

Virtual Tools and Pedagogical Approaches of Private School Teachers in an Online - Classroom

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Abstract

When pandemic hits the world, nobody is prepared for even the owner of the schools and universities. As an educational organization there is a need to continue and accept change. For all we know that change is constant and only permanent in this world. Educational system was forced to embrace and adopt digital learning. The new normal setting which is the virtual learning becomes the new set up in school. There's a lot of virtual tools that came from learning management platform, for video conferencing, for class discussion and email messaging. Pedagogical approaches and techniques should be given attention and importance. Hence, there is a need to conduct a research study relating to virtual tools and pedagogical approaches to determine the efficient and effective ones.

This research study aimed to determine the pedagogical approaches of teachers from private schools in an online classroom. Descriptive method of research was utilized. The participants were private school teachers. The participants were from five prestigious schools in Metro Manila with a population size of 180. The participants of the research were all selected irrespective of their rank and or position. The results revealed that majority of the teachers were female with a bachelor's degree and mostly teaching in Junior High school and handling different subject matter. The participants mostly utilized Schoology in terms of Learning Management System, Gmail in terms of Email messaging, MS Teams in terms of Video Conferencing, live chat and screen sharing. The participants strongly agree in managing social interactions and learning support on the dimensions of pedagogical approaches used in the classroom. There is no significant relationship in pedagogical approaches when grouped according to sex, education, years of

teaching, subject handled and grade assignment.

The top management may provide effective and efficient tools for Synchronous and Asynchronous class of students to be applied in Learning Management System, Email messaging and Video conferencing. For pedagogical approaches in different areas such as managing social interaction the conflict may be resolved using online educational games and interactive activities. In instructional design, the top management may implement Instruction Delivery Monitoring System for Synchronous and Asynchronous class. In guiding the use of technology, teachers may monitor the students by giving classroom netiquette in proper usage of technology. Furthermore, in learning assessment and learning support teacher may monitor the progress of the students by using technology-based assessment and virtual learning activities. Lastly, the management may provide professional development to teachers by trainings and seminars to help them improve their knowledge and skills in Virtual learnings. Teachers may also adopt and integrate different virtual tools and pedagogical approaches in teaching.

Keywords: virtual learnings; virtual tools; synchronous; asynchronous; pedagogical approaches; learners

1. Introduction

In the past year, dramatic change has been seen in the education field. All schools, universities, and educational institutions have transferred to digital learning. Everybody was forced to work, teach, and learn online. Every subject that was mainly taken up in a traditional classroom had to adapt to the 'new normal' of teaching.

Fortunately, the digital age offers a selection of Virtual tools, gadgets, applications, websites, and virtual materials. With this transpiration, new Pedagogical approaches and techniques of teaching should be derived. Virtual tools such as social media websites, content creation applications, digital educational tools have drastically emerged in the past few years. Teachers have also eventually utilized these tools in face-to-face classes, blended classrooms, hybrid classrooms, and online classes.

In 2020, a jump in the use of digital applications rose (Anderson, et al., 2020). Children ages 5-9 have also joined the digital world. This came with a stricter use of applications and setting regulations to prevent unwanted age-inappropriate content to be seen by young users. Digital platforms continuously improve their services and user design to cater to younger audiences. Not only these online tools are for entertainment, but also for educational purposes.

Most schools only use the internet as an extension or reference for their classes. Students can pass their homework, activities, and projects online. They can also research, take videos or photos, look for the newest reference, and use the latest apps. Technology was just a better method to accomplish schoolwork.

But, in the year 2020, educational institutions shifted to the virtual world - abruptly. With little to no plans, almost every class worldwide was forced to learn online. Many problems arose when it came to Virtual tools that already exist. Since pre-pandemic, apps were not built for 100% virtual classrooms. While classes were adjusting and learning at the same time, e-learning developers and big tech companies that run Virtual tools were also updating and developing better platforms to adapt to the sudden change of learning.

Schools in the Philippines have also adapted e-learning systems such as Google Classrooms, Microsoft Teams, and Learning Management Systems like Schoology, Moodle and Blackboard. To maximize the use of online apps, teachers use Zoom, Kahoot, Quizizz, and Google Forms as a way to deliver lessons, assess activities, and connect with students.

From the literatures concerning online education, Virtual Learning Environment and e- learning technology has been largely connected with institutions, colleges and adult learners. More research knew that the implementation of Virtual Learning environment has become worldwide in further and higher education. According to OfSTED (2009), in the primary schools the Virtual learning environment used was very limited while in the secondary schools the use of Virtual Learning environment increased with the students' age. Due to this reasons, research is very limited into the area of e-learning within primary education and so this small scale dissertation will somehow try to explore the utilization of such approaches to teach with younger ones,

concentrating on a VLEs usage of interaction and online discourse.

It's very simple to use applications and Virtual tools setting in virtual classrooms, but the main objective of teachers is to connect and build rapport with students while delivering lessons digitally. The lack of face-to-face interactions makes it difficult for teachers to make meetings engaging and interactive. It takes a lot to accomplish student-centered learning. There are still unknown ways how to use these online applications and a vast array of in-development tools that will bridge the gap of teaching and connecting with students in a virtual-centered classroom.

Online teaching plays a critical role in education particularly in a time where students and teachers are forced to stay at home and use technology to continue meaningful education. Problems such as having the perfect tool to deliver lessons as impactful as physical classes remain a problem despite the vast availability of online tools and applications (Kumar, et al., 2020).

In spite of many impact studies, the new technologies effect on achievements of the student remains hard to test and so many reasonable debate came up. According to Trucano (2005) who studied numerous number of studies about new technologies' impacts on students' achievements, there are few statements that are conclusive, advantages and disadvantages, about these technologies' usage.

A study in Kuwait assessed the views of the students referring to the future of mobile learning. It summarized great words from the student utilization in mobile learning in higher education and the recommendation for teaching course and developing about m-learning usage and application is the advantage of the study. On the contrary, the disadvantage of the study is that the participants are not sufficient in higher education to generalize m-learning (Alanezi & AlAzwani, 2020). Researchers such as Rajab, Mohammad, Gazal, and Alkattan (2020) studied challenges in medical education that held online classes during the COVID19 outbreak and mentioned that assessment, communications, experience on online education, virtual tools, anxiety, time management, and coronavirus disease stress were the challenges.

In addition, the educational processes would transform from new technologies like from being

teacher-dominated to student-centered, and that this transformation would enable learners to develop their creativity, communication skills, problem-solving abilities, information reasoning skills, communication, and other higher order thinking skills. However, this research has a limited research data to support these claims. (Arafeh, 2004; Guri-Rosenblit, 2005, 2009a; Trucano, 2005; Zemsky & Massy, 2004).

Several studies had a hard time following the rapid changes on the applications of technology for instructional purposes. In several cases, the main objective of research in this field is based on the effectiveness of the ICT in restricted situation and some studies on the online learning effectiveness have been published (Cabero et al., 2009; Means et al., 2009). Researchers in the field of e-learning think that it's time to create a robust data collection strategy for the development of lessons learned from past successes and from failures (Bates, 2005, 2009; Guri-Rosenblit, 2009a; Trucano, 2005). In a study by Fauzi and Khusuma (2020) about the conditions of Indonesian educators in elementary schools, it turns out that educators are familiar with online learning but several problems were found such as the, internet connection, planning, availability of facilities, implementation and evaluation of learning. Educators commonly use Zoom, Whatsapp, and Google Forms. In spite of that, 80% are dissatisfied with the thorough use of online learning because of network problems, and lack of meaningful learning system due to deficient time of preparation too.

This study will address the use of virtual tools, applications, as well as gadgets to teach virtually, how teachers connect with their students in a digitally-centered classroom and will redound to the benefit of society considering that Virtual tools and pedagogical approaches play an important role in education today. Hence, the recommended tools and approaches from the results of this study may help a lot from the school and teachers may teach better if they will apply in teaching. Through this study, educational leaders and administrators will be guided on what should be reiterated by teachers in the school curriculum to improve performance of students in an online centered classroom. Teachers would also be able to use appropriate virtual tools and pedagogical approaches in teaching so as to maintain learning and to understand the current challenges that teachers face in a virtual classroom by giving fair conclusions and recommendations that

would help current and future teachers in teaching in the digital age. The study will contribute to the improvement of education in an online centered classroom. This research also aims to help e-learning developers, instructional designers, and especially future teachers in developing, designing and teaching a digital-focused curriculum for students.

2. Objectives of the Study

This study aimed to determine the pedagogical approaches of teachers from private schools in an online classroom. Specifically, it aimed to present the profile of the participants in terms of sex, years of teaching, educational attainment, subject handled and grade assignment; determine the frequency of virtual tools being use in terms of Learning Management System, email messaging and video conferencing, live chat and screen sharing; test the significant difference in the pedagogical approaches use in an online centered classroom when group according to profile and proposed action plan to enhance teaching in an online centered classroom.

3. Review of Related Literature

3.1 Virtual Tools in Online Teaching

The study is anchored on the learning theory Connectivism by George Siemens (2005). This theory explains learning in the digital age, how information is circulated, and how new information connects all of us through networks. Opportunities have been created for people to educate and share worldwide. In an education setting, the information and answer key questions to support students learning and sharing on their own are guided by the educators. Educators also enhance and develop students by listening to their own learning and expressing thoughts and ideas. Asynchronous and synchronous tools let students and teachers connect with each other and with the world. Connectivism can be applied in two ways – using the web to expand knowledge and connecting with others. Learning can happen over networks online, and activities can give students what they already know and connect it to new knowledge they will find online. By using Connectivism in an e-learning system, students use connections they have outside of the classroom to gain knowledge. Social networks provide the space for students to ask, help, and answer questions that their peers find. Through these ways, learning is continuous and connected.

A study from Indonesia research the primary school teacher's perception of online learning program that they developed during pandemic. The participants from this study were from primary school teachers with demographic profile in terms of sex, years of teaching experience and education level of the teachers. Using thematic analysis, four main themes were found such as challenges, instructional strategies and motivation of teachers. They collected data using surveys and interviews. The study come up of contribution to the online learning literature with collaboration among educators, parents and institutions that help success of the learners. (R. Aliyyah, 2020).

Researcher Lim (2017) defines from his study that synchronous tools are the communication tools that facilitate real-time collaboration while asynchronous tools are tools that are accessible in anytime of the

day to give ample time for study and reflect on discussions. Synchronous tools refer to audio conferencing, video conferencing, web conferencing, live chat, white boarding, and application sharing. These virtual tools help students develop social skills and lead to motivation and engagement. Furthermore, Asynchronous tools include a discussion forum, e-mail messaging, social media messaging, and web logs. Virtual tools were integrated by most learning management systems for the collaboration and form part of a grading system.

