



Integration of ICT in Teaching and Learning, Teachers Motivation and Skills of Teaching Literature: A Structural Model Equation on Academic Performance

Elmer A. Taripe ^{a*} and Marilou Limpot ^a

^a University of Mindanao - Professional School, Matina, Davao City, Philippines.

Authors' contributions

This work was carried out in collaboration between both authors. Author EAT designed the study, performed the statistical analysis, wrote the protocol, wrote the draft of the manuscript, managed the literature searches and discussed the paper. Author ML, as an adviser, guided author EAT throughout the conduct of the study. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: To investigate the most appropriate model in academic performance using structural equation modeling (SEM) as the basis for the tool's design to analyze the relationship between the integration of ICT in learning and teaching, teacher motivation, and skills in teaching literature.

Study Design: Descriptive-causal design.

Place and Duration of Study: The study was conducted among 400 college students from both public and private academic institutions in Regions 11 and 13 during the school year 2021-2022.

Methodology: The respondents were selected using stratified random sampling. Mean, standard deviation, Pearson product-moment correlation, and multiple regression analysis were used to

*Corresponding author: Email: tunobelmer14@gmail.com;

analyze the collected data.

Results: Results revealed that the ICT integration in learning and teaching, teacher motivation, and literature teaching skills had the highest means while academic performance was high. The integration of ICT in learning and teaching, teacher motivation, and literature teaching skills had a significant relationship with academic performance. The most appropriate model for academic performance was model 5, with indicators of personal status, study habits, home-related factors, school-related factors, and teacher-related factors.

Conclusion: The result proved that the knowledge of the integration of ICT in teaching and learning, teacher motivation, and teacher skill in teaching literature are predictors of academic performance.

Keywords: Integration of ICT; teaching and learning; motivation; literature; academic performance; structural model equation; pandemic.

1. INTRODUCTION

The role of academic performance is to play an inescapable part in predicting students' success as well as in academic placement in the educational institution and the degree of employability in a person's profession [1]. Academic performance is the level of expertise, abilities, and competencies attained by a student in the educational field; it is frequently assessed using grades received on the topics covered in the study plan [2]. The student's academic performance on various topics is measured by academic performance. Teachers and school officials frequently gauge student progress by looking at classroom performance, graduation rates, and test scores [3].

The importance of academic performance refers to the level of knowledge, skills, and abilities acquired by a student in the field of education that is often evaluated through the grades obtained in the subjects that make up the study plan. However, this is a complex concept to study because it can be evaluated in different ways, not only in the academic performance obtained by the student within the classroom or subject tasks. Instead, a student's academic performance is assessed using the teacher's grade and test. Academic performance inspires the student to develop and perceive the school experience as personally relevant [4].

In a study, attention was paid to the variable affecting academic performance. The first variable is teachers' knowledge of ICT integration in teaching and learning. The study aims to determine the relationship between ICT integration in teaching and learning and academic performance. Because the wide-

ranging use of ICT has a significant impact on the academic performance of students because ICT helps to get increase education, strengthen the implementation of education in the progressive virtual workplace, and raise the best teaching instruction [5].

1.1 Research Objectives

This study aimed at determining the most appropriate model for students' academic performance. Specifically, this study aimed:

1. To determine the level of knowledge of the teachers in the use of ICT Integration in teaching and learning in academic performance through:
 - 1.1. Teacher's perspective on the integration of ICT in teaching;
 - 1.2. Effectiveness in the integration of ICT into student learning; and
 - 1.3. Effective elements of ICT in the integration of teaching and learning
2. Know the level of teacher motivation through:
 - 1.1. conduct;
 - 1.2. honesty;
 - 1.3. reward;
 - 1.4. punishment; and
 - 1.5. being interested.
3. Determine the level of the teachers' skill in teaching literature through:
 - 3.1. language method
 - 3.2. procedure in paragraph;
 - 3.3. information procedure;
 - 3.4. personal answering method; and
 - 3.5. the method in moral philosophy.

