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## Analysis of Learning and Academic Performance of Education Students Before and During the Coronavirus Disease Pandemic

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**Abstract:** The study focused on education students' learning experiences and the differences in their activities before and during the pandemic. This research was carried out at the NEUST Gabaldon Campus during the academic year 2020-2021 vacation. A study design that combines descriptive-comparative and descriptive-correlational elements. The descriptive-comparative design was used to compare the number of hours students spent sleeping, studying, using social media, and academic performance before and during the pandemic. The descriptive-correlation design, on the other hand, was used to determine the relationship between a student's academic performance (GPA) and the number of hours spent sleeping, studying, and using social media during the pandemic. The 171 education students who participated in the study were chosen through stratified random sampling. The findings revealed that there is a significant difference in the number of hours spent sleeping, studying, and using social media before and during the pandemic. However, there is no significant difference in students' academic performance before and during the pandemic. The study also discovered a highly significant link between the number of hours spent studying and academic performance and between the number of hours spent in social media and the number of hours spent studying. Nonetheless, there is no statistically significant relationship between students' academic performance and the number of hours they sleep and the use of social media during the pandemic. In addition, there is no link between the number of hours they sleep and the amount of time they spend studying and using social media. The students agree that there are benefits and drawbacks to flexible learning. The study's theoretical and practical implications were also discussed.

**Keywords:** *Academic performance, advantages and disadvantages of flexible learning, learning activities, pandemic.*

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### Introduction

The Coronavirus disease (COVID19) pandemic has changed the environment of the entire world. Various aspects of society have transitioned to a new approach of delivering their potential. Working standards in certain government and commercial sectors, for example, have transitioned to online platforms, often known as work from home schemes. Furthermore, the educational system switched to a new method of teaching and learning. Students are one of the most affected stakeholders in education, as the traditional face-to-face learning method has been replaced with blended learning, which is largely modular and online. This big shift in the education system leads the educators and the learners to adopt different learning platforms. Some of these learning platforms are new for both educators and learners, and the need for learning them is necessary for them to adapt to the new normal. In addition, students learning patterns and as well as their way of living was also shifted to a new normal.

During the pandemic, online learning was the best option for continuing education, especially in tertiary education (Mahyoob, 2020). Furthermore, some online platforms, such as Eliademy, CourseSites, iTunes U, LatitudeLearning, Mycourse, Schoology, ATutor, Dokeos, Moodle, and others, maybe considered and used in the teaching and learning process so that classes and even regular routines are not jeopardized. This may help to promote schools' learning management systems (LMS), which are required by various accrediting bodies (Francisco & Barcelona, 2020). In addition, Agarwal and Kaushik (2020) concluded that beyond the current lockdown, online teaching is viable and inexpensive, and it should be considered a part of postgraduate education in India. However, some schools lack the

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resources necessary to provide students with learning opportunities, and not every student has access to the internet at home (Hani, 2020). This scenario was faced by the education system of the Philippines, where online learning was imposed, but not all students and schools can provide gadgets and internet connection for the learning to continue and improved. Likewise, the internet connectivity was very poor and numerous students are in the far-flung areas. As a result, flexible learning was imposed by higher education, allowing for flexibility of time, place, and audience, including but not limited to the use of technology (Commission on Higher Education [CHED], 2020). This type of learning approach allows instructors and students to choose from a variety of learning materials and platforms that are both affordable and readily available. Flexible learning, according to Joan (2013), shapes the learner's ability to plan activities based on their interests and passions. It also keeps the learner's mind in a comfortable state, free of external fear. He comes to the conclusion that flexible learning in the classroom aids in the promotion of high-quality education. Furthermore, Amir et al. (2020) concluded that despite some difficulties, dental students were able to adapt to the new full DL learning techniques, and the majority thought that blended learning, which combines classroom and distant learning, should be employed in the future. This current COVID-19 pandemic affects not only the use of technology in education but also future pedagogy initiatives.

