



# Stress levels and Metacognition of College Students during Pandemic

Dr. Eleanor A. Osea<sup>1\*</sup>, Atty. Remelisa G. Alfelor-Moraleta<sup>2</sup>, ArriethGenoveva O. Sanderson<sup>3</sup>, Dr. Elena C. Praxides<sup>4</sup>, Dr. Elmer H. Lolin<sup>5</sup>, Dr. Amelia F. Nacario<sup>6</sup>, Arch. Jose Malazarte<sup>7</sup>, Dr. Paulino Neon Cepe<sup>8</sup>, Dr. Paquito Alvarez<sup>9</sup>, Engr. Ramon Albar<sup>10</sup>, Domingo Ortega II<sup>11</sup>

<sup>1</sup>Dean, School of Graduate Studies and Vice President for Academic Affairs, University of Northeastern Philippines, Iriga City, Philippines

<sup>2</sup>School of Law and University President, University of Northeastern Philippines, Iriga City, Philippines

<sup>3</sup>Dean, College of Arts, Sciences and General Education, University of Northeastern Philippines, Iriga City, Philippines

<sup>4</sup>Dean, College of Education, University of Northeastern Philippines, Iriga City, Philippines

<sup>5</sup>Dean, College of Business Education and Assistant Vice President for Finance, University of Northeastern Philippines, Iriga City, Philippines

<sup>6</sup>Dean, College of Nursing and Midwifery, University of Northeastern Philippines, Iriga City, Philippines

<sup>7</sup>Dean, College of Engineering and Architecture, University of Northeastern Philippines, Iriga City, Philippines

<sup>8</sup>Dean, College of Criminal Justice Education, University of Northeastern Philippines, Iriga City, Philippines

<sup>9</sup>Dean, College of Maritime Education, University of Northeastern Philippines, Iriga City, Philippines

<sup>10</sup>Dean, College of Marine Engineering, University of Northeastern Philippines, Iriga City, Philippines

<sup>11</sup>Shipboard Training Officer, University of Northeastern Philippines, Iriga City, Philippines

\*Corresponding Author

Date of Submission: 15-01-2023

Date of Acceptance: 31-01-2023

**Abstract.** The COVID-19 pandemic impacted all aspects of society, especially educational systems whereby traditional classroom set-up to be drastically altered. Face-to-face learning was abandoned in favor of online, blended, flexible, home-schooling, modular, asynchronous, synchronous, and technology-assisted learning that brought stress and immediate learning strategies that the students could use. This study determined the Demographic Profile, Stress levels, and Metacognition of the 251 college students at the University of Northeastern Philippines, Iriga City, during the end of the First Semester of the Academic Year 2021-2022. Quota sampling was utilized. Adapted questionnaire was used and was distributed using Google forms. The weighted mean, rank, and verbal interpretation and Pearson Product Moment Correlation were used. It was revealed that the students experienced Somewhat stressful conditions that affected their schooling. They also fairly to moderately utilized metacognition, especially among Motivation; Organizing and Planning Work; Working with others and Utilizing resources and Feedback; Managing School Work

Stress; Note Taking and Reading, and Preparing Assignment or Projects. It yielded further a positive relationship between stress levels and metacognition. Hence, it can be used by the school administration for policy making and training of teachers for better implementation of various learning platforms during and beyond the COVID-19 pandemic.

## I. INTRODUCTION

Because the COVID-19 Pandemic impacted all aspects of society, it significantly impacted all educational systems, causing the traditional classroom set-up to be drastically altered. Face-to-face learning was abandoned in favor of online, blended, flexible, home-schooling, modular, asynchronous, synchronous, and technology-assisted learning. Moreover, as the number of positive COVID-19 cases in the Philippines continues to rise, the government, through the Department of Education and the Commission on Higher Education of the Philippines, has implemented several policies to encourage the use of alternative modalities in delivering basic education content to higher



education institutions. COVID-19 compelled teachers and educational institutions to transform and equip their classrooms to support online and remote learning, often known as "New Normal Teaching." (E. C. Avila and Genio 2020). With these, various platforms were institutionalized that brought changes to the usual classroom set-up (Avila & Lavadia, 2019; Avila & Cabrera, 2020; Avila et al., 2021)

