



Metacognitive Strategies in Comprehending Self-Learning Printed Modules: Basis for an Action Plan

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ABSTRACT

The research aimed to investigate the metacognitive strategies utilized by one hundred twenty-eight (128) Alternative Learning System learners of Flora district in comprehending their self-learning printed modules. Specifically, this study determined the profiles variables of the ALS learners along with their age, sex, ethnicity, occupation of parents, and learning resources available at home, and identified the metacognitive strategies and how they exemplify such strategies.

The researcher employed the descriptive design in the course of the study. The data were analyzed with the use of frequency count, percentages, weighted mean, and qualitative analysis.

The analysis and interpretation of the data yielded the following results:

1. in terms of their profile variables, there were seventy-five (75) or 58.59% male and fifty-three (53) or 41.41% female Alternative Learning System students in Flora district; their average age is 19.55; one hundred thirteen (113) or 88.28% are Ilokano and only fifteen (15) or 11.72% are Aeta. In terms of their fathers' occupations, one hundred twelve (112) or 87.50% are farmers, nine (9) or 7.03% are drivers, four (4) or 3.13% are employed privately, and three (3) or 2.33% are government employees. Furthermore, as regards their mothers' occupation, one hundred twenty-two (122) or 95.31% are housewives, four (4) are government employees, and only two (2) or 1.56% are into business. Lastly, all (128) of them signified that they have books at home; thirty-seven (37) or 28.91% indicated that they have journals; and only two (2) or 1.56% have magazines. Apart from this, none of them specified that they have online learning resources;
2. there were three metacognitive strategies that students employ in comprehending their self-learning printed modules. These include self-reflection and meditation, awareness on one's strengths and weaknesses and learning styles, and use of active learning strategies and techniques. Among the three metacognitive strategies, the ALS learners yielded the highest mean of 3.65 signifying that they are always aware on their strengths and weakness as well as with their learning styles;
3. from the interview conducted and responses tabulated and transcribed it came out that there were six (6) processes of how they exemplify the use of their metacognitive strategies in comprehending the contents of their self-learning printed modules. These are familiarization, decoding, planning, monitoring, assimilation, and evaluating; and
4. among the proposed instructional intervention strategies to be embedded in the construction of self-learning printed modules to boost metacognitive strategies of students include AIM Strategy (Awareness Inventory of Metacognition), Content Self-Assessment (CSA), Aloud Thinking for Metacognition (ATM), Visual Study Tools and Concept Mapping (VST-CM), and Reflective Writing.

From the findings of the study, the following conclusions were drawn:

1. the pool of learners of the Alternative Learning System is male dominated. Almost all of them are Ilokano. Their mean age is within the expected range age of students who wants to continue their studies through ALS. Most of their parents are into farming as their source of living. They only have printed materials as available resources of learning at home;



2. students are aware on their strengths and weakness as well as with their learning styles. They usually capitalize from this awareness to devise ways in comprehending their self-learning printed modules;
3. there is a process by which students exemplify the use of their metacognitive strategies in comprehending their learning materials. This entails familiarization, decoding, planning, monitoring, assimilation, and evaluating; and
4. there are numerous metacognitive strategies that students can utilize to comprehend their learning materials. Among these would include AIM Strategy (Awareness Inventory of Metacognition), Content Self-Assessment (CSA), Aloud Thinking for Metacognition (ATM), Visual Study Tools and Concept Mapping (VST-CM), and Reflective Writing.

Keywords: Alternative Learning System, Exemplify, Metacognitive Strategies, Self-Learning Printed Modules

INTRODUCTION

Swiftly, the world is changing. This is brought upon by technological advancement which yields firsthand and indefinite conditions for the human being and society, to which it is indispensable to acclimatize. The world is going through these changes that are dynamic to which technological advancement has a great impact on our society. If an individual wants to become a part of the society, he/she has no further choice, but to become accustomed to these vicissitudes. The level of adaptation is the outcome of internal and external factors (which constantly interrelate and reconstruct each other). Education has the objective to concoct each individual within the society to be able to adjust to these alterations and also to arm each individual with aptitudes essential to face the requirements positively. Education is therefore one of the utmost contemporary societal priorities entrenched in the legislative and international systems and institutions where knowledgeable staff members deal with how much they need to focus their attention to this resort and what assets will be given towards these issues. The foremost concern here is not only the significance of education itself. Postmodern circumstances of (not only) the eastern world deals with the demand of how much can we assure the value of such education, where all the parts of being a contemporary human are nurtured in its biological and multifaceted landscape and also this deals with how this may help cultivate the response of this anthropomorphic prospective.

Metacognition is usually defined as a thinking process of thinking [12], or as the awareness of control over internal cognitive tasks during the learning process, or more like a capacity to increase and utilize already identified information of cognitive processes themselves and their tendencies, and over their capability to adjust, develop and cultivate these processes and predispositions [15]. Cognition can be therefore defined as an intricate intellectual process of data processing – this way we can (in relation to metacognition) depict metacognition as an “object” which is governed by metacognitive processes on its detailed level. A perspective where metacognition and cognition can be distinguished is defined by Garofalo a Lester (2015): “it’s indispensable to recognize cognition as a route that is associated to the performance process, unlike metacognition which directs the assortment and preparation of such things, which are needed to be done and then, it displays what is progress right now”. However, it is very rigid to accurately distinguish these two terms apiece. Some authors referred to this construct as to a reflexive abstraction, or to a reflexive intellect [9]. The concept of metacognition was first utilized by developmental psychologists and nowadays it is well deliberated and applied in the arena of clinical psychology, experimental psychology, and cognitive neurosciences and mainly by educational psychology.

As regards strategy development, numerous researches have shown that learning activities have to be sufficiently challenging and encouraging, so the student practices metacognitive strategies in a certain manner. Specifically, this means that the use of metacognitive knowledge conveys benefits only if the learning activities are placed within an individually intermediate range of difficulty [17], due to which the prerequisites of teachers rise. It appears like a preposterous weight for an educational manager to produce testing approaches which would be the same for all learners on the middle level of difficulty. However, the contemporary paradigm of individualization of education standpoint approves this concept. We have to identify what strategy does a learner use and how much is he/she able to simplify them is influenced by metacognitive and associative processes. Apart from the strategy training, an educational manager should be



able to focus even on metacognitive knowledge without which, (even though the drill might be fruitful) the learned behavior may cease to exist on its own pretty soon after when one is no longer exposed to the educational situation. Without early educational intrusion and metacognitive consciousness stimulation, active systematic utilization of strategies take years before it will start to progress [19].

With the advent of COVID-19 in the Philippines, the Department of Education designed a scheme to combat the challenges that it brought. Among the challenges posted by the pandemic includes the absence of face-to-face classes which lead to the absence of the learners and teachers inside the classroom. As a result, teachers were tasked to develop and validate modules that will be used by learners. However, these printed modules will only be distributed to the students and that they are tasked to learn the modules on their own.

Self-learning printed modules are learning tasks that are so organized, sequenced and clearly stated in such a way that provide sufficient direction and guidance to students without having the teacher present at all times. It allows each student to study at a pace most effective and at a time most convenient for him. He can pace his study according to his own ability to assimilate the information and master the objectives [3].