4. Know the level of academic performance through:
 - 4.1. personal circumstances;
 - 4.2. study habits;
 - 4.3. factors related to the home;
 - 4.4. school-related factors; and
 - 4.5. factors related to the teacher.
5. Determine the significant relationship between:
 - 5.1. integration of ICT in teaching and learning in academic performance;
 - 5.2. teacher motivation in academic performance;
 - 5.3. literature teaching skills and academic performance.
6. Know the combined and single influence of ICT integration on teaching and learning, teacher motivation, literature teaching skills, and academic performance.
7. Determine the most appropriate model for academic performance.

2. MATERIALS AND METHODS

2.1 Research Design

This study used the quantitative-casual method through the Structural Equation Mode (SEM). Casual research according to Masuka and Khoza [6] is a design that obtains evidence of cause and effect between two variables or more than two variables. To know the cause, Grünbaum et al. [7] said that it is essential to observe the difference in variables that are assumed to cause a change in other variables. Hence, proves a cause-and-effect relationship.

2.2 Research Instrument

In achieving the objectives of this study, a research-based questionnaire was adopted by the researcher. A four-dimensional questionnaire was adapted from existing materials developed and used by credible scholars and researchers on the topics of teacher knowledge of using ICT Integration in teaching and learning, teacher motivation level, teacher's ability to teach literature, and students' academic performance.

2.3 Research Respondents

The respondents of this study were the 400 college students coming from both public and private educational institutions in Regions 11 and 13 during the school year 2021-2022. The

respondents were selected through stratified random sampling to associate items of the entire population called strata based on similar characteristics.

3. RESULTS AND DISCUSSION

3.1 Integration of ICT in Teaching and Learning

To emphasize each variable, the first exogenous variable is the integration of ICT in teaching and learning. ICT in education primarily aims to enhance student learning through technology. Nowadays, significant efforts are being made in practically every nation to change the teaching force and educational personnel into tech-savvy and qualified teachers. The caliber of instruction depends on the caliber of teachers, who in turn depends on the caliber of teacher preparation [8].

ICT integration in Teaching and Learning has three (3) indicators. The Teacher's Perspective on the Integration of ICT in Teaching refers to how perceptions significantly influence teachers' conduct in the classroom [9]. Effective ICT Integration in Student Learning deals with the students accessing relevant knowledge and materials for learning and helps students study more efficiently [10]. Lastly, practical ICT elements in the integration of teaching and learning refer to providing technical support if they encounter difficulties, as well as training and professional development regarding the use of ICT in the classroom [11].

Reflected in Table 1 shows that the integration of ICT in teaching and learning among the students of Region XI and Region XIII, with a total mean score of 4.33 and a standard deviation of 0.54, is described as the highest and means that the integration of ICT in teaching and learning is always seen. On the other hand, the descriptive levels are similar, but their meaning is different. The highest mean was the teacher's perception of the integration of ICT in teaching, which scored 4.38 with a corresponding standard deviation of 0.54. This was followed by the effectiveness of ICT integration in student learning, with a mean of 4.35 and a corresponding standard deviation of 0.60. Meanwhile, the indicator with the lowest mean of 4.27 and the corresponding standard deviation of 0.64 was described as having the most effective elements of ICT in the integration of teaching and learning.

Table 1. Level of integration of ICT in teaching and learning

Indicator	SD	Mean	Descriptive Level
Teacher's Perspective on the Integration of ICT in Teaching	0.54	4.38	Very High
Effectiveness of ICT Integration in Student Learning	0.60	4.35	Very High
Effective ICT Elements in the Integration of Teaching and Learning	0.64	4.27	Very High
Overall	0.54	4.33	Very High

The highest level of ICT integration in teaching and learning facilitates the process and improves the reception of information to students, significantly impacting their academic performance because it allows them to investigate the real world they live in. The integration of ICT into the teaching and learning process enhances students' learning abilities and improves academic performance [12].

The integration of ICT into teaching and learning offers more opportunities for teachers and students to cope better in a globalized digital era. The integration of ICT in teaching is complex and challenging but is facilitated and improved by e-learning students to get high academic performance. However, integrating ICT into teaching and learning as a modern learning tool for students has also had a significant effect. Furthermore, with the integration of ICT in teaching and learning, the students become active and participate in the discussion; they become more interested in what the teacher teaches using Mentimeter, Padlet, and other platforms that have added to their knowledge of the integration of ICT, and because of this, they have learned a lot in achieving significant academic performance [13].

