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ONLINE LEARNING COMPETENCE OF THE STUDENTS DURING COVID-19 PANDEMIC

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MAZEDAN EDU. REVIEWS AND TEACHING METHODS

e-ISSN:

Article id-MERTM0202005

Vol.-2, Issue-2

Received: 20 Apr 2022

Revised: 21 Jun 2022

Accepted: 24 Jun 2022

Citation: Buendia, K. M., Cayabas, M. D., & Oxinio, B. B. (2022). Online Learning Competence of the Students during Covid-19 Pandemic. *Mazedan Educational Reviews and Teaching Methods*, 2(2), 26-30.

Abstract

This study mainly determined the correlation between online learning competence and the academic performance of the students during COVID-19 pandemic. It specifically endeavored to determine the level of online learning competence, the level of the academic performance of the students.

This study used the descriptive – correlation research design used to analyze the gathered data through a modified survey questionnaire to respondents obtained taken through stratified sampling by ratio and proportion to 353 students. Besides, it conducted the Reliability Test for the analysis of gathered data, it utilized mean and weighted mean. It used Pearson Product Moment Correlation and Multiple Linear Regression to test the stated hypothesis. The students were competent on the online learning competence and had outstanding academic performance. The online learning competence and the academic performance of the students were significantly related. The academic performance of the students was highly influenced by the computer literacy skill and time management. It is concluded that the online learning competence contributed to the academic performance of the students.

Keywords: Online Learning, Academic Performance, Computer Literacy, Technical, Competence.

1. INTRODUCTION

E-learning is another word for online learning. This sort of distant learning is called online learning. It is a catch-all word for any learning that takes place through the internet rather than in a traditional classroom (Blomeyer, 2012). The COVID-19 has yielded in all schools to change its learning system. Globally, over 1.2 billion students choose to learn online, which made education system change to adapt to the present phenomena. Teaching is undertaken remotely, and digital platforms are being utilized (Adonis, 2020). The COVID-19 has had a significant impact on the educational system and student learning (Li and Lalani, 2020). Online learning, interestingly, has been demonstrated to improve information retention in less time. Most of the public schools in the Philippines are now using blended learning. Elementary and secondary education systems are using self-learning modules. The education continued mostly via online learning. Parents, students, and teachers are to obey the new normal system of education in the pursuit of having a better future amidst the pandemic (Vermani, 2017).

Despite the efforts exerted by the Department of Education (DepEd) to ensure the continuity of learning amidst the COVID-19 outbreak, students from both public and private institutions were not spared from the instantaneous problems and repercussions of adapting with the blended online learning. Some problems include disruptions of network and connectivity, unavailability of gadgets used for online classes, and the location of their homes (Simbulan, 2020).

As a result, some students admitted that they are not yet ready to embark on online learning since it requires several considerations such as familiarizing online learning activities and studying online needs to be adept with the system. With these difficulties and considerations in blended online learning, the academic performance of students and their interest to enhance their e-learning competency were affected (Martha, Junus, Santoso, and Suhartanto, 2021). Not many studies conducted on the online learning competence of the students during COVID-19 pandemic since more studies focus on traditional learning competence. This study has not yet been explored much focused on online learning. It is an evident that it is seldom to see research which is more focused on online learning practices (Adonis, 2020). It is in the premise above that the researcher was motivated and opted to know the e-learning competence and how it affects the academic performance of the students of Kidapawan City National High School.

2. STATEMENT OF THE PROBLEM

The goal of this study was to measure the students' online learning competency and academic achievement throughout the COVID-19 pandemic. It aimed to solve the following research questions.

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1. What is the level of online learning competence of the students in terms of adaptability, technical skill, computer skill, and time management?
2. What is the level of the academic performance of the students, in terms of their Grade Point Average (GPA)?
3. Is there a significant relationship between the online learning competence and the academic performance of the students?
4. Does the online learning competence significantly influence the academic performance of the students?

3. THEORETICAL FRAMEWORK

Piaget (1896) cognitive learning theory, cognitive load theory, constructivism, and e-learning theory are all used in this study. E-learning theory is founded on cognitive science principles that show how the usage and design of educational technology may help students learn more effectively (Bransford, Brown, & Cocking, 2000).

