



A Structural Relationship Model in the 21st Century Teaching and Learning of Filipino Teachers

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Aims: To determine the best fit model of 21st century teaching and learning of Filipino teachers.
Study Design: Quantitative non-experimental design.
Place and Duration of Study: The study was conducted among teachers teaching Filipino subject in all public schools in Region 11.
Methodology: The respondents were 400 Filipino teachers from public schools in Region 11, Southern Mindanao, Philippines. The respondents were chosen using stratified random sampling. The data were collected using google forms.
Results: The overall results showed that the information and communication technology (ICT) integration in teachers' teaching, teachers' classroom management strategies, and teachers' professional identity as Filipino teachers have a significant influence on the teaching and learning of 21st century teachers. Among the five models, model 5 best fits the study.
Conclusion: The use of the structural model strengthened this study because the analysis conformed to the sequential process of the specific model. The result showed that the level of integration of ICT in teaching, classroom management strategies, professional identity, and teaching and learning in the 21st century is high, and there is an indication that these variables are

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agreed upon in all opportunities for Filipino teachers in public secondary schools in Region XI. This is supported by Holistic Theory of Language Teaching of Richards at Rogers. Based on the results of the study, the researcher proposed the recommendation to continue and maintain the appreciation of the four variables of ICT integration in teaching, classroom management strategies, professional identity, and teaching and learning because they both gained the highest descriptive level.

Keywords: ICT integration; classroom management strategies; professional identity; teaching and learning; education; structural equation model; Philippines.

1. INTRODUCTION

In the dynamic landscape of education, teaching strategies that once thrived in prior generations may no longer hold the same level of effectiveness in today's world. Therefore, it becomes imperative to adapt and evolve our approach to education. Hence, the classroom serves as an ideal starting point for implementing these necessary changes [1]. However, it is crucial to acknowledge that the success of any educational policies depends not only on their design but also on how they are actually put into practice though it is common to encounter discrepancies between policy performance and their implementation. As a matter of fact, some teachers may be hesitant to embrace and apply the established regulations and standards when delivering the particular curriculum.

To be more specific, one of the causes for the student's more advanced ability to study the Filipino subject is the lack of instructional methods. When teacher uses creative teaching methods, the learner becomes more eager to learn. Also, teachers monitor students or question them to discover more about their interests, prior knowledge, and future learning goals. Consequently, ideas based on the student's enthusiasm, experience, and prior knowledge will emerge through the dialogue between the teacher and student as well as from content-related materials. Indeed, teacher needs the information to make plans, know the standards that can be covered in each lesson, choose the material in accordance with the guidelines, identify the skills that the students need to learn, and create assessments to ascertain the knowledge that each student has learned [2].

Undeniably, the instructor serves as a facilitator for numerous classroom activities. He/She keeps an eye on how the students and teachers interact. The pupils' responsibility, on the other hand, is to actively participate in the various

class activities since they must develop their talents in the different subjects they are learning. The teacher used to do a lot of the talking and other work during teacher-student interactions. Moreover, he/she is in charge and handles most of the work in the classroom, leaving the pupils to simply observe. The engagement between the teacher and students may be 75% or 25% on the student's work and 25% on the teacher's. In this situation, it can be said that within 80 minutes of class, the teacher's speech is only 20 minutes long, while the student's is 60 minutes long [3].

In the case of the COVID-19 pandemic, when both developed and developing countries closed physical campuses, developed countries maintained higher education continuity through pure online education, a feat not as common in poor and developing countries [4]. With less physical contact between students and staff members, there is less likelihood of viral transmission. Self-learning modules (SLMs) are available in printed or digital form to address digital disparities, especially in underdeveloped nations where pupils lack access to technology and the internet [5], a situation similarly experienced by Filipino teachers.

Thus, the use of information and communication technology (ICT) in educational institutions to impart to pupils the knowledge and skills they require for the digital world is crucial. Teachers and students have greater opportunity to collaborate more successfully in the digital world, a credit to the use and integration of ICT in the teaching and learning environment. Whether used in the classroom, for administration, for online instruction, or for other purposes, ICT has the potential to play a significant role in education [6]. In fact, methods to satisfy the demands of students in the twenty-first century were sought in Mandado's research of the teaching of Filipino [7]. He emphasized that, in order to remain relevant to young people's interests, it is crucial to stay up with modern technological advancement.

Additionally, it was found out that, Filipino teachers' performance expectations (PE), effort expectations (EE), social influence (SI), and education policy (EP) have significant effects on teachers' behavioral intention to use ICTs (BI), and that ICT use habits (IUH) and facilitating conditions (FCs) have positive effects on the actual use of ICTs for instruction [8].

Hence, this study aims to develop a model of teaching and learning in the 21st century as presented in Fig. 1. Specifically, it determines the following: first, ensure the integration of ICT in the teaching of teachers who already have indicators: teachers' perception of ICT integration in teaching (TPICT); effectiveness of ICT integration for student learning (EICTSL); and elements of the effectiveness of ICT integration in teaching and learning (EICTTL). Second, classroom management strategies were identified with the following indicators: managing classroom behavior (MCB); specific teaching techniques (STT); working with parents (WWP); and planning and support (PAS). Third, determine the level of professional identification of Filipino teachers with indicators that are: teaching beliefs (TB); professional socialization (PS); career progression (CP); learning environment (LE); effective communication and efficient use of technology (ECEUT). Fourth, to know the teaching and learning of teachers in the 21st century, Filipino teachers should use

indicators such as critical thinking (CT), collaboration (CA), communication (CO), creativity (CR); self-direction (SD), making global connections (MG), making local connections (ML), and use of technology in learning (UT). Fifth, determine the significant relationship between teaching and learning technology, classroom management strategies, and the professional identity of teachers. Sixth, find out which variable most affects the teaching and learning of Filipino teachers in the 21st century. Finally, develop a 21st-century teaching and learning model for Filipino teachers.