College students are at risk of developing psychosocial issues, especially during the pandemic, whereby they are confronted with psychological stress due to the challenges brought by the paradigm shifts of teaching from traditional to online. Hence, anxiety impacts student learning results because it causes confusion and the perception that they are not learning to the fullest. The study of Clabaugh et al. (2021) found that COVID-19 had mental health effects in countries severely struck at the start of the epidemic, including Asia, including the Philippines. The everyday stressors faced by the students include an unfamiliar online learning environment, difficult home conditions, loss of access to academic resources such as computers and internet connectivity, and distractions in the home learning environment, including disruptions from other family members and additional responsibilities. Hence, when combined with online learning methods, these stressors exacerbate student anxiety, tension, and despair as they most likely do not achieve their learning targets (Hasanah et al., 2020). Stress is a part of students' lives and can affect how they cope with educational demands. They face several problems daily, which causes stress (Pariat et al., 2014). According to Son et al. (2020), there was an increase in mental health problems among students, especially during the COVID-19 pandemic, so there is an urgent need to assess the current pandemic's impact on student's mental health and wellbeing (de Oliveira et al., 2020), which prompted the researchers to conduct this study.

Metacognition is "thinking about thinking," and it concerns how a person knows what they know. Metacognitive strategies have a significant positive association with online learning as they have a significant positive correlation. In other words, students with metacognitive talents can manage their learning and execution by using suitable ways to manage their thoughts, assess their learning, and evaluate the time required for the study. Metacognitive methods are crucial for academic achievement and have a significant positive link with online learning performance (Dumford & Miller, 2018; Broadbent & Poon, 2015; Goradia & Bugarcic, 2017; Cho & Heron, 2015).

Students with metacognitive learning strategies can manage their learning and execution. Thus, by using suitable ways to manage their thoughts, assess their learning, and evaluate the time required for study since students in higher education are capable of monitoring and reflecting on their strategy use (Roth et al., 2016). However, Anthonysamy et al. (2020) found that metacognitive learning among university students is still insufficient. Furthermore, according to a Harvard Business Review study, the main problem in learning is that college students do not participate in enough metacognition (Boser, 2018).

As university students are expected to be proactive and engaged when learning online, some students' usage of metacognitive strategies in their learning is limited (Anthonysamy et al., 2020). Compared to a skilled user of metacognitive strategies, those students who lack metacognitive strategies cannot perceive the broader picture of the activity at hand by planning, monitoring, and regulating academic tasks online. To put it another way, university students still lack self-awareness, and comprehension of their mental processes can be improved by self-reflection and using planning, monitoring, and regulating procedures. As a result, it is critical to investigate whether metacognitive methods directly and positively improve students' learning performance when using online learning brought on by the pandemic (Puka et al., 2020).

While significant research has been done on online learning, particularly during the COVID-19 pandemic, no research has been done on the correlations between stressors, motivation, and metacognition of college students in the Philippines during the pandemic. As a result, the goal of this research is to learn more about that aspect and how a private higher education institution in the Philippines can be fully engaged in using available tools to teach and serve the best knowledge to their students. As such, when students develop themselves, particularly during the COVID-19 pandemic-affected school years, they can bring rippled effects to the community.

## II. METHOD

The researchers used a descriptive-correlational research design to understand the Stress levels and Metacognition of College Students of a University of Northeastern Philippines during a Pandemic at the University of Northeastern Philippines, Iriga City, Philippines. During the data gathering process, there were 251 who responded to the survey. To collect the data, the researchers adapted a research questionnaire of Lucas and Corpuz (2020) and distributed it through Google



Forms in one week that spanned the third week of May 2022.