Based on Cognitive Load Theory, this theory was derived from a set of ideas (Kerka, 2014). Jackson (2019) describes Cognitive Load Theory as the level of mental effort required for working memory during a task, which may be divided into three categories: germane, intrinsic, and extraneous effort.

Working memory capacity is restricted, and overload occurs when students are given too much knowledge, striking a balance between these three types of learning is crucial.

Johnson (2005) highlighted the importance of online learning settings, teacher-student interaction, and the information given. Teachers and students can use both asynchronous and synchronous techniques to connect within these communities. The online learning atmosphere creates a collaborative community where students may form relationships with their classmates while also studying. Drills, simulations, and tutorials are just a few of the tools that may aid in the facilitation of these settings.

As a learning theory, Rosenberg (2006) references George Siemens' connectivism. It examines the shortcomings of modern learning theories such as Behaviorism, Cognitivism, and Constructivism, as well as how they relate to technology. Siemens' theory is concerned with the impact of technology on society and how learning and educational pedagogy are evolving. Its core premise is that learning is no longer individualistic and is increasingly focused on participation in practice groups.

According to Watson (2010), connectivism is about creating connections between people and technology. E-learning theory is included in Connectivism's grand theory because it emphasizes how technology can be used and expanded to provide new learning possibilities and facilitate effective learning.

4. CONCEPTUAL FRAMEWORK

This study hypothesized that students' online learning competency was linked to their academic achievement. The following indicators were used to evaluate online learning competence: flexibility, technical skill, computer skill, and time management. Meanwhile, this research looked at the students' academic achievement in terms of grade point average across the first and second grading periods.

Heager (2010) asserted that online learning competency is rapidly becoming a viable learning approach as proven by the field of teaching for learning, skills training, and development. Nonetheless, many academic institutions are making substantial progress toward using more interactive online learning methodologies to improve overall academic performance of the students.

Today, online learning competency is highlighted as a powerful medium for teaching and learning. Knowledge has been more effectively accessible to the masses of students because of the extensive use of the internet. The use of internet promotes effective engagement of learners, enhancement of learning, and ease of use of teaching methods and materials to respond to students' interests and needs (Qaznavi,2010)

The arrow signified that the independent variable affected and influenced the dependent variable (Loyens, Magda, & Rikers, 2008).

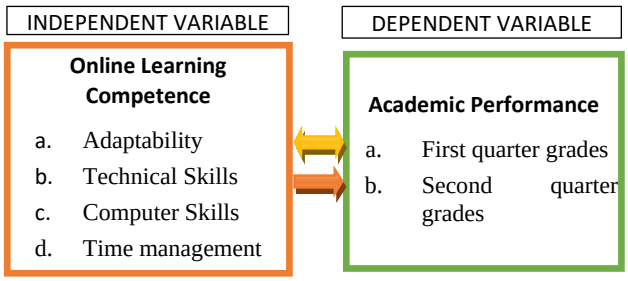

Figure 1 Conceptual framework of the study entitled: "Online Learning Competence of the Students during Covid-19 Pandemic"

5. METHODS

Research Design

To characterize the variables and the natural correlations that exist between and among them, this research utilized a descriptive-correlation research design (Routledge, 2013). To determine the degree of online learning ability and academic achievement of the students, the researcher employed the descriptive approach (Boakye, 2015). I used the correlational approach to investigate the link and impact of students' online learning competency on their academic achievement (Loyens, Magda, & Rikers, 2008).

Data Gathering Methods

The researcher requested permission to conduct the study at Kidapawan City National High School in a letter to the Superintendent of Schools' office. I also formulated a parallel letter addressed to the school principal requesting to conduct the study in the school. I used the granted permission to coordinate with the students to facilitate the conduct of the survey. I immediately proceeded in administering the survey questionnaire. I gave enough time for the respondents to think about and analyze every item in the questionnaire. Further, the researcher secured and recorded the grade point average of the students in all learning areas used in this study. After I gathered the needed data, the researcher tallied and tabulated the same for statistical analysis and interpretation.