Online instructional strategies would not be complete without tools. However, maximizing the use of these tools help the teacher provide a better online presence. It is important to record online lectures and provide self-learning materials and send them to students' emails individually. Pakistani teachers divide their modules or discussion into 30 minutes' classes. In this way, synchronous and asynchronous tools are efficiently used to help students remain attentive and focused during online classes (Mahmood, 2020).

Todd (2020) finds that Line, Facebook, LEB2 were among the top frequently used tools by Thai teachers in contacting students, whereas synchronous tools like Zoom, Line Video, Microsoft Teams, and asynchronous tools like Line, LEB2, and Facebook were commonly used by teachers and students. In assessment, Google Forms, LEB2, and Google Classroom were the top evaluation tools that teachers use.

The most accessible and reliable media to use are instructional videos. Students can understand the subject matter easily through educational videos. Other tools like Youtube, Google Forms, WhatsApp and Zoom provided as ways to deliver learning materials. Asynchronous tools like WhatsApp and Google Forms were used to send lessons to the parents of students. Parents are already familiar with these tools, so these were the apps that were used. Through apps like Zoom, Google Classroom, and Powtoon, teachers were able to apply question and answer (Q&A) that allowed them to have discussions in the time constrained and poor Internet connection conditions of their classes. Using easy instructional tools helped teachers to deliver materials quickly (Aliyyah et al., 2020).

A study by Moorhouse and Wong (2021) explores the asynchronous and synchronous tools and teaching approaches that were adopted of the Hong Kong English teachers during the COVID-19 suspension

of classes. To investigate how Hongkong English teachers used online tools and pedagogical approaches during pandemic, mixed-method design was used. The results of the research reveal that at least 57% of the teachers adopted synchronous and asynchronous teaching approaches, while 43% used asynchronous-only instructional approaches. Adopting asynchronous and/or synchronous tools were dependent on the availability of internet, tools, and other modes. To further explain, the study detailed the resources, assessment, and communication they have. Based on the survey, Learning Management Systems (LMS) were mostly used. 49% of the teachers use Google Classroom as their main platform. When it comes to asynchronous instructional resources, English teachers use Microsoft Powerpoint, Screencastify as tools for video creation. To present these videos, platforms like EdPuzzle and Youtube were utilized. Asynchronous tools for post-viewing exercises such as Kahoot, Quizlet, Nearpod, and Google Forms were utilized by the teachers.

The English language teachers who conducted synchronous online lessons use different kinds of video communication services including Zoom, Google Meet, Microsoft Teams, and Webex. When it comes to assessment and feedback, as well as communication, most of the teachers used the previously mentioned asynchronous tools to provide direct feedback to students. Additionally, they also used synchronous tools like Zoom to give feedback and assessment. Lastly, teachers maintain communication with the students by leveraging LMS, e-mail, instant messaging, and social media to send announcements, reminders, and engagement. With that, it can be concluded that both asynchronous and synchronous tools and teaching approaches are essential in teaching, assessing, feedback, and communication. The researchers concluded that a blended approach of both will provide teachers with the right tools to have an effective digital classroom for primary and secondary learners.

Youki Terada (2020) defines in her article the different ways to improve one's online teaching presence. While it is difficult to build strong connections virtually, some ways to establish a connection is to concentrate on asynchronous lessons, presence of signal through clarity and organization, familiarization of logistics of toggling between apps, change settings, get feedback from students and give a proper response,

and lastly communicate regularly with students.

Diliberti, et al. (2020), focusing on the preparedness of schools during a pandemic, reports that principals find indicator in place pre-pandemic. There are five common indicators included in the study such as the teachers' training for the delivery of online instruction, giving devices like laptops and tablets, learners who will need them, learning management system usage, learning curriculum that are full online or blended and establishment of the delivery of instruction during prolonged school closure.

3.2 Pedagogical Approaches

Five components will be used for this study to find the teaching approaches of teachers when using asynchronous and synchronous tools. There are five approaches namely; instructional design, managing the learning activity, managing social interaction, the design and educational use of technology, and learning assessment (Baran, Correia & Thompson, 2011).

The approaches were listed as supported by related studies and literature. Managing social interactions refers to promoting social interactions of learners. Instructional design pertains to the educational activities related to management and planning of learning task. Guiding the use of technology refers to giving time of educators to assist, monitor and teach them to use technology appropriately.

Learning assessment where the teachers can correct the learners' misunderstanding of content and learning support refers to the students' participation evaluation in social interaction activities and monitoring while Instructional design adds educational activities like planning. Learning activity management is about the learning activities organization during the course then learning assessment involves monitoring to student's learning. Managing social interactions pertains to social interaction promotion. Lastly usage of educational technology and design deals with the guidance and appropriate usage of technology.

Identified tools were listed as supported by related studies and literature. Synchronous tools are used for communication that helps teacher and student collaborate on screen, online discussion and online

assessment thru audio conferencing, video conferencing, web conferencing, live chat, white boarding, and application sharing. In contrast, asynchronous tools are used for giving task off screen. Learners can do their work task at their own pace, it includes Learning management system, web logs and social media messaging. Findings from the research of König, et al. (2020) indicate that in adapting to online teaching especially in a school from home setting, digital competence and opportunities to learn digital competence are influential. Despite living in a digital age, it is certainly difficult to adjust and rely solely on technology to continue teaching-learning activities that happen mainly in a traditional classroom. With asynchronous and synchronous tools and teachers' competence, presence, and preparedness, virtual classrooms will certainly make learning as special as physical classrooms.

According to Baran, Correia and Thompson (2011) in remote learning, when comes to teaching the adoption of certain approach could influence educators' role. Teachers job description is as roles and tasks involving nurturing learners. Instructional design involves educational tasks related to planning; managing the learning activity, implies to the learning activities organization during the course; learning assessment, which applies to the monitoring of the learning of the students; managing social interactions, which covers social interaction promotion; and design and educational use of technology, which involves to guidance for the appropriate usage of technology of learners (Alvarez, Guasch, & Espasa, 2009; Baran et al., 2011; Mishra, 2005; Thach & Murphy, 1995; Williams, 2003).

4. Methods

4.1 Research Design

The study applied a descriptive method. The method presented the virtual tools and pedagogical approaches used by private school teachers from prestigious institutions in Metro Manila for the academic year of 2021 to 2022. The profile of participants includes sex, years of teaching, educational attainment,

subject handled and grade assignment. The virtual tools and pedagogical approaches of teachers will be investigated through an online survey form.

4.2 Participants of the Study

The population or participants of this study were conducted from private school teachers from esteemed institutions in Metro Manila for the academic year of 2021 to 2022. The total numbers are 180 teachers consists of 133 females and 47 males. For the inclusion criteria, the study focused on teachers who are male or female and teaching in private school while on the other hand, for the exclusion criteria, librarian, school nurse, school doctor, administrative officers and school staff were not qualified to answer the survey. The sample size is 180 based on input parameters: alpha error 0.10, power 0.90 and effect size 0.28.

4.3 Data Gathering Instrument

The questionnaire will be divided into two parts: demographic profile (part 1) and pedagogical approaches (part 2).

The first part is checklist type, wherein the respondents would just put a check beside the data that is applicable to them. Demographic profile includes sex, years of teaching, educational attainment, subject handled, grade assignment and virtual tools that are applicable in a virtual classroom such as virtual tools in Learning Management system, email messaging and Video, live chat and screen sharing. The items were assessed using a 5-point Likert scale with 5 as All the time/always and 1 as Not at all/Never.

For the second part of the survey, it refers to the description of pedagogical approaches. There are five dimensions in pedagogical approaches: instructional design, guiding the use of technology, learning assessment and learning support and each dimension has four items. The participants answered and assessed using the items using a 4-point Likert scale with number and verbal interpretation of 4 as strongly agree and 1 as disagree to determine the pedagogical approaches of teachers in a virtual classroom.

According to the reliability test (Cronbach alpha) managing social interaction got 0.851, instructional

design got 0.906, use of technology got 0.867, learning assessment got 0.732, learning support got 0.939 and the overall result is 0.91. This indicates that the questionnaire is acceptable.

4.4 Data Gathering Procedure

The data of this research were gathered using a combination of a researcher-made, modified, and adapted questionnaire from the literature relevant to the study's objectives from Badia (2016) and Moorhouse (2021) survey instrument. (Badia, et al., 2016 and Moorhouse, et al., 2021). A quantitative online survey using Google Forms were used to gather data from the participants. The quantitative survey includes the virtual tools used in the virtual classroom and pedagogical approaches of the participants in a virtual classroom using multiple choices.

4.5 Data Analysis

The quantitative data were analyzed using frequency distribution, weighted mean to find out the recurring and relevant information on how teachers connect with their students using asynchronous, synchronous tools and teaching approaches that will come up from the data. The quantitative data were presented through tables and summaries. Independent sample t-test was used to determine if there are significant differences in the teaching approaches when the respondents are grouped by sex and education, while in determining significant difference in the approaches when respondents are grouped by years of teaching, subject handled and grade analysis of variance were used.

4.6 Ethical Consideration

Ethical considerations are essential for research projects as all participants have legal and moral rights. For this study, the researcher guaranteed that all the information received was acknowledged and precisely represented and participants' feelings are protected. These are important factors according to

Greetham (2009) and Walliman and Buckler (2008). The researcher complied ethical considerations, such as informed consent. This principle discusses respect for persons – autonomy, confidentiality and data protection, human subject research, risk-benefit analysis, conflict of interest and informed consent.

The researcher prioritized the respect for the dignity of each participant and had a full consent obtained prior data gathering. This research paper adheres to the ethical standards in compliance with the university privacy policy and with the Data Privacy Act of 2012. Respondents are assured of the confidentiality of the data gathered and that it will be solely for the research purpose.

5. Results and Discussion

The study considered the profile of the participants regarding sex, years of teaching, educational attainment, subject handled and grade assignment. Table 1 presents the demographic profile of the respondents. It can be seen from the total of 180 participants, 47 or 26.1 percent of the respondents are male and 133 or 73.9 percent are female. The results clearly show that there was an uneven distribution of respondents according to sex for there were more female students than male.

Table 1. Demographic Profile of the Respondents

Sex	Frequency	Percent
Male	47	26.1
Female	133	73.9
Years of Teaching		
1 to 5 years	63	35.0
6 to 10 years	45	25.0
11 to 15 years	22	12.2
16 to 20 years	19	10.6
21 or more years	31	17.2
Educational Attainment		
Bachelor's Degree	149	82.8
Master's degree	31	17.2
Subject Handled		

Computer	9	5.0
English	31	17.2
Filipino	16	8.9
Mathematics	24	13.3
MAPEH	22	12.2
Science	26	14.4
Social Studies/ Civics and Culture	22	12.2
Others	30	18.7
Grade Assignment		
ECE/ ECE & Primary	13	7.2
Primary & Intermediate	27	15.0
Intermediate only	31	17.2
Junior High School	98	54.4
Others	11	6.1

The frequency and percentage of the participants in terms of years of teaching resulted that from the total of 180, 63 or 35 percent of the participants are 1 to 5 years in teaching; 45 or 25 percent of the participants are 6 to 10 years in teaching. 22 or 12.2 percent of the respondents are 11 to 15 years of teaching. Then 19 or 10.6 percent are from 16 to 20 years of teaching and 31 or 17.2 percent are 21 or more years in teaching. This implies that there are more teachers at 1 to 5 years of teaching that served as participants of the study, followed by the teachers at 6 to 10 years in teaching and lastly is at 21 or more years in teaching.