Furthermore, the researcher would like to know if there is a significant relationship between other variables such as ICT integration in teachers' teaching, teachers' classroom management strategies, teachers' professional identity, and teaching and learning in 21st-century Filipino teachers.

Indeed, the younger generation is required by the 21st century to possess a variety of skills that go beyond knowledge of information and communication technology (ICT), including communication, cooperation, social and cultural skills, creativity, critical thinking, problem solving, productivity in a globalized world, learning new skills, self-direction, planning, flexibility, risk-taking, conflict management, and a sense of initiative and entrepreneurship [9].

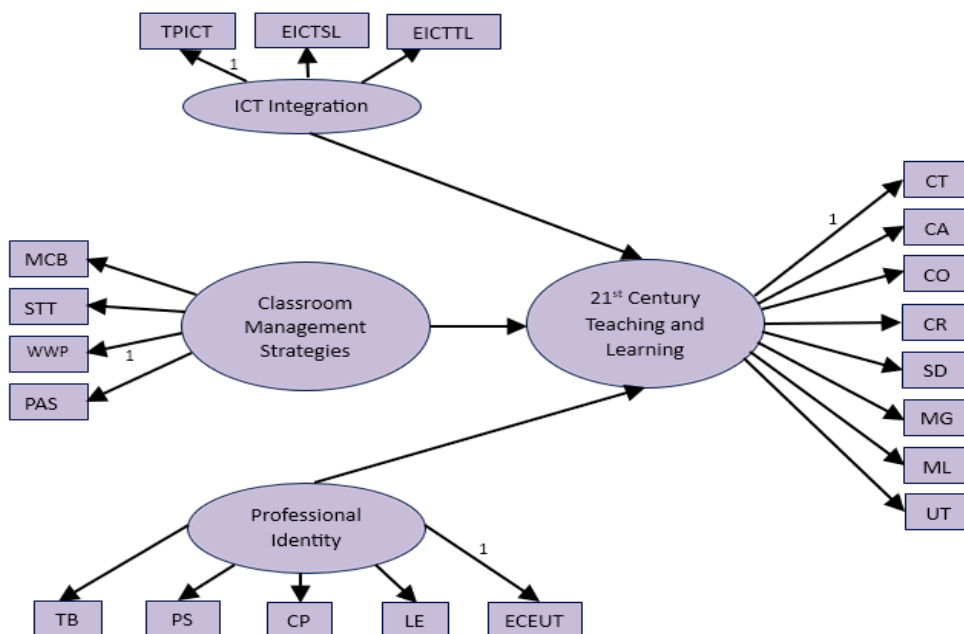


Fig. 1. Conceptual framework of the study

Additionally, the usage of technology demonstrates its efficacy in enhancing students' linguistic and 21st-century skills [10]. Methods to satisfy the demands of students in the twenty-first century were sought in Mandado's research of the teaching of Filipino [7]. To stay current with the interests of the young, it is crucial to follow modern-era development.

A study reveal that all teachers engaged in language correctness and classroom discourse, two aspects of classroom interaction. Indonesian and Malaysian teachers were evaluated on their language proficiency in the areas of pronunciation, vocabulary, directions, questions, and explanations as well as the gathering of information and the correction of grammatical errors. Additionally, they used monologue, conversation, discourse restructuring, filling in the language gaps for students, using both teachers' and students' first and second languages, tolerating incomplete answers from the student, and getting a one-word response. The interactions between students and teachers were improved by these categories [8].

Another study's findings demonstrate the variety of teacher speeches that can be delivered in a classroom setting. It involves welcoming the student, going over prior information, introducing new material, providing guidance and instructions, motivating and inspiring the class, offering counsel, and wrapping up the lesson [11].

It also deepens our understanding of how teachers interact with students in the classroom and how they might increase their knowledge, for instance through reflection. ponder the circumstances in the classroom. To help instructors realize their full potential as teachers, the authors advocate a higher focus on integrating research-based knowledge and teacher learning practices [12].

The development of accurate and appropriate work in the classroom with regard to Filipino subjects is significantly influenced by the professional identities of Filipino teachers in the 21st century. The teacher's exercises will be the key tool in the students' learning process. The formation and development of teachers' professional identities and identifying the characteristics of teachers' professional identities are the two categories in which the literature study on teachers' professional identities falls [13].

Thus, due to its emphasis on student-centered learning, this study, which is grounded in the Constructivism theory first proposed by Piaget in 1957, encourages active learning. The theory places a high value on prior information in order to generate new knowledge. As a result, each student will produce something unique from what his peers have produced depending on his prior knowledge and experience. The philosophy places a strong emphasis on learning as a process.