Participants of The Study

Three hundred fifty-three (353) students served as data-source through stratified sampling by ratio and proportion from Grades 9 and 10 in Kidapawan City National High School. These students were having online class. These students were recommended since they were using Google Meet as platform in their online class.

Table 1 Population and sample size of students of their respective grades from Kidapawan City National High School, Kidapawan City, SY 2021-2022

KCNHS	Population Size N	Sample Size n
Grade 9	1448	172
Grade 10	1528	181
Total	2976	353

Statistical Tools and Data Analysis

Considering the nature of the study, which was evaluative, the study used quantitative approach in the analysis of the data (Creswell, 1994). The author tallied the data through a coding sheet. She then processed, analyzed, and interpreted the same, using mean, Pearson Product Moment Correlation Coefficient, and Linear Regression, with the assistance of the statistician.

The researcher used mean and weighted mean (Garambas, 2011) to describe the levels of the online learning competence and of the academic performance of the students. She also employed Pearson Product Moment Correlation Coefficient (Garambas, 2011) to determine the relationship between the level of the online learning competence and the academic performance of the students.

Lastly, the researcher utilized Multiple Linear Regression Analysis (Garambas, 2011) to determine the significant influence of the independent to the dependent variables of the study.

Ethical Considerations

Before the conduct of the study, the researcher wrote a letter of permission addressed to the Schools Division Superintendent of Kidapawan City Division. After which, the researcher addressed a permission letter to the principal. The same letter of permission was given to the advisers for data collection purposes. On the other hand, in the quantitative gathering of data, the researcher also asked consent to the respondents containing the participants' full knowledge of what is involved, the harm and risk of the participants and the issue of confidentiality on their responses.

6. RESULTS AND FINDINGS

Quantitative Strand

This section dealt with the result of the quantitative data gathered through the survey questionnaires.

Summary of Results and Discussions

A. Research Problem No. 1

To sum up the level of online learning competence of the students in terms of the 4 (five) indicators, technical skill obtained the highest weighted mean with the value of 3.86, followed by computer skill, time management, and adaptability. All indicators were described as competent. The general weighted mean for the level of online learning competence is 4 interpreted as competent practiced by the students.

Table 2 Level of online learning competence in terms of adaptability, technical skills, computer skills, and time management

Online Learning Competence	Mean	Description
Adaptability	3.56	Competent
Technical Skill	3.86	Competent
Computer Skill	3.69	Competent
Time Management	3.67	competent

Levels	*Descriptor*
4.50-5.00	*Very Competent*
3.50 – 4.49	*Competent*
2.50 – 3.49	*Moderately Competent*
1.50 – 2.49	*Slightly Competent*
1.00 – 1.49	*Very Slightly Competent*

Research Problem No. 2

To summarize the level of academic performance of the students in terms of grade point average with a weighted mean of 91.41%, described as outstanding. Results reveal that the mean percentage of the students during the first quarter is 90.60 and second quarter is 92.22 described as outstanding, respectively. The findings indicate that the students are outstanding in their academic performance. The results imply that the students have mastered the competencies which means that their skills are fully developed even using online learning environment.

Table 3 Academic performance of the students during the first quarter and second quarter

Quarter	Mean	Description
First Quarter	90.60	Outstanding
Second Quarter	92.22	Outstanding

Grading Scale	*Descriptor*
90 - 100	*Outstanding*
85 - 89	*Very Satisfactory*
80 - 84	*Satisfactory*
75 - 79	*Fairly Satisfactory*
Below 75	*Did not meet expectation*

Statement of the Problem No. 3.

The result means that online learning competence shows association with academic performance of the students. The presented probability values which is lesser than the set 1% level of significance means that the stated hypothesis is rejected.

Table 4 Correlation matrix showing the relationship of the online learning competence and the students' academic performance

Online Learning Competence		Academic Performance
Adaptability	Pearson r	0.109*
	Probability	0.020
Technical Skill	Pearson r	0.214**
	Probability	0.000
Computer Skill	Pearson r	0.276**
	Probability	0.000
Time Management	Pearson r	0.254**
	Probability	0.000
* Correlation is significant at 1% level (2-tailed)		

On the other hand, the correlation matrix shows that the online learning competence has a significant relationship with all parameters measured in the academic performance of the students.