The self-learning printed modules serve as an automatic tutor to help the student work on a specific task according to his speed and ability. If not successful, the student restudies the lesson or seeks the personal instruction of the teacher. It is very effective in optimizing learning in different subject areas. This approach allows the student to understand problems, principles, and processes by actual performance of activities, observing and gathering results, analysing them and making generalizations.

When carried out systematically and with diligence and persistence, self-learning printed modules approach may overcome students' attention and redirect interests. Students eventually discover themselves their power, their motives and drives to succeed.

These rich and intelligible thoughts furnished by credible and reputable individuals point out the use of individualizing instruction serves the purpose of being valuable to the development of positive attitude towards the subject. Studies have already indicated that in instructional materials instruction, each student experiences a feeling of success because at the end of every session, he has accomplished something by himself [10].

With the above-mentioned researches and findings, the Department of Education has decided to utilize modular instruction as one of the ways to cope up with the challenges posted by the pandemic. Not only are modules being utilized this time of the pandemic but as the main medium of instruction with the Alternative Learning System.

There is an educational crisis in the country since the system is being challenged to operate despite the pandemic. Alternative Learning System students do not belong to the exemptions because they are also challenged to learn on their own through with their self-learning printed modules.

On the process of learning, Alternative Learning System learners have their own metacognitive strategies to comprehend the concepts and topics discussed in their self-learning printed modules. These metacognitive strategies that Alternative Learning System students are utilizing are the concern of this study to investigate. It is hoped that whatever findings and results of this study will contribute to the present knowledge and information involving the learning styles of Alternative Learning System learners specifically on the metacognitive strategies of learners when learning on their own through the use of self-printed modules. As such, this will help educational managers and curriculum planners and designers to give a consideration on the learning styles and preferences of Alternative Learning System learners especially during this time of the pandemic which could be integrated on the development and validation of self-learning printed instructional materials which are being distributed to the Alternative Learning System learners.

Statement of the Problem

This study determined the alternative learning system students' metacognitive strategies in comprehending the self-learning printed modules in Flora District at Flora, Apayao for the school year 2021-2022.

Specifically, it answered the following questions:

1. What are the profile variables of the respondents in terms of their:
 - a. sex;
 - b. age;
 - c. ethnicity;
 - d. occupation of parents; and
 - e. learning resources available at home?
2. What metacognitive strategies are being utilized by Alternative Learning System learners in comprehending their self-learning printed modules?
3. How do Alternative Learning System students exemplify the use of the dominant metacognitive strategies in modular learning?
4. What actions/programs/interventions can be proposed to improve the metacognitive strategies of students in comprehending their self-learning printed modules?

Conceptual Framework

This study investigated the metacognitive strategies utilized by Alternative Learning System learners in comprehending their self-learning printed modules.

Metacognition is generally a dynamic process which set ups the meta-structure of data processing and which dynamically contributes in the information processing. Metacognition is a progression which brings about and pedals the intellectual developments of responsiveness, selective perception, keeping in short term retention, encoding into long term memory and retrieval (Senemoğlu, 2017; Eggen & Kauchak, 2011; Irak, 2014).

Additionally, metacognitive strategy involves cognitive processes which learners employ to monitor, control and regulate their awareness and learning. Metacognitive strategy may occur before, during or after a cognitive activity. If one recognizes that he or she does not comprehend a text, he or she may attempt to overcome this problem by applying a scheme like; re-reading, reassessing what he or she understood, continuing to read in order to find some information that might make it easier to comprehend, asking for assistance or varying the objective about the learning element.

In the light of metacognitive knowledge which one assimilated through metacognitive practices, one adopts which strategy will be further effective and relates that strategy in order to accomplish the objectives linked to a particular learning entity. Metacognitive knowledge is established when the defined objectives are completed as an outcome of the activity. Unless one can realize the objectives, metacognitive knowledge is reorganized in the light of latest metacognitive experiences. If the person decides that the applied strategy is not beneficial to attain the goals, then he/she employs a new strategy. As an end result of this repetitive process, the more metacognitive involvements one goes through, the more probable it becomes to decide correctly which strategy is necessary for the present situation.

The conceptual model in the study is depicted in Figure 1.

In determining the metacognitive strategies employed by the Alternative Learning System students, a survey questionnaire was used which was backed-up by an individual interview on how they understand the contents of their self-learning printed modules step by step.

The study utilized of the Input-Process-Output as its research paradigm. As depicted on the paradigm, the research let the Alternative Learning System students utilize the self-learning printed modules provided by the Department of Education. After the Alternative Learning System students were done answering the said modules, they were surveyed as regards the dominant metacognitive strategies that they have utilized in the course of completing the modules which was followed up and confirmed by an individual interview. The output of the study is a list of metacognitive strategies employed by Alternative Learning System students and proposed instructional intervention strategies in the development and validation of self-learning printed modules that is hoped to boost the metacognitive strategies of students.

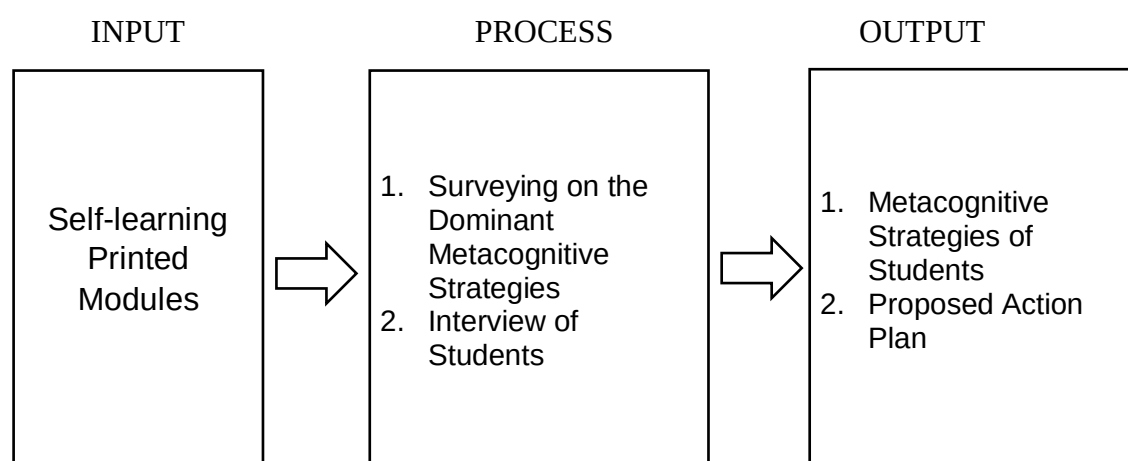


Figure 1. Research Paradigm

METHODOLOGY

This study utilized descriptive research design to able to analyze the data that were collected and gathered.

