Often, 2 - Seldom, 1 - Never

The table shows in terms of indicating how often a person does the following during online classes regarding student participation, wherein questions 1, 2, and 3 all have a median of (2) and an IQR of (1, 3) which is “Seldom”, while questions 4, 5, and 6 all have a median of (3) and an IQR of (2,

4) which is “Often”. Zheng & Warschauer (2015) states that previous study has indicated that the use of online dialogue in teaching in the classroom improves student engagement and interaction (e.g., Kern, 1995; Warschauer, 1996), and the rise in engagement is related to favorable approaches to learning and better attitudes (e.g., Cheng, Pare, Collimore, & Joordens, 2011, Kim, 2013, as cited in Zheng & Warschauer 2015) studying

Table 7. E-learning platforms

Education	Frequency	Percent
Google Classroom	126/126	100%
Google Meet	119/126	94.44%
Google Forms	98/126	77.78%
Messenger (6)	83/126	65.87%
Youtube (9)	56/126	44.44%
Google Hangouts (4)	48/126	38.10%
Zoom (8)	9/126	7.14%
WhatsApp (5)	4/126	3.17%

It is shown through the table that Google Classroom has the highest frequency of 126/126 with a percentage of 100% for the E-learning platforms. Then it is follow by Google Meet with a frequency of 119/126 with a percentage of 94.44% followed by Google Forms with 98/126 and 77.78%, then Messenger with 83/126 with 65.87%, then YouTube with 56/126 with 44.44%, then Google Hangouts with 48/126 and 38.10%, then Zoom with 9/126 and 7.14%, and lastly WhatsApp with 4/126 and 3.17%. (Graham, 2006) stated that Educational Technologies are mostly implemented to a classroom setting to allow students to be independent and personal when it comes to learning. Another study states (Zhao & Breslow, 2013) that Blended learning enables a change in teaching for both learners and teachers. The main focus should be on how pedagogical objectives should determine the way of teaching instead of how to integrate technology in a

classroom setting. In 2014 GAFE (Google Apps for Education) released Google Classroom, which is a free to use application for teachers and students, that Teachers can effectively make use of classroom time using Google Classroom

Table 8. E-learning platforms

	Median	IQR	Interpretation
How helpful are these online platforms your teachers used for online learning?	3	1,5	Very helpful

The table shows in terms of how helpful the online platforms are used by teachers for online learning regarding e-learning platforms has a median of (3) and an IQR of (1, 5) which is “*Very helpful*”. This table supports with the statement from Ngai et al. (2018) wherein states that in e-learning programs, student-centered pedagogy is implemented effectively in enhancing the educational environment of students and therefore well received by universities (Chickering & Gamson 1987, Harju & Åkerblom 2015, Elliott & Reynolds 2014, as cited in Ngai et al., 2018).

STATEMENT OF THE PROBLEM NO. 3

Table 9. Hypothesis test summary in terms of sex group

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Delivery of the Lesson is the same across categories of Sex.	Independent-Samples Mann-Whitney U Test	.185	Retain the null hypothesis.
2	The distribution of Classroom Strategies is the same across categories of Sex.	Independent-Samples Mann-Whitney U Test	.054	Retain the null hypothesis.

3	The distribution of Student Participation is the same across categories of Sex.	Independent-Samples Mann-Whitney U Test	.560	Retain the null hypothesis.
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*\*Note: Asymptotic significances are displayed. The significance level is .050.*

A Mann-Whitney U Test was utilized to determine the difference between the groups of Sex and the distribution of the Delivery of the Lesson, Classroom Strategies, and Student Participation. There was no significant difference between sex groups in terms of the distribution of the Delivery of the Lesson ( $p = 0.185$ ) and Classroom Strategies ( $p = 0.54$ ). The table also displayed that there is no significant difference between sex groups in terms of the distribution of Student Participation ( $p = 0.560$ ). Thus, the researchers retain the null hypothesis and concluded that there is no significant difference in respondent’s assessment when grouped according to sex. This result aligns with the research outcome from Ruthotto (2020) where it shows that sex does not have an effect in regards with student participation.

Table 10. Difference between academic strand groups

	Ranks	Strand	N	Mean Rank
Delivery of the Lesson		STEM	99	63.81
		ABM	12	49.33
		HUMSS	11	76.55
		ICT	3	55.67
		HRS	1	83.00
		Total	126	
Classroom Strategies		STEM	99	61.92
		ABM	12	57.04
		HUMSS	11	86.09
		ICT	3	56.33
		HRS	1	70.50
		Total	126	
Student Participation		STEM	99	60.06
		ABM	12	80.63
		HUMSS	11	84.45
		ICT	3	22.50

	HRS	1	91.50
	Total	126	

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	Delivery of the Lesson	Classroom Strategies Ave	Student Participation
Kruskal-Wallis H	3.687	5.002	11.673
df	4	4	4
Asymp. Sig.	.450	.287	.020

A Kruskal-Wallis H test shows that there was no statistically significant difference in delivery of lesson between the different academic strands,  $\chi^2(4) = 3.687, p = 0.450$ , with a mean rank delivery of lesson of 83.00 for HRS, 76.55 for HUMSS, 63.81 for STEM, 55.67 for ICT, and 49.33 for ABM.

