

Online Engagement and Learners' Academic Performance: A Correlational Study

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ABSTRACT

The COVID-19 pandemic has led the Department of Education to rethink and redirect the way education is delivered in the country. One of the innovations was engaging students in the online modality. This study investigated the online engagement of 32 grade VI learners in one of the schools in the Division of Cadiz City and correlated it to their academic performance. The respondents of the study were composed of 11 males and 21 females. The study utilized descriptive correlational research with the use of a questionnaire as an instrument to gather data. Due to restrictions on the face-to-face conduct of the study, the instrument was sent to the learners through their respective advisers. Results revealed that there was a great extent of online engagement among the learners ($M=3.99$, $SD= 0.71$). The academic performances of the learners showed a very satisfactory result ($M=88.31$, $SD=1.874$). It further showed that there was a significant relationship between online engagement and academic performance (p value= 0.056) of grade 6 learners. The results only show that online learning is a significant learning modality that would address the concern of learning continuity among learners.

KEYWORDS

Academic performance, Correlational study, Online engagement, Learners

INTRODUCTION

The introduction of technology to the educational arena has dramatically impacted the education landscape of the world (National Academy of Sciences, 2017). The usual face-to-face delivery of content becomes virtual where teachers and students meet in front of the monitor screens. This innovative crossover of education from the usual physical contact to virtual delivery might tend to affect the academic performance of the students.

The impact of technology on education specifically on students has long been studied since its conception. Research shows how the introduction of technology has improved the academic performance of students (Al-Hariri & Al-Hattami, 2017) while there were studies also which present results otherwise. In the Philippines, while there were schools that embraced technology as an important tool for instructional delivery some years ago (Kentnor, 2015). Apparently, the Department of Education (DepEd) in the Philippines has not transitioned itself to the platform. This sudden shift of instructional delivery was a noble action of the system to battle the atrocities brought about by circumstances like COVID-19. However, just like any other innovations, the paradigm shift of education might have caused changes in the behavior of the students towards learning may it be negative or positive. It is for this premise that the researcher deems the necessity to conduct this study. Since this type of instructional delivery is novice for the teachers and the students, the researcher is interested to know if such innovation has significant effects on the academic performance of the students.

Literature Review

The advent of technology and the introduction of the internet and the World Wide Web gave rise to the Education 4.0 revolution. One of its advantages is the introduction of online education, which provides attractive opportunities for learning in a new manner. Online learning allows learners to manage their own time, learn whenever they want, and whatever content they find relevant to them. The wide array of advancements in technology aims to improve the interaction between students and teachers, and even parents and other knowledge contributors worldwide. Moreover, the feeling of security and confidence in sharing the students' ideas provides students more opportunities to open up and give out their opinions without being ridiculed, which is sometimes unavoidable in a face-to-face learning environment. As a result, at times, students become conservative and hesitant to express what they want to share. Bell and Fedeman (2013) emphasized that upgrading technology and software has allowed teachers, students, and university administrators to collect data, feedback, and evaluation regarding their online experiences. In online education, learning is asynchronous synchronous, or a combination of both. Asynchronous learning is teaching and learning that do not happen simultaneously (Moore & Kearsley, 2011) while synchronous learning refers to teaching and learning that happen simultaneously, both of which are conducted through technologies such as the Internet.

In an academic setting, computer-assisted instruction is changing the pedagogical landscape as many students seek online education. DepEd is rapidly implementing online classes to meet student needs nationwide. There is an increase in the number of online courses given by universities have been quite dramatic over the last couple of years (Lundberg et al., 2008). In 2010, the Sloan Consortium found a 17% increase in online students from the years before, beating the 12% increase from the previous year (Keramidas, 2012). Contrary to popular belief, online education is not a new phenomenon. Technological advancement indubitably helped improve the speed and accessibility of distance learning courses; now, students worldwide can attend classes from the comfort of their own homes. With technological advancement, learners now want quality programs they can access from anywhere and at any time. Because of these demands, online education has become a viable, alluring option for business professionals, stay-at-home-parents, and other similar populations. In addition to flexibility and access, multiple other face-value benefits, including program choice and time efficiency, have increased the attractiveness of distance learning (Wladis et al., 2015). Prospective students want to receive a quality education without sacrificing work time, family time, and travel expenses. Instead of having to be at a specific location at a specific time, online education students have the freedom to



communicate with instructors, address classmates, study materials, and complete assignments from any Internet-accessible point (Richardson & Swan, 2003). This type of flexibility grants students much-needed mobility and, in turn, helps make the educational process more enticing. According to Lundberg et al. (2008), the student may prefer to take an online course, as online courses offer more flexible study hours.