Students' activities and learning patterns, on the other hand, varied before and during the pandemic. Typically, student activity and learning patterns decrease during a pandemic. During this pandemic, students face learning process constraints like connections, assignment methods, delivery methods, and inadequate time management (Noviyanti et al., 2020). Furthermore, the COVID-19 pandemic causes a significant change in the student's routine and learning methods, which may have a negative impact on their sleeping habits and routine (Deutsch & Ehsan, 2021). For instance, poor sleep quality and high stress levels are directly associated to students' academic performance; poor performance means poor sleep and high stress levels (Ahrberg et al., 2012). However, according to Ali et al. (2013), sleeping patterns have no direct effect on medical students' academic performance. In addition, there is no significant difference between the sleep quality index of students with high and low grades (Jalali et al., 2020). On the other hand, according to Dubuc et al. (2020), eating habits and study time have direct relationship with academic performance. In addition, the importance of good study habits in promoting academic success cannot be overstated. Study habits have a significant impact on a person's overall personality development as well as academic success (Lone, 2021).

In this period of epidemic, social media was in high demand, and both young and old people had easy access to these technological benefits. For example, educators who used social media to communicate with their students. According to Ali et al. (2021), there is a strong positive correlation between students' academic achievement and their use of social media. Girls use social media for educational objectives, whilst boys use it to communicate with others. However, Atteh et al. (2020) claims that, despite its benefits in the learning process, social media has negative consequences for students' grades and studies.

On the other hand, Carlsson et al. (2015) claimed that if students went to school, their memory capacity would improve. The intensity of students attending school is reduced when schools are closed. Carlsson et al. points out that no school will deduct 1% of the standard deviation of knowledge for the next ten days. This is a challenge as well as a new difficulty for educational stakeholders in the process of developing more educated pupils in a complex period of competitiveness. Students' knowledge will degrade as a result of their lack of time studying at school.

This study article evaluated the following questions based on the aforementioned description. What can be said about the students' responses in terms of the number of hours they slept, studied, and used social media, as well as their academic achievement before and during the pandemic? Is there a significant difference between the number of hours in sleeping, studying, and using social media before and during the pandemic? Is there a significant difference between the academic performance of education students before and during the pandemic? Is there a significant relationship between and among GPA, number of hours spent sleeping, studying, and using social media during the pandemic? How may the perception of the students on the advantages and disadvantages of flexible learning during the pandemic be described?

Null Hypotheses: 1.) There is no statistically significant difference in the amount of time spent sleeping, studying, and using social media before and during the pandemic; 2.) There is no statistically significant difference in academic performance of education students before and during the pandemic; 3.) During the pandemic, there is no significant relationship between GPA and the number of hours spent sleeping, studying, and using social media.

## Methodology

### *Research Design*

This study utilized both descriptive-comparative and descriptive-correlational study design. A comparative study is a method for analyzing things and then comparing them to find points of distinction and resemblance (Mokhtarianpour, 2016). The descriptive-correlation research design examines the relationship between two variables that are not under the researcher's control (McCombes, 2019).

### Sampling Technique

The 171-sample size was calculated using Slovin's formula from a total population of 462 education students of Nueva Ecija University of Science and Technology, Gabaldon campus, and they were chosen using stratified random sampling. Stratified random sampling is a method for sampling from a population in which the population is divided into subgroups and units are randomly chosen from the subgroups (Frey, 2018).

### Questionnaires Validity

The researcher designed the questionnaire. The researcher determines the questionnaire's validity using the Lawshe method. He recruited 12 faculty members from the College of Education of Nueva Ecija University of Science and Technology, Gabaldon campus to serve as raters. They assign three levels of importance to each item: essential, useful but not essential, and non-essential. The Content Validity Ratio (CVR) of each item is shown in the table number 1. It was calculated using the formula:  $CVR = [n_e - (N/2)] / (N/2)$ , where  $n_e$  is the number of raters who identified the item as "essential," and  $N$  is the total number of raters.

Table 1 shows the Content Validity Ratio of each item.

