

## Evaluating the Metacognitive Strategies of Selected College Students in a Higher Education Institution in Cavite, Philippines: A Psychological Perspective

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### Abstract

**Background:** One of the most fundamental ways that reflective activity helps learning in general is through encouraging metacognition. In this study, learning is referred to as metacognition, which is the awareness of one's own cognitive processes.

**Purpose:** The research objective of the study was to determine the metacognitive strategies of colleges students in one higher education institution in Cavite, Philippines. In terms of motivation, planning and organizing your work, collaborating with others and utilizing resources and feedback, managing the stress associated with schoolwork, taking notes and reading, and preparing assignments and projects, it sought to ascertain the levels of metacognitive strategies used by students.

**Design/Methodology/Approach:** The research demonstrated the value of these metacognitive strategies by assessing the levels of metacognition of the college students based on their own experiences, perspectives, or outlook. These 25 students were the respondents of this study in Emilio Aguinaldo College – Cavite. They were all taking up Teacher Education in SY-2020-2021.

**Findings:** Majority of the student respondents apply self-motivation at work and some of them are easily distracted that makes them feel uncomfortable to perform the tasks. The findings reveal that despite some slight lapses on their side throughout the pandemic, students at this college were capable of dealing with the hardships and continue to learn. The topics were employed to help them better their learning and prepare for a future career as educators.

**Research Limitations:** This study is limited only to the intent of improving the metacognitive strategies of college students in one higher education institutions in the Philippines. It focused on the education students' assessment on their levels of metacognition based on their own perspectives.

**Originality/Value:** This study is unique since it focused mainly on the metacognitive strategies of selected Education major students in one higher education institution in the Philippines.

**Keywords:** metacognition, strategies, motivation, organization, work stress

## INTRODUCTION

Being mindful and taking charge of one's mind is crucial for effective learning. The power of strong metacognitive skills in influencing student learning and performance cannot be underestimated. However, developing meaningful metacognitive engagement may be challenging for many students, even though it is achievable with time and effort. The study of metacognition was pioneered by Ann Brown in 1978, who identified two fundamental principles: "knowledge of cognition" (our understanding of our cognition) and "regulation of cognition" (how we control and manage our cognition to accomplish tasks). Knowledge of cognition comprises three types of knowledge: declarative knowledge (knowing "about" things), procedural knowledge (knowing "how" to do things), and conditional knowledge (understanding the "why" and "when" aspects of cognition). On the other hand, cognitive control involves activities like planning and evaluation. The capacity to strategically allocate resources and employ techniques is linked to knowledge of cognition, while cognitive control is associated with more systematic skills like planning, monitoring, and assessment.

Students' awareness of how they learn best and their ability to manage these aspects is referred to as metacognition. A student demonstrates metacognition when she recognizes that studying with a stereo on reduces her ability to concentrate and hence turns it off. Metacognitive students are able to alter techniques to match learning demands than their less metacognitive counterparts, and as a result, they are more effective students (Eggen & Kauchak, 2004). Encouragement of metacognition is one of the most fundamental ways that reflective activity helps learning in general. The awareness of one's own cognitive functioning — in this case, learning — is known as metacognition. Being conscious of one's own thinking process and coping mechanisms. It permits students should be more aware of their actions and their motivations and of potential applications for the abilities they are learning differently depending on the circumstance. Jaleel and Premachandran (2016) used a survey to determine secondary school students' levels of metacognitive awareness using the standardized awareness assessment to assess their mental aware. The investigation aims to determine if there are any significant Gender and Locality differences among the various sub samples and the school's management style based on their mental awareness of oneself. The authors came to the conclusion that the activities that promote a strategic and reflective approach to learning should be incorporated into a classroom's regular activities. Such reflective tasks are extras that detract from ongoing assessment, review, and modification as well as work strategy. Teachers can have a long-lasting effect on how their students learn long after they leave the classroom by making learning and problem-solving processes apparent and by assisting students in identifying their own strengths and tactics.

Metacognition is a skill that can be mastered with time and practice, just like most others. Teachers can purposefully include succinct and powerful metacognitive techniques into their lessons to motivate students to participate in reflective activities. This can be accomplished by openly modeling metacognitive practices, such as by being transparent about your own thought and reflection processes or by engaging in any of the activities (Major, Harris, and Zakrajsek, 2015, Gerardo, 2022). You can include a sequence of metacognitive prompts in an assignment to encourage students to reflect on their learning, and instruct them to use the comment tool in Microsoft Word to answer (LaVaque-Manty & Evans, 2013). Students have the chance to check their comprehension of the material and pinpoint any gaps in their learning via self-testing. Students can also activate pertinent knowledge and encode information from prompts through self-testing, making it easier for them to recall it later (Dunlosky et al., 2013).