In addition, this study was also based on the notion put forward by Richards and Rogers (1986) in their Holistic notion of Language Teaching, which served as the foundation for the Communicative Approach and the study. Based on their beliefs about teaching languages, teachers make choices about what they will teach in the classroom. They stressed how strongly instructors' ideas affect their objectives, approaches, job descriptions, and students [14].

Widdowson (1984) expands on this idea by mentioning the usage of language and asserting that these two factors are a component of the process. Language teachers do not strictly communicate students' errors because the major objective of communicative language teaching (CLT) is to educate non-native language learners to participate in the negotiation of meaning [15].

2. MATERIALS AND METHODS

2.1 Respondents

In the study done by the researcher, the Filipino teachers in secondary school at the public school were selected. Four hundred teachers were recruited from different public secondary schools in Region XI. The respondents were taken from the ten divisions of Region XI as follows: Davao City (A) 100 respondents, Davao Oriental (B) 50 respondents, Davao del Norte (C) 30 respondents, Panabo City (D) 30 respondents, Tagum City (E) 60 respondents, Digos City (F) 40 respondents, Island Garden City of Samal (G) 40 respondents, and Mati City (H) 50 respondents. The sample was taken in each division depending on the size of their population to get 400 respondents.

This method aided the study because it guaranteed that the presence of a significant subgroup within the sample was important. The estimated sample size for this investigation was also determined using the Raosoft sample size calculator. Additionally, it is the simplest way to

collect information from the entire population. As a result, all information gathered from responses will be kept private. The researcher respects the respondents' personalities. To further highlight specific subgroups throughout the whole population, stratified random sampling was performed.

The study was conducted in the third quarter of the 2022 school year in all secondary schools in the Region XI division. This was chosen by the researcher because this is the region where he belongs to, and also because of the threat of the pandemic. It also led to the researcher to adopt a strict method of collecting data that is in line with the government's standards regarding COVID-19. In addition, the number of teachers who teach Filipino in this area is sufficient to conduct the research. The study does not include teachers who teach other subjects, including teachers who teach in public schools that are not covered by Region XI. Moreover, respondents were free to comment if they did not understand something in the study flow. Respondents were not forced to participate in the study, and no appropriate punishment was imposed on them. Any data obtained from respondents will remain confidential. The personality of the respondents is appreciated by the researcher.

2.2 Research Instrument

This study used a downloaded questionnaire from web sources. The questionnaires were reviewed by the counselor and experts to validate the instruments used in the study. After validation, the efficiency of the questionnaires

was tested through pilot testing. The researcher also used the Likert scale, and the respondents could mark the answers according to the scale of an extreme angle to other extremes through the level of agreement of those who answered the questions submitted. Table 1 shows the Likert Scale ratings. More specifically, it displays the scale, description, and interpretation used in the data collection among the four variables of the study.

To find out the accurate measurement of the level of assessment of ICT integration in teachers' teaching, teachers' classroom management strategies, teachers' professional identity, and teaching and learning in the 21st century, the following scale was used: First, the interval of the mean of 4.20–5.00 has a descriptive level that is the highest and has an interpretation that if the referred item is agreed upon in all cases, the ability of the teachers Second, the mean gap of 3.40–4.19 has a descriptive level that is high and has an interpretation that if the referred item is the ability of the teachers to agree, Third, the mean gap of 2.60–3.39 has a descriptive level of medium and has the interpretation that if the referred item is not sure of the ability of the teachers, Fourth, the mean gap of 1.80–2.59 has a descriptive level that is low and has an interpretation that if the referred item does not agree with the ability of the teachers, And, finally, the interval of the mean of 1.00–1.79 has a descriptive level that is the lowest and has the interpretation that if the referred item ever occurs, the ability of the teachers is totally disagreeable.

Table 1. List of scale used, description, and interpretation of the data collected in the four variables of the study

Scale	Description	Interpretation
4.20-5.00	Very High	ICT integration in teaching, teachers' classroom management strategies, teachers' professional identity, and 21st century teaching and learning are always observed.
3.40-4.19	High	ICT integration in teaching, teachers' classroom management strategies, teachers' professional identity, and 21st century teaching and learning are often observed.
2.60-3.39	Moderate	ICT integration in teaching, teachers' classroom management strategies, teachers' professional identity, and 21st century teaching and learning are sometimes observed.
1.80-2.59	Low	ICT integration in teaching, teachers' classroom management strategies, teachers' professional identity, and 21st century teaching and learning should be observed.
1.00-1.79	Very Low	ICT integration in teaching, teachers' classroom management strategies, teachers' professional identity, and 21st century teaching and learning are never observed.

The questionnaires went through pilot testing and were measured by Cronbach's Alpha with a result of .830 for the questionnaire regarding the integration of ICT in Teaching, while the result for the teachers' Classroom Management Strategy was .945, the result in professional identity and .878 the result in Teaching and Learning in the 21st century Filipino teachers, which showed the reliability of the questionnaires. In a study, it was emphasized that the reliability of Cronbach's alpha coefficient normally has a range between 0 and 1. However, there is no lower limit on the coefficient. The closer the Cronbach's Alpha coefficient is to 1.0, the greater the internal consistency of the scale items. On the other hand, the following rule of thumb is given: Cronbach's Alpha $>.9$ = Excellent; Cronbach's Alpha $>.8$ = Good; Cronbach's Alpha $>.7$ = Acceptable; Cronbach's Alpha $>.6$ = doubt; Cronbach's Alpha $>.5$ = Weak; and Cronbach's Alpha $<.5$ = Unacceptable [13]. When using a Likert scale, it is imperative to calculate and report the Cronbach's Alpha Coefficient for internal consistency and reliability for any scale or sub-scale used. Data analysis must use the entire scale and not individual items. Cronbach's Alpha does not provide reliability for single items.

