

Active Reading Style, Student Vocabulary Learning Strategies and Self-regulated Learning: A Structural Model Equation on Academic Writing Motivation and Self-regulation

ABSTRACT

Aims: To determine the best fit model for students' academic writing motivation and self-regulation.

Study design: Descriptive-causal design.

Place and Duration of Study: The study was conducted among senior high school of Region XIII during 2021-2022.

Methodology: The respondents were chosen using stratified random sampling. The data were collected using the online platform.

Results: The overall results showed that the respondents had a high level active reading style; vocabulary learning strategy is always visible; and academic writing motivation was always observed. Moreover, there is significant relationship between active reading and academic writing motivation and students' self-regulation; there is a significant relationship between vocabulary learning strategy and students' academic writing motivation and self-regulation; and there is a significant relationship between self-learnin academic writing motivation and self-regulation. Lastly, Model 5 is the most suitable model for students' academic writing motivation and self-regulation.

Conclusion: Students' motivation and self-control in academic writing were significantly influenced by active reading, vocabulary learning techniques, and self-learning. The best model for encouraging and regulating students' academic writing is Model 5. Personal experiences, study habits, home variables that first form student knowledge, and factors associated to the student make up the final group of indicators for students' motivation and self-regulation in academic writing.

Keywords: Active reading, vocabulary learning strategies, self-regulated learning, structural model, academic writing motivation, Philippines

1. INTRODUCTION

The self-regulation of motivation assumes students' deliberate action and capacity to self-motivate has been recognized as an essential idea in deregulated learning. It specifically concerns students' acts to preserve motivation and persistence in school activities. In addition, it is more precisely defined as the behaviors people use to consciously enhance, maintain or initiate their level of motivation to start, and engage (Paulino et al., 2016). To properly navigate their learning experiences, students practice self-regulation learning. It is crucial since it can aid students not only in their academic careers but also in their professional careers in the future. The degree to which students are self-regulated is determined by their active metacognitive, motivating, and behavioral learning process (Saija, 2019).

The importance of academic writing is to learn the self-regulation of motivation that can improve behavior by understanding students' learning.

Inspiration for academic writing improves the academic achievement and self-confidence of students (Liz-Domínguez et al., 2022). Gaining value in academic writing also entails realizing development and cooperating with other students. Even teachers should put more effort into giving guidance and writing that is accurate and acceptable to make a connection between each student's creative interests and the task that has been assigned to them. In addition, self-regulation of motivation activates and maintains their thoughts, feelings, and actions to accomplish their objectives. In other words, self-regulation of motivation students continuously defines learning objectives and use techniques to meet those objectives (Bai et al., 2021).

2. MATERIAL AND METHODS / EXPERIMENTAL DETAILS / METHODOLOGY

2.1 Respondents

In this quantitative study, structural equation modeling (SEM) was utilized to determine the best fit model for students' motivation and self-regulation in academic writing. SEM is a multivariate statistic that is used to look at how the latent and manifest variables relate to one another. In order to determine the linear connection between the variables using numerical data, this study also used a Pearson-r.

2.2 Research Respondents

The study was conducted among senior high school of Region XIII during 2021-2022. These students were enrolled during the school year 2021-2022. The respondents were chosen using stratified random sampling.

3. RESULTS AND DISCUSSION

3.1 Active Reading Style

To emphasize each variable, the first exogenous variable is the active reading style of students in SHS in public schools. It significantly improves students' reading comprehension and gives them the tools to manage their reading efficiently. In addition, readers actively engage with the text and are conscious of their strategies to comprehend what they are reading. Reading strategies are deliberate methods for understanding the author's point of view (Banditvilai, 2020).

Active reading style has three indicators. Students' lives today are significantly impacted by technology. Although bringing technology into the classroom has been advantageous, there are also some downsides. Also, technology has improved student involvement and willingness while enabling learning improvement (Mallon, 2019). The purpose is to allow students to learn and explore innovative learning methods supported by constructive theories rather than having students memorize facts and figures and memorization (Nagasubramani, 2017). Lastly, physical strategies demonstrate to students how to express their ideas or questions in writing by highlighting sections or word passages in context (Palilonis & Bolchini, 2015).