This study determined the Demographic Profile, Stress levels, and Metacognition of the 251 college students at the University of Northeastern Philippines, Iriga City, during the end of the First Semester of the Academic Year 2021-2022. It sought answers to the general levels of motivation of the students, general stress levels, and their metacognitive learning strategies and their correlates. Quota sampling was utilized. The weighted mean, rank, and verbal interpretation were used to describe the said levels that were interpreted using the following scale: Metacognition during the pandemic, 5-Strongly Agree (SA), 4-Moderately Agree (MA), 3-Agree (A), 2-Fairly Agree (FA), 1-Not at all (NAA). While for the Stress levels during the COVID-19 pandemic, the scale was: 5-Extremely Stressful, 4-Very Stressful, 3-Moderately Stressful, 2-Somewhat Stressful, and 1-Not Stressful at all. The Pearson Product Correlation

was used to test the correlation between and among the Stress levels and metacognition and the basic profiles of the students. Statistical Package for Social Sciences (SPSS) was also utilized to facilitate the statistical treatment.

### III. RESULTS AND DISCUSSION

#### 3.1 Demographic Profile of the students.

The demographic profile of the students is shown in Table 1. The Courses of the respondents revealed that most of the students who responded to the online survey were the BS Criminology, with 69 or 27.5% of the 251 respondents. Then, other courses with a large number of respondents were the students of BS in Accountancy with 32 or 12.70%; Bachelor in Elementary Education with 26 or 10.40%; BS in Social Work with 24 or 9.60%; BS in Office Administration and BSEd in English with 15 students each or 6.0% of the total respondents.

**Table 1: Demographic Profile of the Students who responded to the research**

Demographic Profile of students	Number of Students	Percentage
<b>Course</b>		
BA in Political Science	3	1.20
<b>BS in Social Work</b>	<b>24</b>	<b>9.60</b>
BA in Communication	2	0.80
BSEd in Physical Education	5	2.00
BSEd in Filipino	8	3.20
<b>BSEd in English</b>	<b>15</b>	<b>6.00</b>
BSEd in Mathematics	2	0.80
<b>Bachelor in Elementary Education</b>	<b>26</b>	<b>10.40</b>
BSEd in Music, Arts, Physical Education, and Health	3	1.20
BSEd in Technology and Livelihood Education	2	0.80
BS in Nursing	10	4.00
BS in Civil Engineering	7	2.80
BS in Mechanical Engineering	1	0.40
BS in Architecture	1	0.40
<b>BS in Office Administration</b>	<b>15</b>	<b>6.00</b>
<b>BS in Accountancy</b>	<b>32</b>	<b>12.70</b>
BSEd in Social Studies	5	2.00
BS in Business Education major in Marketing Management	6	2.40
BS in Business Education major in Financial Management	7	2.80
BS in Hotel and Restaurant Management	3	1.20
BS in Entrepreneurship	1	0.40
<b>BS in Criminology</b>	<b>69</b>	<b>27.50</b>
BS in Tourism	4	1.60
<b>Year level</b>		
First-year	111	44.20
Second-year	22	8.80
Third-year	77	30.70
Fourth-year	41	16.30
<b>Sex</b>		



Male	83	33.10
Female	168	66.90
<b>Age</b>		
18 to 20 years old	91	36.30
21 to 23 years old	106	42.20
24 to 26 years old	23	9.20
27 years old and above	31	12.40
<b>Civil Status</b>		
Single	235	93.60
Married	16	6.40
<b>Working while Studying</b>		
Yes	56	22.30
Sometimes	61	24.30
Never	134	53.40
<b>Total</b>	<b>251</b>	<b>100.0</b>

The said proportion also corresponds to the courses attracting many enrollees in the university where the research is presently conducted. Likewise, for the **Year of the respondents**, out of 251 respondents, the majority were First Year with 111 or 44.2%, then the least were in the Second year with 22 or 8.80%. Then for the **Sex of the respondents**, out of 251, the majority are Female, with 168 or 66.90%. For the **Age of the students**, the majority are 21 to 23 years old with 106 or 42.20%, and the least is 24 to 26 years old with 23 or 9.20%. For the **Civil Status**, the majority are Single, with 235 or 93.60%. In addition, the majority of the students are Never working part-time with 134 or 53.40%, while the least are working while studying with 56 or 22.30% of the total.