Descriptive design was used to describe the profile variables of the respondents in terms of their age, sex, ethnicity, parents' occupation, and available learning resources at home. According to McCombes (2019), descriptive research aims to describe a population, situation or phenomenon accurately and systematically. It can answer what, where, when and how questions, but not why questions. A descriptive research design can use a wide variety of research methods to investigate one or more variables. Unlike in experimental research, the researcher does not control or manipulate any of the variables, but only observes and measures them.

Also, in this study, the Alternative Learning System students were asked to identify the process of exemplifying the use of the dominant metacognitive strategies in modular learning. Lastly, actions/programs/interventions were proposed to improve the metacognitive strategies of students in comprehending their self-learning printed modules.

Locale of the Study

This study was conducted in Flora district at Flora, Apayao which consists of sixteen barangays: Allig, Anninipan, Bagutong, Balasi, Balluyan, Lower Atok, Malayugan, Mallig, Malubibit Norte, Malubibit Sur, Poblacion West, Poblacion East, San Jose, Sta.Maria, Tamalunog, and Upper Atok for the school year 2021-2022.

Respondents

The study was conducted at Flora District at Flora, Apayao for the school year 2021-2022. To ensure reliability and validity of results of the study that was conducted, the research involved all one hundred twenty-eight (128) Alternative Learning System students. Hence, the study used total enumeration in selecting the respondents of the study.

Table 1 presents the number of respondents in each barangay of Flora district. As gleaned from the table, there is a total of one hundred twenty-eight (128) Alternative Learning System students from the sixteen (16) barangays of Flora district. From the sixteen (16) barangays, it can be gleaned that Balasi has the most number of learners under the Alternative Learning System with nineteen (19) while Sta.Maria has the least number of learners with three (3)



Table 1. Distribution of Student-respondents

Barangay	Frequency	Percentage
Allig	5	3.91
Anninipan	6	4.69
Bagutong	6	4.69
Balasi	19	14.84
Balluyan	4	3.13
Lower Atok	7	5.47
Malayugan	11	8.59
Mallig	8	6.25
Malubibit Norte	9	7.03
Malubibit Sur	4	3.13
Poblacion West	15	11.72
Poblacion East	9	7.03
San Jose	5	3.91
Sta. Maria	3	2.34
Tamalunog	8	6.25
Upper Atok	9	7.03
TOTAL	128	100

Research Instrument

This research utilized a questionnaire as a data gathering tool which was developed by the researcher. The said tool was developed by the researcher based from the metacognitive learning strategies discussed by Dr. Drew (2020) in HelpfulProfessor.com. The researcher constructed statements that were based from the thirteen (13) metacognitive strategies discussed by Dr. Drew. Moreover, the statements were validated by experts to ensure that the statements described a specific metacognitive learning strategy precisely.

The developed and validated Metacognitive Learning Strategies Questionnaire (MLSQ) consisted of two parts which will include the following:

Part I: Profile Variables

Part II: Metacognitive Learning Strategies Statements/Descriptions

The first part of the questionnaire elicited the profile of the respondents in terms of their sex, age, ethnicity, parents' occupation, and available learning resources at home.

The second part of the questionnaire consisted of thirteen (13) statements which describe the thirteen (13) metacognitive learning strategies discussed by Dr. Drew individually. The second part elicited open-ended responses from the student-respondents involving other possible metacognitive learning strategies that they are utilizing in their subject areas aside from the enumerated strategies in Part I. A Semi-Structured Interview Questionnaire was also used to discover the dominant metacognitive strategies.

Data Gathering Procedure

the researcher conducted the necessary procedures to gather needed data or information that are needed in the course of the study.

First, the MLSQ was constructed and validated by the Education Program Supervisor in ALS.



Second, the researcher sought necessary permission from the Schools Division Superintendent of Apayao Division through a letter to allow the Alternative Learning System students of Flora district participate in the study.

Third, after the approval of the Schools Division Superintendent allowing the Alternative Learning System students participate in the study, letters asking the full cooperation and participation of the Alternative Learning System students and select teachers were also prepared and distributed.

Fourth, the Metacognitive Learning Strategies Questionnaires (MLSQ) was fully administered to the Alternative Learning System student-respondents. At most thirty (30) minutes was given to each student-respondent to complete the questionnaire. After the completion of the Metacognitive Learning Strategies Questionnaires (MLSQ), the researcher asked a series of interview questions that inquired on how the Alternative Learning System student-respondents exemplify their use of dominant metacognitive strategies in comprehending the self-learning modules. The Alternative Learning System student-respondents were asked to allow the researcher to record their responses through the use of a pen and paper.

Lastly, the data and information gathered and collected were tabulated and analyzed. In analyzing the data provided by the respondents regarding the process of how they exemplify the use of the dominant metacognitive strategies, the questions were translated in Ilocano which is the dominant dialect in the community.

Statistical Treatment of data

The data that that were gathered were tallied and the frequencies were counted, tabulated, analyzed and interpreted. The following tools were utilized under the course of the study:

1. To determine their profile variables along sex, age, ethnicity, parents' occupation, and available learning resources at home, frequency count, percentage, mean, and standard deviation were utilized.
2. To determine the dominant metacognitive learning strategies employed by the Alternative Learning System students in learning their printed modules, a 4-point Metacognitive Learning Scale was used:

Range Interval	Descriptive Rating
1.00 – 1.740	Never
1.75 – 2.49	Sometimes
2.50 – 3.24	Frequently
3.25 – 4.00	Always

3. To determine how the Alternative Learning System students exemplify the use of the dominant metacognitive strategies in their modular learning, an in-depth interview guide or protocol was utilized.

RESULTS AND DISCUSSION

The data and findings in this study are presented, analyzed, and interpreted on this section.

Profile Variables of the Students

This study determined the profile variables of the one hundred twenty-eight (128) Alternative Learning System students along their sex, age, ethnicity, parents' occupation, and learning resources available at home.

Table 2.1 Alternative Learning System Students' Sex

Sex	Frequency	Percentage
Male	75	58.59



Female	53	41.41
Total	128	100

As can be gleaned from table 2.1, there were seventy-five (75) or 58.59% male and fifty-three (53) or 41.41% female Alternative Learning System students in Flora district. The data shows that the study is male dominated.

Table 2.2 Alternative Learning System Students' Age

Age	Frequency	Percentage
16-20	97	75.78
21-25	16	12.5
26-30	10	7.81
31-35	3	2.34
36-40	1	0.0078
41-above	1	0.0078
Mean: 19.55		
Total	128	100

Table 2.2 presents the age as a profile variable of the one hundred twenty-eight (128) Alternative Learning System students of Flora district. It can be seen that ninety-seven (97) or 75.78% of them are 16-20 years, sixteen (16) or 12.50% are 21-25 years old, ten (10) or 7.81% are 26-30 years old, three (3) or 2.34% are 31-35 years old, and two are more than thirty-six (36) years old. With a mean age of 19.55, the data shows that the students of Alternative Learning System of Flora district are within the expected range age of students who wants to continue their studies through ALS.

Table 2.3 Alternative Learning System Students' Ethnicity

Ethnicity	Frequency	Percentage
Ilokano	113	88.28
Aeta	15	11.72
Total	128	100

Of the one hundred twenty-eight (128) Alternative Learning System students of Flora district, one hundred thirteen (113) or 88.28% are Ilokano and only fifteen (15) or 11.72% are Aeta. This data only shows that Flora is an Ilokano dominated municipality. Many, if not all, are using Iloco as their native language.