<b>Advantages</b>	<b>CVR</b>	<b>Interpretation</b>
I can study the learning materials at my own pace.	0.833	Essential
I can save money and time because there is no need to commute.	1.00	Essential
I feel comfortable in learning because I can do whatever I want to do for me to learn.	1.00	Essential
I can pursue a job or work and learn at the same time.	0.833	Essential
I can study whenever and wherever I am.	0.833	Essential
I can search through the internet and search for solutions and answers to my activities with no restrictions.	0.833	Essential
I don't wake up too early, since there is no need to go to school.	0.667	Essential
I have a lot of time in my family.	0.833	Essential
I have different choices in studying its either modular, teleconferencing, audio-video materials, television, radio, internet and the like.	0.833	Essential
I have a lot of time for my hobbies like planting ornamental plants, animal husbandry, watching videos, repairing etc.	0.667	Essential
<b>Disadvantages</b>	<b>CVR</b>	<b>Interpretation</b>
I don't have the opportunity to meet and interact with people from different places on a personal level.	1.00	Essential
I have difficulty keeping track of my course works and assignments.	1.00	Essential
I have the difficulty in using different technological devices and software in learning.	1.00	Essential
I have the difficulty in learning because internet connectivity is too slow.	0.833	Essential
I have difficulty passing my activity in time because of poor connectivity.	0.833	Essential
I have the difficulty in understanding the lesson since there is no actual interaction with our teacher.	0.833	Essential
I can't focus on my study because of some distractions.	0.833	Essential
I agree that the learning and performance of the students are unreliable.	0.833	Essential
I agree that the grading of the teachers towards the students' performance is unreliable.	0.833	Essential
I agree that the standards in education were not meet.	0.667	Essential

### Questionnaires Reliability

Using a reliability test, the questionnaire was examined. A questionnaire was distributed to 50 education students who were not part of the study's respondent pool. SPSS - Cronbach's Alpha was used to determine the reliability coefficient of 0.88.

### Data Collection

The researcher approached the campus director of the Nueva Ecija University of Science and Technology, Gabaldon, and asked permission to conduct study on education students. Data were collected using google forms and interviews were done through google meet. The interview with the students was informal, with no scheduled questions. "How are you? how is the study? aren't you having a hard time in learning the lessons?" These are the sample questions ask during the interview.

*Data Analysis*

IBM-SPSS was used to analyze the data, and descriptive statistics, dependent t-tests, and Pearson r were applied. Means and standard deviations were used to describe the student's number of hours sleeping, studying, use of social media and academic performance before and during the pandemic. The mean is also used to describe the student's perception of the advantages and disadvantages of flexible learning. Meanwhile, the t-test was used to compare the difference in the number of hours sleeping, studying, use of social media and academic performance before and during the pandemic. The Pearson product-moment coefficient of correlation was used to determine the relationship between and among GPA, number of hours spent sleeping, studying, and using social media.

Table 2 shows the normality test for each variable. It shows that "sleeping before" ( $w = 0.815, p > 0.05$ ), "sleeping during" ( $w = 0.853, p > 0.05$ ), "studying before" ( $w = 0.854, p > 0.05$ ), "studying during" ( $w = 0.833, p > 0.05$ ), "social media before" ( $w = 0.883, p > 0.05$ ), "social media during" ( $w = 0.855, p > 0.05$ ), "GPA before" ( $w = 0.830, p > 0.05$ ), and "GPA during" ( $w = 0.804, p > 0.05$ ) are normally distributed.

Table 2: Normality Test

	Shapiro-Wilk		
	Statistic	df	Sig.
Sleeping Before	.815	171	.188
Sleeping During	.853	171	.178
Studying Before	.834	171	.469
Studying During	.833	171	.416
Social Media Before	.883	171	.265
Social Media During	.855	171	.297
GPA before	.830	171	.236
GPA during	.804	171	.433

The weighted mean and verbal interpretation were used to describe the student's perception of the advantages and disadvantages of flexible learning; it ranges from 1.00 – 1.74 for strong disagreement, 1.75 – 2.49 for disagreement, 2.50 – 3.24 for agreement, and 3.25 – 4.00 for a strong agreement.