3.2 Teachers Motivation

The second exogenous variable is teacher motivation (TM). Teacher motivation seems to be in vogue in teacher professional development. It is intimately associated with several educational factors, including teacher satisfaction and well-being, education reform, instructional methods, and student motivation [14].

This variable has five indicators. The first indicator is attitude. Attitude is a positive or negative emotional tendency [15]. Commitment is a balance of power that regulates behavior by restricting freedom and compelling people to follow a course of action [16]. The reward is language instruction that has been found to

increase student academic performance, foster competition in the classroom, and rein in undesirable behaviors [17]. Punishment may involve physical force, mental abuse, or verbal misbehavior with students and activities that do not significantly cause bodily harm [18].

The level of teacher motivation has its indicators shown in Table 2. Given clear knowledge, each indicator was analyzed and given an interpretation in the form of a simple statement. Table 2 reveals the level of teacher motivation with a total mean of 4.28 and a corresponding standard deviation of 0.58, which means that the teacher's motivation is always seen. It can be seen from the data that the indicator with the highest mean of 4.40 with a corresponding standard deviation of 0.61 is described as very high. Meanwhile, the indicator with the lowest mean of 4.09 with an equivalent standard deviation of 0.71 described as high is punishment.

The highest level of teacher motivation plays an essential role in shaping students' behavior in school because it influences the productivity and performance of students. Teacher motivation is also a necessity and force to move toward the goal of meaningful academic performance. It can motivate students to continue their studies. It has been interpreted that the teacher's motivation refers to a student's attraction, retention, and concentration [19].

Galvez-Suarez and Milla-Toro [20] and Han and Yin [21] conclude that teacher motivation is the internal and external factors that motivate teachers to stay and continue teaching despite any challenge, especially during a pandemic. The study proves that the teacher's internal and external motivations help the teachers face the challenge caused by the problem they are facing. In addition, determining the factors that affect teacher motivation in teaching is a significant issue for students. This only confirms the great role of teachers in the future of a country, so it is appropriate to consider the motivations of teachers [22].

Table 2. Level of teachers motivation

Indicators	SD	Mean	Descriptive Level
Attitude	0.67	4.33	Very High
Commitment	0.62	4.30	Very High
Reward	0.67	4.28	Very High
Punishment	0.71	4.09	High
Interest	0.61	4.40	Very High
Overall	0.58	4.28	Very High

3.3 Skills in Teaching Literature

The third exogenous variable is skills in teaching literature. It is an excellent opportunity to develop language proficiency and increase students' engagement in the learning process. It also reflects social life and covers various subjects, from tales of love to human tragedies. This variable has five indicators. The first indicator is the language-based approach, which focuses on the linguistic and linguistic reading materials and how students' knowledge advances as they engage with texts' familiar language grammar [23]. The information-based approach focuses on providing information and expertise about the target language to the learners and is primarily a teacher-centered learning approach where the students actively receive feedback regarding the texts presented by the teachers [24]. The paraphrastic approach makes it easier for learners to understand the text content. This approach is also appropriate for beginning students since it gives them a simpler environment to make assumptions or interpret the texts [25].

To continue the following indicator is the personal response approach, which refers to the students' attempting to connect their real-life experiences to the subjects of the literature they are studying. The student can discuss specific topics from their perspectives, which helps keep them interested and enjoy the reading process

[26]. This means that to conclude the moral and philosophical implications of the reading materials, students must be able to interpret the meaning of literary works beyond the next level. This will also assist students in developing positive character traits and self-awareness as they interpret the literature [27].

The level of the teacher's skill in teaching literature has five indicators that can be seen in Table 3, which is described as the highest with a total mean of 4.35 and a corresponding standard deviation of 0.58, which means that the skill of teaching literature is always seen. It can be seen in the results with two indicators with the highest mean of 4.36, the highest being the information method and the personal method.