Table 2.4 Alternative Learning System Students' Parents' Occupation

Parents' Occupation	Frequency	Percentage
A. Father		
Government Employed	3	2.33
Employed Privately (Business)	4	3.13
Farming	112	87.5
Driver	9	7.03
B. Mother		
Government Employed	4	3.13
Employed Privately (Business)	2	1.56



Housekeeping	122	95.31
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Table 2.4 shows the data on the parents' occupation of the one hundred twenty-eight (128) Alternative Learning System students of Flora district. As shown from the table as regards on their fathers' occupation, one hundred twelve (112) or 87.50% are farmers, nine (9) or 7.03% are drivers, four (4) or 3.13% are employed privately, and three (3) or 2.33% are government employees. Furthermore, as regards their mothers' occupation, one hundred twenty-two (122) or 95.31% are housewives, four (4) are government employees, and only two (2) or 1.56% are into business.

The collected and gathered data only shows that most of the parents of the respondents' fathers are into farming. This supports the fact that Flora is an agricultural-oriented municipality. Most of the constituents of this municipality do farming as a source of their income. Also, the data shows that almost all their mothers are housewives. This supports the fact that most of the constituents of Flora still practice the tradition of housewives staying at home to take care of the children and husbands as breadwinners. However, housewives also assist their husbands in some of the works in the field.

Table 2.5 Alternative Learning System Students' Available Learning Resources

Learning Resources	Frequency	Percentage
Books	128	100
Journals	37	28.91
Magazines	2	1.56

As presented in table 2.5, the one hundred twenty-eight (128) Alternative Learning System students were also asked about their available learning resources at home. All (128) of them signified that they have books at home; thirty-seven (37) or 28.91% indicated that they have journals; and only two (2) or 1.56% have magazines. Apart from this, none of them specified that they have online learning resources.

Metacognitive Strategies Utilized by Alternative Learning System learners in Comprehending Their Self-Learning Printed Modules

With the educational challenges posted by the COVID-19 pandemic, the Department of Education has devised ways to cope with these challenges and bridge the gap by conducting education in some alternative ways such as online learning, blended learning, and modular instruction among others. Among these modes of delivery, modular instruction seems to be the most feasible mode for most areas in the country.

In Flora district where Alternative Learning System learners are enrolled, modular instruction was also utilized as the mode of delivery. In this instructional delivery mode, the learners are tasked to study the assigned modules on their own. This research inquired on the strategies, specifically metacognitive strategies, which these learners employ in comprehending their self-learning printed modules. One hundred twenty-eight (128) Alternative Learning System learners of Flora district, Flora, Apayao were asked about the metacognitive strategies that they employ in comprehending their self-learning printed modules.

Table 3.1 Self-Reflection and Meditation as a Metacognitive Strategy

A. Self-Reflection and Meditation	Mean	Descriptive Value
1. I pause throughout a task to consciously check my own actions.	3.67	Always
2. I reach a calm and focused state that can prime me for learning.	3.48	Always
3. I reflect by pausing to think about a task. I usually do a cyclical process where I reflect, think of ways to improve, try again then go back to reflection.	3.66	Always
Total	3.6	Always



Table 3.1 presents self-reflection and meditation as a metacognitive strategy. With an overall mean of 3.60, the ALS students signified that they always self-reflect and meditate in comprehending their self-learning printed modules. To do these, they have indicated that they always take a breather throughout an assignment to intentionally make sure their own actions and reflect by waiting to think about a task. Also, they indicated that they typically do a cyclical process where they consider, think of approaches to develop, attempt again then go back to contemplation.

ALS learners always utilize reflection as a metacognitive strategy in comprehending their modules. This is supported by a weighted mean of 3.67. As the students have indicated, they reflect by pausing to think about a task. They usually do a cyclical process where they reflect, think of ways to improve, try again then go back to reflection. Reflection is metacognitive only if one deliberately reflects on *what the thought processes were* and *how to improve upon them next time*. There are countless models of reflection with varying stages. Most reflective cycles involve planning a task, attempting a task, looking at how one did the task, coming up with things that one did well and areas for improvement, planning the next task with a focus on improving the weaknesses, and trying again. Once one has become skilled at reflection, he/she may also reflect *while* doing a task to make adjustments to the thinking processes.

One metacognitive strategy that the students always employ is meditation. This is being supported by a weighted mean of 3.48. In this strategy, students reach a calm and focused state that can prime them for learning. Dr. Drew (2020) indicated that meditation could be considered as a metacognitive strategy because meditators aim to clear out the chatter that goes on in their heads, reach a calm and focused state that can prime them for learning, and be more aware of their own inner speech.

With a corresponding mean of 3.66, the learners also indicated that they utilize self-questioning methods in comprehending their self-learning printed modules. In this strategy, good students question their actions both while they're completing the task and after finishing it and that they try to reflect. In this strategy, students try to assess the best way to carry out a task, evaluate if they miss something, check if they followed the correct procedure, assess on how they could do better next time, and think about what they're doing.

Table 3.2 Awareness on One's Strengths and Weaknesses and Learning Styles as a Metacognitive Strategy

B. Awareness on One's Strengths and Weaknesses and Learning Styles	Mean	Descriptive Value
1. I look at myself and make a genuine assessment of my strengths and weaknesses to achieve self-improvement.	3.71	Always
2. I take advantage of utilizing my learning styles to comprehend and learn better.	3.58	Always
Total	3.65	Always

With a mean of 3.65, the one hundred twenty-eight (128) Alternative Learning System learners of Flora district signified that they always utilize their recognition on their strengths and limitations and learning styles in comprehending their modules. Furthermore, they have specified that they look at themselves and make an honest evaluation of their strengths and weaknesses to attain self-improvement. Also, they take advantage of employing their learning styles to comprehend and learn better.

The ALS learners indicated that the awareness of strengths and weakness is one of the metacognitive strategies that they always utilize in comprehending their self-learning printed modules. This is being backed up by a weighted mean of 3.71. This means that students look at themselves and make a genuine assessment of their strengths and weaknesses to achieve self-improvement. Fundamental to metacognition is an individual's capability to evaluate their personal strengths and weaknesses. Only through looking at yourself and creating an honest assessment of your weaknesses can you attain self-improvement. One technique to start observing one's strengths and weaknesses is to utilize a SWOT chart. A SWOT chart is a map with four sections which include strengths, weaknesses, opportunities and threats. **Strengths involve** writing down what you perceive to be your strengths as a learner. **Weaknesses entail** writing down what you perceive to be your weaknesses as a



learner. **Opportunities** are about identifying opportunities you may have to improve your cognitive skills in the coming weeks or months. Lastly, **threats involve** identifying potential threats that may prevent you from improving your cognitive skills in the coming weeks or months.