Educational attainment profile showed that 149 or 82.8 are Bachelor's degree and 31 or 17.2 percent are Master's degree. This mean that there are more participants from Bachelor's degree than Master's degree. In relation to this study, participants who are enrolled in graduate school program learn and specialized knowledge and improve teaching skills and approaches.

In addition, subject handled by the teachers also considered in this study. It shows that from the total of 180, 9 or 5 percent of the participants are teaching Computer, 31 or 17.2 percent are English teachers, 16 or 8.9 percent are Filipino teachers, 24 or 13.3 are teaching Mathematics, 22 or 12.2 are MAPEH teachers, 26 or 14.4 are Science teachers, 22 or 12.2 percent are teaching Social Studies/Civics and Culture and 30 or 18.7 are teaching other subject matter. This means that the biggest percentage of the participants were teaching other subject matter.

In terms of grade assignment, it can be gathered from the table that from the total of 180, 13 or 7.2 percent of the participants were from ECE/ ECE & Primary level, 27 or 15 percent were from Primary & Intermediate Level, 31 or 17.2 were from Intermediate level only, 98 or 54.4 were from Junior High School level only and 11 or 6.1 were from other grade assignment. This pertains that most of the participants were from Junior High School department.

According to a study from Indonesia research the perceptions of primary school teachers of online learning program that they developed entitled Home during the COVID-19 Pandemic. The participants from this research were from primary school teachers with demographic characteristics including sex, years of teaching experience and education level of the teachers. They found out four main themes using thematic analysis such as challenges, pedagogical strategies and teachers' motivation. They collected data using surveys and interviews. The study come up of contribution to the online collaborative learning literature between teachers, parents and schools that help student's success (R. Aliyyah,2020).

Table 2. Frequency of Utilization of Synchronous and Asynchronous Tools in terms of Learning Management System

LMS	Frequency (Percent)				
	not at all/ never	a little/ seldom	moderate amt of time/ Sometimes	Most of the time/ often	All the time/ Always
Schoology	70 (38.9)	16 (8.9)	18 (10.0)	19 (10.6)	57 (31.7)
Moodle	99(55.0)	19 (10.6)	28 (15.6)	23 (12.8)	11 (6.1)
Blackboard	98 (54.4)	20 (11.1)	30 (16.7)	23 (12.8)	9 (5.0)
Talent	92 (51.1)	14 (7.8)	22 (12.2)	28 (15.6)	24 (13.3)
Quipper	105 (58.3)	16 (8.9)	28 (15.6)	25 (13.9)	6 (3.3)

Table 2 shows the frequency of utilization of synchronous and asynchronous tools in terms of different Learning Management System. As can be seen, Schoology, Moodle, Blackboard, Talent and Quipper were the Learning Management System to choose from. The participants were asked to identify if they had knowledge of these various LMS and to what extent. From the result, the LMS "Schoology" got the highest percentage and the LMS "Quipper" got the lowest percentage. This pertains that Schoology was the most used

Learning Management System from the participants and Quipper was the least on. It was found out that Schoology gives access to the teachers, students, parents and even the school administrators in order to monitor the Synchronous class and Asynchronous tasks of the students. According to T. Trinidad (2022) Schoology is an online learning platform that is freemium used by 60, 000 K-12 schools and universities worldwide. Lesson planning, grading, communicating with parents and peer-to-peer collaboration are offered in Schoology while on the other hand Quipper caters e-Learning, tutorials, coaching and assessment service for K-12 learners in Indonesia, Japan, Mexico as well as Philippines. As stated by Lim, 2017, most learning management systems integrate these tools to give students a chance to collaborate and form part of a grading system.

Table 3. Frequency of Utilization of Synchronous and Asynchronous Tools in terms of Email Messaging

Email Messaging Tools	Frequency (Percent)				
	not at all / never	a little / seldom	moderate amt of time/ Sometimes	Most of the time/ often	All the time/ Always
Gmail	8 (4.4)	2 (2.2)	13 (7.2)	21 (11.7)	134 (74.4)
Yahoo Mail	82 (45.6)	25 (13.9)	25 (13.9)	20 (11.1)	28 (15.6)
MS Mail	46 (25.6)	13 (7.2)	22 (12.2)	30 (16.7)	69 (38.3)

Table 3 shows the Frequency of Utilization of Synchronous and Asynchronous Tools in terms of Email Messaging. Gmail, Yahoo mail and MS mail were the tools that were explored. It was clearly stated that “Gmail got the highest percentage (74.4%) followed by MS mail (38.3%) and Yahoo Mail (15.6%). This means that “Gmail” is the most used tool in sending Email messages in Online Class and Yahoo mail is rarely used. This agrees with the article by Software Testing Help (2022) Gmail is the best email service provider by Google. Through web and using third-party programs it can be accessed easily. In addition, Gmail can also be used on Android mobile and iOS devices. It is also used for business communication not only for personal matter.

Lim (2017) reiterated that synchronous tools are the communication tools that facilitate real-time collaboration with teachers and students while asynchronous tools are tools that are available anytime and anywhere that learners can spend more time to study and reflect on discussions.

Table 4. Frequency of Utilization of Synchronous and Asynchronous Tools in terms of Video Conferencing, Live Chat and Screen Sharing

Video Conferencing Tools	Frequency (Percent)				
	not at all / never	a little / seldom	moderate amt of time/ Sometimes	Most of the time/ often	All the time/ Always
Zoom	29 (16.1)	16 (8.9)	38 (21.1)	33 (18.3)	64 (35.6)
Teams	47 (26.1)	18 (10.0)	19 (10.6)	18 (10.0)	78 (43.3)
Google Meet	47 (26.1)	10 (5.6)	24 (13.3)	31 (17.2)	68 (37.8)
Messenger	44 (24.4)	11 (6.1)	31 (17.2)	24 (13.3)	70 (38.9)

Table 4 presents the frequency of utilization of synchronous and asynchronous tools in terms of Video Conferencing, Live Chat and Screen Sharing. As can be observed that Zoom, Teams, Google Meet and Messenger were tools that were included. The results show that Teams application got 64 or 43.3 percent respondents followed by Messenger with 70 or 38.9 percent respondents next is Google meet with 68 or 37.8 percent and lastly is Zoom with 64 or 35.6 percent respondents. The results indicate that almost half of the respondents were always using Teams.

Todd (2020) emphasized that Line, Facebook, LEB2 were among the top frequently used tools by Thai teachers in contacting students, whereas synchronous tools like Zoom, Line Video, Microsoft Teams, and asynchronous tools like Line, LEB2, and Facebook were commonly used by teachers and students and in assessment, Google Forms, LEB2, and Google Classroom were the top evaluation tools that teachers use. In addition, as mentioned by Aliyyah et al, parents are already familiar with these tools, so these were the apps that were used. Through apps like Zoom, Google Classroom, and Powtoon, teachers were able to apply question and answer (Q&A) that allowed them to have discussions in the time constrained and poor Internet

connection conditions of their classes. Using easy instructional tools helped teachers to deliver materials quickly.

Table 5. Pedagogical Approaches in terms of Managing Social Interaction

Indicators	Mean	VI	Rank
Promoting of relationship of trust and mutual commitment among students	3.68	SrA	1
Resolution of group conflicts among students	3.48	SmA	4
Enhancements of cordial and warm relations between teacher and students	3.65	SrA	2
Facilitation of personal or professional knowledge among students	3.59	SrA	3
Composite Mean	3.60	SrA	

Legend: 3.50-4.00=Strongly agree(SrA); 2.50-3.49=Somewhat agree(SmA); 1.50-2.49= Somewhat disagree (SDa); 1.0-1.49=Strongly disagree (SrD)

Table 5 presents the pedagogical approaches in terms of managing social interaction. The composite mean 3.60 shows that the respondents strongly agree with all the indicators in terms of managing social interaction.

It can be gathered from the table that the item “Promoting of relationship of trust and mutual commitment among students received the highest weighted mean of 3.68 that is verbally interpreted as “Strongly Agree”. This pertains that relationship of trust and mutual commitment among students is the most important factor in managing social interaction. In virtual learning, promoting relationship of trust and mutual commitment to students are very essential due. According Jannelle Cox (2020) the foundation of any relationship is trust and the most important thing for teacher is to build trust and healthy classroom environment for learning. She also emphasized that building trust within the classroom is important for the success of learners. Once trust was built with students, you'll know that your classroom is a happier and more fruitful place.

Second to the highest is the item “Enhancements of cordial and warm relations between teacher and students” with 3.65 mean. Studies have shown that substantial impact on academic success came from good relationships between a teacher and learners. Kirby Hall School (2017) stated that when learners see their

teachers as a partner rather than an adversary, they are more motivated and ready to learn. Moreover, a collaborative environment can be enhanced when trust was built where students are ready to listen willingly to each other.

While the item “Facilitation of personal or professional knowledge among students got 3.59 weighted mean. Facilitation skills are very important for educators where learnings take place through interaction and application of knowledge. Cox, (2020) also stressed that to deal the needs of their learners that can’t be seen at home and the opportunity for the teachers to educate learners to become respectful, to become a responsible human being and to build a good rapport to their peers a classroom community can help.

In addition, the indicator “Resolution of group conflicts among students got the lowest weighted mean. Conflicts are unavoidable among students. James Stanfield (2022) said that conflict in the classroom can make a teacher feel like running away to a faraway place like foreign country. It is an essential skill for kids to resolve conflict. Though conflict cannot stop there are a few things to help minimize conflict by prevention and giving praise to students.

Table 6. Pedagogical Approaches in terms of Instructional Design

Indicators	Mean	VI	Rank
Design of the training proposal based on the training requirements	3.53	SrA	4
Selection, design and/or content adaptation	3.60	SrA	3
Establishment of learning objectives and competency to be developed	3.67	SrA	1
Selection, design and/or adaptation of learning activities and assessment	3.64	SrA	2
Composite Mean	3.61	SrA	

Legend: 3.50-4.00=Strongly agree(SrA); 2.50-3.49=Somewhat agree(SmA); 1.50-2.49= Somewhat disagree(SDa); 1.0-1.49=Strongly disagree (SrD)

Table 6 shows the pedagogical approaches in terms of instructional design. The composite mean, 3.61 presents that the respondents of this study strongly agree with all the indicators mentioned in terms of instructional design. The indicator “Establishment of learning objectives and competency to be developed got the highest rank having 3.67 weighted mean. Learning objectives and competency are the most essential

factors in learning. Second to the highest is the indicator “Selection, design and/or adaptation of learning activities and assessment” having 3.64 weighted mean. Careful analysis of selection and designing curriculum should be made for the learner’s welfare. Next indicator is “Selection, design and/or content adaptation” with 3.60 weighted mean. Selecting and designing content is also significant wherein skills, learning activities and attitude develop and learning outcome will come from here.