The highest level of the teacher's skill in teaching literature is essential in teaching the five basic language skills, such as reading, writing, listening, speaking, and watching. However, when using literature in the language classroom, skills should not be taught in isolation but in an integrated manner. Teachers should try to teach basic language skills as an integral part of spoken and written language use, as part of themes for creating both referential and interactional meaning, not just as an aspect of theory and written production of words, phrases, and sentences expressing human feelings about things in the world and life.

Table 3. Skills in Teaching Literature

Indicator	SD	Mean	Descriptive Level
Language-based approach	0.63	4.33	Very High
Paraphrastic approach	0.63	4.31	Very High
Information-based approach	0.64	4.36	Very High
Personal response approach	0.61	4.36	Very High
Moral-philosophical approach	0.60	4.38	Very High
Overall	0.58	4.35	Very High

The teachers should have a dynamic teaching and student-centered approach to understanding a literary work. Once students have mastered literal understanding, they move to deep understanding, where they must make inferences and interpretations about characters, settings, and themes and where they adopt the author's point of view. However, there are four main reasons to use the teacher's skill in teaching literature in the classroom: authentic material, cultural enrichment, language enrichment, and personal involvement. In addition, the teacher's skill in teaching literature is a valuable method to integrate the linguistic system and life-related objective literature [28].

3.4 Academic Performance

The latent endogenous variable of the study is academic performance, which is the level of expertise, abilities, and competencies that a student has attained in the academic field. It is frequently assessed using the grades received in the topics included in the study plan [29]. Academic achievement refers to the scores that students attain on their examinations. The scores measure the academic success of students. Academic achievement is used by various education and career programs, and it is also used as a critical factor in determining the success of any educational system [30].

Students' academic performance, which can be characterized as the knowledge acquired by the student that a teacher evaluates through marks and educational goals, is a variable with five indicators. The first is a personal condition, defined as students' experiences in class while having a meaningful discussion [31]. Study habits are behavior pattern that students adopt when learning, and it entails the suitable study routines and actions that the student performs while studying in a conducive environment [32]. Home-related factors refer to the background of a family. They include the level of income or economic status of the parents, their educational attainment, their participation in academic activities assigned by subject teachers, their peer group, their activities, the success or failure of older siblings, the type and availability of food in their homes, as well as traditional norms and beliefs regarding sex biases in access to education [33].

In addition, school-related factors refer to the atmosphere established in a school by the teachers' and students' behavior, and both teachers and students can benefit academically from a pleasant climate. On the other hand, a bad school climate can hinder effective teaching and student learning [34]. Finally, the lecturer factor, which is the teacher's background, appears to impact student performance positively, and it is mentioned in the teacher-student teacher as a factor influencing students' academic performance [35].

The level of academic performance has five indicators that can be seen in Table 4 described as high, with a mean of 4.06 and a corresponding standard deviation of 0.57 described as a high indicator, which means that academic performance is often seen. It can be seen in the result that the indicator that has the highest mean of 4.20 with a corresponding standard deviation of 0.77 is the personal condition and factors related to the teacher with different standard deviations. Meanwhile, the lowest mean is 3.90 with a corresponding standard deviation of 0.71, which is described as a high mean that academic performance is often seen.

A high level of academic performance impacts various indicators: personal circumstances, study habits, home-related factors, school-related factors, and teacher-related factors. Sometimes the students get low academic performance because of the wrong method used by the teacher and sometimes fail in the subjects because of the slow teaching and learning process. This result is confirmed by Ramos-Galarza et al. [36] that the teacher should consider the method he uses in teaching. For this reason, it is measured whether the teacher teaches his students enough and balances the students' lack of daily socialization at school in achieving meaningful academic performance.

The significant relationship between the teacher's knowledge of the use of ICT integration in teaching and learning academic performance is presented in Table 5 with a total R-value of 0.679 and a corresponding probability of $p = .000$, which is less than 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 teacher knowledge of the use of ICT integration in teaching and learning and academic performance.