**Findings / Results***Student's Routine and Academic Performance Before and During the Pandemic*

Table 3 shows the number of hours sleeping before the pandemic ( $M=7.60, SD=1.69$ ) and during the pandemic ( $M=6.79, SD=2.24$ ) with the mean difference of 0.81. The data implies that there is a slight mean difference between the number of sleeping hours before and during the pandemic. In addition, the standard deviation of sleeping before the pandemic is less than the standard deviation during the pandemic ( $SD_{\text{before}}=1.69 < SD_{\text{during}}=2.24$ ), which suggests that the sleeping hours of the students during the pandemic are far different to each other than before the pandemic.

Table 3 also shows the number of hours studying before the pandemic ( $M=7.23, SD=3.32$ ) and during the pandemic ( $M=7.82, SD=5.42$ ) with the mean difference of -0.59. This implies that there was a slight increase in the number of hours in studying. In addition, the standard deviation of studying is less than the standard deviation during the pandemic ( $SD_{\text{before}}=3.32 < SD_{\text{during}}=5.42$ ).

The number of hours of using social media before the pandemic ( $M=4.46, SD=2.74$ ) is also increased by 3.72 hours during the pandemic ( $M=8.18, SD=4.57$ ) as shown in table 3. Furthermore, the standard deviation before is less than during the pandemic ( $SD_{\text{before}}=2.74 < SD_{\text{during}}=4.57$ ).

Table 3 also shows the GPA of the students before ( $M=90.35, SD=4.00$ ) and during the pandemic ( $M=90, SD=4.40$ ) with the mean difference of 0.35. The data shows that there is a slight difference in the academic performance of the students before and during the pandemic. Furthermore, the performance of the students during the pandemic is more varied than before ( $SD_{\text{before}}=4.00 < SD_{\text{during}}=4.40$ ).

Table 3 shows the means, mean difference as initial measurement and variations of student's routine and academic performance before and during the pandemic.

	N	Mean (M)	Mean difference (MD)	Std. Deviation (SD)
Number of hours sleeping before the pandemic	171	7.5965		1.68934
Number of hours sleeping during the pandemic	171	6.7895	0.80702	2.23662
Number of hours studying before the pandemic	171	7.2281		3.31849
Number of hours studying during the pandemic	171	7.8246	-0.59649	5.41606
Number of hours using social media before the pandemic	171	4.4561		2.46674
Number of hours using social media during the pandemic	171	8.1754	-3.71930	4.57148
GPA Before Pandemic	171	90.3509		4.00400
GPA During Pandemic	171	90.0000	0.3509	4.39786
Valid N (listwise)	171			

#### Comparisons of Number of Hours in Sleeping, Studying, Using Social Media and Comparison Between Grade Point Average Before and During the Pandemic

Table 4 shows that there is a significant difference between the number of hours sleeping ( $t=4.72$ ,  $df=170$ ,  $p<0.01$ ) with a small effect size (Cohen's  $d = 0.36$ ); number of hours in studying ( $t=-2.06$ ,  $df=170$ ,  $p<0.05$ ) with a small effect size (Cohen's  $d = 0.16$ ); and the usage of social media ( $t=-11.77$ ,  $df=170$ ,  $p<0.01$ ) with large effect size (Cohen's  $d = 0.90$ ). On the other hand, there is no significant difference between the grade point average ( $t=2.92$ ,  $df=170$ ,  $p<0.01$ ) of the students before and during the pandemic.