Table 1. Level of Active Reading Style of Students in SHS Public Schools

Indicator	SD	Mean	Descriptive Level
Technology	0.58	4.07	High
Purpose	0.55	4.15	High
Physical Strategies	0.65	3.86	High
Overall	0.51	4.03	High

Table 1 describes the active reading style of students in SHS public schools in Region XIII with a total mean score of 4.03 and a standard deviation of 0.51, which is described as high and means the active reading style of students. Descriptive levels are similar, but their means are different. The highest mean was the objective score of 4.15, with a corresponding standard deviation of 0.55. Technology followed it with a mean of 4.07 and a corresponding standard deviation of 0.58. Meanwhile, among the three indicators, the physical strategy has the lowest mean score of 3.86 with a corresponding standard deviation of 0.65, which is described as highly effective in active reading.

The result shows a high style of active reading improves the effort and process of receiving information among students, which has a significant impact on their academic performance because it is helpful in their studies, daily life, and career that can be chosen after their studies. However, [Elcin et al. \(2021\)](#) mentioned that the correlation of active reading develops the students' learning ability and heals/enriches academic writing motivation and personal regulation.

Active reading allows students and teachers to raise awareness of globalized development better. The active task is difficult, but it involves good and healthy learning in students to gain high academic writing motivation and students' self-regulation. Additionally, by having active reading, students are encouraged and more alert in the discussion; they prefer to learn what the teacher teaches using modern teaching tools with a specific purpose, interactive activities, and principles with good intentions in their knowledge of active reading. In this way, they gradually learn or are shaped to achieve meaningful academic performance ([Alghonaim, 2020](#)).

3.2 Students' Vocabulary Learning Strategies

The second exogenous variable is students' vocabulary learning strategies (VLS). Vocabulary learning strategies are methods or procedures that can aid in acquiring and retaining vocabulary knowledge by language learners and are essential for language learning. Additionally, when students have access to various teaching techniques, they can modify their approach to fit the situation ([Thiendathong & Sukying, 2021](#)).

The variable has four indicators. The first indicator is the cognitive strategy is focuses on teaching students how to utilize their brains 'potential to the fullest and make it easier to relate new knowledge to preexisting concepts, which helps to strengthen memory and retention ([Akpur, 2021](#)). The metacognitive strategy evaluates the efficacy of systematic direct instruction of various metacognitive tactics to help students improve their reading comprehension, vocabulary development, and text comprehension ([Idris, 2022](#)).

To continue the following indicator, "memory strategy" is a method for processing new information in a learning context, storing or memorizing a range of information, and includes elaboration, mental imagery, mnemonics, and organization ([Mohamad et al., 2019](#)). The determination strategy describes how children learn the meaning of new words and individual learning ([Rabadi, 2016](#)).

Table 2. Level of Students' Vocabulary Learning Strategies

Indicator	SD	Mean	Descriptive Level
Cognitive Strategy	0.72	3.81	High
Metacognitive Strategy	0.73	3.86	High
Memory Strategy	0.70	3.84	High
Determination Strategy	0.91	3.79	High
Overall	0.63	3.83	High

The student's vocabulary learning strategy is shown in Table 2. It was understood, analyzed, and explained in a straightforward presentation. Table 2 exposes the students' vocabulary learning strategy with an overall mean of 3.83 and a corresponding standard deviation of 0.73, which indicates that the student's vocabulary learning strategy is always visible. It can be observed from the data that the indicator with a high mean is 3.86, with a standard deviation of 0.73 and a high descriptive level, which is the metacognitive strategy. On the other hand, the indicator with the lowest mean of 3.79 and a standard deviation of 0.91 described as high is the decision-making strategy.

The high level of students' vocabulary learning strategies has a significant role in shaping the correct behavior of students in the classroom. Because it has a role to play in the achievement and performance of the students, The students' vocabulary-learning strategy is one of the main goals that need to be met with meaningful fulfillment. It goes a long way in motivating students to persevere in learning the vocabulary learning strategy that has become part of their lives. In a direct and specific definition, the students' vocabulary learning strategy refers to their perspective, approach, situation, and connection with them (Carter, 2019).

The vocabulary-learning strategy is crucial to motivate them to continue learning despite the threat, more than what they experienced during the Pandemic. It can only be confirmed that the vocabulary learning strategy positively and significantly impacts the student's ability to face the challenge at hand. In addition, having a thorough knowledge of vocabulary learning strategies is one of the essential topics that students need to study. It only proves that the student's knowledge and abilities deserve to be focused on because their future depends on them (Aravind & Rajasekaran, 2018).