Studies on the relationship between study time and performance are limited; however, it is often assumed that online students will use any surplus time to improve grades (Bigelow, 2009). It is crucial to mention the link between flexibility and student performance as grades are the sole performance indicator of this research. Online education also offers more program choices. With traditional classroom study, students are forced to take courses only at universities within feasible driving distance or move. On the other hand, web-based instruction grants students electronic access to multiple universities and course offerings (Salcedo, 2010). Therefore, students who were once limited to a few colleges within their immediate area can now access several colleges worldwide from a single, convenient location. With online teaching, students who usually do not participate in class may voice their opinions and concerns. As they are not in a classroom setting, quieter students may feel more comfortable partaking in class dialogue without being recognized or judged. Online teaching may increase average class scores (Driscoll et al., 2012). On the other hand, the other modality, classroom teaching, is a well-established instructional medium in which teaching style and structure have been refined over several centuries. Face-to-face instruction has numerous benefits not found in its online counterpart (Xu & Jaggars, 2016). Perhaps most importantly, classroom instruction is highly dynamic. Traditional classroom teaching provides real-time face-to-face instruction and sparks innovative questions. It also allows for immediate teacher response and more flexible content delivery. Online instruction reduces the learning process because students limit their questions (Salcedo, 2010).

Over time, however, online teaching will probably improve, enhancing classroom dynamics and bringing students face-to-face with their peers/instructors. However, for now, face-to-face instruction provides dynamic learning attributes not found in Web-based teaching (Kemp & Grieve, 2014). The traditional classroom learning is a well-established modality. Some students are opposed to change and view online instruction negatively. These students may be technophobes, more comfortable sitting in a classroom taking notes than sitting at a computer absorbing data. Other students may value face-to-face interaction, pre and post-class discussions, cooperative learning, and organic student-teacher bonding (Roval & Jordan, 2004). Many academic and professional organizations do not consider online degrees on par with campus-based degrees (Columbaro & Monaghan, 2009). Often, prospective hiring bodies think Web-based education is a watered-down, more straightforward means of attaining a degree, often citing poor curriculums, unsupervised exams, and lenient homework assignments as detriments to the learning process. Finally, research shows online students are more likely to quit class if they do not like the instructor, the format, or the feedback. Because they work independently, relying almost wholly upon self-motivation and self-direction, online learners may be more inclined to withdraw from the class if they do not get immediate results. Several studies have already been conducted regarding the implementation of online education and its effect on the student's academic performance. These studies yield different results because these studies were conducted in different countries with different contexts and cultures. For instance, in the study of Paul and Jefferson (2019), when they made a comparative analysis of student performance in an online vs. face-to-face environmental science course from 2009 to 2016, they found that there was no significant difference in the student's performance utilizing the two modes of learning. Similarly, the study of Kemp and Grieve (2014) found that both online and face-to-face learning for psychology students led to similar academic performance. The same finding was shared by the study conducted by Mann and Henneberry (2014), which showed no significant difference in the academic performance of students who were taught using online and face-to-face modalities. These findings may only show that online education is not far from conducting in the lesson in a traditional classroom that it was transferred to a new platform. Conducting a class online and face-to-face does not quite make a difference. Loeb (2020), showed that the use of virtual courses among K-12 students had proliferated in recent years. However, most online courses, particularly those serving K-12 students, have a format much more similar to in-person courses. The teacher helps to run virtual

discussions among the students, assigns homework, and follows up with individual students. Sometimes these courses are synchronous (teachers and students all meet simultaneously), and sometimes they are asynchronous (non-concurrent). In both cases, the teacher is supposed to provide opportunities for students to engage thoughtfully with the subject matter. Students, in most cases, are required to interact with each other virtually. However, when she compared online and in-person classes, online classes are not as practical as in-person classes for most students. Only a little research has assessed the effects of online lessons for elementary and high school students. Even less has used the "gold standard" method of comparing students assigned randomly to online or in-person courses.