### 3.2 Stress Level of the Students who responded to the research

Stress is a natural component of university students' lives. Stress is the body's reaction to changes that place strain on it. The terms eu-stress, which refers to positive stress, and distress, which refers to negative stress, are not interchangeable. Individuals' coping mechanisms play an essential role in overcoming or reducing stress. To cope with stress, people employ a variety of coping mechanisms. From this premise, the stress levels of University of Northeastern Philippines students during the pandemic were measured in this study. Table 2 presents the general indicators of the students' stress levels who responded to the survey.

**Table 2: The Stress Level of the Students of UNEP during Pandemic**

Indicators	Mean	Interpretation
Quality of academic studying experience during COVID-19 pandemic.	2.87	Moderately stressful
Risk of contagion during COVID-19 pandemic.	2.73	Moderately stressful
Condition of social isolation imposed during COVID-19 pandemic.	2.68	Moderately stressful
Changes in motivation due to social isolation during the COVID-19 pandemic.	2.68	Moderately stressful
Changes in professional development due to social isolation during the COVID-19 pandemic.	2.67	Moderately stressful
Changes in personal life due to social isolation during the COVID-19 pandemic.	2.59	Somewhat stressful
Relationships with the university colleagues during the COVID-19 pandemic.	2.58	Somewhat stressful
Relationships with university professors during COVID-19 pandemic.	2.57	Somewhat stressful
Changes in the spiritual life due to social isolation during the COVID-19 pandemic.	2.4	Somewhat stressful
Relationships with relatives during COVID-19 pandemic.	2.37	Somewhat stressful
Changes in the sexual life due to social isolation during the COVID-19 pandemic.	2.17	Somewhat stressful



Average

2.57

Somewhat stressful

From Table 2, it was revealed that the students are Moderately Stressed with the quality of academic experience affected by the COVID-19 pandemic. Moreover, they are also afraid of the risks that the virus can affect them. However, the social distancing and other health measures employed by the health authorities also stressed them. Hence, the latter also brought anxiety and despair due to the social isolation during the COVID-19 pandemic. Moreover, the students are stressed that the learning they are receiving from their schooling affects the quality of their professional development, which is badly needed as they advance their degrees. It can also be noted that the students experienced some stress brought about by the sudden social isolation and gathering prevented by the COVID-19, especially with their peers and friends, classmates, and university professors. However, their religious beliefs, relationships with their relatives, and sexual life were not much affected by the COVID-19 pandemic. The latter indicator might be because only 16 or 6.40 of the respondents are married.

Therefore, it can be concluded that the students experienced somewhat stressful conditions during the school years affected by the COVID-19 pandemic that brought closures to the school and shifted their schooling from traditional to online. Hence, this implies that the university

administration should consider that the students are afraid that they are not learning much from their platforms. Thus, the administration should consider that relevant measures should be carefully and adequately implemented upon opening of classes since the respondents are also afraid that they might still catch the virus while in school.

### Part 3. Metacognition of UNEP College students during the COVID-19 pandemic

Metacognition is "thinking about thinking," and it concerns how a person knows what they know. Metacognitive strategies have a significant positive association with online learning as they have a significant positive correlation. In other words, students with metacognitive talents can manage their learning and execution by using suitable ways to manage their thoughts, assess their learning, and evaluate the time required for the study. As such, the researchers were interested in gauging the metacognition of the University of Northeastern Philippines students so that relevant recommendations may be given at the end of the study. In this study, the metacognition revolved around the Motivation, Organizing and Planning Work; Working with others and Utilizing resources and Feedback; Managing School Work Stress, Note Taking and Reading; and Preparing Assignments or Projects.