2.3 Research Design and Methodology

A descriptive, correlational, and causal comparative design was used to carry out this study. When conducting research to uncover the root causes of a certain issue, descriptive language is employed to describe the current status of the situation. A distinctive characteristic of a group of people whose responses are continuous data and for whom the simple mean of the normal level is provided are described in descriptive research [16].

Each variable in this design is related to one another in correlational research. Determines the degree of correlation between two or more variables by representing, estimating, and testing the link between the variables used in the data collection [17]. A structural correlation model was also employed in this study to analyze the connections between the various variables.

This descriptive study was analyzed using quantitative data about the problem. The quantitative aspect is an appropriate data collection method designed to target respondents who answered the questions. The data collection process was based on the use of questionnaires.

This study focuses on the teaching capacity model, theory, and problem-related assumptions. Empirical data on the scale level interval from the participants' responses are used to demonstrate this nature.

Because the analysis went through the processes of model design, data collecting, model estimation, model analysis, and potential model revision, using the Structural Equation Model (SEM) in this study improves the integrity and rigor of the research. As a result, an alternative model that fits the data must be developed when the proposed model is disproved by goodness of fit statistics.

The following procedure was used to collect the data: first, the letter was addressed to the dean of the school's manager and approved by the dean of the professional school. Third, the researcher sent the preliminary version of the questionnaires to the research adviser for any revisions and comments. Second, the researcher requested permission to perform the study in a number of Region XI public high schools. The survey was sent to professional panels for assessment and confirmation.

Based on the procedure to be followed, the researcher personally distributed the questionnaire to the respondents depending on the time allotted for the survey at the included schools or it may be based on an online technique. To demonstrate that the researcher is truly gathering information from the respondents, the researcher secured a certificate of attendance from the school administration. According to the goals of the study, the researcher recorded, arranged, organized, analyzed, and interpreted the data they have gathered.

The following statistical tools were used to calculate the data and test the hypotheses: first, the mean will be used to determine the assessment level of ICT Integration in Teaching and Learning, Classroom Management Strategy, Professional identity, and 21st Century Teaching and Learning of Filipino Secondary School Teachers. Second, Pearson r-Correlation was used to determine significant correlations between variables. Third, Multiple Regression was also used to determine the significant influence of ICT Integration in Teaching and Learning, Classroom Management Strategies, Professional identity, and 21st Century Teaching and Learning on Filipino Secondary teachers.

In conducting this study, appropriate research rules are important for its completion. The researcher considered the ethical aspects of the research regarding the confidentiality of the data, consent, and protection of the participants for the study conducted.

The proper research guidelines were followed in order to construct this study. The researcher followed the assessment methodology and defined criteria for conducting the study, primarily in the management of the population and data, but not only in those areas. The required paperwork was also completed and organized with care then sent with the questionnaire and forms. The ethics of the study's conduct was also taken into account with utmost confidentiality, securing consent and participants' protection. The researcher received a Certificate of review with U MERC Protocol No. once the papers submitted for review were received back. U MERC- 2023-113.

3. RESULTS AND DISCUSSION

3.1 Level of ICT Integration in Teaching

Table 2 shows the level of integration of ICT in teaching by teachers in Region XI. It has an overall mean of 4.25, with the descriptive level being the highest. The indicator of teachers' understanding of the integration of ICT in teaching has a mean of 4.30, a corresponding standard deviation of 0.45, and a descriptive level of the highest. The level of effectiveness of ICT integration for students' learning is also highest, with a mean of 4.40 and a corresponding standard deviation of 0.49. The element of effectiveness of ICT integration in teaching and learning is high, with a mean of 4.04 and a corresponding standard deviation of 0.66.

This table's results show that the overall mean has the highest descriptive level, indicating that teachers strongly agree with the statements about how well they understand how to incorporate ICT into their instruction and how well it benefits student learning. It also shows that the effectiveness of ICT integration in teaching and learning is high. Simply said, it means that all teachers accept the use of ICT in their instruction.

Whether used in the classroom, for administration, for online instruction, or for other purposes, ICT has the potential to play a

significant role in education (Lawrence and Usman, 79-105). Methods to satisfy the demands of students in the twenty-first century were sought in Mandado's research of the teaching of Filipino [6]. In order to remain relevant to young people's interests, it is crucial to stay up with modern technological advancement.

The usage of technology, demonstrates its efficacy in enhancing students' linguistic and 21st-century skills [10]. Methods to satisfy the demands of students in the twenty-first century were sought in Mandado's research of the teaching of Filipino. To stay current with the interests of the young, it is crucial to follow modern-era development [7].

The usefulness of ICT integration in teaching and learning was highlighted since it attained a high level. This suggests that the use of ICT in teacher education will be increased in order to develop teachers' abilities to implement 21st century skills. While the indicator recommends that teachers should maintain a high level of understanding of ICT integration in teaching and effectiveness of ICT integration for student learning, in response, teachers should attend training or take or study NCII about ICT at TESDA, where they will be given the freedom to design their own lessons using ICT and, most importantly, have enough support from the school's administration.