It is not surprising that in-person courses are, on average, more effective. Being in person with teachers and other students creates social pressures and benefits that can help motivate students to engage. Some students do as well in online courses as in in-person courses; some may do better, but, on average, students do worse in the online setting, which is particularly true for students with weaker academic backgrounds. Students who struggle in in-person classes are likely to struggle even more online. While the research on virtual schools in K-12 education does not address these differences directly, a study of college students that he worked on with Stanford colleagues found very little difference in learning for high-performing students in online and in-person settings. On the other hand, lower-performing students performed meaningfully worse in online courses than in in-person courses. On the contrary, numerous studies have illustrated the strong correlation between social interaction, sense of community, and their roles in achieving success in online learning (Brindley et al., 2009; Bryant & Bates, 2015; Cox & Cox, 2008; Ke, 2010; Sadera, Robertson, Song, & Midon, 2009; Sher, 2009; Whipp & Lorentz, 2009; Yang, Yu, Chen, & Huang, 2014). As an impression of online education, Blackmon and Major (2012) found out that one's ability and capacity play a vital role in how one succeeds in an online class. The student's capacity was found in their qualitative research synthesis of student experiences in online courses that student factors such as the ability to balance between educational access, family life, and time had specific effects on their efficacy in online learning. The same acceptance of personal responsibility and learning autonomy play vital roles in succeeding in an online class. They also mentioned that instructors are also part of the process where factors like accessibility and opportunities to connect with peers are also determining factors in students' success in online education.

Problem Statement

The purpose of the study is to find out the relation of learners academic performance and online engagement in the year 2020-2021.

1. What is the profile of the learners in terms of the following variables?
 - 1.1. sex
 - 1.2. parent's monthly income
 - 1.3. parent's educational attainment
2. What is the level of online engagement of the learners when taken as a whole and when grouped according to the aforementioned variables?
3. What is the academic performance of the learners when taken as a whole and when grouped according to the aforementioned variables?
4. Is there a significant relationship between online engagement and academic performance of the learners?

Hypothesis

There is no significant relationship between the online engagement and academic performance of the learners.



METHODS

Research Design

Quantitative research using descriptive and correlational approaches was utilized in the study. This involves the collection of data so that information can be obtained using statistical treatment (Apuke, 2017). Whilst, correlation as pointed out by Leedy and Omrod (2010) deals with the creation of a relationship among two or more variables. The variables in this study are the level of online engagement and the academic performance of the students. The researcher used the responses of the respondents to determine their level of competence and engagement in online education. This level was retrieved using a survey questionnaire. The survey questionnaire was used to measure the given population's characteristics through the utilization of statistical methods. On the other hand, as a correlational study, the researcher will be utilizing the responses of the respondents as a correlation variable which will be correlated with their academic performance. The variables included were not manipulated but were only identified and studied as they occurred in their natural setting.

Respondents

The respondents of the study are the 32 grade VI learners who are officially enrolled for the Academic Year 2020-2021 in the central schools of the Division of Cadiz City that employ online learning as its instructional delivery.

Research Instrument

A researcher-developed 20-item survey questionnaire for the level of online engagement served as the primary instrument of the study. This is divided into two parts; the first part presents the profile of the respondents such as sex, parent's monthly income, and parent's educational attainment. The second part is the survey questionnaire that measures the online engagement of the learners.

Validity and Reliability

To ensure validity, the instruments were submitted to 3 experts in the field of education by using Lawshe's content validity. On the other hand, the reliability was established using Cronbach's Alpha which measures its internal consistency.

Data Collection

At the onset of the study, the researcher sought the approval of the superintendent of the Division of Cadiz City and the selected school for the conduct of the study. The researcher discussed the nature of the research, its purpose, and its significance in the delivery of quality education. Right after the approval, the researcher convened the parents and asked for their permission to make their children become respondents to the study. The researcher distributed the instrument to the respondents. To minimize the intervention of other confounding variables, the researcher personally distributed and collected the research survey questionnaire. The collected data was then subjected to statistical treatment guided by the research questions.