Also, the students indicated that they always utilize their awareness of their learning styles as a metacognitive strategy that they employ in comprehending their self-learning printed modules. This is being supported by a weighted mean of 3.58. They have claimed that they take advantage of utilizing their learning styles to comprehend and learn better. Learning styles theories such as Gardner's Multiple Intelligences and Learning Modalities theories contend that different individuals acquire knowledge and skills in unique ways. Some collective learning styles comprise visual, auditory, kinaesthetic, logical-mathematical, interpersonal, and intrapersonal. A visual learner learns pre-eminently through TV documentaries, graphs, images, and graphics. They are good at recognizing patterns and matching complementary colors. An auditory learner learns best through listening instead of reading or watching. They appreciate reading stories and listening to podcasts. A kinaesthetic learner learns best through movement. They prefer to learn by doing things instead of listening or reading. They are active rather than passive learners. People who are logical-mathematical learners are good at utilizing reasoning to discover answers. They are the best with numbers but may find difficulty with subjective issues in the humanities. An interpersonal learner prefers learning through interaction socially. They prefer group work, have high emotional intelligence, and can compromise to get their job done. An intrapersonal learner is somebody who prefers to mull things over in their own minds. They're pleased to learn in quietness and isolation and may find working with others to be interference. Howard Gardner (1983) created the theory of multiple intelligences where he broadened the definition of intelligence and outlines several distinct types of intellectual competencies. Also, Psychologist David Kolb (1984) proposed the concept of learning styles claiming that individual learning styles merge due to our genetics, life experiences, and the demands of our current environment.

Table 3.3 Active Learning Strategies and Techniques as a Metacognitive Strategy

B. Active Learning Strategies and Techniques	Mean	Descriptive Value
1. I use mnemonic aids strategies to improve my information retention. Some of such aids include using rhymes, patterns and associations to remember	3.66	Always
2. I always write down the important details of what I'm learning.	3.55	Always
3. I have to talk through what my brain is doing, making those thinking processes explicitly.	3.59	Always
4. I use graphic organizers in understanding concepts that are presented in my self-printed modules.	3.58	Always
5. I create a regulation checklist that would help me remind myself to pause and reflect-in-practice at regular intervals, prompts me to think about what strategies should I use and whether they are appropriate for the task, self-questions myself to remind me to question my choices, helps me focus on my developments such as KWL charts.	3.56	Always
6. I employ active reading strategies that ensure me to concentrate while I read and actually comprehend the information.	3.55	Always
7. When learning, I turn my body to directly face a speaker, make eye contact, ask questions, nod when appropriate, and repeat what was said to me.	3.6	Always
8. I often have to think about how I'll go about a task.	3.6	Always
Total	3.59	Always

Based on the responses of the one hundred twenty-eight (128) Alternative Learning System learners of Flora district, they always utilize their active learning strategies and techniques as a metacognitive strategy in comprehending their self-learning printed modules. This is supported by an overall mean of 3.59.

A mean of 3.66 shows that the ALS learners utilize mnemonic aids strategies to improve their information retention. Some of such aids include using rhymes, patterns and associations to remember. A reason why the



students least utilized mnemonic aids strategies is that they are not forced to memorize terms or words and phrases since these are readily available in the modules and they could be accessed anytime they are needed.

Likewise, the students indicated that they always write down the important details of what they are learning. This indication is being supported by a weighted mean of 3.55. This proves that the learners utilized a metacognitive strategy in the form of writing down what they are learning.

In addition, a weighted mean of 3.59 supports that the learners always utilized a thinking aloud metacognitive learning strategy. This strategy makes a learner really think. They have to talk through what their brain is doing, making those thinking processes explicit.

In comprehending their modules, the students always utilized graphic organizers as a metacognitive learning strategy. A mean of 3.58 shows that they use graphic organizers in understanding concepts that are presented in their self-printed modules. Graphic organizers, also sometimes called cognitive tools, help learners to consciously improve their thinking processes. They assist learners in organizing their thoughts, creating connections between things they know, thinking more deeply about something, and visualizing processes and procedures. Some examples of graphic organizers that learners utilize include mind maps, flow charts, spider diagrams, and among others. The ideal graphic organizer will allow learners to spill their thinking out onto a sheet or screen and shuffle and sort out thoughts to help them organize their thoughts better. By using a graphic organizer, they are more effectively thinking about their thinking.

A mean of 3.56 indicates that the learners always create a regulation checklist, as indicated by Dr. Drew (2020), that would help them remind themselves to pause and reflect-in-practice at regular intervals, prompts them to think about what strategies should they use and whether they are appropriate for the task, self-questions themselves to remind them to question their choices, helps them focus on their developments such as KWL charts. A regulation checklist can either be task based or generalized. A task based regulation checklist is usually created before a task begins. It will list the thought processes required to succeed in the task, list the observable outcomes of higher order thinking linked to the task, and list the checkpoints during the task where people should pause to reflect on their thinking. A general regulation checklist provides regulation strategies that can be used across any normal task.

With a corresponding mean of 3.55, the students indicated that they employ active reading strategies that ensure them to concentrate while they read and actually comprehend the information being read. Some examples of active reading strategies that they employ include underlining text, using a ruler to read, and scanning and skimming. While reading, students underline key or important bits of information to highlight their importance in their mind, place a ruler under the sentence they're reading to help them focus on that line, and in informational texts, they scan and skim for the information they need and pay close attention to subheadings that give them a clue about where they will find the key information.

Moreover, the students indicated that when learning, they always turn their body to directly face a speaker, make eye contact, ask questions, nod when appropriate, and repeat what was said to them. This confirms that they utilize active listening strategy as a metacognitive learning strategy. This is being supported by a weighted mean of 3.60.

Lastly, the students indicated that they always plan ahead. This is backed up by a weighted mean of 3.60. Hence, the students often have to think about how they will go about a task. Planning ahead involves thinking about what a student is going to do in order to complete a task. During the planning phase, learners might make decisions such as deciding what strategies they will use when a task, competition or activity begins, tossing up a range of different thinking skills they might utilize when completing a task, reminding themselves not to make the same mistakes they made last time, and preparing some tools that will help them keep their thinking on track, such as preparing graphic organizers.

When students or learners "think about their thinking," they become more capable of improving themselves not only on the academic aspect but with other facets as well. Metacognitive strategies can be acquired, practiced, and made into behaviors in order to develop learning, learning and *cognitive* skills into the future.



The findings of this study confirm are parallel findings with that of Dr. Drew (2020) where there were indicated metacognitive strategies utilized by students in comprehending their self-learning printed materials.

Processes of exemplifying the use of the dominant metacognitive strategies in comprehending the self-learning modules

Metacognition entails a process that takes place on a learner's cognition. There must be a step by step route that has to be done by an individual before metacognition fully occurs.

This study is inclined to investigate the process on how the students exemplify the utilization of metacognitive strategies as they comprehend their assigned self-learning printed modules. To do so, the researcher has chosen ten (10) select interviewees. According to *Creswell* (1998), there should be at least ten (10) to thirty (30) participants in a study where it conducts an interview. Since the responses of the participants reached the saturation point, then there were just only (10) interviewees who participated. Also, the participants were selected randomly. Saturation point refers to the point in the research process when no new information is discovered in data analysis, and this redundancy signals to researchers that data collection may cease.