This study focused on the college students' use of metacognitive strategies in a variety of areas of concern and how these students could manage coping with these strategies at school to ensure that students are prepared at facing the various challenges in their academic life.

## RESEARCH OBJECTIVES

The study's research goal was to determine the metacognitive strategies of college students at one higher education institution in Cavite, Philippines. It focused on determining students' levels of metacognitive strategies in the areas of motivation, organizing and planning your work, working with others and utilizing resources and feedback, managing school work stress, note taking and reading, and assignment and project preparation.

## **THEORETICAL FRAMEWORK**

The research is driven by Kolb's Experiential Learning Cycle, which asserts that this theory of learning can be defined as the mechanism by which knowledge is formed through the transformation of experience. Learning and experience transformation combine to produce knowledge. Experiential learning is distinct from cognitive and behavioral theories of learning in that cognitive theories place a premium on mental mechanisms, whereas behavioral theories downplay the potential role of context in the learning process. Due to its emphasis on reflection and experience in this new normal, this theory was instrumental in evaluating the various METACOGNITIVE STRATEGIES OF college students at one HEI in Cavite, Philippines. Acquiring knowledge requires direct experience, which serves as a springboard for contemplation. These thoughts absorb knowledge and generate abstract ideas. Individuals then transform these concepts into hypotheses about the modern world, which they rigorously evaluate. Once again, knowledge is gleaned from experience by verifying these theories, completing the process. On the other hand, the process does not always begin with practice. Rather than that, depending on the circumstance, each student must choose the method of instruction that works best for them.

## **SCOPE AND LIMITATIONS**

The study was limited to the analysis of the metacognitive strategies of colleges students in a higher education institution in Cavite. It also included some strategies to improve the various categories based on the students' responses. The experiential approach was helpful in the analysis of these metacognitive levels of students.

## **MATERIALS AND METHODS**

### **RESEARCH DESIGN**

This study utilized the quantitative and qualitative methods of research using the survey on metacognition culled from the book "Facilitating Learning" authored by Lucas and Corpuz (2014). It focuses on the six (6) categories of metacognitive levels.

### **SAMPLING TECHNIQUE AND PARTICIPANTS**

The research demonstrated the value of these metacognitive strategies by assessing the levels of metacognition of the college students based on their own experiences, perspectives, or outlook. These 25 students were the respondents of this study in Emilio Aguinaldo College – Cavite. They were all taking up Teacher Education in SY-2020-2021.

### **INSTRUMENT**

The survey questionnaire was adapted from Lucas and Corpuz's (2014) textbook, which was delivered to all students enrolled in the "Facilitating Learning" course in AY-2020-2021. Because the learners' interpretation was already part of the survey, the students carefully evaluated the answers to the questions. The Google Link was used to send the survey questionnaire.

### **DATA GATHERING AND ETHICAL CONSIDERATIONS**

The study was conducted to 25 college students from Emilio Aguinaldo College – Cavite. The study was conducted using the Google Form and the result was automatically received by one of the authors as their professor during that particular semester. Since it was part of the lesson in Week 2 in the syllabus, the students were aware that the survey was also part of determining their metacognitive levels using the six categories mentioned above. A matrix of the participants' answers was created the group leader and their perspectives were carefully analyzed and interpreted based on the survey questionnaire interpretation. Sets of themes of experiences were also established in this study.

### **DATA ANALYSIS**

After conducting this survey, the results were gathered, analyzed, and interpreted based on the interpretation from Lucas and Corpuz (2014). The experiences were basis for improvement of the learners in different aspects or categories in the metacognitive strategies. The professor in-charge conducted an interview among the respondents who willingly shared their experiences that created a theme of this study.