Data Analysis

The following statistical analysis was employed to answer the research problems: For problem 1, frequency distribution was utilized. For problems 2 and 3, mean and standard deviation was employed. For problem 4, Pearson's product-moment of correlation was used to establish the correlation between the online engagements of students to their academic performance.

RESULTS AND DISCUSSION

The respondents in this study were profiled based on the percentage distribution of their essential characteristics such as sex, parents' educational attainment, and parents' monthly income. This profile is presented in Table 1.

Table 1. *Distribution of respondents by demographic characteristics*

Demographics Characteristics		Frequency	Percentage
Sex	Male	11	34.4%
	Female	21	65.6%
Parents' Educational Attainment	Elementary Graduate	1	3.1%
	High School Level	2	6.3%
	High School Graduate	4	12.5%
	College Level	16	50%
	College Graduate	8	25%
	Master's Graduate	1	3.1%
Parents Monthly Income	Less than ₱11,690.00	17	53.1%
	₱11,690.00 - ₱23,381.00	13	40.6%
	₱23,381.00 - ₱46,761.00	1	3.1%
	₱81,832.00 - ₱140,284.00	1	3.1%

Table 1 shows the demographic profile of 32 elementary learners who participated in this study. The results show that most respondents (65.6%) are female, while 11 respondents (34.4%) are male. In terms of parents' educational attainment, half of the respondents' parents are college-level, 8 (25%) respondents' parents graduated college, and 4 (12.5%) are high school graduates. Regarding parents' monthly income, the majority (53.1%) of respondents' parents have a monthly income of less than ₱11,690.00. Another concern of the study was to determine the extent of the learners' online engagement. This extent is presented in Table 2.

Table 2. *Overall extent of online engagement of grade VI learners*

Online Engagement	Std. Dev.	Interpretation
Mean Score		
3.99	0.71	Great Extent

The table above presents the overall respondents' extent of online engagement. As a whole, the Grade VI learners have a great extent ($M=3.99$, $SD=0.71$) of online engagement.

Table 3. *Extent of online engagement of grade VI learners when the different online engagement activities are considered*

	Online Engagement Mean Score	Std. Dev.	Interpretation
Attend the online class.	4.22	0.71	Very Great Extent
Listen attentively to the lesson online.	4.13	0.71	Very Great Extent
Participates in the online discussion.	4.09	0.82	Very Great Extent
Asks questions when don't understand the lesson.	3.88	0.87	Very Great Extent
Participate in breakout rooms or small group discussion online.	4.00	0.92	Very Great Extent
Consult the teacher online to better understand the lesson.	3.91	0.89	Very Great Extent
Perform all the online activities.	3.94	0.91	Very Great Extent
Take note of what is being discussed.	3.84	0.92	Very Great Extent
Review the recorded lessons/online materials after class.	3.72	0.92	Very Great Extent
Desire to learn the materials by searching related lessons online.	4.13	0.91	Very Great Extent
Submit assigned activities/home tasks in the online platform on time.	4.06	0.88	Very Great Extent
Collaborate with others in doing tasks online.	3.94	0.88	Very Great Extent
Use online applications in making outputs.	4.13	0.87	Very Great Extent
Stay until the lesson ends.	4.06	0.88	Very Great Extent
Utilize different online platforms in submitting tasks.	3.94	0.84	Very Great Extent

Table 2.1 shows the extent of online engagement of the Grade 6 learners. It is imperative to note that the learners recorded a great extent in all the components of attending the online class as having the highest mean ($M=4.22$, $SD=0.71$) and reviewing the recorded lesson or online materials after class ($M=3.72$, $SD=0.92$). Similarly, parents' observations on the online engagement of their children showed a very great extent with attending online classes having the highest mean ($M=4.25$, $SD=0.72$) and consulting the teacher having the lowest mean ($M=3.72$, $SD=0.85$). On the other hand, when the perspective of the teachers was considered, a great extent to very great extent was observed with attending online classes having the highest mean ($M=3.68$, $SD=0.93$) and utilizing different platforms in submitting tasks having the lowest mean ($M=3.33$, $SD=0.91$).