Garnering the lowest weighted mean of 3.53 is the indicator “Design of the training proposal based on the training requirements”. This is one of the hardest part in instructional design. Choosing framework, qualification and mode of delivery are the basic factors that need to be taken care for this matter.

Table 7. Pedagogical Approaches in terms of Guiding the Use of Technology

Indicators	Mean	VI	Rank
Design of certain technological tools for learning	3.63	SrA	3.5
Decision to integrate new technological tools into existing virtual environment	3.63	SrA	3.5
Guidance given to students in the use of the virtual learning environment	3.69	SrA	1
Regulation of an appropriate use of technology by students	3.64	SrA	2
Composite Mean	3.65	SrA	

Legend: 3.50-4.00=Strongly agree (SrA); 2.50-3.49=Somewhat agree (SmA); 1.50-2.49= Somewhat disagree (SDa); 1.0-1.49=Strongly disagree (SrD)

Table 7 presents the composite mean of 3.65 that the respondents of this study strongly agree with all the indicators mentioned in terms of guiding the use of technology. It was clearly stated that the item “Guidance given to students in the use of the virtual learning environment” got the highest rank having 3.69 weighted mean. Guiding students in using of technology is very necessary in Online class, teachers as well as the learning partners of the students need to monitor their kids at home so that they will know the activities and struggles of the students in using technology. Next in line, is the item “Regulation of an appropriate use of technology by students with 3.64 weighted mean. Another indicator that is very challenging and needs attention is online classroom netiquettes and rules must be taught and reiterated consistently to the students.

Charles (2012), stated that appropriate use of technological devices is one of the difficult rules to negotiate in schools.

The item “Design of certain technological tools for learning” and “Decision to integrate new technological tools into existing virtual environment” are tie in rank having 3.5 weighted mean. Designing of certain technological tools is one of the major requirement in new normal learning. Integration of new technological tools should embrace for continuous learning that is easy to access and available to use at hand. According to National Educational Technology Standards for Students (2002), Designing of certain technological tools for learning is needed. International Society for Technology in Education said that when learners are able to choose tools to help them for acquiring information in a timely manner, analyzing and synthesizing the information the effective integration of technology is achieved. The virtual tools should become the fundamental part of how the classroom functions just like the other classroom tools.

Table 8. Pedagogical Approaches in terms of Learning Assessment

Indicators	Mean	VI	Rank
Correction of students’ misunderstanding of content]	3.65	SrA	4
Resolution of questions from students about content]	3.66	SrA	2.5
Monitoring and evaluation of students’ individual and group activities]	3.66	SrA	2.5
Providing students with information about assessment (grades, correct answers and or evaluation criteria)]	3.68	SrA	1
Composite Mean	3.66	SrA	

Legend: 3.50-4.00=Strongly agree(SrA); 2.50-3.49=Somewhat agree(SmA); 1.50-2.49= Somewhat disagree (SDa); 1.0-1.49=Strongly disagree (SrD)

Table 8 presents the composite mean of 3.66 that the respondents of this study strongly agree with all the indicators mentioned in terms of learning assessment. Based on the table the indicator “Providing students with information about assessment (grades, correct answers and or evaluation criteria) ranked first with 3.68 weighted mean. Giving students information about their assessment is a key component of learning. Proper communication with kind words in giving students information is the best way in providing their assessment. It can also motivate students to study when they see their assessment. According to Educational Data Systems

(2018), assessments provide evidence of learning and directly beneficial to learners. Aligned assessments activities and content standard cater learner's information pertaining concepts and skills they need to learn. The results help the learners understand what they need to work on and what they already know.

The indicators "Monitoring and evaluation of students' individual and group activities" and "Resolution of questions from students about content" indicators got the second rank with 3.66 weighted mean. This pertains that monitoring and resolution of questions from students about content are also important tasks in learning assessment. In monitoring evaluation of students, teachers and students will check the development by determining the strengths and weaknesses in a particular area. Resolution of questions about content are need to be discuss so that the course material will understand better. The last rank that garnered 3.65 weighted mean is the indicator "Correction of students' misunderstanding of content". Effective learning is more efficient when correction of students misunderstanding get feedback immediately so that learners analyze and think over the feedback. To help ease the stress of the learners in taking assessment, Educational Data Systems (2018) stated that assessment practice gives advantages by helping to lower anxiety and helping learners to master content by preparing learners with low-stakes assessments with the same formats to make learners comfortable in formal assessment settings. Frequent in class practice can help learners understand their mastery of lessons that can help reduce test anxiety.

Table 9 shows the pedagogical approaches in terms of learning support. The composite mean, 3.60 presents that the respondents of this study strongly agree with all the indicators in terms of learning support. In terms of learning support, the three indicators namely; "Guidance and monitoring of students' participation in social interaction", "Guidance and regulation of students' individual study processes" and "Monitoring and evaluation of students' participation in social interaction activities" got the highest rank with 3.61 weighted mean.

Table 9. Pedagogical Approaches in terms of Learning Support

Indicators	Mean	VI	Rank
Guidance and monitoring of students' participation in social interaction]	3.61	SrA	1.3
Monitoring and evaluation of students' participation in social interaction activities]	3.61	SrA	1.3
Guidance and regulation of students' individual study processes]	3.61	SrA	1.3
Control and monitoring of students' learning pace and learning periods]	3.58	SrA	4
Composite Mean	3.60	SrA	

Legend: 3.50-4.00=Strongly agree(SrA); 2.50-3.49=Somewhat agree(SmA); 1.50-2.49= Somewhat disagree (SDa); 1.0-1.49=Strongly disagree (SrD)

It points out that the three indicators are the most necessary instruments in terms of learning support. students' participation is an important factor to have a successful learning during classroom discussion. Students need to actively participate during different classroom sessions by seeking new information. Abdullah et al. (2012) mentioned the various reasons that encourage students to participate in their classes.

Various studies talked about the relationship of between learner's participation and in classroom discussions learning. Dallimore et al. (2010) stated that to improve learning, educators need to help learners to increase their engagement, to help students in retaining and remembering knowledge, providing confirmation of what they have learned, giving clarification and deepening their understanding in every class discussions. In addition, a study by Starmer et al. (2015) reiterated the big effect of classroom participation on the scores of the students' examination. The authors also stated that higher scores of examination and achievement of higher levels of learning was connected to the full participation in the course.

The lowest rank is the indicator "Control and monitoring of students' learning pace and learning periods" for having 3.58 weighted mean. Each one of us learns differently and there are no two brains are alike. Some people learns easily by hearing while others learns from seeing and every individual has own strengths and weaknesses. According to study from The Guardian (2006) students' approaches to learning suggests that long hours and private tutorial does not mean they learn better as well as spending screen time in

front of the desktop and laptop and emerge with short time to show for it and even going to a class discussion and remember nothing important. Quality of the engagement is more important than the time in learning process.

Table 10. Summary Table on Pedagogical Approaches Used in the Classroom

Dimensions	Composite		
	Mean	VI	Rank
Managing social interactions (MSI)	3.60	SrA	4.5
Instructional design (ID)	3.61	SrA	3
Guiding the use of technology (GUT)	3.65	SrA	2
Learning assessment (LAS)	3.66	SrA	1
Learning support (LSU)	3.60	SrA	4.5
Composite mean	3.63	SrA	

Legend: 3.50-4.00=Strongly agree (SrA); 2.50-3.49=Somewhat agree(SmA); 1.50-2.49= Somewhat disagree (SDa); 1.0-1.49=Strongly disagree (SrD)

Table 10 shows the summary on pedagogical approaches used in the classroom. The learning assessment that gained the highest weighted mean of 3.66. Second to the rank is guiding the use of technology with 3.65 weighted mean followed by the instructional design with 3.61 weighted mean. Moreover, managing social interactions and learning support got the lowest rank with a weighted mean of 3.60. As clearly stated from the table that the composite mean, 3.63 presents that the respondent of this study strongly agree with all the dimensions on Pedagogical Approaches used in classroom.

According to Y. Terada (2020), she said that the different ways to improve one's online teaching presence. While it is difficult to build strong connections virtually, some ways to establish a connection is to give attention on asynchronous lessons and communications, familiarization with the technological tools in windows or apps, change settings, signal presence through organization and clarity, get feedback from students and give a proper response, and lastly communicate regularly with students.

Table 11 presents the significance differences in pedagogical when grouped according to demographic profile. Demographic profile is very essential in conducting research, it allows you to

understand specific background, characteristics of the respondents such as age, sex, race and others. By asking demographic questions in surveys, you can easily gather information about the respondents. Also, demographic profile is important for the determination Of whether the respondents in a particular study are the target population for generalization purposes.

Table 11. Significant Differences in Pedagogical when Grouped According to Demographic Profile

Profile	MSI	ID	GUT	LAS	LSU
Sex	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Male	3.53 (0.78)	3.52 (0.71)	3.60 (0.68)	3.56 (0.68)	3.51 (0.72)
Female	3.62 (0.66)	3.64 (0.62)	3.67 (0.63)	3.70 (0.62)	3.64 (0.62)
t-value	0.782	1.173	0.589	1.216	1.213
Decision	NS	NS	NS	NS	NS
Education					
Bachelor's Degree	3.60 (0.71)	3.61 (0.65)	3.63 (0.65)	3.65 (0.65)	3.60 (0.65)
Masteral degree	3.60 (0.63)	3.62 (0.65)	3.75 (0.60)	3.71 (0.61)	3.63 (0.64)
t-value	0.043	0.093	0.966	0.464	0.233
Decision	NS	NS	NS	NS	NS
Years of teaching					
1 to 5 years	3.65 (0.70)	3.62 (0.67)	3.57 (0.70)	3.66 (0.69)	3.57 (0.67)
6 to 10 years	3.65 (0.63)	3.65 (0.62)	3.71 (0.63)	3.66 (0.63)	3.62 (0.63)
11 to 15 years	3.34 (1.02)	3.48 (0.90)	3.47 (0.90)	3.42 (0.91)	3.41 (0.90)
16 to 20 years	3.55 (0.45)	3.67 (0.43)	3.85 (0.28)	3.79 (0.39)	3.71 (0.44)
21 or more years	3.64 (0.61)	3.60 (0.54)	3.73 (0.41)	3.75 (0.38)	3.73 (0.51)
F-value	0.952	0.313	1.376	1.125	0.949
Decision	NS	NS	NS	NS	NS
Subject handled					
Computer	3.75 (0.38)	3.72 (0.36)	3.69 (0.48)	3.72 (0.44)	3.72 (0.44)
English	3.62 (0.72)	3.64 (0.63)	3.66 (0.64)	3.61 (0.66)	3.63 (0.67)
Filipino	3.80 (0.39)	3.80 (0.32)	3.75 (0.35)	3.86 (0.32)	3.84 (0.30)
Mathematics	3.63 (0.66)	3.61 (0.67)	3.56 (0.67)	3.63 (0.72)	3.59 (0.69)
MAPEH	3.69 (0.59)	3.64 (0.62)	3.74 (0.60)	3.70 (0.50)	3.67 (0.43)
Science	3.88 (0.65)	3.62 (0.60)	3.66 (0.65)	3.68 (0.66)	3.51 (0.68)
Social Studies/ Civics and Culture	3.65 (0.69)	3.60 (0.72)	3.69 (0.67)	3.69 (0.70)	3.65 (0.68)
Others	3.23 (0.89)	3.43 (0.84)	3.53 (0.80)	3.54 (0.77)	3.43 (0.85)
F-value	1.613	0.552	0.355	0.435	0.803
Decision	NS	NS	NS	NS	NS
Grade Assignment					
ECE & Primary	3.40 (0.84)	3.40 (0.87)	3.25 (0.84)	3.48 (0.88)	3.46 (0.85)
Primary & Intermediate	3.64 (0.58)	3.74 (0.43)	3.71 (0.41)	3.81 (0.36)	3.69 (0.46)