Table 4. Level of academic performance

Indicator	SD	Mean	Descriptive Level
Personal condition	0.77	4.20	Very High
Study habits	0.69	4.02	High
Home-related factor	0.67	3.93	High
School-related factor	0.71	3.90	High
Lecturer factor	0.65	4.20	Very High
Overall	0.57	4.06	High

Table 5. Significance of the Relationship between Integration of ICT in Teaching and Learning and Academic Performance

Integration of ICT in Teaching and Learning and Academic Performance	Academic Performance					
	Personal condition	Study habits	Home-related factor	School related factor	Lecturer factor	Overall
PGIP	.563** .000	.574** .000	.457** .000	.445** .000	.581** .000	.647** .000
PEIS	.504** .000	.528** .000	.411** .000	.454** .000	.555** .000	.605** .000
EEIP	.605** .000	.490** .000	.396** .000	.390** .000	.578** .000	.608** .000
Overall	.612** .000	.580** .000	.461** .000	.470** .000	.627** .000	.679** .000

There is a significant relationship between the knowledge of the integration of ICT in teaching and learning and academic performance. The result is related to Raihan & Shamim [37], which improves the quality of academic performance through the excellent participation of students. Because it enables online teaching and self-learning, it facilitates interaction between teacher and student feedback and facilitates student participation increases to achieve meaningful academic performance. Therefore, the integration of ICT in teaching and learning improves academic performance because students become interactive in participating in various classroom activities. In addition, they become more creative and imaginative and provide opportunities to explore new information related to the learning topic.

The significant relationship between teachers' motivation and academic performance is presented in Table 6 with a total r-value of .694 and the corresponding probability of p .000, which is less than the 0.05 level set for this student. This indicates that a high level of teacher motivation can result in high academic performance. The null hypothesis is therefore rejected, which states that a significant relationship exists between teachers' motivation and academic performance.

There is a significant relationship between teacher motivation and academic performance. The result is related to Mang'era's [38] study that teacher motivation is a desire and willingness to teach using different methods and styles to deliver a significant academic performance to students. This indicates that teacher motivation is affected by their performance, attendance, and dealings with students. If the teacher is not motivated to teach, it harms the performance of the students who do not achieve the objective in the class. Instead, this indicates that if the teachers are not well motivated, they will not perform their roles as expected in class, which, in turn, affects students' academic performance. Motivation holds the key to understanding human behavior [39].

The significant relationship between the teacher's teaching practice of literature and academic performance is presented in Table 7 with a total r value of .698 and the corresponding probability of p .000, which is less than the 0.05 level set in this study. This indicates that a high skill level in teaching literature can result in high academic performance. The null hypothesis is therefore rejected, which states that a significant relationship exists between the teacher's literature teaching skills and academic performance.

Table 6. Significance of the relationship between teachers' motivation and academic performance

Teachers Motivation	Academic Performance					
	Personal condition	Study habits	Home-related factor	School related factor	Lecturer factor	Overall
Attitude	.590** .000	.480** .000	.390** .000	.415** .000	.567** .000	.604** .000
Commitment	.519** .000	.505** .000	.439** .000	.388** .000	.569** .000	.596** .000
Reward	.545** .000	.536** .000	.438** .000	.443** .000	.603** .000	.633** .000
Punishment	.426** .000	.526** .000	.469** .000	.486** .000	.497** .000	.591** .000
Interest	.538** .000	.577** .000	.459** .000	.492** .000	.578** .000	.652** .000
Overall	.589** .000	.592** .000	.496** .000	.503** .000	.634** .000	.694** .000

Table 7. Significance of the relationship between skills in teaching literature and academic performance

Skills in Teaching Literature	Academic Performance					
	Personal Condition	Study Habits	Home-related factor	School related factor	Lecturer factor	Overall
Language-Based Approach	.606** .000	.589** .000	.432** .000	.470** .000	.665** .000	.682** .000
Paraphrastic Approach	.590** .000	.538** .000	.446** .000	.452** .000	.643** .000	.658** .000
Information-Based Approach	.566** .000	.490** .000	.427** .000	.417** .000	.625** .000	.623** .000
Personal Response Approach	.542** .000	.523** .000	.433** .000	.449** .000	.638** .000	.637** .000
Moral-Philosophical Approach	.591** .000	.496** .000	.431** .000	.424** .000	.626** .000	.634** .000
Overall	.625** .000	.569** .000	.468** .000	.478** .000	.690** .000	.698** .000