Table 4. *Extent of online engagement of grade VI learners when grouped according to demographics*

Demographics Characteristics		Online Engagement Mean Score	Std. Dev.	Interpretation
Sex	Male	3.86	0.63	Great Extent
	Female	4.1	0.75	Great Extent
Parents' Educational Attainment	Elementary Graduate	3.47	0	Great Extent
	High School Level	3.5	0.42	Great Extent
	High School Graduate	4.2	0.86	Great Extent
	College Level	3.74	0.63	Great Extent
	College Graduate	4.48	0.6	Great Extent
	Master's Graduate	5	0	Very Great Extent
	Parents' Monthly Income	Less than ₱11,690.00	3.98	0.66
₱11,690.00 - ₱23,381.00		3.86	0.74	Great Extent
₱23,381.00 - ₱46,761.00		5	0	Very Great Extent
₱81,832.00 - ₱140,284.00		5	0	Very Great Extent

The table above presents students' extent of online engagement when grouped according to sex, parents' educational attainment, and parents' monthly income. When grouped according to sex, both male and female respondents have a great extent of online engagement. However, female respondents have a higher mean score ($M=4.1$, $SD=0.75$) than the male respondents ($M=3.86$, $SD=0.63$). When grouped according to parents' educational attainment, respondents whose parents are Master's graduates have the highest mean score ($M=5.0$, $SD=0$) across subgroups. It is followed by respondents whose parents are college graduates. Across the subgroups, respondents whose parents are elementary graduates have the lowest mean score ($M=3.47$, $SD=0$). When grouped according to parents' monthly income, both the ₱23,381.00 - ₱46,761.00 and the ₱81,832.00 - ₱140,284.00 have a very great extent of online engagement.

Results show that contributing to the active engagement of students in online activities is the educational attainment of the parents. Having a higher educational background might have given them higher chances of assisting their children in accessing and utilizing the technology, which paves the way for them to have higher engagements. It can also be implied that students with parents who achieved higher degrees in education have more significant engagements than those with lower levels. From there, it can be deduced that these parents might have provided more assistance to their

children's engagement, or knowing that their parents have a higher degree provided them more confidence in their online engagement. When taken as a whole, the result shows that the students have a high degree of online engagement. The result might be because the lesson delivery had transitioned from face-to-face to blended learning. A central school located in the urban might also contribute because they have access to technology and a more robust internet connection. Similarly, the study conducted by Driscoll et al. (2012) shared the same result. He posits that in online teaching, students who usually do not participate may now have a voice to air their opinions, and concerns partaking in the dialogue without being recognized or judged might play a part in their increased engagement. The result somehow opposes the study of Xu and Jaggars (2016). They mentioned that face-to-face instruction has numerous benefits not found in online counterparts, such as dynamism. Considering the type of students who love to be on the Internet, online engagement might have already marked its path for recognition and utilization. Another concern of the study was to determine the level of the learners' academic performance.

Table 5. Overall academic performance of grade VI learners

Academic Performance Mean Score	Std. Dev.	Interpretation
88.31	1.874	Very Satisfactory

The table above presents the overall respondents' academic performance. As a whole, the elementary learners have a very satisfactory (M=88.31, SD=1.87) academic performance.

Table 6. Academic performance of grade VI learners when grouped according to demographics

Demographics Characteristics	Academic Performance Mean Score	Std. Dev.	Interpretation	
Sex	Male	87.09	1.04	Very Satisfactory
	Female	88.95	1.91	Very Satisfactory
Parents' Educational Attainment	Elementary Graduate	86	0	Very Satisfactory
	High School Level	88	0.71	Very Satisfactory
	High School Graduate	91	2.8	Outstanding
	College Level	92	2.09	Outstanding
	College Graduate	91	1.55	Outstanding
	Master's Graduate	90	0	Outstanding
Parents' Monthly Income	Less than ₱11,690.00	88.47	1.84	Very Satisfactory
	₱11,690.00 - ₱23,381.00	87.77	1.83	Very Satisfactory
	₱23,381.00 -	91	0	Outstanding