Table 4 presents the comparison of the number of hours in sleeping, studying, use of social media and grade point average before and during the pandemic

Comparisons	t	Df	Sig. (2-tailed)	Cohen's d	Effect Size
Pair 1 Sleeping Before – Sleeping During	4.723	170	.000	0.36	Small
Pair 2 Studying Before – Studying During	-2.058	170	.041	0.16	Small
Pair 3 Social Media Before – social media During	-11.766	170	.000	0.90	Large
Pair 4 GPA before – GPA during	1.052	170	.294		

#### Correlation between and among GPA, Number of Hours Sleeping, Studying and Using Social Media During the Pandemic

Table 5 shows that there is no significant relationship between GPA and number of hours sleeping ( $r = 0.052$ ,  $p>0.05$ ); GPA and using social media ( $r = -0.86$ ,  $p>0.05$ ); number of hours sleeping and studying ( $r = 0.018$ ,  $p>0.05$ ); and number of hours sleeping and using social media ( $r = -0.024$ ,  $p>0.05$ ). Nonetheless, a highly significant relationship was observed between GPA and the number of hours in studying ( $r = 0.204$ ,  $p<0.01$ ) and the number of hours studying and the use of social media ( $r = 0.274$ ,  $p<0.01$ ).

Table 5 shows the correlation between and among GPA, number of hours sleeping, studying, and using social media during the pandemic.

	GPA during	Sleeping During	Studying During	Social Media During
GPA during	1	.052	.204**	-.086
Sleeping During	.052	1	.018	-.024
Studying During	.204**	.018	1	.274**

\*\* Correlation is significant at the 0.01 level (2-tailed).

#### Students Perception on the Advantages and Disadvantages of Flexible Learning

Table 6 shows that the students are agreed that they learn at their own pace (2.86), they save money and time (3.19), they feel comfortable in learning, because they can do whatever they want to do for them to learn (2.77), they can pursue a job or a work and learn at the same time (2.98), they can study whenever and wherever they are (2.98), they can search through the internet and search for solutions and answers to their activities with no restrictions (2.89), they don't wake up too early, since there is no need to go to school (2.93), they have a lot of time with their family (3.07), they have different choices in studying its either modular, teleconferencing, audio-video materials, television, radio, internet and the like (3.04), and they have a lot of time on my hobbies like planting ornamental plants, animal husbandry, watching videos, repairing etc. (2.95). The total weighted mean is 2.97 which can be interpreted as agreement.

Table 6 also shows that the students are strongly agreed that they don't have the opportunity to meet and interact with other people from different places on a personal level (3.28), they have the difficulty in learning, because internet connectivity is too slow (3.39), they have difficulty passing their activity in time because of poor connectivity (3.26), and they can't focus to their study because of some distractions (3.33). On the other hand, students agreed that they have difficulty keeping track of their course works and assignments (2.91), they have the difficulty in using different technological devices and software's in learning (2.68), they have the difficulty in understanding the lesson since there is no actual interaction to their teacher (3.19), the learning and performance of the students are unreliable (2.98), the grading of the teachers towards the students' performance is unreliable (2.65), and the standards in education were not meet (3.18). The total weighted mean is 3.09 which can be interpreted as agreement.

*Table 6 shows the students perception of the advantages and disadvantages of flexible learning.*

<b>Advantages</b>	<b>WM</b>	<b>Verbal Interpretation</b>
I can study the learning materials at my own pace.	2.86	Agree
I can save money and time because there is no need to commute.	3.19	Agree
I feel comfortable in learning because I can do whatever I want to do for me to learn.	2.77	Agree
I can pursue a job or work and learn at the same time.	2.98	Agree
I can study whenever and wherever I am.	2.98	Agree
I can search through the internet and search for solutions and answers to my activities with no restrictions.	2.89	Agree
I don't wake up too early, since there is no need to go to school.	2.93	Agree
I have a lot of time in my family.	3.07	Agree
I have different choices in studying its either modular, teleconferencing, audio-video materials, television, radio, internet and the like.	3.04	Agree
I have a lot of time for my hobbies like planting ornamental plants, animal husbandry, watching videos, repairing etc.	2.95	Agree
<b>TWM</b>	<b>2.97</b>	<b>Agree</b>
<b>Disadvantages</b>	<b>WM</b>	<b>Verbal Interpretation</b>
I don't have the opportunity to meet and interact with people from different places on a personal level.	3.28	Strongly Agree
I have difficulty keeping track of my course works and assignments.	2.91	Agree
I have the difficulty in using different technological devices and software in learning.	2.68	Agree
I have the difficulty in learning because internet connectivity is too slow.	3.39	Strongly Agree
I have difficulty passing my activity in time because of poor connectivity.	3.26	Strongly Agree
I have the difficulty in understanding the lesson since there is no actual interaction with our teacher.	3.19	Agree
I can't focus on my study because of some distractions.	3.33	Strongly Agree
I agree that the learning and performance of the students are unreliable.	2.98	Agree
I agree that the grading of the teachers towards the students' performance is unreliable.	2.65	Agree
I agree that the standards in education were not meet.	3.18	Agree
<b>TWM</b>	<b>3.09</b>	<b>Agree</b>