A semi-structured guide as constructed by the researcher which consisted of one central question and interview questions. After the interview was conducted among the ten Alternative Learning System learners of Flora district, their responses were transcribed. The interview transcription was then transformed into smaller units which are the codes. After the codes were harnessed from the interview questions, they were then again converted into much smaller units which are the categories. Finally, the categories were broken down into much smaller subunits which are the themes.

Table 4 presents the research transcription along with the codes, categories and themes.

Table 4 Research Transcription

Themes	Categories	Codes
		get acquainted with the instructional material
	Material familiarization	know better the modules
		familiarize oneself to the distributed modules
		read well the modules
		adapt to the nature of the modules
	Accustoming on the modules	acculturate oneself to the modules
Familiarization		acclimatize with the information in the modules
		decipher the information presented
	Decrypting contents	figure out the data included
		unravel the details
	Interpret the presented facts and figures	grasp the contents
Decoding		translate the facts
		expound the information
		paraphrase the contents
		formulate a technique
	Strategize a learning plan	devise a method
		lay a learning plan
		plan a learning strategy
Planning		plot a knowledge acquisition method
	Designing knowledge	mapping of knowledge acquisition technique



	acquisition approach	
		form an approach to acquire knowledge and information
	Observe strengths and weaknesses	spot my own weaknesses
		know my strengths
		acknowledge my assets
		examine my skills
	Keeping track of skills and competencies	utilize my acquired competencies
Monitoring		monitor my skills and capabilities
		admit what I do not know
		concede with my weaknesses
	Acknowledging deficiency	recognize my deficits
		accept my inadequacies
		take in new information
	Data and information absorption	comprehend new ideas
		grasp new presented concepts
		learn new data presented
Assimilation		integrate the ideas to new situations
		blend new knowledge to new instances
	Knowledge incorporation	incorporate the newly learned concepts
		determine my newly acquired knowledge and competencies
		analyze my capabilities
	Assess acquired competencies	evaluate my proficiency
Evaluating	Measuring of learned skills	evaluate newly acquired skills
		rate my skills
		quantify what I can do

During the interview, it was discovered that there were six (6) steps that the participants indicated in exemplifying the use of their dominant metacognitive strategies in comprehending their self-learning printed modules. These include the following:

1. Familiarization
2. Decoding
3. Planning
4. Monitoring
5. Assimilation
6. Evaluating

It was revealed that self-learning is a need for familiarization on the learning material that is being used. They claimed that material familiarization or being accustomed to the modules is the first step of a successful exemplification of one's metacognitive strategies. The participants indicated that they have to "get acquainted with the instructional material", "know better the modules", "familiarize oneself to the distributed modules", "read well the modules", "adapt to the nature of the modules", "acculturate oneself to the modules", and "acclimatize with the information in the modules". In fact, one participant interviewee has stated the following in support to the first step (familiarization) of exemplification of dominant metacognitive strategies:

“Para kaniak kas estujante nga rumbeng nga mangawat dagiti naikabil ti modyul, ti umuna nga aramiden ket ipamiliar iti bagik kadagiti naiwaras a modyuls. Daytoy ti mangted kaniak iti nasayaat a pangrugian nga agturong iti naballigi a pannakaawat iti naibaga a material.”

When transcribed, “In my perspective as a student who is inclined to comprehend the self-learning printed modules, the first step is to familiarize myself to the distributed modules. This gives me a good starting point towards a successful comprehension of the said material.”

Second, as provided by the transcribed responses of the interviewees, they need to decode. One of the interviewees told that:

“Ti panangpanunot ti impormasion ken datos a naiparang kadagiti modulo ket isu ti sumaganad nga addang ti panangiparang kadagiti metakognitibo nga estratehia. Kaipapanan daytoy a masapul nga ammuen ti maysa dagiti kinapudno ken detalye a naipasimudaag kadagiti materiales a mangisuro.”

When transcribed, “Figuring out the information and data presented in the modules is the next step of exemplifying metacognitive strategies. This means that one has to know the facts and details indicated in the instructional materials.”

Third, after successfully decoding the details, facts, figures, data and information provided in the modules, the students need to plan. This means that they need to strategize and design a knowledge acquisition approach. This is being supported by the responses of the interviewees such as “formulate a technique”, “devise a method”, “lay a learning plan”, “plan a learning strategy”, “plot a knowledge acquisition method”, “mapping of knowledge acquisition technique”, and “form an approach to acquire knowledge and information”. Among the interviewees, one stated that:

“Ti panagimapa ti maysa nga estratehia ket maysa kadagiti napateg a proseso iti panangiparang kadagiti metakognitibo nga estratehia a kas daytoy ket mangpasayaat ti naannayas a tekniko ti panaggun-od ti pannakaammo.”

When transcribed, “Mapping out a strategy is one of the important processes in exemplifying metacognitive strategies as this will facilitate a smooth knowledge acquisition technique.”

Fourth, as the transcribed responses provide, is monitoring. In this process of exemplifying the dominant metacognitive strategies of the students in comprehending their self-learning printed modules, they need to observe strengths and weaknesses, keeping track of their skills and competencies, and acknowledging their deficiencies. The interviewees indicated that they need to “spot my own weaknesses”, “know my strengths”, “acknowledge my assets”, “examine my skills”, “utilize my acquired competencies”, “monitor my skills and capabilities”, “monitor my expertise”, “admit what I do not know”, “concede with my weaknesses”, “recognize my deficits”, “realize my shortages”, and “accept my inadequacies”. One of the interviewees stated the following:

“Sigurado nga adda dagiti kabaelan a nagun-odko manipud kadagiti napalabas nga asignaturak. Nainsiriban nga usaren dagitoy a kabaelan nga agturong iti pannakaawat kadagiti module a naituding kaniak.”

When transcribed, “Surely, there are competencies which I have acquired from my past subjects. It will be wise to utilize these competencies towards understanding the modules assigned to me.”

The fifth process of how the participants utilized their metacognitive strategies in comprehending their self-learning printed modules, as the tabulated and transcribed interviews provide, is to assimilate. Assimilation, as provided from the collected responses, entails data and information absorption as well as knowledge incorporation. The interviewees indicated that in this part of the process, they “take in new information”, “comprehend new ideas”, “grasp new presented concepts”, “learn new data presented”, “integrate the ideas to

new situations”, “blend new knowledge to new instances”, and “incorporate the newly learned concepts”. One of the respondents stated the following confirming assimilation is part of the process:

“Masapul a maawatak dagiti baro a naiparang a konsepto manipud iti modulo. Daytoy ket aktual a ti kapatgan a paset dagiti amin a proseso iti panagusar kadagiti metakognitibo nga estratehia.”

In English, “I have to grasp new presented concepts from the module. This is actually the most important part of all the processes in utilizing our metacognitive strategies.”