**RESULTS**

**Table 1: Metacognitive Survey Results Per Category**

<b>CATEGORY 1 (MOTIVATION)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
2	45	Scores from 35 to 50 mean that you sometimes get down to work but you can be distracted, you might not always be certain why you are having to work. You probably could benefit from learning some techniques that help you get down to work more consistently and keep at it.
4	50	
7	60	
8	65	
3	65	
1	70	
1	75	
<b>CATEGORY 2 (ORGANIZING AND PLANNING YOUR WORK)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
2	55	Scores from 40 to 65 could mean you are not as well-organized as you could be. Your time management might benefit from a closer analysis
6	65	
2	70	Scores from 70 to 100 mean that you are well-organized and plan ahead for your work.
2	75	
3	80	
4	85	
2	90	
4	100	
<b>CATEGORY 3 (WORKING WITH OTHERS; UTILIZING RESOURCES AND FEEDBACK)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
1	0	There are important resources around you that you are ignoring.
9	45	Scores from 35 to 50 mean you probably collect resources, but you need to ask yourself how you are going to use them more effectively.
1	50	
4	55	Scores from 55 to 85 mean you make full use of resources available, listen well and take an active part in seminars.
6	60	
2	65	
2	70	
<b>CATEGORY 4 (MANAGING SCHOOL WORK STRESS)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
1	10	Scores of 35 and under mean that you are likely to get over-whelmed with your problems which will make you much less effective as a student. You need to acquire the skills of managing stress more effectively. You need to take action.
1	15	
2	20	
1	25	
3	30	
6	35	
4	40	Scores from 40 to 65 mean that you handle your anxieties and concerns moderately well but could develop manage them more effectively.
3	55	
2	60	
0	65	Scores from 65 to 80 mean that although you sometimes get stressed and worried you have the skills of knowing how to minimize problems and look after yourself.
<b>CATEGORY 5 (NOTE-TAKING AND READING)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
1	50	Scores from 45-70 mean your reading and note taking skills are adequate, but

5	55	could be improved
1	60	
2	65	
3	70	
3	75	Scores from 75 to 110 mean you prepare well and read efficiently, learning as you go. You waste little time reading irrelevant material.
3	80	
2	85	
4	95	
1	100	
<b>CATEGORY 6 (PREPARING AN ASSIGNMENT/PROJECT)</b>		
<b>FREQUENCY (Students)</b>	<b>Score</b>	<b>Interpretation</b>
1	50	Scores from 40-65 mean that there is room for improvement although you do demonstrate some skills
2	55	
5	65	
3	70	Scores from 70-100 mean that your essays are well thought out, researched and clearly written
3	75	
8	80	
1	85	
2	90	

The table above shows the different categories answered by the student respondents. The categories are divided into six categories. It shows that in the first Category on Motivation, the majority of respondents (getting a frequency of 20) do not seem to have many difficulties starting and finishing their work, while only five (5) students occasionally start and finish their work but can be distracted and may not always be aware of why they are required to do so. They probably stand to gain from learning some methods that will enable them to work harder and more consistently. According to Siqueira, M.A.M., Gonçalves, J.P., Mendonça, et al. (2020), one's motivation to learn is influenced by their perceptions of the significance of a particular subject and how it will enable them to deal with novel situations or find solutions to pressing issues.

Metacognitive strategies help students to examine their own thinking. They have more influence over their own learning now that they comprehend the learning process. It also increases one's personal capacity for self-regulation and management of one's own learning motivation. Metacognitive activities include planning how to approach learning tasks, selecting acceptable ways to finish a task, evaluating progress, and gauging comprehension.

Zulkipli (n.d.) conducted research to explore the relationship between metacognition and students' academic achievement. Metacognition, defined as thinking about one's own thinking, has been suggested to play a crucial role in successful learning. The study took place at a private secondary school in Kuching, Malaysia, and utilized the widely used Shraw and Anderson Metacognitive Awareness Inventory. It investigated the connections between students' academic progress and five metacognitive control strategies: planning, information management strategies, understanding monitoring, debugging strategies, and evaluation. The research also examined students' metacognitive awareness across different academic years and genders. The findings indicated no significant differences in metacognition awareness between male and female students across all academic years. However, there was a significant positive relationship between students' academic performance and metacognitive awareness. These results highlight the importance of fostering metacognition in students to enhance their learning outcomes. To promote metacognition, teachers, parents, and students themselves can create a metacognitive environment by encouraging more metacognitive activities. For instance, students can keep a thinking journal to reflect on and analyze their cognitive processes, and teachers can prompt reflective writing on what students have learned, comprehended, and struggled with during the day. Students can also identify what they know and don't know at the beginning of new topics through self-asking approaches, helping them make informed decisions about their learning responsibilities and goals. By emphasizing the processes of planning, self-regulation (monitoring), and self-evaluation, educators can support students in developing effective metacognitive skills for improved learning outcomes.

Successful learning relies on metacognition, which involves intentional control of cognitive processes in learning. Metacognitive activities include deciding how to approach learning assignments, monitoring comprehension, and assessing progress. Nurturing metacognition in students is essential for successful learning, and all stakeholders - teachers, parents, and students - can contribute to creating a metacognitive environment at

school and home by encouraging metacognitive practices. Keeping a thinking journal can help students improve their ability to reflect on and analyze their cognitive processes. Teachers can assist in this by asking students to write reflections on their learning experiences each day. Additionally, students can engage in self-asking at the beginning of new topics to identify what they already know and what they need to learn, empowering them to set learning goals effectively. Encouraging the processes of planning, self-regulation (monitoring), and self-evaluation is crucial for effective learning. By fostering metacognition, educators can empower students to take control of their learning and achieve better outcomes in their academic pursuits.