Table 8. Significance on the integration of ICT in teaching and learning, teachers' motivation skills in teaching literature and academic performance

Academic Performance				
Exogenous Variables	B	β	t	Sig.
Constant	.716		4.457	.000
Integration of ICT in Teaching and Learning	.242	.231	3.442	.001
Teachers' Motivation Skills in Teaching Literature	.227	.233	3.059	.002
	.304	.309	4.358	.000
R				
R	.731			
R ²	.535			
ΔR	.532			
F	151.522			
ρ	.000			

Shown in Table 8 is the significant influence of teacher's knowledge of using ICT integration in teaching and learning on academic performance, teacher's motivation, and teacher's literature teaching skills on academic performance with a calculated F-value of 151.522 R-value of .731, the adjusted R2 value of .535 and p-value of .000 which is less than the .05 level of significance, the overall result agreed with the rejection of the null hypothesis that supported the alternative hypothesis. Teacher knowledge of using ICT integration in teaching and learning, teacher motivation, and teacher literature teaching skills indicated that 53.5% of the differences in academic performance were attributed to teacher knowledge. This means that 46.5% of the variation in academic performance was attributed to other variables that were not included in this study. Therefore, it can be said that the combination of three exogenous variables significantly influences academic performance.

Integrating ICT in teaching literature helps increase students' academic performance because it meets the need for a modern teacher's teaching method. The student's academic performance increases even more because of the solid motivation of the teacher in the class. Therefore, teachers always apply strategies for students to achieve the learning goal that has been significant in the relationship between the integration of ICT in the teaching of literature and academic performance that sustains learning in the classroom. In addition, integrating ICT improves academic performance because students are encouraged to learn to increase their knowledge of different teaching methods in the literature. Although this will result in higher learning gains for students, it also creates and enables opportunities for students to develop their creativity, problem-solving skills, and information [42].

Table 9. 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)	RMSEA (<0.05)	P-close (>0.05)
1	.000	12.137	.719	.798	.784	.766	.167	.000
2	.000	7.499	.807	.885	.870	.864	.127	.000
3	.000	4.265	.848	.941	.925	.931	.091	.000
4	.000	4.234	.849	.942	.926	.932	.090	.000
5	.094	1.269	.976	.997	.987	.996	.026	.991

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

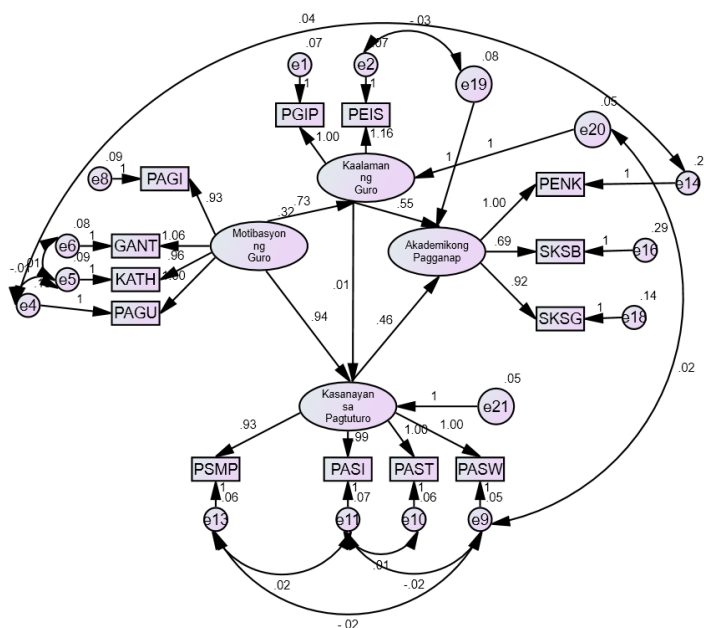


Fig. 1. Direct and Indirect Effects of the Independent Variables on Academic Performance of Best Fit Model

Table 10. Direct and indirect effects of the independent variables on academic performance of best fit model