3.3 Self-regulated learning

The third exogenous variable is self-regulated learning. A student organizes a task, executes it, assesses how they did it, and comments on the results. The cycle then resumes as the student makes adjustments and is ready for the subsequent challenge using the reflection. In addition, describe the cyclical processes learners use to guide their thoughts and actions before, during, and after engaging in learning tasks (Brenner, 2022). This variable has six indicators. The first indicator is motive has been linked to the amount of mental effort typically expended in learning tasks, which has led to the idea that motivation might be viewed as a consistent personal trait comparable to personality (Al-Hawamleh et al., 2022). The first indicator is that motive plays a crucial role in practically all facets of human conduct and continues to significantly impact how students behave and their desire to learn or acquire good academic skills in school (Yapo et al., 2021). Time is a valuable resource that keeps slipping away without ending and effectively managing this resource, which everyone has access to equally, and placing enough attention on planning are keys to success in life (Razali, 2018). Performance has been regarded as the critical variable in examining the efficacy of learning and assessed using various methods (Abdullah et al. 2022). The physical environment consists of buildings, furniture, teaching materials, labs, libraries, playgrounds, machinery, decorative items, a swimming pool, audiovisual equipment, and playfields (Baafi, 2020). Lastly, the social environment involves interactions among learners, peers, teachers, and tutors. In addition, it allows students to learn collaboratively and interactively (Abadikhah, 2019).

Table 3. Self-regulated learning

Indicator	SD	Mean	Descriptive Level
Motive	0.93	3.91	High

Method	0.90	3.80	High
Time	0.91	3.89	High
Performance	1.02	3.64	High
Physical Environment	0.94	3.84	High
Social Environment	0.99	3.60	High
Overall	0.71	3.76	High

3.4 Academic Writing Motivation and Self-regulation

The latent endogenous variable of the study is Academic Writing Motivation, and Self-regulation is postulated that students may control their desire to learn. This process benefits academic performance and conducts impacted motivation beliefs (Perez-Gonzales et al., 10). Students employ academic writing motivation and self-regulation to achieve their educational goals, and they establish their own writing style as part of this process (Chuikova, 2016).

Academic writing motivation and self-regulation affect a writer's decision to write, their level of effort, the activities and tools they use while writing, and how they interact with other students (Graham, 2005). The first is achievement goals play a significant role in shaping students' innate drive to complete a task and involve being persistent and expressing both positive and negative emotions in the wake of achievements and failure (Hidayat, 2022). Achievement goals play a significant role in shaping students' innate drive to complete a task and involve being persistent and expressing both positive and negative emotions in the wake of achievements and failures. In addition, Self-efficacy relates to a learner's readiness to attempt, persist in, and complete a task and the extent to which students believe they can succeed academically (Tipon, 2021). Self-regulated learning refers to the procedures that students use to take charge of their knowledge and the techniques they develop to support this learning and difficulties (Morelli, 2022). Value is broadly described as a function of the task's perceived attributes, the individual's need, aim, and interest, and the most significant predictor of the student's grade performance (Wilby, 2020).

Table 4. Academic Writing Motivation and Self-regulation

Indicator	SD	Mean	Descriptive Level
Achievement goal	0.65	3.92	High
Self-efficacy	0.71	3.96	High
Self-regulated learning	0.67	4.00	High
Value	0.65	4.13	High
Overall	0.62	4.00	High

The level of student knowledge of academic motivation in writing and students' self-regulation consists of five indicators that can be seen in Table 4, with a high descriptive rating, with a total mean of 4.00 and a standard deviation of 0.62. High means that students' academic writing motivation and self-regulation are frequently observed. The result shows that the indicator is high, with a mean of 4.13 and a corresponding standard deviation of 0.65. In contrast, the goal achieved has a mean of 3.92 with a corresponding standard deviation of 0.65. The high level of academic writing motivation and self-regulation of students is correlated with each indicator of achievement goals, self-efficacy, personal learning, and value. These factors are connected to students who have scored low in academic writing motivation and self-regulation due to the wrong information they learned. In addition, students must focus on what he has become the basis of learning because it measures whether the students have learned anything from what the teacher teaches them

and be the support of the teacher in their teaching to achieve meaningful academic writing motivation and self-regulation in students (Olivier, 2016).