Seventeen (17) respondents are well-organized and have their work ahead of time planned, according to the second category on organizing and planning your work. Even though there are only eight (8) of them, they are not as organized as they could be. A closer examination of their time management might be beneficial. Your success is greatly influenced by your capacity for organization, and your team and colleagues may also be affected. You can think more clearly by keeping things organized. Clear thinking, as well as quick access to the appropriate knowledge and resources, are necessary when making decisions and resolving issues (Content Team, Mind Tools, 2021).

In the third category, "Working with Others, Using Resources, and Receiving Feedback," the majority of respondents fully utilize the resources at their disposal, listen intently, and actively participate in seminars. Ten (10) students gather resources, but they need to consider how they will use them more effectively. Only one (1) respondent chooses to disregard the valuable resources that are available. Reynolds (2021) reminds us that feedback is reciprocal and that as educators, we should constantly work to improve our skills.

To foster rapport and group cohesion among students, educators can employ icebreakers, team-building exercises, and reflection activities. These strategies create a positive and inclusive learning environment, allowing students to connect with their peers and feel more comfortable engaging in collaborative learning experiences. Icebreakers help break down barriers and facilitate introductions, while team-building exercises encourage cooperation and teamwork. Reflection activities allow students to share their thoughts and experiences, promoting open communication and understanding within the group. By incorporating these approaches, teachers can create a supportive and cohesive learning community that enhances students' social and emotional development.

Empowering students to take charge of their own learning is essential for fostering resilience and self-directed learning. When teachers co-create learning opportunities with students, they provide them with agency, allowing them to use their voice and leadership in shaping their educational journey. This can be achieved by (1) encouraging students to take ownership of their learning by developing strategies to achieve their goals, (2) supporting the gradual development of students' self-direction and self-assurance in completing learning tasks, and (3) providing opportunities for students to assess their progress and create plans for future growth. Moreover, teachers can involve students in determining assessment criteria and procedures that align with their learning goals, empowering them to engage more meaningfully in their education. By implementing these practices, educators enable students to become active participants in their learning process, leading to greater motivation, engagement, and overall academic success.

Most of the people who answered, with a frequency of ten (10) in the fourth group about dealing with stress at school and work, need to learn how to deal with stress better and do something about it. Even though nine (9) of the people who answered only did a little bit well, they could do better. Only one (1) student has the skills to know how to deal with problems and take care of herself/himself. Four (4) student responses are likely to become stressed by their problems, which will make them much less effective as students. The American Institute of Stress says that stress affects about 80% of college students on a daily basis. Stress that isn't handled well can make it hard to focus, make you angry, make you tired, change your hunger, weaken your immune system, and make it hard to sleep. One of the best ways to avoid and treat stress-related illnesses is to set up a schedule for dealing with worry (Broderick, 2021). Stress is usually thought of as a change from how the body and mind usually work. Stress at work can be caused by a number of things, such as how the job is controlled, how the boss runs the business, etc. Moderate stress is good for both the individual and the company. It helps both organizations and individuals reach their goals. But Panigrahi (2017) says that too much worry can hurt a person's health, mind, and attitude. Stress is an annoying condition caused by too much work and being

overloaded, which makes it harder for students to focus, keep their minds healthy, and do regular things. This study looks at how stress affects students and how students deal with worry. The main goals were to find out how much stress affects students' ability to do well in school, their health, and their general quality of life, as well as what effect worry already has on students (Hemamalini, et al., 2018, Tobe, 2022). When people are stressed out about school, they can have a number of psychological problems, such as less drive, missing class and tests, not finishing their work, etc. Every manager should make stress management a top priority if they want to keep their personal and school lives in order. No matter their age, gender, income level, or anything else, all students should be treated the same and managed in a way that doesn't cause them to be unhappy. One of the main things that caused stress was school. Adding lessons on how to deal with stress to the classroom could help solve this problem. Students should teach other people how to deal with stress. This trend will definitely help students feel more in control of their lives and more successful in school and outside of it. Students who are stressed out should take classes on how to deal with stress. This will help them learn how to deal with their problems and calm down.

