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Graduate Students' Assessment on E-learning during COVID Times

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Abstract: This descriptive study aimed to determine the graduate education students' assessment of e-learning during the COVID crisis. Specifically, it investigated access to the technology of the 51 Master of Arts in Education major in Science Education and Master of Arts in Management major in Administration and Supervision and assessment of their e-learning. These students represent a total enumeration of the two classes handled by the researchers during the first semester of the school year 2020-2021. A survey method was utilized to gather the data through the adopted *self-assessment to e-learning* instrument crafted by Watkins, Leigh, & Triner (2004). This study finds that most students use only smartphones and access the internet by mobile data that is capable only of fair download and upload speeds, between 1 to 10 Mbps when the connection is stable. However, despite the unideal setting in infrastructure, students maintain a positive attitude towards e-learning. Their motivation can be attributed to their prior knowledge and experience in using online platforms that are beneficial to help them easily adapt to the e-learning mode. This finding implies that the primary obstacle for graduate students in e-learning is a lack of access to a proper device and unreliable internet speeds, which are common problems among students of any level in the Philippines. The study further reveals that graduate students prefer the asynchronous mode of instruction for e-learning to eliminate the difficulty during online classes when either device is unavailable or the internet connection is unstable. Thus, this requires educators to create more comprehensive learning materials to assist students in adapting to the e-learning mode.

I.   Introduction

Education during the COVID-19 crisis changed dramatically worldwide. Schools were forced to shut down to avoid conventional face-to-face classes, which transformed classroom learning into online instruction that challenged schools to adopt innovative teaching strategies. Primarily, it demands unique preparation and training among teachers to adapt quickly to online teaching. Next, it concerns students who will bear the long-term consequences of a sub-optimal learning experience especially when implemented for a significant time. External factors such as attitude towards learning or online teaching, digital competencies and infrastructure, socio-economic status, and household environment further interplay to modify experiences that are unique for both students and teachers. Despite these considerations, completely postponing schooling was a no better option, since online schooling is deemed useful in sustaining knowledge and skill among students (OECD, 2020).

In developing countries such as the Philippines, the challenge falls on the education sector to implement an inclusive approach that considers both teachers and students while also maintaining the effectiveness of online learning. A study by the Organization for Economic Cooperation and Development (OECD) in 2020 shows that students belonging to low-income groups do not receive sufficient instruction due to a lack of devices for online classes. This highlights the gap in learning outcomes among students who belong to different income groups. This calls for a corrective measure in the implementation of e-learning. However, the lack of robust policies from the government compels universities and state colleges to come up with solutions that are more suitable for their constituents. Hence, the student's perception of possible e-learning strategies is crucial in policy-making.

Several studies on e-learning or online-based instruction vary in findings. In a survey study administered on medicine and dentistry students in a private college in Pakistan, a great majority of students do not prefer e-learning during the implementation of lockdown measures (Abbasi et al. 2020). This finding agrees with a related study from China, where students show low concentration and degree of class participation during online classes (Bao, 2020). In contrast, a survey study conducted on business students shows that they put full participation in e-learning and perceive a satisfactory rating for its implementation (Krishnapatria, 2020). In this scenario, the behavior of students towards e-learning possibly varies based on their field of study where practical and laboratory skills need to be developed more than theoretical concepts, which is a clear limitation in the online mode.

Some studies determined specific factors that affect the student's e-learning. One study revealed that students had low experience ratings on online learning infrastructure, digital learning skills, and quality of academic interaction. These factors include minimal internet access, power interruption, lack of technological ability, and delayed feedback from teachers. Nevertheless, students perceive e-learning as advantageous because of its self-paced approach and cost-efficiency (Laksana, 2020). Perhaps, despite the demand for gadgets and internet access for e-learning, household expenses such as transportation costs and allowance are no longer essential daily compared to the conventional classroom experience. The study shows that students maintain a positive attitude towards e-learning despite obstacles that interfere with their learning experience. Lastly, the study calls for more effective implementation of e-learning methods in areas with minimal internet access.