3.2 Level of Teachers' Classroom Management Strategies

Table 3 shows that, with a total mean of 4.21 and a standard deviation of 0.47, the teachers' degree of classroom management technique is highest at the descriptive level. The highest rated indicators in this Table are two of them. Planning and assistance has a mean of 4.24 and a standard deviation of 0.56, while classroom behavior management has a mean of 4.36 with a matching standard deviation of 0.57. Two metrics performed well. Working with the parent has a mean of 4.19 and a standard deviation of 0.64, but this particular teaching approach has a mean of 4.28 and a matching standard deviation of 0.52 instead.

The overall result of this table has the highest descriptive level, indicating that all of the teachers agree with the components of behavior control, planning, and assistance in the classroom. High-level teaching and parent-working strategies are used. Simply said, it

indicates that all teachers accept the classroom management approach.

The results demonstrate that all teachers engaged in language correctness and classroom discourse, two aspects of classroom interaction. Indonesian and Malaysian teachers were evaluated on their language proficiency in the areas of pronunciation, vocabulary, directions, questions, and explanations as well as the gathering of information and the correction of grammatical errors. Additionally, they used monologue, conversation, discourse restructuring, filling in the language gaps for students, using both teachers' and students' first and second languages, tolerating incomplete answers from the student, and getting a one-word response. The interactions between students and teachers were improved by these categories [12].

Teachers who concentrated on particular teaching approaches and interacted with parents scored highly descriptively, and they were encouraged to increase the degree of classroom management strategies. It merely serves to highlight the parents' lack of parental support and teaching abilities. The upkeep of behavior control, planning, and assistance in the classroom will be increased because it has achieved the maximum degree. It simply implies that it has a significant impact on how teachers are managed in the classroom.

Overall, among Filipino instructors, the relationship between classroom management techniques and teaching and learning in the twenty-first century received the greatest scores. The researcher advises that teachers continue to improve and develop their professional skills by participating in trainings, boosting parental involvement in the classroom, holding more

parent conferences for specific issues, and primarily making a home visit to the student. Additionally, he should continue to advance his profession in education to improve the basis and broaden his understanding of classroom management techniques.

The study's findings demonstrate the variety of teacher speeches that can be delivered in a classroom setting. It involves welcoming the student, going over prior information, introducing new material, providing guidance and instructions, motivating and inspiring the class, offering counsel, and wrapping up the lesson [14].

3.3 Level of Teachers Professional Identity

The level of professional identity of Filipino teachers is seen in Table 4, where the overall mean is 4.53, with a standard deviation of 0.62. The teaching belief had the highest mean, scoring 4.56, with a comparable standard deviation of 0.49. The mean of the learning environment was 4.49 with a corresponding standard deviation of 0.51, followed by professional socialization, which has a mean of 4.48 and a standard deviation of 0.54, and the mean of career development is 4.14 with a corresponding standard deviation of 0.57. It was followed by effective communication and efficient use of technologies, each with a mean of 4.53 and a corresponding standard deviation of 0.62.

In all cases, the teachers agreed with every item in the table's overall result, which indicates that Filipino teachers generally have a high level of professional identification. It merely signifies that they accept their professional identity wholeheartedly.

Table 2. Level of ICT Integration in teaching

Indicators	Mean	SD	Descriptive level
Teacher's perception of ICT integration in teaching	4.30	0.45	Very High
Effectiveness of ICT integration for student's learning	4.40	0.49	Very High
The effectiveness element of ICT integration in teaching and learning	4.04	0.66	High
General Mean	4.25	0.44	Very High

Table 3. Level of teacher classroom management strategies

Indicators	Mean	SD	Descriptive level
Managing Classroom Behavior	4.34	0.57	Very High
Specific Teaching Techniques	4.08	0.52	High
Working with parents	4.19	0.64	High
Planning and Support	4.24	0.56	Very High
General Mean	4.21	0.47	Very High

Table 4. Level of teachers professional identity

Indicators	Mean	SD	Descriptive level
Teaching Beliefs	4.56	0.49	Very High
Professional Socialization	4.48	0.54	Very High
Career Progression	4.44	0.57	Very High
Learning Environment	4.49	0.51	Very High
Effective communication and efficient use of technologies	4.53	0.62	Very High
General Mean	4.53	0.62	Very High

The development of accurate and appropriate work in the classroom with regard to Filipino subjects is significantly influenced by the professional identities of Filipino teachers in the 21st century. The teacher's exercises will be the key tool in the students' learning process. The development and professional development of teachers' identities come first, followed by identifying the characteristics of teachers' professional identities, who noted that the literature study on teachers' professional identities falls into two categories that start with various aspects of teacher identity [15].

Since all of the variables reached the highest descriptive level, keep assessing the level of professional identity of Filipino teachers. It only serves to highlight the significant impact that a teacher's professional identity has on how they choose to conduct themselves in the classroom.

3.4 Level of Teaching and Learning among 21st Century Filipino Teachers

With a total mean of 4.74 and a matching standard deviation of 0.32, Table 5. displays the level of teaching and learning among Filipino teachers in the twenty-first century, with the descriptive level of very high. The ranking of indicator items from highest to lowest score is also included. The mean for using technology in teaching is 4.37 with a standard deviation of 0.57, critical thinking has a mean of 4.34 with a

standard deviation of 0.52, and cooperation has a mean of 4.44 with a standard deviation of 0.51; communication has a mean of 4.38 with a standard deviation of 0.53, creativity has a mean of 4.35 and a standard deviation of 0.53, and self-direction has a mean of 4.35 and a standard deviation of 0.53.