Demographics Characteristics	Academic Performance Mean Score	Std. Dev.	Interpretation
₱46,761.00			
₱81,832.00 - ₱140,284.00	90	0	Outstanding

The table above presents students' academic performance when grouped according to sex, parents' educational attainment, and parents' monthly income. When grouped according to sex, both male and female respondents have very satisfactory academic performance. Female respondents, however, have a higher mean score (M=88.95, SD 1.91) than the male respondents (M=87.09, SD=1.04). When grouped according to parents' educational attainment, respondents whose parents are college-level have the highest mean score (M=92, SD=2.09) across subgroups. It is followed by the two subgroups, high school graduates and college graduates. Across the subgroups, respondents whose parents are elementary graduates have the lowest academic performance mean score (M=86, SD=0). When grouped according to parents' monthly income, the ₱23,381.00 - ₱46,761.00 subgroup has the highest academic performance (M=91, SD=0) followed by the ₱81,832.00 - ₱140,284.00 group (M=90, SD=0). Both subgroups have an outstanding rating. When grouped according to the different assigned variables, students' academic performances showed a very satisfactory to outstanding performance. It is a good indicator that the online engagement of students has a positive effect on the students.

Table 6. Significant Relationship between Online Engagement and Academic Performance

	Chi-square Value	p-value	Interpretation
Online Engagement	7.577	0.056*	Reject null hypothesis
Academic Performance			

* Significant at $\alpha=0.10$

Table 4 shows sufficient evidence at $\alpha=0.10$ to reject the null hypothesis that there is no significant relationship between the extent of learners' online engagement and their level of academic performance. This result tells us that these variables are not independent of each other and that there is a statistically significant relationship between online engagement and academic performance. The result shows that online engagement and academic performance are significantly related, with one affecting the other. The result shows a good indication in terms of the willingness of students to learn online as evidenced by their satisfactory to outstanding performance.

Moreover, studies conducted by Brindley et al. (2009); Bryant & Bates(2015); Cox & Cox (2008); Ke (2010); Sadera, Robertson, Song, & Midon (2009); Sher (2009); Whipp & Lorentz, (2009); Yang, Yu, Chen, &Huang (2014) yield results illustrating the strong correlation between the social interactions, sense of community, and their roles in achieving success in online learning. However, while the students' academic performance shows a promising result, stating that online engagement has a significant difference from that of face-to-face could not be established yet. The results of the studies conducted by Kemp and Grieve (2014), Loeb (2020), and Mann and Henneberry (2014) all showed that there is no significant difference in the academic performance of the students who were taught online and face-to-face. The high academic performance of the students might be



because the novelty of the implementation of the online class created a positive attitude towards the academics of the learners.

CONCLUSION/IMPLICATION OF THE STUDY

Based on the result of the study, it can be concluded that online engagement has a positive effect on students' academic performance. Results show that active online engagement of students ranging from focusing and participating in the online discussion and submission of tests and requirements online enabled the students to present very satisfactory performances. While the research is limited to the students' academic performance and its relation to their academic performance, it can already be concluded that somehow online engagement encouraged a positive attitude of students toward learning as evidenced by their academic grades. The shift from traditional face-to-face classes to online has somehow paved the way for a more engaging and refreshing way of conducting classes. Its initial implementation might create a sense of interest students in to discover how online classes are done and ignite their motivation to learn in new ways. The study only showed that online classes, when used appropriately, would create affirmative results for students' academic performances.

RECOMMENDATION

The study showed how we could take advantage of the benefits of the new way of conducting classes; however, being implemented as a new modality and with the limitations, this study was conducted, the following are at this moment recommended:

1. As online engagement showed high academic performance from the students, it is advised that schools may consider improving their technological capacity by providing more opportunities for online learning not only in central schools but in most public schools.
2. It is also advised that alongside the technological improvement is the improvement and boosting of internet connection among schools so that students will enjoy the benefits of learning online.
3. Since the number of respondents is limited and only a few schools are conducting lessons online, it is suggested that a similar study be conducted in other localities to support the findings further.
4. It is also recommended that an experimental study be conducted to identify if there is a significant difference between online and face-to-face classes.

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