Essentially, these studies reveal varying assessments of e-learning of students from one country to another. This roots in their diverse culture, academic background and level, competencies, access to infrastructure, and economic status among others that determine their readiness (Almaiah et al., 2020). Therefore, no single teaching strategy can be deemed most effective for e-learning because each group of students has different profiles and deal

with a specific context of learning obstacles. Hence, it is only necessary to develop a strategy that is specifically designed to aid students in overcoming them.

Hence, this study is purposely conducted to determine the assessment of e-learning of the graduate students of Sorsogon State University (SSU) as a new modality for instruction. Under normal circumstances, graduate students do not need close monitoring from professors compared to students from other levels. Since their curriculum is more focused on research activities, they are expected to work more independently and embody a higher sense of discipline. Thus, to some extent, graduate students can adapt more easily to e-learning despite its limitation in terms of peer-to-peer or teacher-to-student interaction.Nevertheless, graduate students are not exempt from learning obstacles in the online mode such as access to infrastructure like gadgets and internet access as well as technical skills that are otherwise secondary under conventional classroom learning.

Objectives of the Study

Generally, this study aims to determine the graduate students' assessment of e-learning during the COVIDcrisis. Specifically, it investigates the student's access to technology and their e-learning skills.

Methodology

This study used the descriptive research design to determine the graduate students' assessment of e-learning. The study involves 51 respondents composed of students that are officially enrolled in Master of Arts in Education major inScience Education (47%)and Master of Arts in Management major in Administration and Supervision (53%). These students represent a total enumeration of the two classes handled by the researcher during the first semester of the school year 2020-2021.

A survey method was utilized to gather the data through the *self-assessment ofthe e-learning instrument*crafted by Watkins, Leigh, & Triner (2004). For ethical reasons, the researchers e-mailed Mr. Watkins to ask permission for the use of the instrument, and was favorably acted upon. The survey was facilitated online using GoogleForms.

Finally, the data on the student's access to technology were processed, organized, and presented through graphs and tables and were treated and analyzed using frequency and rank. Meanwhile, the data on the student's assessmentof e-learning were analyzed using a weighted mean (WM) with the following Likert scale: 5-completely agree, 4-strongly agree, 3-not sure, 2-strongly disagree, 1-completely disagree.

Results and Discussion

1. **Access to Technology**

    This study operationally defines access to technology in terms of the devices and installed applications available to the students that they utilize for e-learning and the quality of their internet connections.

    Table 1 shows the different devices used by the students for online learning. As reflected, majority of the them have a smartphone while more than half own a laptop. However, only a few have desktops and tablets. It is worth noting that those students who own laptops share this device with other family members or other people for learning.

Table 1. Devices used by the students for e-learning

Device	Frequency	Rank
Desktop computer	7	3
Laptop	35	2
Smartphone	51	1
Tablet/iPad	6	4

This implies that students prefer the use of smartphones for online learning. The cheaper cost of the smartphone and its portability and convenience may be some of the reasons for the student's preference. Tuncay (2016) found out in his study on smartphones as tools for distance education that the majority of the students use this device for almost 10 hours for reasons such as accessing Facebook, YouTube, and Instagram, calling and texting, gaming, and surfing the internet.

Meanwhile, most of the respondents use mobile data to access the internet, followed by Home Wi-Fi and pocket Wi-Fi as shown in Table 2. This result is consistent with the student's preference for the use of smartphones for online learning. Mobile data as widely used by students to access the internet may be attributed to its low cost as the giant telco companies in the country offer data varying promos to students for online learning.

Table 2. Student's Access to the Internet

Device	Frequency	Rank
Home wifi, fiber optic	18	2
Wifi, broadband	12	4
Pocket wifi	16	3
Mobile data	35	1
Computer shop/internet cafe	3	5

On the other hand, only 3% of the respondents access the internet via a computer shop or internet café. These students either have poor internet signal and connectivity at home or lack gadgets that are necessary to attend online classes so they are forced to go to internet shops.