The final step of the process of how the participants utilize their metacognitive strategies in comprehending their self-learning printed modules, as the tabulated and transcribed interviews provide, is to evaluate. The interviewees indicated that this is done by assessing acquired competencies and measuring learned skills. Additionally, they have stated that they “determine my newly acquired knowledge and competencies”, “analyze my capabilities”, “evaluate my proficiency”, “evaluate newly acquired skills”, “rate my skills”, and “quantify what I can do”. One interviewee stated the following involving evaluation:

“Tapno maileppas ti panagusar kadagiti kasta a metakognitibo nga estratehia, masapul a sukimatek ti kinalaingko babaen ti panangala kadagiti panangtingiting ken dadduma pay a panagsubok.”

When transcribed, “To conclude the use of such metacognitive strategies, I have to evaluate my proficiency by means of taking assessments and other tests.”

The responses of the interviewees regarding the process of how they exemplify the use of their metacognitive strategies in comprehending their self-learning printed modules confirmed the findings of Teaching Excellence in Adult Literacy Center staff (2010) which they indicated that there are three processes of exhibiting metacognition. These include planning, monitoring, and evaluating. However, in this study, there were six (6) processes indicated which include familiarization, decoding, monitoring, planning, assimilation, and evaluation.

Figure 2 presents the simulacrum of the research based on the findings on how students exemplify the use of their metacognitive strategies in comprehending their self-learning printed modules.

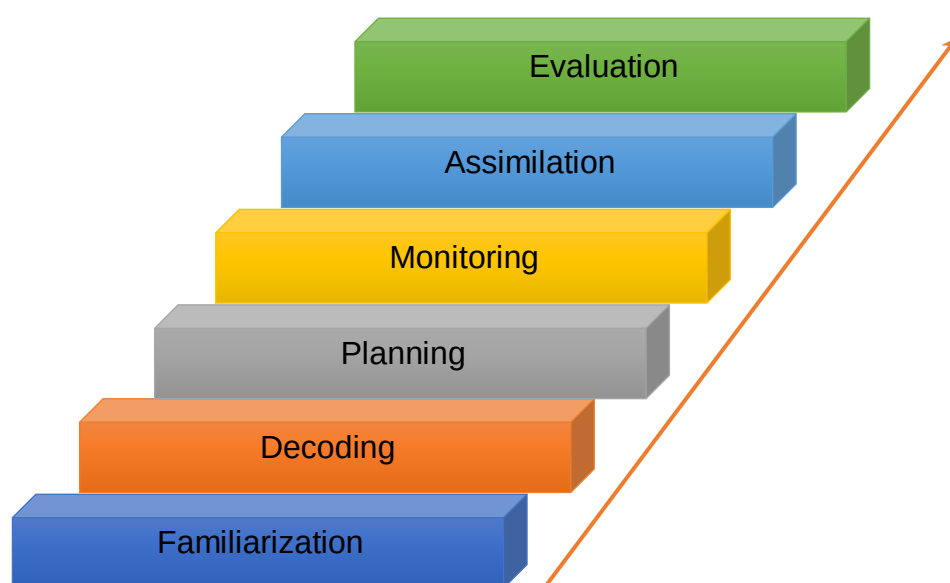


Figure 2. Ladder of Exemplifying Metacognitive Strategies

The ladder of exemplifying metacognitive strategies presents the process by which students conduct in utilizing their metacognitive strategies. As shown from the figure, there are six (6) steps that students conduct



in exemplifying their metacognitive strategies. The process starts from material familiarization and ends at evaluation. In between these two steps include decoding, planning, monitoring, and assimilation. To sum it up, when learners "think about their thoughts," they can improve themselves better. Metacognitive strategies can be learned, practiced, and habituated to improve learning, learning, and thinking skills for the future. Perhaps, the ladder of exemplifying metacognitive strategies could aid them in comprehending not only comprehending their self-learning modules but in understanding other reading materials as well.

Proposed Instructional Intervention Strategies

There are several metacognitive instructional strategies that could be employed to enrich and develop a meaningful teaching and learning process. Utilizing such strategies will surely have a positive impact on the academic performance of the students. It would be prudent, however, to learn first how to effectively employ these strategies to ensure a positive result.

This study, as its main output, proposed instructional intervention strategies that are hoped to develop the metacognitive skills of Alternative Learning System students in their study. The proposed instructional intervention strategies that are mentioned in this study were based on the results gathered and collected through the course of this research.

Table 5 presents the proposed instructional intervention strategies in the preparation of self-learning modules to boost metacognitive strategies of students.

Table 5 Proposed Instructional Intervention Strategies

Methods/ Strategies	Objectives	Resources	Time Frame	Success Indicators
AIM Strategy (Awareness Inventory of Metacognition) Activity: AIMing for a Better Performance	To list the metacognitive strategies preferred and utilized by students or learners.	DepEd financial Department, DBM, COA	August-September 2022	Improved Academic Performance of Learners
Content Self-Assessment (CSA) Activity: Diagnostic Test	To conduct a diagnostic assessment among the students.	DepEd financial Department, DBM, COA	October-November 2022	Improved Academic Performance of Learners
Aloud Thinking for Metacognition (ATM) Activity: Seminar on Metacognitive Strategies	To share some metacognitive strategies that can be utilized by learners.	DepEd financial Department, DBM, COA	December 2022-January 2023	Improved Academic Performance of Learners
Visual Study Tools and Concept Mapping (VST-CM) Activity: Retooling of Teachers' Pedagogical Approaches on Metacognitive Strategies Seminar-Workshop	To utilize pedagogical approaches such as concept map and among others.	DepEd financial Department, DBM, COA	February-March 2023	Improved Academic Performance of Learners
Reflective Writing Activity: Reflective Analogy and Summary	To reflect what is learned through writing.	DepEd financial Department, DBM, COA	April-June 2023	Improved Academic Performance of Learners

As can be gleaned from the table, there are five metacognitive strategies presented along with the objectives, resources, timeframe, and success indicators.

1. AIM Strategy (Awareness Inventory of Metacognition)



In this strategy, there shall be two steps which shall include the knowledge of cognition and regulation of cognition.

In the knowledge of cognition, the teacher must be aware of the factors that influence the learning of the students, know a collection of instructional strategies to be utilized in the modules and choose appropriately the strategy to be used for a specific learning situation.

Also, the instruction implementer must know how to regulate metacognition among the students. This can be done by setting the objectives, planning, monitoring, and evaluating learning in the modules.

2. Content Self-Assessment (CSA)

This is done by conducting a pre-assessment or diagnostic test to the students to help them think about how learning works. In doing so, the following can be done:

- a. Construct key questions about the topic. These questions may be in the form of a homework assignment, a set of clicker questions for in class voting, a short reflective writing piece done in class and handed in.
- b. Have the students independently submit their responses anonymously. Skim through the responses after class. Possibly categorize/summarize all responses by themes.
- c. Share responses with students in the next class either verbally or a summary of themes.
- d. Have a discussion with students about how asking these questions can help them in thoughtful planning of how they might approach a new idea or topic or how they will approach course content and associated studying/learning strategies.