This Table indicates that the descriptive levels of critical thinking, collaboration, communication, creativity, self-direction, global connection, local connection, and use of teaching and learning technology are highest among 21st century Filipino teachers. It simply means that all items included in the indicator of this variable are endorsed in all cases.

Teachers must devise creative strategies to engage pupils and maintain their extrinsic and intrinsic motivation. The majority of typical classes don't give students adequate chances to participate in productive learning. By concentrating on the idea of constructivism, which refers to constructing knowledge obtained through student-student and student-teacher interaction, learning can be made effective and productive. Through substantial social contact, self-evaluation, and individual work to communicate their prior learning and already developed information, ideas, and understanding, constructivism enables the instructor to maximize the potential of students.

Table 5. Level of teaching and learning among 21st century Filipino teachers

Indicators	Mean	SD	Descriptive Level
Critical Thinking	4.34	0.52	Very High
Collaboration	4.44	0.51	Very High
Communication	4.38	0.53	Very High
Creativity	4.35	0.53	Very High
Self-Direction	4.35	0.53	Very High
Making Global Connections	4.23	0.60	Very High
Making Local Connections	4.22	0.62	Very High
Using Technology as a Tool for Learning	4.37	0.57	Very High
General Mean	4.74	0.32	Very High

The Holistic Theory of Language Teaching by Richards and Rogers (1986), the theoretical underpinning of the Communicative Approach, which can be thought of as having as its foundation the language of communication, served as the basis for this study. Widdowson (1984) expands on this idea by mentioning the usage of language and asserting that these two factors are a component of the process. Language teachers do not strictly communicate students' errors because the major objective of communicative language teaching (CLT) is to educate non-native language learners to participate in the negotiation of meaning.

3.5 Significant Relationship between Integration of ICT in Teaching Teachers and Teaching and Learning with 21st Century Filipino Teachers

Table 6. shows the significant relationship between ICT integration in teachers' teaching and teaching and learning in 21st century Filipino teachers, with a total r-value of.505 and a corresponding probability value of.000, well below the.05 significance level set in this study. Therefore, the hypothesis is that there is a significant relationship between the integration of ICT in teachers' teaching and teaching and learning in 21st-century Filipino teachers.

The findings of this Table demonstrate a significant correlation between teaching and learning in 21st-century Filipino instructors and ICT integration in teachers' instruction. This only indicates that instructors' capacity to instruct and

learn in the twenty-first century is great when ICT integration into their instruction is high. It simply shows that the use of ICT in teaching, particularly in critical thinking, collaboration, communication, creativity, self-direction, global connection, and local connection, plays a significant role in teachers' ability to teach and learn in the twenty-first century.

The 21st century has highlighted the need for the younger generation to have a variety of related skills beyond the obvious knowledge of information and communication technology (ICT), including communication, cooperation, social and cultural skills, creativity, critical thinking, problem solving, productivity in a globalized world, learning new skills, self-direction, planning, flexibility, risk-taking, conflict management, and a sense of initiative and entrepreneurship [9].

3.6 Significant Relationship between Classroom Management Strategies and Teaching and Learning for 21st Century Filipino Teachers

With a total r-value of.786 and a p-value of.000 (significant), Table 7. demonstrates the association between classroom management approach and teaching and learning in 21st century instructors in Filipino region XI, which is noticeably lower than the.05 significance criterion set in this study. Therefore, the premise is that among Filipino teachers in the twenty-first century, there is a substantial association between classroom management approach and teaching and learning.

Table 6. Significant relationship between integration of ICT in teaching teachers and teaching and learning with 21st century Filipino teachers

Integration of ICT in Teaching	Teaching and Learning								Overall
	KNP	PAK	KOM	PAG	DSS	PNK	LNK	PTP	
TPICT	.457**	.481**	.468**	.459**	.475**	.422**	.437**	.461**	.544**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
EICTSL	.485**	.519**	.511**	.531**	.531**	.406**	.421**	.469**	.574**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
EICTTL	.435**	.342**	.306**	.330**	.355**	.349**	.391**	.395**	.434**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
Overall	.553**	.527**	.502**	.518**	.536**	.469**	.500**	.528**	.615**
	.000	.000	.000	.000	.000	.000	.000	.000	.000

Legend:

TPICT – teacher’s perception of ICT integration in teaching

EICTSL – effectiveness of ICT integration for student’s learning

EICTTL – effectiveness element of ICT integration in teaching and learning

It was discovered that among Filipino teachers teaching in the twenty-first century, classroom management techniques had a substantial impact on both teaching and learning. This merely indicates that the indicators of classroom management strategies—classroom behavior management, particular teaching methods, dealing with parents, and preparation and support—play a significant role in teaching and learning for Filipino teachers working in the twenty-first century.

The study's findings demonstrate the variety of teacher speeches that can be delivered in a classroom setting. It involves welcoming the student, going over prior information, introducing new material, providing guidance and instructions, motivating and inspiring the class, offering counsel, and wrapping up the lesson [14].