Intermediate only	3.69 (0.63)	3.71 (0.63)	3.69 (0.62)	3.79 (0.61)	3.72 (0.62)
Junior High School	3.57 (0.74)	3.54 (0.69)	3.63 (0.69)	3.58 (0.69)	3.55 (0.69)
Others	3.73 (0.47)	3.89 (0.23)	3.98 (0.75)	3.89 (0.21)	3.70 (0.55)
F-value	0.551	1.590	2.146	1.692	0.746
Decision	NS	NS	NS	NS	NS

It was observed that male got 3.51 weighted mean and female got 3.64 weighted however the two is not statistically significant since the computed p-value was less than 0.05 alpha level. This means that there is little difference in responses and is based on the test performed and this implies that Pedagogical approaches does not vary when grouped to sex. According to studies by Martin and Marsh (2005), Driessen (2007) et al. (2008), exclaimed that neither male nor female students are motivated any more or less by male or female teachers; they found no differences regarding between the abilities of female and male teachers. Martin and Marsh consider that motivation was more of a student factor than a teacher factor, and that an individualized approach would yield the greatest results. In her study, Jones (2003) reiterated that female teachers overwhelmingly responded that male teachers would be better at motivating boys than would female teachers. Although, her research also demonstrates that the longer the interview process lasted with female teachers, the more they would discuss limitations in male teachers' ability to motivate male students. Absolutely shows that there is no statistically significant difference between men and women presenting as role models.

As shown from the table, the educational attainment of the respondents observed that there was no significant difference since the computed p-value was less than 0.05 alpha level. This implies that the pedagogical approaches do not vary in terms of educational attainment. As stated in the study of Clotfelter et al., 2010; Ladd & Sorenson, 2015, researchers unsuccessfully detect significant effects when using combined subject test scores in middle and high schools and social studies achievement scores in high school (Henry et al., 2014). For example, Ladd and Sorensen (2015) examined the teacher's effectiveness with and without a master's degree on middle- and high-school students' achievement scores in North Carolina. Ladd and Sorensen applied the End of Grade (EOG) and End of Course (EOC) standardized test scores, which are

composites of standardized test scores including Math, Science and English. From the study, they found out that the scores of both middle and high school students with teacher who studied master's degree were not significantly different from the scores of students with teachers who did not study master's degree.

Based from the table above as to years of teaching, 1 to 5 years of teaching and 6-10 year of teaching got the same weighted mean of 3.66 while 11 to 15 years of teaching got weighted mean of 3.42, 3.79 weighted mean for 16 to years and 3.75 weighted mean for 21 or more years. However, the result clearly stated that there was no significant difference because of computed 0.949 f-value was less than 0.05 alpha level. This implies that pedagogical approaches do not vary to years of teaching. According to Hamre, Pianta, Mashburn, & Downer, 2007; Pianta & Hamre, 2009 the teachers who are on their first to three years of teaching are less competent than teachers with experienced teachers has very limited support. The study gives various evidence, with some correlations between the quality of teachers and teachers' experience, though these might be conceptualized. Although, these results are confined to a subset of areas of impact and time. There's no evidence that experience makes difference from various studies. Results from several studies using direct measures suggest that more experience does not required result in good quality of classroom setting.

Likewise, in Pedagogical approaches when grouped according to the subject handled with computed F-value of 0.803 and grade assignment with computed 0.746 F-value was less than 0.05 alpha level clearly observed that there was no significant difference. It also implies that pedagogical approaches do not vary when group to the subject handled. According to study from the University of Northern Iowa, if educators study the effects of their teaching on the learning of their students they become careful to variation and more aware of what works for the students' needs. Inquiry training also gives advantage for teachers to learn how to see at the world from multiple perspectives and to reach diverse learners.

Table 12. Proposed Action Plan to Enhance Teaching in an Online – Classroom

Key Result Area	Objectives	Activity	Success/ Performance Indicators	Persons Involved
VIRTUAL TOOLS Virtual Instruction	To adopt new and innovative Synchronous and Asynchronous Tools in terms of the following: a. Learning Management System	Use the most efficient and flexible tools in Synchronous and Asynchronous class.	The students will be able to learn, discover and explore different kinds of virtual tools.	Principal Asst.Principal Dept. Heads Faculty
Virtual Instruction	b. Email Messaging	Use varieties of tools for email messaging that is suitable for age/ grade level of the students.	The students may use any available tools that they have and suited for their age.	Faculty
Virtual Instruction	c. Video Conferencing, Live Chat and Screen Sharing	Provide training for students in using different kinds of Virtual tools in terms of Video conferencing, live chat and screen sharing.	The students will learn how to interact and communicate without hesitation using virtual tools such as performing on screen, do group work, individual report, etc.	Faculty
PEDAGOGICAL APPROACHES A. Managing Social Interaction	To resolve group conflicts among students	Online Games and Activities Such Virtual	The teacher will be able to resolve the conflict by	Dept. Head, Faculty

		Pictionary, Virtual Trivia, Virtual Musical Chairs, Geography Puzzle, etc.	using games and activities	
B.Instructional Design	To design of the training proposal based on training requirements	Implementation of Instruction Delivery Monitoring System	The teacher will be able to implement instruction delivery monitoring system (Synchronous and Asynchronous)	Principal
C. Guiding the Use of Technology	Design of particular technological tools for learning into existing environment	Proper Usage of Virtual tools in terms of LMS, Email messaging and Video Conferencing Teaching Classroom Netiquette	The teacher will be able to guide and monitor the students in using Virtual tools.	Faculty
d. Learning Assessment	Correction of Student's misunderstanding of content.	Assessment using Kahoot, Mentimeter, Quizziz, etc. Technology based assessment, Online Learning Tools such as Instant Q&A, and Games	The teacher will be able to resolve the conflict by using games and activities The teacher will be able to monitor the progress of the students using technology-based assessment and virtual learning activities.	Department Head, Faculty
e. Learning Support	To monitor student's learning pace	Technology based assessment, Online Learning Tools such as Instant Q&A, and Games	The teacher will be able to integrate and use technology-based assessment while the students will be able to enjoy assessment in a	Faculty

		Assessment using Kahoot, Mentimeter, Quizziz, etc.	form of games with immediate feedback The teacher will be able to monitor the progress of the students using technology-based assessment and virtual learning activities	
EMPOWERING TEACHERS	To develop and implement remote learning and other alternative modes of delivery under the “new normal.	Provide training for faculty for online learning Readiness, and Courseware Development.	The faculty will be able to learn new strategies and readiness in online class	Principal, Asst. Principal
EMPOWERING TEACHERS	To encourage creativity and help each other using collaborative approach	Mentoring from same content in teaching Virtual tools (Collaborative Approach)	The teachers will be able to connect and help other teachers who are in need and not familiar with the Virtual tools.	Principal, Asst. Principal, Dept. Head
Virtual Learning – Expanding Opportunities Virtual Learning – Expanding Opportunities	To make students excited to engage in online learning via varied modes of delivery of instruction	Integrated and Inclusive Healthy Lifestyle and Sports Program via online	The students will be able to give importance with their health and practice healthy lifestyle at home.	Principal, Faculty
Virtual Learning – Expanding Opportunities	To provide online enrichment activities that would further develop each student’s potential	Online Academic Contest	The students will be able to develop their potentials and engage in different activities via Online	Department Head, Faculty
Virtual Learning –	To offer varied	Leadership	The students will	Office of

Expanding Opportunities	online activities (co-curricular and extracurricular) to promote school spirit and camaraderie to improve the sociolinguistic competence in terms of social experience	Training and other Character Formation Programs via Online Online Extra Curricular Contest	be able to develop and discover their talents and skills via Online. The students will be able to meet new friends and promote camaraderie to others.	Students Affairs, Faculty
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6. Conclusions

1. Most of the participants are female and in 1 – 5 years of teaching in service. Majority of them have Bachelor's degree and teaching different subjects. Half of the participants are handling Junior High school level.
2. Majority of the participants use the Schoology as Learning Management System. In terms of email messaging, Gmail was the most popular email messaging tool and in video conferencing, live chat and screen sharing, many of the participants utilize Teams.
3. As for pedagogical approaches in terms of managing social interaction, the participants strongly agree in promoting of relationship of trust and mutual commitment among student, with establishment of learning objectives and competency to be developed. In guiding the use of technology, the participants strongly agree in the use of the virtual learning environment and guidance and monitoring of students' participation in social interaction, guidance and regulation of students' individual study processes and monitoring and evaluation of students' participation in social interaction activities. In assessment, the respondents strongly agree in providing students with information about assessment (grades, correct answers or evaluation criteria). Furthermore, in pedagogical approaches used in the classroom the participants strongly agree in learning assessment.

4. There was no significant difference in pedagogical when grouped according to demographic profile in sex, educational attainment, years of teaching, subject handled and grade assignment.
5. The proposed action plan for Virtual tools and Pedagogical approaches were designed to improve online centered classroom.

7. Recommendations

1. With regards to the Virtual tools, the school administration/ management may provide effective and efficient tools for Synchronous and Asynchronous class of students to be applied in Learning Management System, Email messaging and Video conferencing.
2. In terms of pedagogical approaches in different areas such as managing social interaction, the conflict may be resolve using online educational games and interactive activities. In instructional design, school administrators and teachers will implement Instruction Delivery Monitoring System for Synchronous and Asynchronous class. When it comes to guiding the use of technology, teachers may monitor the students by giving classroom netiquette in proper usage of technology. Furthermore, in learning assessment and learning support teacher may monitor the progress of the students by using technology-based assessment and virtual learning activities.
3. For the teachers, they may engage themselves in professional development by attending trainings and seminars to help them improve their knowledge and skills in Virtual learnings. Teachers may also adopt and integrate different virtual tools and pedagogical approaches in teaching.
4. Teachers may encourage students to use technology appropriately to learn not only academically, but in all aspects of their lives, such as physical, emotional, social, and spiritual.
5. For the future researchers, they may use the results of this study as their reference in their future study.