Table 3: Metacognition of the UNEP Students

Indicators	Average Mean	Interpretation
Motivation	3.60	Moderately Agree
<b>Organizing and Planning work</b>	3.60	Moderately Agree
<b>Working with Others and Utilizing Resources and Feedback</b>	3.45	Moderately Agree
<b>Managing School Work Stress</b>	2.96	Fairly Agree
<b>Note-taking and Reading</b>	3.59	Moderately Agree
<b>Preparing Assignment/Project</b>	3.97	Moderately Agree

**Motivation.**In Table 3, the researchers determined the level of metacognition employed by the students of UNEP during the pandemic. Here, this part determines whether the students have focus and are consistent with the tasks they are required to complete. It was revealed that despite the COVID-19 restrictions and sudden shifts to different learning platforms, students of UNEP are using their learning strategies to cope with the demands of their academic programs. They can still exert efforts in completing their academic requirements, are willing to complete the tasks since they enjoy them, and

maintain their focus and attention in their school-related tasks as they have ways of dealing with distractions from home-schooling and online learning. Moreover, they also ask for their teachers' assistance when they feel they are not learning well. It can also be further noted that were they able to complete their tasks without having anyone to tutor them. Therefore, the students of UNEP were able to develop relevant skills to complete the tasks and get down to work with them quickly and with ease.

**Organizing and Planning work.** This part determines whether the students have a well-



organized plan to complete their academic work. This also includes indicators on time management that determine whether the students can constantly complete the tasks ahead of time. It was revealed that the students of UNEP employ various strategies that regulate their learning while accomplishing their tasks and academic work. Notably, they check whether their outputs are of quality. Hence, proofreading, typesetting, and lay-outing are carefully studied before they submit it to their teachers via online platforms. They have also considered their timeliness as they prioritize which output is due and which one they must focus on. Also, they consider the importance of examinations; hence, they review ahead of their monthly examinations.

Furthermore, as they begin dealing with their new assignments to hit their deadline, they arrange necessary resources and equipment before starting work. It is noteworthy that the students can balance school-related activities with their family commitments and find time to relax after studying. Also, they carefully list down necessary scheduled tasks and have a space to study. However, they need to improve their research skills as they are not much into organizing references with detailed bibliographical entries. Therefore, the students of UNEP are organized in dealing with their school work, making it their advantage to complete their weekly tasks in their subjects even though these tasks are not familiar to them since they need to use the internet and online applications new to them.

**Working with Others and Utilizing Resources.** This part determines whether the students were able to utilize the list of available resources at home and within their communities that can augment their learning experiences during a pandemic. This further determined whether they were using the resources effectively by knowing what these resources could contribute to their learning during the pandemic. It revealed that the students could listen comprehensively when their teachers were teaching them using the online platforms, and they could get critical ideas from their professor's lectures. They also used their syllabi and assignments to read their topics for the week in advance. Moreover, in group activities, they ask their lecturers and classmates or group mates questions if the difficulty were encountered, thus making them active members of the class. In addition, as they can read in advance, they can anticipate what their classmates and teachers are about to say next. These yielded further a positive value to them as they learned to share what available resources they have with their classmates. As this

COVID-19 pandemic also affected their maximization and utilization of resources, they could somehow classify the TV programs that are useful to their courses. Furthermore, since social distancing and health restrictions are still in place even during the time of writing this research, students are still afraid to have a group study with their classmates as they are afraid of COVID-19 local transmission and even afraid of holding newspapers and magazines as they believed that might hold the virus.

**Managing School Work Stress.** This part determines whether the students could minimize problems and look after himself/herself as they handle anxieties and immediate school concerns or be overwhelmed by problems that make them less effective students. It was revealed that students are Fairly Agree with managing school-related work stress. However, it is essential to note that stress is just one of the many hurdles college students face. More so, with the stated factors, most students were worried about their school work and assignments. At the same time, most had difficulty discussing their worries, which eventually led to inevitable depression. It triggers an effect on their fitness because of these worries. When they let these concerns get ahead of them, it causes them to be left behind with their lessons, and in due course, they are unable to catch up, and they ultimately feel miserable after a time.