The study's findings also deepen the understanding of how teachers interact with students in the classroom and how they might increase their knowledge, for instance through reflection. ponder the circumstances in the classroom. To help instructors realize their full potential as teachers, the authors advocate a higher focus on integrating research-based knowledge and teacher learning practices [13].

3.7 Significant Relationship between Professional Identity and Teaching and Learning in 21st Century Filipino Teachers

With a total r-value of .764 and a p-value of .000 (significant) or above, Table 8 demonstrates the

substantial association between professional identity and teaching and learning in 21st century teachers in Filipino region XI. This relationship is below the .05 significance criterion imposed in this study. Therefore, it is hypothesized that among instructors in the twenty-first century, there is a substantial association between professional identity and teaching and learning.

In conclusion, it can be seen that among instructors in the twenty-first century, there is a major connection between professional identity and teaching and learning. This only indicates that a significant element of teaching and learning in the twenty-first century is played by the professional identities of Filipino teachers, particularly their commitment to education, professional socialization, career development, learning environment, and effective communication. Filipino instructor.

Professional identity is widely defined as a feeling of self-associated with a certain vocation [18]. According to instructional belief, teaching and learning experiences reveal the dynamic structure of instructors' beliefs, which is extremely contextual and influences teachers in various ways [19]. According to professional socialization, teachers consider that the absence of management or administrative support is one of the most significant barriers to the development of a professional identity [20]. According to career development, a teacher's professional identity may also affect their self-efficacy, professional growth, and recognition for change [21].

Table 7. Significant relationship between classroom management strategies and teaching and learning for 21st century Filipino teachers

Classroom Management Strategies	Teaching and Learning								Overall
	KNP	PAK	KOM	PAG	DSS	PNK	LNK	PTP	
MCB	.537**	.460**	.427**	.432**	.443**	.381**	.441**	.458**	.532**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
STT	.650**	.551**	.571**	.584**	.596**	.641**	.651**	.599**	.724**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
WWP	.561**	.482**	.477**	.451**	.496**	.548**	.558**	.552**	.617**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
PAS	.652**	.639**	.608**	.601**	.637**	.572**	.623**	.636**	.739**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
Overall	.723**	.641**	.626**	.621**	.653**	.645**	.685**	.677**	.786**
	.000	.000	.000	.000	.000	.000	.000	.000	.000

Legend:

MCB – managing classroom behavior

STT – specific teaching techniques

WWP – working with parents

PAS – planning and support

Table 8. Significant relationship between professional identity and teaching and learning in 21st century Filipino teachers

Professional Identity	Teaching and Learning								Overall
	KNP	PAK	KOM	PAG	DSS	PNK	LNK	PTP	
TB	.491**	.528**	.467**	.462**	.471**	.311**	.344**	.426**	.516**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
PS	.497**	.545**	.484**	.499**	.558**	.372**	.402**	.452**	.563**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
CP	.568**	.546**	.499**	.544**	.506**	.374**	.429**	.499**	.586**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
LE	.681**	.724**	.664**	.660**	.660**	.413**	.451**	.597**	.714**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
ECEUT	.672**	.686**	.648**	.668**	.706**	.504**	.519**	.665**	.750**
	.000	.000	.000	.000	.000	.000	.000	.000	.000
Overall	.708**	.736**	.676**	.697**	.706**	.479**	.523**	.652**	.764**
	.000	.000	.000	.000	.000	.000	.000	.000	.000

Legend:

TB – Teaching Beliefs

PS – Professional Socialization

CP – Career Progression

LE – Learning Environment

ECEUT – Effective Communication and Efficient Use of Technologies

3.8 Significant Influence between Integration of ICT in Teaching Teachers, Teacher Classroom Management Strategies, Teachers Professional Identity and Teaching and Learning with 21st Century Filipino Teachers

Table 9 shows the significant influence of ICT integration on teachers' teaching, teachers' classroom management strategies, and Filipino teachers' professional identity in teaching and

learning in the 21st century in region XI. with an F-value of 352.285, an R-value of .853 and an R² of .727, and a p-value of .000, which is well below the .05 level of significance set in this study. It can be observed from the data that the adjusted R² is .727, which represents 73% of the total variation in teaching and learning among 21st century teachers explained in the regression. The difference of 23% may be related to other factors not included in the present study.

3.9 Best Fit Model for Teaching and Learning with 21st Century Filipino Teachers

techniques, professional identity, and teaching and learning in the twenty-first century among Filipino teachers. To find the best teaching and learning model for Filipino instructors in the twenty-first century, five models were tested.

This section focused on the investigation of the connections between classroom management

Table 9. Significant relationship between integration of ICT in teaching teachers, teacher classroom management strategies, teachers professional identity and teaching and learning with 21st century Filipino teachers

		Teaching and Learning			
Exogenous Variables		<i>B</i>	<i>B</i>	<i>T</i>	<i>Sig.</i>
Constant		.002		.012	.990
ICT Integration		.103	.098	2.794	.005
Classroom Strategies		.436	.447	11.309	.000
Professional Identity		.458	.413	11.550	.000
R	.853				
R ²	.727				
ΔR	.725				
F	352.285				
P	.000				