The academic motivation in writing and self-regulation of students is increased by having pre-writing, goal-setting, self-consequence, and being given parental support such as financial and emotional, and many others that help raise the knowledge and skills of students. Additionally, the visible indicators of achievement goals, self-efficacy, personal learning, and value significantly influence students' academic writing motivation and self-regulation. Thus, students' academic writing motivation and self-regulation refer to the fluency, knowledge, and skills they have learned in school, which often translates into grades that give positive direction to learning. Students study. However, the techniques used are evaluated, not just the marks obtained by the students (Khan et al., 2019)

3.5 Active Reading Style of Students

Table 5.1 shows a significant relationship between active reading and academic writing motivation and students' self-regulation, with a total R-value of .625 and a probability of p.000 less at the 0.05 level of significance set in this study. The null hypothesis is therefore rejected, which states that there is no significant relationship between active reading in academic writing motivation and students' self-regulation.

Table 5.1 Significance of the Relationship between the active reading style of students and Academic Writing Motivation and Self-regulation

Active reading style of students	Academic Writing Motivation and Self-regulation				
	Achievement goal	Self-efficacy	Self-regulated learning	Value	Overall
Technology	.383** .000	.405** .000	.404** .000	.421** .000	.439** .000
Purpose	.502** .000	.536** .000	.546** .000	.527** .000	.574** .000
Physical Strategies	.521** .000	.556** .000	.552** .000	.528** .000	.587** .000
Overall	.549** .000	.585** .000	.586** .000	.576** .000	.625** .000

*significant at .05 significant level

It suggests that a high level of student knowledge in active reading can lead to a high level of academic motivation in writing and self-regulation in students (Hayat, 2020). Furthermore, the data revealed that the student's view of active reading, technology, purpose, and physical strategy as an indicator of the student's active reading knowledge has an R-value. 549 with a p-value of 0.05, making it significant compared to the goal achieved. When the indicators of student knowledge in using active reading were correlated with self-efficacy, the overall R-value was .585, with a p-value of 0.05, indicating that the correlation was significant. The total R-value is when student knowledge indicators—learning to use active reading—are linked to personal learning. 586 with a p-value of 0.05, making it significant. When the hands of the student's knowledge of active reading are linked to the value, the total R-value is .576 with a p-value of 0.05, which is still significant.

Table 5.2 Significance of the Relationship between students' vocabulary learning strategies and Academic Writing Motivation and Self-regulation

Students'	Academic Writing Motivation and Self-regulation
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vocabulary learning strategies	Achievement goal	Self-efficacy	Self-regulated learning	Value	Overall
Cognitive strategy	.475 .000	.479 .000	.474 .000	.449 .000	.511 .000
Metacognitive strategy	.555 .000	.559 .000	.542 .000	.503 .000	.587 .000
Memory strategy	.566 .000	.572 .000	.537 .000	.499 .000	.591 .000
Determination strategy	.455 .000	.447 .000	.461 .000	.466 .000	.497 .000
Overall	.619 .000	.620 .000	.609 .000	.582 .000	.661 .000

*significant at .05 significant level

Table 5.2 shows a significant relationship between vocabulary learning strategy and students' academic writing motivation and self-regulation, with a total r-value of .661 and a probability of p.000, which is more than 0.05 lower than the level of significance set in this study. The null hypothesis is therefore not accepted, which states that there is a significant relationship between vocabulary learning strategy, academic writing motivation, and students' self-regulation. High vocabulary learning strategies can result in high levels of students' academic writing motivation and self-regulation.

There is a significant relationship between students' vocabulary strategies and academic writing motivation and self-regulation. The result is related to [Orhan and Ozen \(2017\)](#) that linked to the goal to achieve, the cognitive strategy, metacognitive strategy, memory strategy, and decision strategy serve as indicators of vocabulary learning strategy, with a total value of .619 and a p-value of 0.05 indicating that it is significant. When the indicators of vocabulary learning strategies are linked to self-efficacy, the mean r-value is .620 with a p-value of 0.05, telling that the relationship is significant. Furthermore, when the indicators of vocabulary learning strategies are compared to self-learning, the mean r-value is .609 with a p-value of 0.05, indicating that the difference is significant. Finally, when the vocabulary learning strategy indicator is correlated with the value, the total r-value is .582 with a p-value of 0.05, indicating that the relationship remains significant.