3. Aloud Thinking for Metacognition (ATM)

This can be achieved by the teacher sharing what he thinks about a particular subject matter. After the teacher shares his thoughts, he/she can assign the students in groups to talk out aloud (aloud thinking) as to how they are thinking about an assignment piece of homework or an assignment. This strategy can only be possible if there are two students who reside nearly in the same area.

This strategy can be done through the following steps:

- a. One student talks out loud while the partner records what they are saying (the strategy going to be used to complete the homework or do the assignment). The partner also guides them to think through all the steps.
- b. Students switch roles and do the same for each other.
- c. Now students have thought out the process for completing the assignment or homework, received some feedback from their partner and possibly have a plan written down as to how they are going to undertake the task.

4. Visual Study Tools and Concept Mapping (VST-CM)

A concept map is a method of demonstrating associations between ideas, images or words. Concept maps are a way to improve logical thinking and study skills by enlightening connections to the big ideas or the main concepts a teacher is trying to impart. Concept maps will likewise aid students understand how specific ideas relate to the larger whole or the bigger picture.

The utilization of concept maps can be done effectively by constructing a focus question first; the identifying the key concepts; and then lastly, constructing a map.

5. Reflective Writing

This strategy assists students make connections between what they are learning in their modules and with how



they are integrating the content into their current learning structures.

The most popular reflective writing activity is the “minute paper” whereby the teachers have students respond to prompts that ask them to think about their experiences with the modules or recent learning experiences.

There could be numerous other metacognitive instructional intervention strategies that could be utilized to promote an improved academic and learning performance from the students. These strategies are encouraged to be utilized not only inside the classroom or to the face-to-face modality of instructional delivery but to other modes of delivery as well. If all these strategies are employed successfully, then students will surely reap success in their academic endeavors.

SUMMARY

This study conducted at Flora district, Flora, Apayao for the school year 2021-2022 mainly determined the metacognitive strategies employed by Alternative Learning System learners in comprehending their self-learning printed modules.

There were three objectives that this study aimed to accomplish which include the following:

- Determine the dominant metacognitive strategies of students in comprehending the self-learning printed modules;
- Identify how students exemplify the use of the dominant metacognitive strategies in comprehending the self-learning modules; and
- Propose instructional intervention strategy in the preparation of self-learning modules to boost metacognitive strategies of students.

The study involved one hundred twenty-eight (128) Alternative Learning System students. Ten (10) of them were interviewed to inquire on the process of how they exemplify the use of their metacognitive strategies in comprehending their self-learning printed modules. Also, experts were asked to validate the questionnaires used and the developed semi-structured interview questions.

Three research designs were utilized to realize the objectives of this study. The designs included Descriptive Research Design McCombes (2019), Basic Qualitative Study Design (Merriam & Tisdell, 2016), and Developmental Design (Richey, 1994).

The research made use of two instruments: survey questionnaire by Dr. Drew (2020) and the interview questionnaire developed by the researcher and validated by experts.

Data gathered and collected were tallied, counted, and analyzed. Frequency count and percentage were utilized to describe the profile variables of the ALS students in terms of their age, sex, ethnicity, parents' occupation, and available learning resources at home. Mean was utilized to determine the dominant metacognitive strategies employed by the students and an in-depth interview was conducted to identify the process of how the students exemplify the use of their dominant metacognitive strategies in comprehending their self-learning printed modules.

Based on the data and information gathered and collected, the following results and findings were established:

- In terms of their profile variables, there were seventy-five (75) or 58.59% male and fifty-three (53) or 41.41% female Alternative Learning System students in Flora district; their average age is 19.55; one hundred thirteen (113) or 88.28% are Ilokano and only fifteen (15) or 11.72% are Aeta. In terms of their fathers' occupations, one hundred twelve (112) or 87.50% are farmers, nine (9) or 7.03% are drivers, four (4) or 3.13% are employed privately, and three (3) or 2.33% are government employees. Furthermore, as regards their mothers' occupation, one hundred twenty-two (122) or 95.31% are housewives, four (4) are government employees, and only two (2) or 1.56% are into business. Lastly, all (128) of them signified that they have books at home; thirty-seven (37) or 28.91% indicated that



they have journals; and only two (2) or 1.56% have magazines. Apart from this, none of them specified that they have online learning resources.

- There were three metacognitive strategies that students employ in comprehending their self-learning printed modules. These include self-reflection and meditation, awareness on one's strengths and weaknesses and learning styles, and use of active learning strategies and techniques. Among the three metacognitive strategies, the ALS learners yielded the highest mean of 3.65 signifying that they are always aware on their strengths and weakness as well as with their learning styles.
- From the interview conducted and responses tabulated and transcribed it came out that there were six (6) processes of how they exemplify the use of their metacognitive strategies in comprehending the contents of their self-learning printed modules. These are familiarization, decoding, planning, monitoring, assimilation, and evaluating.
- Among the proposed instructional intervention strategies to be embedded in the construction of self-learning printed modules to boost metacognitive strategies of students include AIM Strategy (Awareness Inventory of Metacognition), Content Self-Assessment (CSA), Aloud Thinking for Metacognition (ATM), Visual Study Tools and Concept Mapping (VST-CM), and Reflective Writing.

CONCLUSION

This study was mainly anchored in determining the metacognitive strategies employed by one hundred twenty-eight (128) Alternative Learning System learners of Flora district in Flora, Apayao for the school year 2021-2022 in comprehending their self-learning printed modules. Based on the results, findings, and summary of this study, the following conclusions were generated:

- The pool of learners of the Alternative Learning System is male dominated. Almost all of them are Ilokano. Their mean age is within the expected range age of students who wants to continue their studies through ALS. Most of their parents are into farming as their source of living. They only have printed materials as available resources of learning at home.
- Students are aware on their strengths and weakness as well as with their learning styles. They usually capitalize from this awareness to devise ways in comprehending their self-learning printed modules.
- There is a process by which students exemplify the use of their metacognitive strategies in comprehending their learning materials. This entails familiarization, decoding, planning, monitoring, assimilation, and evaluating.
- There are numerous metacognitive strategies that students can utilize to comprehend their learning materials. Among these would include AIM Strategy (Awareness Inventory of Metacognition), Content Self-Assessment (CSA), Aloud Thinking for Metacognition (ATM), Visual Study Tools and Concept Mapping (VST-CM), and Reflective Writing.

RECOMMENDATIONS

Considering the outcomes and conclusions shown in this study, the following recommendations are forwarded:

- Utilize the awareness of a learner in his/her strengths and weakness as well as learning styles as a key metacognitive strategy to be embedded in the development of self-learning printed materials such as modules and other instructional materials.
- Develop contextualized modules that would best suit the need of each learner.
- The Department of Education should consider conducting trainings and seminar-workshops intended for proper development, orientation, and the use of metacognitive strategies of authors and writers in developing instructional materials such as modules and other self-learning printed materials.
- Education administrators and managers must cogitate in designing a curriculum that implements the use of metacognitive strategies in the modules and other self-learning printed materials to promote an enhanced and improve academic performance of the students. With this vision, the education administrators and managers must find ways to support the program through appropriate funding and intervention.



- Further study may be conducted on how to develop modules and other self-learning printed materials integrating the use of metacognitive strategies.

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