### Discussion

The data shows a more spread distribution was observed on the number of hours sleeping during the pandemic, which implies that the sleeping hours of the students during the pandemic are far different to each other than before the pandemic. It is since the students who can easily understand and comprehend the lessons have enough time to complete and submit requirements in time. As a result, those students who can complete their task in time would have enough time to rest and take a longer sleep than those who don't complete their task in time. In addition, some students are distracted in different situations at home. Some students stated that:

*"It is difficult to study when there is no actual discussion of the topic given to us"*

*"There are distractions in our home, I can't do my activities properly"*

Furthermore, there is a significant difference in the number of hours sleeping before and during the pandemic. Despite the fact that the projected effect size is minimal, it is noteworthy that some students do not get as much sleep during the pandemic as they did previously due to the abundance of activities provided to them. Furthermore, because there is limited online interaction in flexible learning, students will require a lot of time to study the lectures. It implies that students are sleeping less, even though they should be sleeping more because they do not have to get up too early to go to school. One of the students expressed his thoughts as follows:

*"The requirements of the different subject areas are too bulky for us and we should exert more time in analyzing and completing the activities in time"*

Anchored on that statement, the school's modalities are flexible learning and modular learning, in which students rely solely on their understanding and skills.

Saadeh et al. (2021) shows that the long quarantine has a negative impact on the sleep quality of three-quarters of Jordanian university students. Almost half of the participants said they didn't get enough sleep.

Similarly, data showed a large standard deviation on studying time during the pandemic, indicating that during the pandemic, the number of hours studied by students varies more than before the pandemic. Some of them are studying for long periods, while others do not have enough time. It also implies that some students are eager to learn more and others are unmotivated to learn. One student indicated that:

*"Even though it is challenging to study in this time of uncertainty, it is only on one's motivation and determination to strive and to be successful"*

In addition, the number of hours spent studying before and during the pandemic differs dramatically. As previously stated, the school's preferred mode of instruction is flexible learning, with a focus on modularity, and the educator has limited time to guide students through virtual meetings. As a result, students spent more time and effort studying the material. Although the effect is minimal, this pandemic makes the students work harder. Some students said:

*"There are a lot of activities and we are overwhelmed with that"*

*"Some of the modules are too difficult to comprehend"*

*"The time for submission is too short, we need more time in comprehending the modules"*

According to Pe Dangle and Sumaoang (2020) some challenges emerge during modular distance learning and these are: lack of funding in the production of modules; the students are struggling in self-studying; and parents lack of knowledge to educate their children.

A large standard deviation was also observed in the use of social media during the pandemic compared to before the pandemic. It suggests that during the pandemic, some students use social media more than others.

Furthermore, the data shows a significant difference in the use of social media before and during the pandemic. As evidenced by the substantial effect size, it suggests that students used more social media throughout the pandemic. One student said:

*"We are using the social media to communicate with our classmate and our teachers, and most of our teachers uses social media as a platform in delivering the lessons"*

Abrenica et al. (2021) revealed that the majority of the students in Don Ramon E. Costales Memorial National High School uses Facebook and Instagram and they are using it daily for 1 to 5 hours.