Table 5.3 Significance of self-regulated learning and Academic Writing Motivation and Self-regulation

Self-regulated learning	Academic Writing Motivation and Self-regulation				
	Achievement goal	Self-efficacy	Self-regulated learning	Value	Overall
Motive	.659 .000	.668 .000	.635 .000	.647 .000	.709 .000
Method	.653 .000	.691 .000	.652 .000	.640 .000	.717 .000
Time	.636 .000	.597 .000	.578 .000	.570 .000	.647 .000
Performance	.751 .000	.782 .000	.763 .000	.681 .000	.810 .000
Physical environment	.583 .000	.520 .000	.477 .000	.476 .000	.559 .000

Social environment	.660 .000	.661 .000	.671 .000	.622 .000	.711 .000
Overall	.810 .000	.803 .000	.774 .000	.745 .000	.852 .000

The significant relationship between self-learning academic writing motivation and self-regulation of students is presented in Table 5.3 with a total R-value of .852 and the corresponding probability of $p < .000$, which is less than 0.05 level of significance set in this study. The null hypothesis is therefore rejected, which states that there is a significant relationship between self-learning and academic writing motivation and students' self-regulation. It indicates that a high level of self-learning skills can increase students' academic writing motivation and self-regulation.

The data show that motivation, method, time, performance, the physical environment, and social environment as indicator strategies in learning vocabulary correlated with achieving the total value is .810 with a p-value < 0.005 , significant; also when the self-learning indicators are associated with self-efficacy, the null r-value is .803 with p-value < 0.05 therefore, significant. Further, when the self-learning indicators correlate with self-learning, the mean r-value is .774 with a p-value < 0.05 ; therefore, significant. And finally, when the subjective learning indicator is correlated with the value, the total r-value is .745 with a p-value < 0.005 , thus, still significant.

Table 6. Significance on the active reading style of students, students' vocabulary learning strategies, self-regulated learning, and academic writing motivation and self-regulation

Academic Writing Motivation and Self-regulation					
Exogenous Variables		<i>B</i>	B	<i>T</i>	<i>Sig.</i>
Constant		.336		2.665	.008
Active reading style of students		.149	.123	3.487	.001
Vocabulary learning strategies		-.009	-.009	-.225	.822
Self-regulated learning		.800	.779	19.413	.000
R	.857				
R ²	.734				
ΔR	.732				
F	390.058				
P	.000				

Table 6 shows the significant influence of active reading on academic writing motivation and self-regulation of students, vocabulary learning strategies, and self-learning on academic writing motivation and self-regulation of students. With a calculated f-value of 390.058, an R-value of .857, an adjusted R² value of .734, and a p-value of .00, less than .05 levels of significance, the overall results agree with the rejection of the null hypothesis, which supported the alternative hypothesis. Therefore, the combination of three exogenous variables significantly influences students' academic writing motivation and self-regulation. The R² of .734 indicates that 73.4% of the variance in academic writing motivation is attributed to active reading, vocabulary learning strategies, and personal learning. It means that 26.6% of the variation in academic writing motivation and self-regulation of students was associated with other variables that were not included in this study.

Active reading styles have an essential role in helping increase students' academic writing motivation and self-regulation because it affects the response of student learning outcomes. Active reading in subjects increases academic motivation in writing and students' self-regulation, which is also brought about by a strong and consistent vocabulary learning strategy in the classroom. Therefore, teachers use different methods for students to achieve their learning goals. The relationship between active reading in personal learning and academic writing motivation has been significant—student regulation and sustained learning within the classroom. In addition, active reading enhances students' academic writing motivation and self-regulation because they are encouraged to study and increase their knowledge of different self-learning methods. However, this will result in higher learning gains for students, which will develop and enable opportunities for students to create what they have learned, be creative, and have problem-solving skills when facing problems (Khan et al., 2019).

Table 7. Summary of Goodness of Fit Measures of the Five Generated Models

Model	P-value (>0.05)	CMIN / DF (0<value<2)	GFI (>0.95)	CFI (>0.95)	NFI (>0.95)	TLI (>0.95)	RMS (<0.05)	P-close (>0.05)
1	.000	10.229	.760	.813	.798	.781	.147	.000
2	.000	6.553	.838	.889	.873	.868	.114	.000
3	.000	4.292	.862	.934	.916	.912	.088	.000
4	.000	4.183	.868	.937	.919	.924	.086	.000
5	.157	1.232	.981	.998	.987	.996	.023	.989

Legend: CMIN/DF – Chi-Square/Degrees of Freedom
 GFI – Goodness of Fit Index
 RMSEA – Root Mean Square of Error Approximation
 NFI – Normed Fit Index
 TLI – Tucker-Lewis Index
 CFI – Comparative Fit Index

The summary of the goodness of fit metrics for the five produced models is shown in Table 7. Among these models, Model 5 met the standards for determining the best fit; it contains the following model fit indicators: CMIN/DF=1.232 with a p-value of .157, GFI=0.976, CFI=0.0998, NFI=0.987, TLI=0.996, and RMSEA=0.023. The results show that model 5 is the most accurate accurate for predicting academic performance. The proposed model met the requirements for the best fit model.