6. The proposed plan of action to enhance the Virtual tools and Pedagogical approaches use by the private school teachers in an online centered classroom maybe tabled for discussion and utilization.

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Appendix A. Questionnaire

Consent to Participate in Research

Virtual Tools and Pedagogical Approaches of Private School Teachers in an Online-Classroom

Dear Respondents,

I, Mary Ann B. Binucal, a student of LPU Graduate school, is currently doing a study on Virtual Tools and Pedagogical Approaches of Private School Teachers in an Online- Classroom. I would like to request for some information regarding your perceptions on up to what extent strategies are utilized by teachers and students. All data and information you will provide will be strictly confidential and will be utilized only for the purpose of the research. Data will be collectively summarized and respondents will remain anonymous. Please provide answers to the following queries. Thank you very much!

Part I. Demographic Profile. Please put a check on the applicable response.

1. Sex ☐ Male ☐ Female

2. Years of Teaching Experience _____

3. Educational Attainment

☐ Bachelor Degree

☐ Master's Degree

☐ Doctoral Degree

4. Subject Handled

☐ English

- ☐ Filipino
☐ Math
☐ Science
☐ Social Studies/Civics
☐ Music/Arts/P.E./Health
☐ Computer
☐ Others

5. Grade Level Assignment

- ☐ ECE level only (Nursery, Kinder and Prep.)
☐ Primary level only (Gr. 1-3)
☐ ECE and Primary level
☐ Intermediate only (Gr. 4-6)
☐ Primary and Intermediate Level
☐ Grade 1, Grade 2 and Grade 3
☐ Junior High School level (Gr.7-10)
☐ Others

6. Asynchronous and Synchronous Tools

The following are the asynchronous and synchronous tools used in the virtual classroom. Using the scale below, assess the extent in which the following is utilized.

- 5 All the time/ Always
 4 Most of the time/ Often
 3 Moderate amount of time/ Sometimes
 2 A little amount of time/ Seldom
 1 Not at all/ Never

Learning Management Systems

	5 All the time/ Always	4 Most of the time/ Often	3 Moderate amount of time/ Sometimes	2 A little amount of time/ Seldom	Not at all/ Never
Schoology					
Moodle					
Blackboard					
Talent LMS					
Quipper					

Others _____

E-mail Messaging

	5 All the time/ Always	4 Most of the time/ Often	3 Moderate amount of time/ Sometimes	2 A little amount of time/ Seldom	Not at all/ Never
Gmail					
Yahoo Mail					
Microsoft Mail					

Others _____

Video and Web Conferencing

	5 All the time/ Always	4 Most of the time/ Often	3 Moderate amount of time/ Sometimes	2 A little amount of time/ Seldom	Not at all/ Never
Zoom Communications					
Microsoft Teams					
Google Meet					
Messenger					

Others _____

Part II. Teaching Approaches

Following are descriptions of teaching approaches. Using the scale, assess the extent of utilization of the approach. Write the number corresponding to your assessment.

4 Strongly Agree (SA)

3 Agree (A)

2 Disagree (D)

1 Strongly Disagree (SD)

Teaching Approaches Online	1 SD	2 D	3 A	4 SA
Managing Social Interactions				
Promoting of relationships of trust and mutual commitment among student				

Resolution of group conflicts among students				
Enhancements of cordial and warm relations between teacher and students				
Facilitation of personal or professional knowledge among students				
Instructional Design				
Design of the training proposal based on the training requirements				
Selection, design and/or content adaptation				
Establishment of learning objectives and competency to be developed				
Selection, design and/or adaptation of learning activities and assessment				
Guiding the Use of Technology				
Design of certain technological tools for learning				
Decision to integrate new technological tools into existing virtual environment				
Guidance of students in the use of the virtual learning environment				
Regulation of an appropriate use of technology by students				
Learning Assessment				
Correction of students' misunderstanding of content				
Resolution of questions from students about content				
Monitoring and evaluation of students' individual and group activities				
Providing students with information about assessment (grades, correct answers and or evaluation criteria)				
Learning support				
Guidance and monitoring of students' participation in social interaction				
Monitoring and evaluation of students' participation in social interaction activities				
Guidance and regulation of students' individual study processes				
Control and monitoring of students' learning pace and learning periods				

Appendix B. Statistical Output

Frequencies

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DATASET ACTIVATE DataSet1.

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LMSBlackboard LMSTalent LMSQuipper EMGmail EMYahoomail EMMSmail VCZoom VCMSTeams
VCGooglemeet VCMessenger
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Notes

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Cases Used	FREQUENCIES
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Statistics

	Sex	Yrstchnng	Educ	Subj	GdeaAssignment	LMSSchoology	LMSMoodle	LMSBlackboard	LMSTalent	LMSQuipper	EMGmail	EMYahoomail	EMMSmail	VCZoom	VCMSTeams	VCGooglemeet	VCMessenger
N Valid	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180	180
Missing	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Frequency Table

Sex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	47	26.1	26.1	26.1
	Female	133	73.9	73.9	100.0
	Total	180	100.0	100.0	

Years of Teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	1	.6	.6	.6
	1 to 5 years	2	1.1	1.1	1.7
	6 to 10 years	10	5.6	5.6	7.2
	2.50	1	.6	.6	7.8
	11 to 15 years	22	12.2	12.2	20.0
	3.50	1	.6	.6	20.6
	16 to 20 years	15	8.3	8.3	28.9
	21 or more years	11	6.1	6.1	35.0
	6.00	5	2.8	2.8	37.8
	7.00	12	6.7	6.7	44.4
	8.00	9	5.0	5.0	49.4
	9.00	9	5.0	5.0	54.4
	10.00	10	5.6	5.6	60.0
	11.00	7	3.9	3.9	63.9
	12.00	3	1.7	1.7	65.6
	13.00	2	1.1	1.1	66.7
	14.00	3	1.7	1.7	68.3
	15.00	7	3.9	3.9	72.2
	16.00	4	2.2	2.2	74.4
	17.00	3	1.7	1.7	76.1
	18.00	5	2.8	2.8	78.9
	19.00	2	1.1	1.1	80.0
	20.00	5	2.8	2.8	82.8
	21.00	3	1.7	1.7	84.4
	22.00	1	.6	.6	85.0
	23.00	1	.6	.6	85.6

24.00	2	1.1	1.1	86.7
25.00	3	1.7	1.7	88.3
26.00	1	.6	.6	88.9
27.00	4	2.2	2.2	91.1
29.00	1	.6	.6	91.7
30.00	3	1.7	1.7	93.3
31.00	1	.6	.6	93.9
32.00	3	1.7	1.7	95.6
33.00	4	2.2	2.2	97.8
34.00	1	.6	.6	98.3
35.00	2	1.1	1.1	99.4
36.00	1	.6	.6	100.0
Total	180	100.0	100.0	

Educational Attainment

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Bachelor's Degree	149	82.8	82.8	82.8
Masteral degree	31	17.2	17.2	100.0
Total	180	100.0	100.0	

Subject Handle

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Computer	9	5.0	5.0	5.0
English	31	17.2	17.2	22.2
Filipino	16	8.9	8.9	31.1
Mathematics/ICS	24	13.3	13.3	44.4
MAPEH	22	12.2	12.2	56.7
Science	26	14.4	14.4	71.1
Social Studies/ Civics and Culture	22	12.2	12.2	83.3
Others	30	16.7	16.7	100.0
Total	180	100.0	100.0	

Grade Assignment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	ECE/ ECE & Primary	13	7.2	7.2	7.2
	Primary & Intermediate	27	15.0	15.0	22.2
	Intermediate only	31	17.2	17.2	39.4
	Junior High School	98	54.4	54.4	93.9
	Others	11	6.1	6.1	100.0
	Total	180	100.0	100.0	

LMS Schoology

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	70	38.9	38.9	38.9
	2.00	16	8.9	8.9	47.8
	3.00	18	10.0	10.0	57.8
	4.00	19	10.6	10.6	68.3
	5.00	57	31.7	31.7	100.0
	Total	180	100.0	100.0	

LMS Moodle

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	99	55.0	55.0	55.0
	2.00	19	10.6	10.6	65.6
	3.00	28	15.6	15.6	81.1
	4.00	23	12.8	12.8	93.9
	5.00	11	6.1	6.1	100.0
	Total	180	100.0	100.0	

LMS Blackboard

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	98	54.4	54.4	54.4

2.00	20	11.1	11.1	65.6
3.00	30	16.7	16.7	82.2
4.00	23	12.8	12.8	95.0
5.00	9	5.0	5.0	100.0
Total	180	100.0	100.0	

LMSTalent

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	92	51.1	51.1	51.1
2.00	14	7.8	7.8	58.9
3.00	22	12.2	12.2	71.1
4.00	28	15.6	15.6	86.7
5.00	24	13.3	13.3	100.0
Total	180	100.0	100.0	

LMS Quipper

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	105	58.3	58.3	58.3
2.00	16	8.9	8.9	67.2
3.00	28	15.6	15.6	82.8
4.00	25	13.9	13.9	96.7
5.00	6	3.3	3.3	100.0
Total	180	100.0	100.0	

EM Gmail

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	8	4.4	4.4	4.4
2.00	4	2.2	2.2	6.7
3.00	13	7.2	7.2	13.9
4.00	21	11.7	11.7	25.6
5.00	134	74.4	74.4	100.0
Total	180	100.0	100.0	

EM Yahooemail

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	82	45.6	45.6	45.6

2.00	25	13.9	13.9	59.4
3.00	25	13.9	13.9	73.3
4.00	20	11.1	11.1	84.4
5.00	28	15.6	15.6	100.0
Total	180	100.0	100.0	

EM MSmail

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	46	25.6	25.6	25.6
2.00	13	7.2	7.2	32.8
3.00	22	12.2	12.2	45.0
4.00	30	16.7	16.7	61.7
5.00	69	38.3	38.3	100.0
Total	180	100.0	100.0	

VC Zoom

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	29	16.1	16.1	16.1
2.00	16	8.9	8.9	25.0
3.00	38	21.1	21.1	46.1
4.00	33	18.3	18.3	64.4
5.00	64	35.6	35.6	100.0
Total	180	100.0	100.0	

VCMSTeams

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid 1.00	47	26.1	26.1	26.1
2.00	18	10.0	10.0	36.1
3.00	19	10.6	10.6	46.7
4.00	18	10.0	10.0	56.7
5.00	78	43.3	43.3	100.0
Total	180	100.0	100.0	