This implies that once the online learning competency skills are fully developed the academic performance of the students will also be enhanced. This means that the students enhanced their competencies. Moreover, the higher is the level of online learning competency the higher is the academic performance of the students.

Statement of the Problem No. 4

The table shows that the combined effect of online learning competence significantly influenced the academic performance of the students (F – value = 10.542, Probability = 0.000**). The stated hypothesis was rejected because the probability value is considerably less than the 0.050 criterion of significance.

Among the online learning competence involved in the study, computer skill and time management appeared to be vital predictors of the academic performance. It implies that computer skill and time management affected the academic performance of the students which means when computer skill and time management in online classes are fully developed as these contribute enhancement of academic performance of the students.

Table 5 Influence of the online learning competence on the academic performance of the students

Online Learning Competence	Coef. β	Std. Error	t- value	Probability
(Constant)	87.125	0.932	93.527	0.000
Adaptability	-0.326	0.262	-1.247	0.213
Technical Skill	0.111	0.267	0.417	0.677
Computer Skill	0.735	0.220	3.339	0.001**
Time management	0.691	0.207	3.333	0.001**

*R^2 = 0.108; ** = highly significant; Probability = 0.000**; F – Value = 10.542*

7. CONCLUSIONS

Based on the results of the study, it was drawn that the students are competent when it comes to their level of online learning competence. As shown in the results of the four indicators namely, adaptability, technical skill, computer skill, and time management, it can be implied that students can manipulate digital tools and indulge themselves on the technicalities of it independently which enables them to balance their time wisely and effortlessly use computers with total understanding in the underlying principles of it.

Meanwhile, students' level of academic performance is outstanding based on their General Point Average (GPA). The finding was derived from the students' first and second quarter grades, which the researcher got from their individual class advisors. Further, the result showed that computer skill and time management are the indicators which highly influenced the outstanding academic performance of the students.

Lastly, it was inferred that online learning competence and students' academic performance are related. This was supported by Mothibi (2015), who stated that owing to the widespread use of web systems that may aid in better teaching and learning, online learning has become an effective way to successful learning in academic settings.

8. RECOMMENDATIONS

Based on the conclusion of the study, the researcher offered the following recommendations of the study.

5. Principals should allow the students to use school-owned computers during online classes. This will help a lot to those students who don't have computer to more improve their computer skill.
6. Teachers should enhance the adaptability skill of the students. They should provide more challenging and effective online materials, activities, or assignments. Having these kinds of online activities capacitate students to more engage in online classes.
7. Students should improve the adaptability skill particularly on online learning experiences without the help of the teachers. When online learning is fully experienced, students become more motivated to enhance their skills.
8. Future Researchers are encouraged to conduct similar study in private schools including other variables and indicators to validate the results of the present study.
9. Figure 3 presents the Modified Framework capturing the dimension of the variables that have significant relationship and influence on the online learning competence and the academic performance of the students (Loyens, Magda, & Rikers, 2008). As shown in the diagram, online learning competence had a significant relationship with the academic performance. Tan (2020) said that the delivery online classes correlate with academic performance of the students. Meanwhile, computer skill and time management had significant influence on the academic performance of the students. Moreover Cohn, Balch, and Bradley (2004) reiterated that the grade point average (GPA) is important in determining a student's overall academic achievements and prospects. Furthermore, the grade point average (GPA) is an important factor in determining a student's overall academic achievements and prospects. He observed that students' capacity to study online had an impact on their academic progress. He discovered that time management and computer skills have a considerable impact on pupils' academic success.
10. The researcher proposed an intervention plan to enhance the competence of the students on online learning during COVID-19 pandemic. This is designed for teachers and students on how to facilitate learning for the students using online platform. In this time pandemic where distant learning is required, they should adopt online learning practices where the students and teachers can benefit from it and even quality education still be implemented.

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