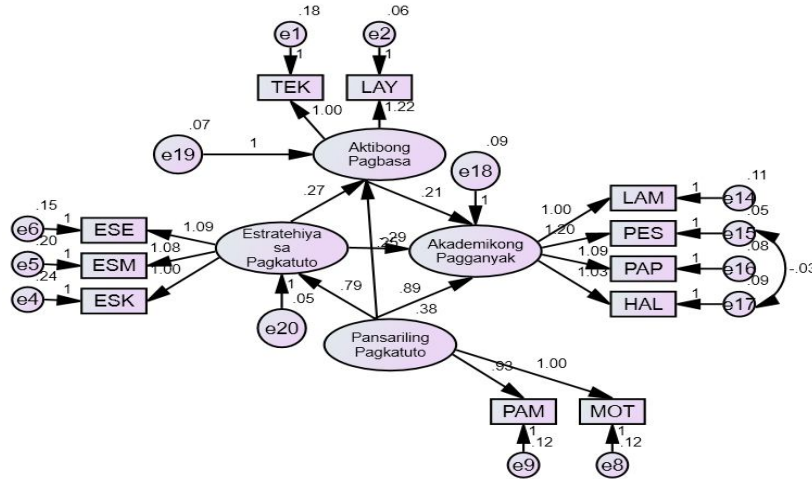


Fig.1 : Structural Equation Modelling

Table 8 : Direct and Indirect Effects of the Independent Variables on academic writing motivation and self-regulation of the Best Fit Model

Variables	Direct Effect	Indirect Effect	Total Effect
Active Reading style	.207	-	.207
Students 'Vocabulary Learning strategies	-.288	.056	-.232
Self-regulated learning	.889	-.132	.757

Table 8 shows the latent exogenous factors' direct and indirect impacts on the self-regulated latent endogenous variable. In contrast, active reading style and proficiency in students' vocabulary learning strategies have negligible effects, as revealed by poor beta values, making it the variable the weakest predictor. One of the three latent exogenous variables, self-regulated learning, exhibits the effects, making it a significant predictor of academic writing motivation and self-regulation, as revealed by a beta value of 0.757. On the other hand, academic writing motivation and self-regulation are only slightly impacted directly by active reading style and students' vocabulary learning strategies.

Self-regulated learning students may or may not organize, monitor, and assess their learning process using the right strategies and notions. In addition, they describe actions that students can engage in to help them take charge of their learning through various activities (Lysenko, 2021).

Conclusion

In the study's findings, the following conclusions can be seen: The results of active reading, vocabulary learning strategies, and self-learning had a significant relationship with students' academic writing motivation and self-regulation. It was concluded that Model 5 is the most suitable model for students' academic writing motivation and self-regulation. The remaining indicators of students' academic writing motivation and self-regulation are personal experiences, study behavior, home factors that first shape student knowledge, and factors related to the student.

The study found that the three independent variables significantly correlated with students' academic writing motivation and self-regulation because their knowledge, fluency, and learning abilities all improve as they become more adept at self-learning. Active reading was claimed to have helped students learn new vocabulary through the constructions of words, phrases, and paragraphs, the provision of word definitions, and many other reading-related abilities and characteristics. However, the understanding of active reading helps the student create the right learning incentives to strengthen and enhance his reading, which results in solid academic motivation in writing and self-regulation of the students in the classroom during their learning.

The Cognitive Theory as a significant learning method of student motivation that aims to meet the needs of the student in the psychological study of cognitive development to meet the needs of students in different language learning, which can significantly benefit themselves and even the society to which they belong. It suggested that each student consists of three universal and psychological needs: autonomy, which refers to self-management, competence, and feeling capable and effective. And touch with a feeling of being loved or connected. Everyone feels psychological well-being due to this, rather than feeling divided and reacting negatively when their learning needs are not fulfilled or met. In addition, this theory method will meet the mental demands of students who are alert to engage in activities within the class.

ETHICAL APPROVAL

The researcher followed and complied with all the study criteria, following the assessment protocol and standardized measures. Voluntary Participation, Privacy and confidentiality, Informed consent process, Recruitment, Risks, Benefits, Plagiarism, Falsification, Conflict of Interest (COI), Deceit, Permission from Organization/Location, and Technology Issues were thoroughly followed as stipulated by the University of Mindanao Ethics Review Committee.

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