The table also reveals that there was no statistically significant difference in classroom strategies between the different academic strands,  $\chi^2(4) = 5.002, p = .287$ , with a mean rank classroom strategies of 86.09 for HUMSS, 70.50 for HRS, 61.92 for STEM, 57.04 for ABM, and 56.33 for ICT.

Moreover, the table presents that there was a statistically significant difference in student participation between the different academic strands,  $\chi^2(4) = 11.673, p = 0.020$ , with a mean rank delivery of lesson of 91.50 for HRS, 84.45 for HUMSS, 80.63 for ABM, 60.06 for STEM, and 22.50 for ICT.

Table 11. Difference between internet connectivity groups

Ranks	Internet access at home		Mean Rank
	Internet access at home	N	
Delivery of the Lesson	Stable or fast internet connection	69	72.46
	Weak or slow internet connection	42	47.99
	Intermittent internet connection	15	65.73
	Total	126	

Classroom Strategies	Internet Access/Connectivity		Mean Rank
	Internet Access/Connectivity	N	
Classroom Strategies	Stable or fast internet connection	69	70.46
	Weak or slow internet connection	42	52.56
	Intermittent internet connection	15	62.10
	Total	126	
Student Participation	Stable or fast internet connection	69	60.61
	Weak or slow internet connection	42	63.79
	Intermittent internet connection	15	76.00
	Total	126	

	Delivery of the Lesson	Classroom Strategies Ave	Student Participation
Kruskal-Wallis H	11.936	6.402	2.224
df	2	2	2
Asymp. Sig.	.003	.041	.329

A Kruskal-Wallis H-Test was run to determine the difference between the groups of Internet Access/Connectivity and the Delivery of the Lesson, Classroom Strategies and Student Participation.

There was a statistically significant difference between groups in terms of Delivery of the Lesson  $\chi^2(2) = 11.936, p = 0.003$ , with a mean rank delivery of lesson of 72.46 for Stable, 65.73 for Intermittent, and 47.99 for Weak or slow internet connection.

Similarly, there was a statistically significant difference between groups in terms of Classroom Strategies  $\chi^2(2) = 6.402, p = 0.041$ , with a mean rank delivery of lesson of 72.46 for Stable, 62.10 for Intermittent, and 52.56 for Weak or slow internet connection.

The table presents there was no statistically significant difference between groups in terms of Student Participation  $\chi^2(2) = 2.224, p = .329$ .

## DISCUSSION

To summarize the information that can be attained from the research's survey results, the majority of the respondents are of the female sex and are classified into the STEM strand in terms of academic track. In terms of 'Internet Connectivity,' the results have shown that the majority of the respondents have fast and stable Internet which is fit for online learning. Regarding the 'Delivery' of the lesson and classroom strategies, most of the respondents found the implementation to be 'Very Helpful.' Although in the means of 'Student Participation,' most of the answers shown are 'Often' or 'Seldom.' As for the E-Learning Platform, Google Classroom is the most used out of all the respondents with a percentage of 100 and is deemed 'Very Helpful.' And the results displayed that there is no significant difference between the 'Sex Groups,' thus the researchers retain the null hypothesis.

## CONCLUSION AND RECOMMENDATION

The objectives of this research study are to (1) identify the demographic profile of the respondents according to their sex, Senior High School strand, and Internet access, (2) determine the assessment of the respondents regarding the conduct of online learning using the variable of delivery of the lesson, student participation, classroom strategies, and usage of e-learning platforms, and (3) distinguish if there is a significant difference in the assessment of the respondents when grouped according to their demographic profile. Based on the descriptive survey research design, it can be concluded that there is no significant difference in the assessment of the respondents when grouped according to sex.

Second, researchers have found that there is no significant difference in the assessment of the respondents when grouped according to their academic strand. However, there is a significant difference in the assessment of the respondents regarding student participation when grouped according to their academic strand. Lastly, researchers have found that there was a significant difference in the assessment

of the respondents regarding the Delivery of the Lesson and Classroom Strategies when grouped according to their internet access.

Based on the results gathered through online survey questionnaires, researchers have concluded that sex does not influence the online learning of Senior High School students. This coincides with the outcome of the research study conducted by Ruthotto (2020) that showed no sex effects regarding student participation in an online class. Meanwhile, when grouped according to their academic strand and internet access, researchers conclude that the academic strand of Senior High School students influence their online learning in terms of Student Participation. Researchers also conclude that the internet access of Senior High School Students does influence their online learning in terms of Lesson Delivery and Classroom Strategies.

This study has revealed that sex does not influence the online learning of Senior High School students, however academic strand (regarding student participation) and internet access (regarding lesson delivery and classroom strategies) do. Thus, the following recommendations are hereby presented:

1. Since it has been proven that the academic strand influences the online learning of Senior High School students regarding student participation, teachers may incorporate innovative strategies in class such as a new form of interactive activity, in order to increase the student's interest and motivation to take part in the online class.
2. Implementation of innovative strategies in an online class to boost student participation should be encouraged by school administrators and teachers in an attempt to constantly enhance online learning.
3. Since Internet access has been proven to affect the online learning of Senior High School students regarding lesson delivery and classroom strategies, Internet providers may incorporate new projects in trying to increase the efficiency of their internet connection to help satisfy the customers who buy

their services. Finding the best location is also a given in order to maximize the internet connectivity in the area.

4. Implementation of new projects regarding the increase in efficiency in internet connectivity and location should be encouraged by Broadband Internet Service Providers in order to contribute to the well-being of others in terms of online activity.

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