Most of the people who answered in Category 5—Taking Notes and Reading—Students who do this 13 times are well-prepared and read quickly while learning new things along the way. They don't spend much time reading things that don't matter. The twelve (12) kids can read and take notes well enough, but they could do better. Changing the information to help you understand it better by condensing, rewriting, sorting, idea mapping, and word mapping is hard to do when you're taking handwriting notes. Taking notes turns into making notes, which is a useful way to understand and process data for later thought, research, or the exchange of notes with lab partners or other students to see how well they understand. This is a good way to learn because talking to someone can help you make your own ideas more clear (Roessingh, 2020).

Taking notes is a skill that is often used during school years. Taking notes is a popular thing to do outside of college, and most people do it from grade school through college. When time is taken into account, taking notes is a skill with two parts. The first one is about taking notes, paying attention to what is being seen, read, or heard at that moment, and how to do that. In the second, you take notes that you can use later. Students who take notes do better at getting the course's main ideas and remembering what they've learned. The main advantage of taking notes is that students don't have to read the whole book. It helps students learn more because it draws their attention to what they are reading or listening to. It makes sure they pay attention in class (Ozcakmak, 2019, Tobe, 2023). He looked at how taking notes while reading and hearing changed the understanding of people who wanted to teach Turkish as a second language. The study also looked at how well each group understood based on how well they did in school and their gender. Comparative and cause analysis were used to make the study. Hatay Mustafa Kemal University's Education Faculty's Department of Turkish Language Teaching found 72 third-grade children to take part in the study. The Comprehension Achievement Test was used in the study to figure out how well the students understood what they read and what they heard. In the study, a 640-word book called "Childhoods of the Famous Scientists" was used as a source of information. At the end of the study, it was found that the Listening-Note Taking groups did statistically better than the Reading, Reading-Note Taking, and Listening groups when it came to understanding what was being said. The kids' classroom grade point rates and how well they understood what they read were found to be linked. There was also no statistically significant difference between the genders of the students.

In the most recent Category 6 Preparing an Assignment/Project survey, eight (8) students said they have some writing skills but still need to get better, while seventeen (17) said their articles are well-planned, well-researched, and written clearly. According to Fry et al. (2018), the tasks may test their understanding, but they may also be artistic and unique, which helps to spark the interest that learning should bring.

Both PISA 2003 and the OECD (2013), which used data from PISA 2012, indicate that when individual school and student background factors are taken into account, schools where students have more weekly homework do better. In a word, homework is multilevel (Trautwein and Koller, 2003), which means that the factors have different effects and meanings based on the level of analysis. At the class level, this has a good effect, but at the individual level, it usually has a negative or no effect. Alonzo, et al. (2017) point out that the effects are most obvious in the classroom and school. This shows how important it is for schools to have rules about homework and how much time each student spends on homework.

## DISCUSSION

The majority of the respondents who identified themselves as students use self-motivation at work, but some of them are easily distracted, which makes them feel uneasy about carrying out the tasks. Student engagement takes into account the historical positioning of the individual within contextual factors (such as personal and familial circumstances) that affect an individual's (or group's) level of engagement in their learning

at any given time. This acknowledges the complexity of engagement beyond cognition, behavior, emotion, and affect (Sitwat Saeed & David Zyngier, 2012). Interestingly, it also expresses how organized these students are in terms of their academics while very few seemed to have problems in organizing their work due to some workload. There is a need to improve their time management on this issue. Their individual school/college should prepare some student development series to strengthen these skills. Some resources are not apparent for the students to use. There was misunderstanding on how they should implement the learnings they gained from the many webinars or seminars they attended. Half of the responders need to manage their stress at work. This suggests that these students require additional pieces of guidance in order to cope with the many activities and to control their stress both at work and at home. On the other hand, majority of the respondents could read efficiently and they only studied those things pertinent to their study. In preparing their assignment or project, most of the responders have the skills in writing and they could exhibit their competency in writing essays. There is a small progress but their willingness to enhance all these talents is clear.

## CONCLUSION

College students have successfully employed metacognitive strategies in six (6) areas or categories to learn from a variety of courses despite the COVID-19 epidemic. Students used a variety of coping mechanisms to deal with their own difficulties, but they all made an effort to succeed in their studies, extracurricular activities, and dealing with personal issues. They also believed that any situations they would face as students working as a team would be successful and wouldn't put them under as much stress. They feel relieved to have their close friends or loved ones around. The results show that, despite a few minor missteps on their part during the epidemic, students at this college were able to cope with the difficulties and complete their education. They made use of the metacognitive techniques described in this study. Although other people felt that some of these learning tactics needed to be improved. They used the themes to enhance their learning and get ready for a future profession in education. They think that challenges faced by students are commonplace and that they can still manage the daily pressure of academics. Finally, despite their heavy workloads, these education major students are highly motivated to learn.

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