VC Google meet

	Frequency	Percent	Valid Percent	Cumulative Percent
--	-----------	---------	---------------	--------------------

Valid	1.00	47	26.1	26.1	26.1
	2.00	10	5.6	5.6	31.7
	3.00	24	13.3	13.3	45.0
	4.00	31	17.2	17.2	62.2
	5.00	68	37.8	37.8	100.0
Total		180	100.0	100.0	

VCMessenger

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	44	24.4	24.4
	2.00	11	6.1	30.6
	3.00	31	17.2	47.8
	4.00	24	13.3	61.1
	5.00	70	38.9	100.0
Total		180	100.0	

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	Female	133	3.6447	.62174	.05391
AveUT	Male	47	3.6011	.67699	.09875
	Female	133	3.6654	.63132	.05474
AveLAs	Male	47	3.5638	.68459	.09986
	Female	133	3.6955	.62108	.05385
AveLSu	Male	47	3.5053	.71758	.10467
	Female	133	3.6391	.62493	.05419

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
AveMSI	Equal variances assumed	1.576	.211	-.782	178	.435	-.09215	.11780	-.32461	.14032
	Equal variances not assumed			-.725	70.994	.471	-.09215	.12717	-.34571	.16142
AveID	Equal variances assumed	1.821	.179	-1.173	178	.242	-.12878	.10975	-.34535	.08779
	Equal variances not assumed			-1.099	72.179	.276	-.12878	.11722	-.36245	.10489
AveUT	Equal variances assumed	.458	.500	-.589	178	.556	-.06435	.10919	-.27981	.15112
	Equal variances not assumed			-.570	76.112	.570	-.06435	.11291	-.28922	.16052
AveLAs	Equal variances assumed	1.470	.227	-1.216	178	.226	-.13166	.10828	-.34534	.08202
	Equal variances not assumed			-1.160	74.455	.250	-.13166	.11345	-.35770	.09438
AveLSu	Equal variances assumed	1.578	.211	-1.213	178	.227	-.13378	.11032	-.35149	.08393
	Equal variances not assumed			-1.135	72.157	.260	-.13378	.11786	-.36873	.10117

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Group Statistics

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	Masteral degree	31	3.6048	.62508	.11227
AveID	Bachelor's Degree	149	3.6091	.64940	.05320
	Masteral degree	31	3.6210	.64830	.11644
AveUT	Bachelor's Degree	149	3.6275	.65025	.05327
	Masteral degree	31	3.7500	.60208	.10814
AveLAs	Bachelor's Degree	149	3.6510	.64581	.05291
	Masteral degree	31	3.7097	.61270	.11004
AveLSu	Bachelor's Degree	149	3.5990	.65491	.05365
	Masteral degree	31	3.6290	.64184	.11528

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
AveMSI	Equal variances assumed	.211	.646	-.043	178	.966	-.00585	.13727	-.27674	.26505
	Equal variances not assumed			-.046	47.508	.963	-.00585	.12640	-.26005	.24836
AveID	Equal variances assumed	.001	.978	-.093	178	.926	-.01191	.12816	-.26482	.24100
	Equal variances not assumed			-.093	43.449	.926	-.01191	.12802	-.27000	.24619
AveUT	Equal variances assumed	1.366	.244	-.966	178	.335	-.12248	.12681	-.37273	.12776
	Equal variances not assumed			-1.016	45.781	.315	-.12248	.12055	-.36516	.12019
AveLAs	Equal variances assumed	.077	.781	-.464	178	.643	-.05867	.12641	-.30813	.19078
	Equal variances not assumed			-.481	44.985	.633	-.05867	.12210	-.30460	.18726
AveLSu	Equal variances assumed	.008	.927	-.233	178	.816	-.03004	.12885	-.28431	.22423
	Equal variances not assumed			-.236	43.986	.814	-.03004	.12715	-.28630	.22622

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Case Processing Summary

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	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
AveMSI * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveID * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveUT * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveLAs * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveLSu * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveMSI * Subj	180	100.0%	0	0.0%	180	100.0%
AveID * Subj	180	100.0%	0	0.0%	180	100.0%
AveUT * Subj	180	100.0%	0	0.0%	180	100.0%
AveLAs * Subj	180	100.0%	0	0.0%	180	100.0%
AveLSu * Subj	180	100.0%	0	0.0%	180	100.0%
AveMSI * GdeaAssignment	180	100.0%	0	0.0%	180	100.0%
AveID * GdeaAssignment	180	100.0%	0	0.0%	180	100.0%
AveUT * GdeaAssignment	180	100.0%	0	0.0%	180	100.0%
AveLAs * GdeaAssignment	180	100.0%	0	0.0%	180	100.0%
AveLSu * GdeaAssignment	180	100.0%	0	0.0%	180	100.0%

AveMSI AveID AveUT AveLAs AveLSu * Years of Teaching

Yrstchnng		AveMSI	AveID	AveUT	AveLAs	AveLSu
.00	Mean	4.0000	4.0000	3.0000	3.7500	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
1 to 5 years	Mean	3.5000	3.5000	3.5000	3.5000	3.5000
	N	2	2	2	2	2
	Std. Deviation	.70711	.70711	.70711	.70711	.70711
6 to 10 years	Mean	3.8750	3.8250	3.7750	3.7500	3.8250
	N	10	10	10	10	10
	Std. Deviation	.21246	.20582	.32167	.35355	.23717
2.50	Mean	4.0000	4.0000	4.0000	4.0000	4.0000
	N	1	1	1	1	1

	Std. Deviation	.	.	.	.	.
11 to 15 years	Mean	3.5682	3.5227	3.5341	3.6364	3.4432
	N	22	22	22	22	22
	Std. Deviation	.86321	.80515	.86704	.88549	.86922
3.50	Mean	4.0000	4.0000	4.0000	4.0000	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
16 to 20 years	Mean	3.4667	3.4333	3.3833	3.5333	3.5000
	N	15	15	15	15	15
	Std. Deviation	.88068	.85808	.85496	.82303	.72580
21 or more years	Mean	3.7727	3.7727	3.7045	3.7727	3.5682
	N	11	11	11	11	11
	Std. Deviation	.30526	.36150	.38435	.32509	.46221
6.00	Mean	3.4000	3.5500	3.8000	3.5500	3.7000
	N	5	5	5	5	5
	Std. Deviation	.57554	.44721	.44721	.44721	.44721
7.00	Mean	3.7083	3.6875	3.7083	3.6250	3.7083
	N	12	12	12	12	12
	Std. Deviation	.68948	.68362	.68948	.71111	.68948
8.00	Mean	3.5000	3.3611	3.3889	3.5278	3.3889
	N	9	9	9	9	9
	Std. Deviation	.97628	.97717	1.01636	.88780	.96914
9.00	Mean	3.8611	3.9722	3.8889	3.9444	3.6111
	N	9	9	9	9	9
	Std. Deviation	.22048	.08333	.33333	.16667	.48591
10.00	Mean	3.6500	3.6250	3.7750	3.6250	3.7000
	N	10	10	10	10	10
	Std. Deviation	.48876	.44488	.32167	.61520	.40483
11.00	Mean	3.0357	3.6429	3.6786	3.6071	3.2857
	N	7	7	7	7	7
	Std. Deviation	.94017	.45316	.47246	.53730	.56695
12.00	Mean	4.0000	3.6667	3.5833	3.6667	3.9167
	N	3	3	3	3	3
	Std. Deviation	.00000	.57735	.52042	.57735	.14434
13.00	Mean	4.0000	4.0000	4.0000	3.5000	4.0000
	N	2	2	2	2	2
	Std. Deviation	.00000	.00000	.00000	.70711	.00000
14.00	Mean	3.7500	3.6667	3.5833	3.6667	3.7500
	N	3	3	3	3	3
	Std. Deviation	.43301	.57735	.52042	.57735	.25000
15.00	Mean	3.0000	3.0000	3.0000	3.0000	3.0000
	N	7	7	7	7	7
	Std. Deviation	1.41421	1.41421	1.41421	1.41421	1.41421
16.00	Mean	3.3750	3.3750	3.8125	3.6875	3.6250
	N	4	4	4	4	4

	Std. Deviation	.47871	.47871	.12500	.47324	.43301
17.00	Mean	3.8333	3.9167	4.0000	4.0000	4.0000
	N	3	3	3	3	3
	Std. Deviation	.28868	.14434	.00000	.00000	.00000
18.00	Mean	3.4000	3.8500	3.9500	4.0000	4.0000
	N	5	5	5	5	5
	Std. Deviation	.45415	.33541	.11180	.00000	.00000
19.00	Mean	3.7500	3.6250	4.0000	3.5000	3.5000
	N	2	2	2	2	2
	Std. Deviation	.35355	.53033	.00000	.70711	.70711
20.00	Mean	3.6000	3.6000	3.6500	3.6500	3.4000
	N	5	5	5	5	5
	Std. Deviation	.54772	.54772	.48734	.48734	.54772
21.00	Mean	3.9167	4.0000	4.0000	4.0000	4.0000
	N	3	3	3	3	3
	Std. Deviation	.14434	.00000	.00000	.00000	.00000
22.00	Mean	3.0000	3.5000	3.5000	3.2500	3.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
23.00	Mean	4.0000	3.7500	3.5000	3.5000	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
24.00	Mean	3.8750	3.5000	4.0000	3.7500	3.7500
	N	2	2	2	2	2
	Std. Deviation	.17678	.70711	.00000	.35355	.35355
25.00	Mean	3.5000	3.3333	3.3333	3.3333	3.6667
	N	3	3	3	3	3
	Std. Deviation	.50000	.57735	.57735	.57735	.57735
26.00	Mean	3.0000	3.0000	3.0000	3.0000	3.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
27.00	Mean	3.1250	3.2500	3.7500	3.7500	3.5000
	N	4	4	4	4	4
	Std. Deviation	1.42156	.95743	.50000	.50000	1.00000
29.00	Mean	3.7500	4.0000	3.2500	3.7500	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
30.00	Mean	3.9167	3.5833	4.0000	4.0000	3.6667
	N	3	3	3	3	3
	Std. Deviation	.14434	.72169	.00000	.00000	.57735
31.00	Mean	4.0000	4.0000	4.0000	4.0000	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
32.00	Mean	3.5000	3.0833	3.1667	3.5833	3.6667
	N	3	3	3	3	3

	Std. Deviation	.50000	.14434	.28868	.52042	.57735
33.00	Mean	3.6875	3.8750	3.9375	3.8750	3.7500
	N	4	4	4	4	4
	Std. Deviation	.47324	.25000	.12500	.14434	.50000
34.00	Mean	3.7500	4.0000	4.0000	4.0000	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
35.00	Mean	4.0000	4.0000	4.0000	4.0000	4.0000
	N	2	2	2	2	2
	Std. Deviation	.00000	.00000	.00000	.00000	.00000
36.00	Mean	4.0000	4.0000	4.0000	4.0000	4.0000
	N	1	1	1	1	1
	Std. Deviation	.	.	.	.	.
Total	Mean	3.6000	3.6111	3.6486	3.6611	3.6042
	N	180	180	180	180	180
	Std. Deviation	.69344	.64742	.64226	.63895	.65100