Therefore, university administrators should provide ample resources and opportunities for students to deal with stress positively to address these issues. Figuring out what situations might cause stress is only half the battle for the learners. Thus, as students are exposed to stressors or stimuli that provoke stress, they experience an array of physical, emotional, behavioral, and cognitive reactions. As such, these students might experience stress in very different ways, and the university should have an intervention to mitigate these stressors in their students.

**Note-taking and Reading.** This part determines whether the students could prepare well and read well efficiently as their learning was developed. It also determines whether their reading and note-taking strategies are sufficient or can be improved. If not, selective reading and writing down strategies should be considered. It was revealed that regardless of the situation that may hinder the learning preferences of the students from UNEP, it is still distinguishable that the learning experiences upon note-taking and reading are given clear emphasis as they were still able to listen for significant key factors when listening to a speaker and were still



able to jot down and highlight important ideas so that they can be identified as they take down important notes. Also, it emphasizes organization and planning as it can be manageable. Moreover, students can also deal with the things as they happen, which will eventually lead them to complete their work tasks more completed and organized. It can also be noted that students have their way of getting their files and notes to be as orderly and organized using different yet unique techniques of their own.

Consequently, it can be concluded that although these students may vary with each of their learning preferences, it can be noted that applying these techniques can lead one to be an expert learner. As such, these learning through note-taking and reading strategies to develop metacognition also embody different variables that affect this learning: person, task, and strategy. Thus, this implies that the university somehow offers a leveraging opportunity to its learners. However, there must be a balance between factors affecting the note-taking and reading of the UNEP students. Therefore, the University administrators should offer a good learning style that supports expertise in note-taking and reading for these learners.

**Preparing Assignment/Project.**, This part determines whether the students could prepare well and read well efficiently as their learning was developed. It also determines whether their reading and note-taking strategies are sufficient or can be

improved; if not, selective reading and write-down strategies should be considered. It can be noted above that the students can use their metacognitive strategies in determining whether they are learning or thinking while doing their assignments or projects. It was observed that they were able to check their spelling. Hence they are capable of making their answers with correct spelling. They were also able to review their project or assignment for proofreading. They were also capable of understanding the instruction and could research the topic well by reading other references aside from what was suggested by their teachers. Their essays are also connected to the instruction, related to the title, and show an introduction and conclusion. However, they need improvements in dealing with the compilation of references and bibliography to strengthen their claims in their written works and need someone to proofread them before fully submitting them to their teachers.

### 3.4 Correlates between and among the Stress levels and metacognition and the basic profiles of the students.

This part determined whether the demographic profiles of the 251 students of UNEP who answered this survey are significantly related to their stress levels and metacognition. Likewise, the researchers further determined whether Stress Levels are significantly affected by the metacognition of the respondents.

**Table 4: Correlates between and among the Stress levels and metacognition and the basic profiles of the students**

Indicator	Stress level		Metacognition	
	Computed r	Sig (p value)	Computed r	Sig (p value)
Course	.003	.960	.082	.198
Year Level	<b>.166**</b>	<b>.008</b>	.085	.179
Sex	.016	.803	.091	.152
Age	.066	.294	.084	.183
Civil Status	.010	.873	.016	.804
Working while studying	-.005	.941	-.039	.537
Stress level	--	-	<b>.688**</b>	<b>.000</b>
Metacognition	<b>.688**</b>	<b>.000</b>	--	-

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

\* Correlation is significant at the 0.05 level (2-tailed).