Variables	Direct Effect	Indirect Effect	Total Effect
Integration of ICT in Teaching and Learning	.554	.004	.558
Teachers Motivation	-	.840	.840
Skills in Teaching Literature	.460	-	.460

There is a significant relationship between the teacher's skill in teaching literature and academic performance. This decision agrees with Tevdovska's [40] study that the teacher's skill in teaching literature conveys the value of literature and the joy of literature. Literature is a skill that needs to be actively taught by teachers because students do not simply "acquire" the skills of reading literature. In the intensive reading of literature, students are expected to understand everything they read and to be able to answer detailed vocabulary and grammar questions. In addition, in extensive reading of literature, students should have a general understanding of the text without having to understand every word because it depends on the teacher to apply the appropriate skills and strategies in learning literature that will lead to good academic performance because every student understood every detail contained in the text [41].

The summary of goodness of fit metrics for the five (5) produced models was shown in Table 9. Among these models, Model 5 met the standards for determining the best fit; it contains the following model fit indicators: CMIN/DF=1.269 with a p-value of 0.094, GFI=0.976, CFI=0.0997, NFI=0.987, TLI=0.996, and RMSEA=0.026. The results show that Fig. 1 is the most accurate model for predicting academic performance. The proposed model met the requirements for the best fit model.

Table 10 displays the latent exogenous variables' direct and indirect effects on the latent endogenous variable, the integration of ICT in Teaching and Learning. The integration of ICT in teaching and learning, one of the three latent exogenous variables, exhibits the effect, making it a significant predictor of academic performance, as revealed by a beta value of 0.558. In contrast, teachers' motivation and proficiency in teaching literature have negligible effects, as revealed by poor beta values, making the variables the weakest predictors. Moreover, the value of Skills in Teaching Literature, which makes a slight difference in its direct impact on academic performance, is 460.

The integration of ICT in teaching and learning can create an interactive learning environment that can promote the growth of cognitive abilities and create an environment conducive to learning, enhancing the learning experience. It improves the kids' comprehension and problem-solving abilities and increases motivation, achievement, and student learning opportunities [43]. It enables the student to quickly and effectively access digital material. Furthermore, using ICT provides professors and students with new avenues for exploration outside the course material.

On the other hand, it is essential to consider the drawbacks of using ICT in teaching and learning. Students listen passively and respond or comment passively during the lecture. The teachers will portray the learning process as merely the audience. Since only one teacher manages the classroom, not every student may receive complete instruction [44]. As a result of the study of Abel et al. [45], it is possible that students are becoming less motivated to learn, distracted, prone to cheating, and do not have equal access.

4. CONCLUSION

The researcher has the following conclusions based on the data at hand:

Academic performance had a substantial association with the teacher's understanding of ICT integration in teaching and learning, teacher motivation, teacher ability in teaching, and the instructor's body of literature. Model 5 was shown to be the best suitable model for academic success. Personal status, study habits, variables linked to the household, factors related to the school, and factors related to the relationship with the instructor make up the remaining determinants of academic performance.

Five models were designed to analyze the substantial relationship between the use of ICT in teaching and learning, teacher motivation, and the teacher's proficiency in instructing from their

own body of work. Each model has a framework that may be further broken down into the dimensional and structural sub-models. The measured loads of each latent construct element serve as the model's dimensions, while the structural model refers to the interrelationships between the variables. To find the best suitable model of academic achievement, the model was tested. Additionally, the model is accepted or rejected based on the evaluation of fit.

The findings demonstrated that the model accurately predicted knowledge of the integration of ICT in teaching and learning, teacher motivation, and teacher proficiency in teaching literature as academic success predictors. These are crucial elements in students' notable academic success, and they should be happy of what they have accomplished in their everyday encounters with school-related activities.

CONSENT

As per international standard or university standard, respondents' written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

The researcher followed and complied with all the criteria in conducting the study following the assessment protocol and standardized criteria. Voluntary participation, privacy and confidentiality, permission from organization/location, and technology issues were fully followed as stipulated by the University of Mindanao Ethics Review Committee. Certification was issued to the researcher for the implementation of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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