During the pandemic, the standard deviation of the student's GPA was higher than before. It implies that some students are learning more effectively than others. One student said:

*"I can learn better before the pandemic because I can easily understand what the teacher teaches us rather than modules and online discussions"*

Despite this, the data demonstrates that there is no significant difference in students' GPAs before and during the pandemic. It means that the student's performance has not deteriorated dramatically. It also implies that the professors' and the NEUST administration's intervention in this pandemic is highly successful. This was also observed by Ghada (2021), on 376 business students on a face-to-face setting in 2019 and 372 students fully online via distance learning mode in 2020 during the pandemic. He concluded that there is no significant difference in the student's grades before and during the pandemic.

According to the data, the number of hours of sleeping does not predict students' academic performance during the pandemic. Mnatzaganian et al. (2020) shows that Pittsburgh Sleep Quality Index (PSQI) is not significantly correlated to exam scores. Likewise, the number of hours using social media does not also predict student's academic performance. Nonetheless, the correlation coefficient is negative which implies that some students grade is negatively correlated with the use of social media. This was also observed by Boahene et al. (2019) that the use of social media can negatively affect academic performance. The number of hours sleeping have no direct link with the number of hours studying and using social media.

On the other hand, as is customary, the amount of time a student spends studying can predict their academic performance. Although students complain about the number of activities, they benefit from it because they spend so much time on it. The study of Walck-Shannon et al. (2021) also shows that study time predicted exam performance of college students. Similarly, the number of hours spent studying is linked to social media, implying that students use

social media as a learning aid. They might utilize social media to look for similar activities and works. They also use social media to engage with and work with their peers. According to Oueder and Abousaber (2018), the most popular social network among Tabuk university students is one that is beneficial to their academic skills.

Students agree that there is an advantage to flexible learning, which means that even during the pandemic, students saw it in a different light. They see this as an opportunity to spend more time with their families, pursue their hobbies, and learn in new ways. One student said:

*"With flexible learning, I can do whatever I want and execute things I haven't done before."*

Likewise, students also agree that there is a disadvantage to flexible learning. It implies that students believe flexible learning has flaws that must be addressed.

According to the study of Cardullo et al. (2021) problems in Internet access, lack of communication, motivation and challenges to students have all been observed. The drawbacks include the self-efficacy of teachers with the use of education technology, lack of support and resources in online teaching and efforts to stimulate and engage students. The reports included flexibility and differentiation for teachers, a large number of materials and a learning support mechanism when there is no personal education.

### **Conclusion**

There is a slight difference in the student's number of hours sleeping, studying, use of social media and academic performance before and during the pandemic. There is a significant difference in the student's number of hours sleeping, studying, use of social media before and during the pandemic. This implies that there is an adjustment made by the students to conform to the new normal way of studying. But there is no significant difference in the student's academic performance before and during the pandemic. This implies that the institution (NEUST) has accommodated students properly and implemented interventions to address the needs of quality education during this time of the pandemic. The number of hours in sleeping and number of hours in using social media have no direct relationship with student's academic performance, which implies that this variable cannot affect directly student's performance. The number of hours spent sleeping has no bearing on the number of hours spent studying or utilizing social media. On the other hand, GPA and the number of hours spent studying, as well as the number of hours spent studying and the number of hours spent using social media, were found to have a highly significant association. Students agree that there are advantages and disadvantages to flexible learning.

### **Recommendations**

The academic personnel's and the institution as well may continue their program and interventions to acquire excellence in the student's academic performance. Instructors and professors may conduct webinars that address the students on how to limit their use of social media and time management for those students who are working. The instructors and professors may give ample time for students to pass their works and activities. Teachers may utilize different platforms in delivering lessons to cater for differences in the students' knowledge of technology. The teachers may develop learning modules that were not too difficult to comprehend. For future researchers, you may try to discover the student's emotional status and motivation before and during the pandemic. Researchers may undertake a study in the future to see how students gradually adopt new learning platforms.

### **Limitation**

The purpose of this study was to determine the students' learning routines and academic performance at Nueva Ecija University of Science and Technology – Gabaldon Campus. The study's findings/results and implications are only intended for this specific school. The researcher conducted it to improve the teaching and learning process and to implement a specific intervention based on the study's findings. In addition, this study is limited to what the items of the questionnaire in this study measured.

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