Moreover, table 3 reveals the quality of the student's internet connection which was operationally defined in this study as the internet download and upload speed. The table shows that majority have download and upload speeds of 1 to 10 Mbps while only a few have speeds faster than 31 Mbps for the same operation. Domingo (2020) reported the NTC data that as of October 2020, the Philippines' fixed broadband speed is ranked 32nd in Asia, while its mobile internet speed placed 34th out of 50 countries in the continent. Moreover, the country's internet speed in Southeast Asia is only about a tenth of regional leader Singapore's 229.42 Mbps speed for fixed broadband, and 64 Mbps speed for mobile connection.

Table 3. Quality of Internet connection

Speed	Download		Upload	
	f	%	f	%
Slower than 1 Mbps	9	17.6	11	21.6
1 – 10	24	47.1	22	43.1
11 – 20	13	25.5	13	25.5
21 – 30	3	5.9	4	7.8
Faster than 31 Mbps	2	3.9	1	2

Along availability of applications for online learning, Table 4 likewise shows that Microsoft Office applications have the highest frequency followed by PDF readers, Google Meet, and internet browsers. This indicates the great necessity for this software to cope with their tasks for online learning. The Microsoft Office software may have been very useful for the students since learning activities commonly involve oral presentations and written reports. The Microsoft Office Suite help students to transmit educational materials and practice systematically in school and university with speed and higher quality (Importance of MS Office, 2019).

Table 4. Computer applications

Applications	Frequency	Rank
Office (word, PowerPoint, Excel)	46	1
PDF Reader	32	2.5
Zoom	25	5
Google Meet	32	2.5
Chrome, Safari, Firefox, Microsoft Edge,	30	4
Google Classroom	11	6
Moodle	10	7
Edmodo	1	8

2. **Graduate Student's assessment of e-learning**

This section shows the graduate students' assessment of e-learning in terms of online skills and relations, motivation, online audio/video, internet discussions, and factors to success (Watkins, Leigh, & Triner, 2004). Tables were used to present the data.

Online skills and relations. Table 5 presents the students' assessment of their skills in online learning. As shown, the students strongly agree that they have the basic skills to operate a computer (e.g. saving files, creating folders) with the highest weighted mean of 4.35. Likewise, they perceive to have the skills in sending emails with file attachments and finding a way around the internet such as using search engines and entering passwords.

Table 5. Online skills and relations

Indicators	WM	Description
1. I have the basic skills to operate a computer (e.g. saving files, creating folders).	4.35	Strongly agree
2. I have the basic skills for finding my way around the Internet (e.g. using search engines, entering passwords).	4.29	Strongly agree
3. I can send an email with file attachments.	4.33	Strongly agree
4. I think that I would be comfortable using a computer several times a week to participate in a course.	3.96	Strongly agree
5. I think that I would be able to communicate effectively with others using online technologies (e.g. email, chat).	3.86	Strongly agree
6. I think that I would be able to express myself clearly through my writing (e.g. mood, emotions, and humor)	3.90	Strongly agree
7. I think that I would be able to use online tools (e.g. LMS, email, chat) to work on assignments.	4.08	Strongly agree
8. I think that I would be able to schedule a time to provide timely responses to other students and/or the instructor.	4.02	Strongly agree
9. I think that I would be able to ask questions and make comments in clear writing.	4.02	Strongly agree
Composite Mean	**4.09**	**Strongly Agree**

Overall, the entire indicators for the online skills of the students obtained a weighted mean of 4.09, described as strongly agree. This means that the students can do online learning as they are perceived to possess the basic skills.Rakap (2010) found out in his study that there is a moderate positive correlation between computer skills and students' success. The students' learning preference has also an impact on the acquisition of knowledge. As online learning is ubiquitous during this time of the pandemic, having these skills may allow students to cope with the new normal.

Motivation. Table 6 shows the students' assessmentof motivation for learning. It reveals that the students are still motivated to learn despite some distractions during learning and even when the instructor is not always online as reflected by the composite mean of 3.74, described as strongly agree.