Table 9 above shows that between and among the Stress levels and metacognition and the basic profiles of the students, only the Year level is highly correlated to the Stress Level with a

computed r of 0.166 and p-value of 0.008. At the same time, the rest of the demographic profiles of the respondents are not significantly related to their metacognition and stress levels. Thus, it implies that



the students of UNEP have varying levels of stressors and use metacognition differently. Moreover, it is noteworthy to observe a highly significant relationship between the Stress Level and Metacognition of students of UNEP, with a computed  $r$  of 0.688 that yielded a  $p$ -value up to 0.000. Thus, it implies that the stressors the students experienced during the pandemic can be effectively reduced if the students efficiently utilize metacognitive strategies. Therefore, teachers and school administrators should carefully consider school-related activities that can be utilized together with online learning platforms so that the students can discover how to use their metacognition effectively.

#### IV. CONCLUSION

The findings show that the students of the University of the Northeastern Philippines, Iriga City, Philippines, represent variables related to their stressors and metacognition despite the COVID-19 pandemic. Said factors affect the quality of the learning experience they receive from the university. Hence, they need to consider checking the cause of their stressors and carefully consider various strategies on metacognition to address them fully. The respondents agreed that they experienced somewhat stressful situations after the sudden transition to a different learning modality. However, with the help of metacognition through Motivation, Organizing and Planning Work; Working with others and Utilizing resources and Feedback; Managing School Work Stress; Note Taking and Reading, and Preparing Assignment or Projects, students can better balance their studies and achieve higher learning outcomes. As a result of the high correlation between the level of stress and metacognition of students, the lack of resources, communication difficulties, difficulty in adopting new technologies for modular, distance, and mixed learning, and a lack of time balancing family and schooling can all be overcome by adapting better metacognitive learning strategies. The school administration can use this for policy making and training of teachers for better implementation of various learning platforms, strategies, and approaches during and beyond the COVID-19 pandemic.

#### Acknowledgment

The researchers would like to acknowledge the Office of the University Research Director, who helped them transform this research into a publishable format. Also, they thank the Office of the University President and Office of the Vice

President for Finance for assisting them in the financial aspects of completing this paper. Much thanks to the college students-respondents who answered the survey forms and the college secretaries and faculty members who facilitated the distribution of forms.

#### REFERENCES

- [1]. Anthonysamy, L., Koo, A-C., Hew, S.-H. (2020). Self-regulated learning strategies and non-academic outcomes in higher education blended learning environments: A one-decade review. *Education and Information Technologies*, 1–28. <https://doi.org/10.1007/s10639-020-10134-2>.
- [2]. Avila, Ernie C., and Ana Maria Gracia J. Genio. 2020. "Motivation and Learning Strategies of Education Students in Online Learning during Pandemic Motivation and Learning Strategies of Education Students in Online Learning during Pandemic." *PSYCHOLOGY AND EDUCATION* 57 (9): 1608–14.
- [3]. Avila, Ernie C., Gracia J. Abin, Glenda A. Bien, Dominador M. Acasamoso, and Dorren D. Arenque. 2021. "Students' Perception on Online and Distance Learning and Their Motivation and Learning Strategies in Using Educational Technologies during COVID-19 Pandemic." *Journal of Physics: Conference Series* 1933 (1): 012130. <https://doi.org/10.1088/1742-6596/1933/1/012130>.
- [4]. Avila, Ernie C., and Honorato I. Cabrera. 2020. "The Use of Facebook Group in Distance Learning During the Time of Covid-19 Pandemic." *PalArch's Journal of Archaeology of Egypt/ Egyptology* 17 (6): 1859–71.
- [5]. Avila, Ernie C, and Mary Kris S Lavadia. 2019. "Investigation of the Acceptability and Effectiveness of Academic Podcasts to College Students' Scholastic Performance in Science." *Indian Journal of Science and Technology* 12 (34) (September): 1–8. <https://doi.org/10.17485/ijst/2019/v12i34/127382>.
- [6]. Boser, U. (2018). Learning Is a Learned Behavior. Here's How to Get Better at It. Retrieved December 04, 2020, from [https://hbr.org/2018/05/learning-is-a-learned-behavior-heres-how-to-get-better-at-it?utm\\_medium=social](https://hbr.org/2018/05/learning-is-a-learned-behavior-heres-how-to-get-better-at-it?utm_medium=social).
- [7]. Broadbent, J., & Poon, W. L. L. (2015). Self-regulated learning strategies & academic