AveMSI AveID AveUT AveLAs AveLSu * Subj

Subj		AveMSI	AveID	AveUT	AveLAs	AveLSu
Computer	Mean	3.7500	3.7222	3.6944	3.7222	3.7222
	N	9	9	9	9	9
	Std. Deviation	.37500	.36324	.48052	.44096	.44096
English	Mean	3.6210	3.6371	3.6613	3.6129	3.6290
	N	31	31	31	31	31
	Std. Deviation	.73278	.63192	.64404	.66407	.66730
Filipino	Mean	3.7969	3.7969	3.7500	3.8594	3.8438
	N	16	16	16	16	16
	Std. Deviation	.38964	.31910	.35355	.31582	.30104
Mathematics/ICS	Mean	3.6250	3.6146	3.5625	3.6250	3.5938
	N	24	24	24	24	24
	Std. Deviation	.65938	.66749	.67264	.71854	.68688
MAPEH	Mean	3.6932	3.6364	3.7386	3.7045	3.6705
	N	22	22	22	22	22
	Std. Deviation	.59227	.61590	.59501	.49783	.42529
Science	Mean	3.6827	3.6154	3.6635	3.6827	3.5096
	N	26	26	26	26	26
	Std. Deviation	.65406	.60096	.65170	.66166	.68367
Social Studies/ Civics and Culture	Mean	3.6477	3.6023	3.6932	3.6932	3.6477
	N	22	22	22	22	22
	Std. Deviation	.69290	.72234	.67229	.70260	.67989
Others	Mean	3.2333	3.4333	3.5250	3.5417	3.4250
	N	30	30	30	30	30

	Std. Deviation	.89282	.84316	.80234	.76868	.85387
Total	Mean	3.6000	3.6111	3.6486	3.6611	3.6042
	N	180	180	180	180	180
	Std. Deviation	.69344	.64742	.64226	.63895	.65100

AveMSI AveID AveUT AveLAs AveLSu * Grade Assignment

GdeaAssignment		AveMSI	AveID	AveUT	AveLAs	AveLSu
ECE/ ECE & Primary	Mean	3.4038	3.4038	3.2500	3.4808	3.4615
	N	13	13	13	13	13
	Std. Deviation	.84495	.86926	.84163	.88070	.85297
Primary & Intermediate	Mean	3.6389	3.7407	3.7130	3.8056	3.6944
	N	27	27	27	27	27
	Std. Deviation	.57735	.43012	.41431	.36251	.46167
Intermediate only	Mean	3.6935	3.7097	3.6935	3.7903	3.7177
	N	31	31	31	31	31
	Std. Deviation	.63479	.62615	.62152	.60929	.62497
Junior High School	Mean	3.5714	3.5408	3.6327	3.5791	3.5510
	N	98	98	98	98	98
	Std. Deviation	.74266	.69022	.68696	.68920	.68579
Others	Mean	3.7273	3.8864	3.9773	3.8864	3.7045
	N	11	11	11	11	11
	Std. Deviation	.46710	.23355	.07538	.20505	.54564
Total	Mean	3.6000	3.6111	3.6486	3.6611	3.6042
	N	180	180	180	180	180
	Std. Deviation	.69344	.64742	.64226	.63895	.65100

ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Yrstchnng
/MISSING ANALYSIS.

Oneway**Notes**

Output Created		25-FEB-2022 08:30:51
Comments		
Input	Data	C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\EL M Binucal.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>

Missing Value Handling	Split File	<none>
	N of Rows in Working Data File	180
	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax	ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Yrstchn /MISSING ANALYSIS.	
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.02

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AveMSI	Between Groups	12.481	37	.337	.651	.936
	Within Groups	73.594	142	.518		
	Total	86.075	179			
AveID	Between Groups	11.088	37	.300	.666	.925
	Within Groups	63.940	142	.450		
	Total	75.028	179			
AveUT	Between Groups	11.695	37	.316	.722	.875
	Within Groups	62.142	142	.438		
	Total	73.837	179			
AveLAs	Between Groups	8.317	37	.225	.493	.993
	Within Groups	64.761	142	.456		
	Total	73.078	179			
AveLSu	Between Groups	10.336	37	.279	.605	.962
	Within Groups	65.524	142	.461		
	Total	75.859	179			

ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Subj
/MISSING ANALYSIS.

Oneway

Notes

Output Created	25-FEB-2022 08:31:03
Comments	

Input	Data	C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\EL M Binucal.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
Missing Value Handling	N of Rows in Working Data File	180
	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Subj /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.01

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AveMSI	Between Groups	5.304	7	.758	1.613	.134
	Within Groups	80.771	172	.470		
	Total	86.075	179			
AveID	Between Groups	1.649	7	.236	.552	.794
	Within Groups	73.379	172	.427		
	Total	75.028	179			
AveUT	Between Groups	1.052	7	.150	.355	.927
	Within Groups	72.785	172	.423		
	Total	73.837	179			
AveLAs	Between Groups	1.270	7	.181	.435	.879
	Within Groups	71.808	172	.417		
	Total	73.078	179			
AveLSu	Between Groups	2.399	7	.343	.803	.586
	Within Groups	73.460	172	.427		
	Total	75.859	179			

ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY GdeaAssignment
/MISSING ANALYSIS.

Oneway**Notes**

Output Created		25-FEB-2022 08:31:15
Comments		
Input	Data	C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\EL M Binucal.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	180
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax		ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY GdeaAssignment /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.03

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AveMSI	Between Groups	1.070	4	.268	.551	.699
	Within Groups	85.005	175	.486		
	Total	86.075	179			
AveID	Between Groups	2.631	4	.658	1.590	.179
	Within Groups	72.397	175	.414		
	Total	75.028	179			
AveUT	Between Groups	3.453	4	.863	2.146	.077
	Within Groups	70.384	175	.402		
	Total	73.837	179			
AveLAs	Between Groups	2.721	4	.680	1.692	.154

	Within Groups	70.357	175	.402		
	Total	73.078	179			
AveLSu	Between Groups	1.272	4	.318	.746	.562
	Within Groups	74.587	175	.426		
	Total	75.859	179			

FREQUENCIES VARIABLES=Yrstchnng
/ORDER=ANALYSIS.

Frequencies

Notes

Output Created		25-FEB-2022 08:35:19
Comments		
Input	Data	C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\ELM Binucal.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	180
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.
Syntax		FREQUENCIES VARIABLES=Yrstchnng /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.00
	Elapsed Time	00:00:00.00

Statistics

Yrstchnng

N	Valid	180
	Missing	0

Yrstchnng

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 to 5 years	63	35.0	35.0	35.0
	6 to 10 years	45	25.0	25.0	60.0
	11 to 15 years	22	12.2	12.2	72.2
	16 to 20 years	19	10.6	10.6	82.8
	21 or more years	31	17.2	17.2	100.0
	Total	180	100.0	100.0	

MEANS TABLES=AveMSI AveID AveUT AveLAs AveLSu BY Yrstchn
 /CELLS=MEAN COUNT STDDEV.

Means

Notes

Output Created		25-FEB-2022 08:58:21
Comments		
Input	Data	C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\EL M Binucal.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	180
Missing Value Handling	Definition of Missing	For each dependent variable in a table, user-defined missing values for the dependent and all grouping variables are treated as missing.
	Cases Used	Cases used for each table have no missing values in any independent variable, and not all dependent variables have missing values.
Syntax		MEANS TABLES=AveMSI AveID AveUT AveLAs AveLSu BY Yrstchn /CELLS=MEAN COUNT STDDEV.
Resources	Processor Time	00:00:00.02
	Elapsed Time	00:00:00.02

Case Processing Summary

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
AveMSI * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveID * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveUT * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveLAs * Yrstchnng	180	100.0%	0	0.0%	180	100.0%
AveLSu * Yrstchnng	180	100.0%	0	0.0%	180	100.0%

Report

Yrstchnng		AveMSI	AveID	AveUT	AveLAs	AveLSu
1 to 5 years	Mean	3.6468	3.6151	3.5714	3.6627	3.5675
	N	63	63	63	63	63
	Std. Deviation	.69653	.67176	.70486	.68856	.67233
6 to 10 years	Mean	3.6500	3.6500	3.7056	3.6611	3.6222
	N	45	45	45	45	45
	Std. Deviation	.63380	.62477	.62905	.62649	.63206
11 to 15 years	Mean	3.3409	3.4773	3.4659	3.4205	3.4091
	N	22	22	22	22	22
	Std. Deviation	1.01929	.90274	.89740	.91087	.90483
16 to 20 years	Mean	3.5526	3.6711	3.8553	3.7895	3.7105
	N	19	19	19	19	19
	Std. Deviation	.44549	.43343	.28032	.39320	.44303
21 or more years	Mean	3.6452	3.6048	3.7258	3.7500	3.7258
	N	31	31	31	31	31
	Std. Deviation	.60819	.54304	.41006	.38188	.51379
Total	Mean	3.6000	3.6111	3.6486	3.6611	3.6042
	N	180	180	180	180	180
	Std. Deviation	.69344	.64742	.64226	.63895	.65100

ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Yrstchnng
/MISSING ANALYSIS.

Oneway

Notes

Output Created	Data	25-FEB-2022 08:58:33
Comments		
Input		C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\ELM Binucal.sav

		Active Dataset	DataSet1
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		Split File	<none>
		N of Rows in Working Data File	180
Missing Value Handling		Definition of Missing	User-defined missing values are treated as missing.
		Cases Used	Statistics for each analysis are based on cases with no missing data for any variable in the analysis.
Syntax			ONEWAY AveMSI AveID AveUT AveLAs AveLSu BY Yrstchng /MISSING ANALYSIS.
Resources	Processor Time		00:00:00.02
	Elapsed Time		00:00:00.02

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
AveMSI	Between Groups	1.833	4	.458	.952	.435
	Within Groups	84.242	175	.481		
	Total	86.075	179			
AveID	Between Groups	.533	4	.133	.313	.869
	Within Groups	74.495	175	.426		
	Total	75.028	179			
AveUT	Between Groups	2.252	4	.563	1.376	.244
	Within Groups	71.585	175	.409		
	Total	73.837	179			
AveLAs	Between Groups	1.832	4	.458	1.125	.346
	Within Groups	71.245	175	.407		
	Total	73.078	179			
AveLSu	Between Groups	1.610	4	.403	.949	.437
	Within Groups	74.249	175	.424		
	Total	75.859	179			

GET

FILE='C:\Users\USER\OneDrive - lpulaguna.edu.ph\Documents\ELM Cancino.sav'.

DATASET NAME DataSet2 WINDOW=FRONT.