Table 6. Motivation

Indicators	WM	Description
1. I think that I would be able to remain motivated even though the instructor is not online at all times.	3.76	Strongly agree
2. I think that I would be able to complete my work even when there are online distractions (e.g. friends sending messages, or websites to surf).	3.76	Strongly agree
3. I think that I would be able to complete my work even when there are distractions in my home (e.g. television, children, and such).	3.69	Strongly agree
Composite Mean	**3.74**	**Strongly Agree**

This means that students may have also preferred asynchronous learning where instructional materials are made available on the learning platform for them to study independently. This also indicates the students' level of maturity for learning as they are considered adult learners. Knowles's (1984) Andragogy theory emphasized characteristics of adult learners that asone reaches maturity, the motivation to learn becomes internal. Hence, it was suggested that for self-directed learners, instruction should allow them to discover things and knowledge for themselves without depending on people. Nevertheless, they should be offered guidance and help when mistakes are made.

Online audio/video. Table 7 presents the students' assessmentof processing audio/video presentations. The students strongly agree that they can understand course-related information presented in video formats, relate the video clips to the information read online or in other reading materials, and take notes while watching videos on the computer. The composite mean of 3.81 shows this level of agreement by the student-respondents.

Table 7. Online audio/video

Indicators	WM	Description
1. I think that I would be able to relate the content of short video clips (1-3 minutes typically) to the information I have read online or in other reading materials.	3.80	Strongly agree
2. I think that I would be able to take notes while watching a video on the computer.	3.75	Strongly agree
3. I think that I would be able to understand course-related information when it is presented in video formats.	3.88	Strongly agree
Composite Mean	**3.81**	**Strongly Agree**

This implies that the students have the confidence and ability to process the video presentation for learning. The ability of the students to process video-based materials is significant as it may increase the level of processing important information and thus their motivation for learning. Thus, allowing them to better understand and rememberkey points of a lecture.

As revealed in the study by Mendoza, Caranto, & David (2015), the integration of video presentation is highly effective forstudents learning. The student access to the video can develop their context for their learning experience and be a source of motivation. Ergo, the ability of the students is a leverage for the students to better understand the lesson.

Internet discussions. Table8 reveals the students' assessmentof internet discussions. As reflected, the students strongly agree that they sometimes prefer to have more time to prepare responses to a question, be able to follow along with an online conversation while typing, and carry on a conversation with others using the Internet. On the other hand, students agree that they are comfortable having several discussions taking place in the same online chat even though they may not be participating in all of them. Overall, the internet discussions obtained a composite mean of 3.55, interpreted as strongly agree.

Table 7. Internet discussions

Indicators	WM	Description
1. I think that I would be able to carry on a conversation with others using the Internet (LMS, internet chat, instant messenger).	3.55	Strongly agree
2. I think that I would be comfortable having several discussions taking place in the same online chat even though I may not participate in all of them.	3.35	agree
3. I think that I would be able to follow along with an online conversation (e.g. Internet chat, instant messenger) while typing.	3.57	Strongly agree
4. I sometimes prefer to have more time to prepare responses to a question.	3.71	Strongly agree
Composite Mean	**3.55**	**Strongly Agree**

Moreno, Jelenchick & Koff, et al. (2012), showed in their research that when college students use the internet, they commonly engage in multiple online activities simultaneously. In other words, they tend to multitask when they are online. Similarly, Lepp, Barkley & Karpinsk, et al. (2019), concluded in their study that multitasking was greatest during online courses than in the face-to-face course. As emphasized, multitasking in online and face-to-face courses isa different phenomenon and therefore, may require different pedagogical methods to successfully minimize multitasking behaviors.

Factors for success. Table 8 reflects the relevant factors considered by the students for success in online learning. As shown, the students strongly agree that quick technical and administrative support, regular contact with the instructor, prior experiences with online technologies, the ability to immediately apply course materials, and frequent participation throughout the learning process are important factors for their success in doing online learning. Generally, all these factors obtained a composite mean rating of 4.21, described as strongly agree.