- achievement in online higher education learning environments: A systematic review. *Internet and Higher Education*, 27, 1–13. <https://doi.org/10.1016/j.iheduc.2015.04.007>.
- [8]. Breslend, Nicole, et al. “Biosocial Interactions Between Relational Victimization and
- [9]. Physiological Stress Reactivity in Relation to Anxious/Depressive Symptoms and Cognitive Biases in Adolescent Girls.” *Merrill - Palmer Quarterly*, vol. 64, no. 1, Wayne State University Press, Jan. 2018, p. 39.
- [10]. Ch Son, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on College Students’ Mental Health in the United States: Interview. *J Med Internet Res*. 2020 Sep 3;22(9): e21279. pmid:32805704
- [11]. Clabaugh, A., Duque, J. F., & Fields, L. J. (2021). Academic Stress and Emotional Well-Being in United States College Students Following Onset of the COVID-19 Pandemic. *Frontiers in psychology*, 12, 628787. <https://doi.org/10.3389/fpsyg.2021.628787>
- [12]. Cho, M. H., & Heron, M. L. (2015). Self-regulated learning: The role of motivation, emotion, and use of learning strategies in students’ learning experiences in a self-paced online mathematics course. *Distance Education*, 36(1), 80–99. <https://doi.org/10.1080/01587919.2015.1019963>.
- [13]. de Oliveira Araújo FJ, de Lima LSA, Cidade PIM, Nobre CB, Neto MLR. Impact of Sars-Cov-2 and its reverberation in global higher education and mental health. *Psychiatry Res*. 2020;288: 112977. <http://europepmc.org/abstract/MED/32302818>. pmid:32302818
- [15]. Dumford, A. D., & Miller, A. L. (2018). Online learning in higher education: Exploring advantages and disadvantages for engagement. *Journal of Computing in Higher Education*, 30(3), 452–465. <https://doi.org/10.1007/s12528-018-9179-z>. Return to ref 2018 in article
- [16]. Goradia, T., & Bugarcic, A. (2017). A social cognitive view of self-regulated learning within the online environment. *Advances in Integrative Medicine*, 4(1), 5–6. <https://doi.org/10.1016/j.aimed.2017.05.001>.
- [17]. Hasanah, U., Ludiana, L., Immawati, I., & Livana, P. H. (2020). Psychological description of students in the learning process during pandemic COVID-19. *Jurnal Keperawatan Jiwa (JKJ): Persatuan Perawat Nasional Indonesia*, 8(3), 299-306.
- [18]. Lucas, M.R. D., and Corpuz, B. B., *Facilitating Learner-Centered Teaching*. 5<sup>th</sup> Edition, Lorimar Publishing Inc., Cubao, Quezon City, Manila (2020)
- [19]. Pariat L, Rynjah A, Joplin ,Kharjana MG. Stress Levels of College Students: Interrelationship between Stressors and Coping Strategies. *IOSR-JHSS*. 2014;19(8): 40–46.
- [20]. Puška, A., Puška, E., Dragić, L., & Maksimović, A. (2020). Students’ satisfaction with E-learning platforms in Bosnia and Herzegovina. *Technology, Knowledge, and Learning*. <https://doi.org/10.1007/s10758-020-09446-6>.
- [21]. Roth, A., Ogrin, S., & Schmitz, B. (2016). Assessing self-regulated learning in higher education: A systematic literature review of self-report instruments. *Educational Assessment, Evaluation, and Accountability*, 28, 225–250. <https://doi.org/10.1007/s11092-015-9229-2>.
- [22]. Shivaji, Suryawanshi, and R. Adsul. “Impact of Teens and Parent Relation on Various Personality Factor of High School Students.” *Indian Journal of Health and Wellbeing*, vol. 6, no. 6, Indian Association of Health, Research and Welfare, June 2015, p. 625.