Table 8. Factors for success

Indicators	WM	Description
1. Regular contact with the instructor is important to my success in online coursework.	4.24	Strongly agree
2. Quick technical and administrative support is important to my success in online coursework.	4.27	Strongly agree
3. Frequent participation throughout the learning process is important to my success in online coursework.	4.10	Strongly agree
4. I feel that prior experiences with online technologies (e.g., email, internet chat, online reading) are important to my success with online courses.	4.24	Strongly agree
5. The ability to immediately apply course materials is important to my success with online courses.	4.20	Strongly agree
Composite Mean	**4.21**	**Strongly Agree**

This implies that the students need both external and internal support to succeed in online learning. External support pertains to the assistance given by their instructor as the facilitator of learning. Aliyyah, Rachmadtullah, & Samsudin, et al. (2020), revealed in their study that the success of online learning in Indonesia during the COVID-19 Pandemic was determined by the readiness of technology in line with the national humanist curriculum, support and collaboration from all stakeholders, including government, schools, teachers, parents, and the community. Furthermore, Martin, Budhrani, and Kumar, et al. (2019) showed that online instructors assume five different roles in online learning, namely Facilitator, Course Designer, Content Manager, Subject Matter Expert, and Mentor. These roles have a significant impact on the students' performance in online learning.

Meanwhile, the internal factors entail the skills and efforts exerted by the students for their online classes. The involvement and interest of the students in doing online tasks is one factor that determines their success. Garo (2011) highlighted the principle of active involvement in student learning, i.e. for learning to take place, the students must focus and engage directly with the activity or task where they may draw knowledge, concepts, principles, attitudes, skills, or habits. This suggests that the students must take an active role in the search for knowledge. Hence, having computer skills and active participation may be considered as attributing factors to their success in online learning.

Conclusions and Recommendations

This study finds that MAEd and MAM-AS graduate students of Sorsogon State University perceive the online learning modality positively as determined by both their access to technology and their assessment ofe-learning during COVID times.

All students have access todevices for online learning and most ofthem use the internet by mobile data that is capable only of fair download and upload speeds, ranging between 1 to 10 Mbps during stable connection. Students are equipped with digital skills in performing basic internet functions, processing information delivered via audio or video presentation, and actively participating in online discussions. Moreover, students are also confident about their ability to complete the course excellently, which reveals their high level of motivation. Both internal and external factors are also key to the success of graduate students during online classes. External factors mostly initiate from the side of the instructor, such as availability for consultation and quick technical assistance in online coursework, while internal factors are solely dependent on the involvement of students in online class activities.

This shows that online instruction may be suitable for MAEd and MAM-AS graduate students because they have access to technology and prior experience in using online tools for learning. Nonetheless, the obstacles faced by students for e-learning arise. First, althoughall graduate students have access to devices and the internet, some of them need to go elsewhere to rent computer units and connect to wifi concerns both time and money. Among students who have gadgets in the household, a good majority share them with other members who also engage in online activities. The particular preference of students for smartphones also queries the quality of learning experience of students during class discussions mainly because of the smartphone's small screen resolution, lower storage capacity, and weaker wireless connection capability compared to PC or laptops.Given this scenario, it is reasonable that students prefer the asynchronous method of online learning which allows a self-paced study of the learning materials.

On the other hand, the graduate students'assessment of e-learning shows a more positive scenario. Their prior experience in using online platforms for active discussion and learning is beneficial to help them adapt to the e-learning mode. It is worth noting that graduate students remain optimistic despite their unideallearning experience of using only smartphones with subpar internet speed. This suggests that the level of effectiveness of e-learning mode on graduate students is dependent primarily on the student's access to infrastructure.Therefore, whenever possible, the guidelines for e-learning should accommodate each student since they differ in actual learning obstacles. Instructors for graduate courses should also consider shifting to an asynchronous method for the class which entails creating more comprehensive learning materials.Meanwhile, the graduate students demonstrate a high level of motivation toward e-learning and show that this mode of instruction is suitable for them.

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