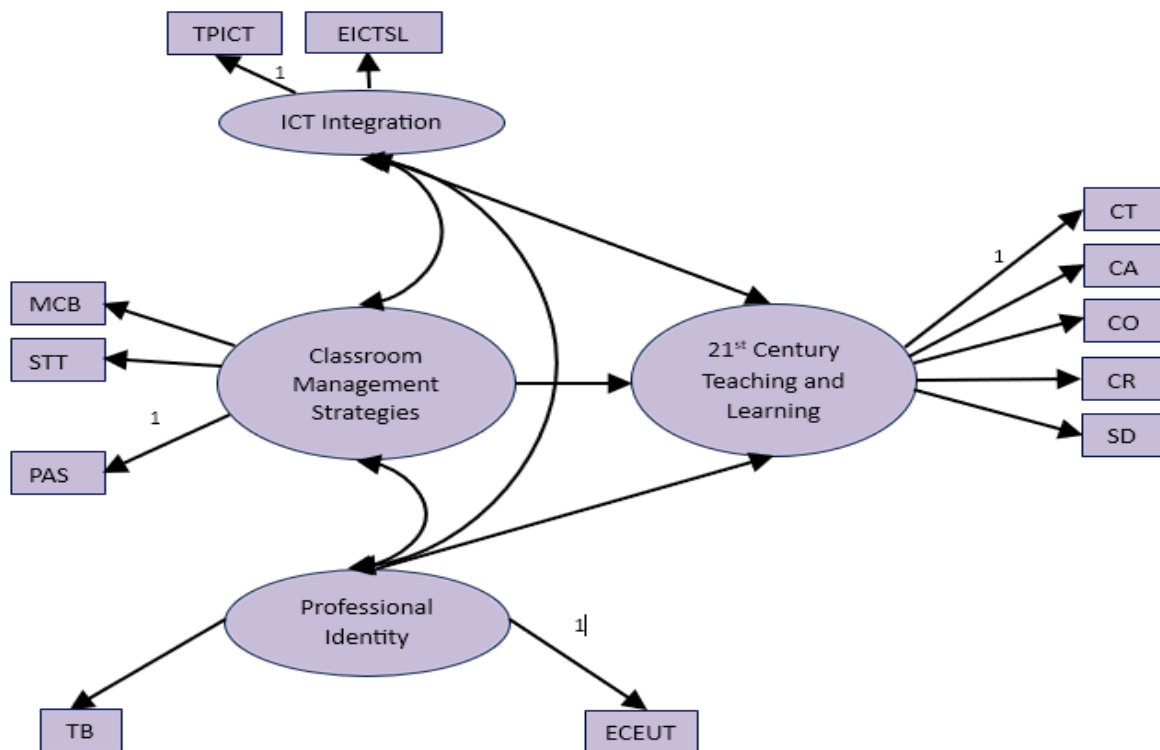


Fig. 2. Best fit model for teaching and learning with 21st century Filipino teachers

Table 10. Summary of the goodness of fit measure of the five structural 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	7.472	.769	.821	.800	.796	.127	.000
2	.000	6.509	.805	.849	.827	.827	.118	.000
3	.000	5.743	.802	.870	.848	.851	.109	.000
4	.000	4.773	.818	.898	.874	.881	.097	.000
5	.082	1.317	.978	.996	.983	.993	.028	.976

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

According to the following metrics: CMIN/DF = 1.317, p-value = .182, RMSEA = .028, p-close = 0.976, and indices like NFI (0.983), TLI (0.993), CFI (0.996), and GFI (0.978), Hypothesized Structural Model 5 was found to be the best fitting model of the data as shown in Table 10. All indices with corresponding values above 0.95 either met the standards for goodness-of-fit measurements or were larger than 0.95. It does not deserve further testing of any other models because the created model 5 is the best suitable teaching and learning model for instructors in the twenty-first century. The hypothesis is therefore rejected.

4. CONCLUSION

This section will summarize the study's findings and the researcher's conclusions and recommendations based on the analysis and interpretation of the data. Because the analysis followed the sequential steps of the particular model, the usage of the structural model strengthened this study. The findings indicated a high level of ICT integration in teaching, classroom management techniques, professional identity, and teaching and learning in the twenty-first century. Additionally, there is evidence that these variables are shared across all opportunities for Filipino teachers in public secondary schools in Region XI.

The null hypothesis was rejected since there is a significant association between the following variables: ICT integration in teaching, classroom management techniques, and professional identity in teaching and learning in the twenty-first century. Out of the five studied models, model 5 had consistent indexes that showed the data fit the model the best. It was therefore determined to be the best model. Because all of the indices match the established requirements in comparison to the calculated value of the best-

fitting model, the goodness of fit result of model 5 is extremely satisfactory.

Supported and anchored in the theory of Constructivism introduced by Piaget (1957), it promotes active learning because it revolves around student-centered learning. The theory gives a lot of importance to previous knowledge in order to create new ones. Therefore, each student, based on his previous knowledge and experience, will create something different compared to his peers. The theory emphasizes learning as an active process.

The Holistic Theory of Language Teaching by Richards and Rogers (1986), the theoretical underpinning of the Communicative Approach, which can be thought of as having as its foundation the language of communication, served as the basis for this study. Widdowson (1984) expands on this idea by mentioning the usage of language and asserting that these two factors are a component of the process. Language teachers do not strictly communicate students' errors because the major objective of communicative language teaching (CLT) is to educate non-native language learners to participate in the negotiation of meaning.

CONSENT AND 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, Conflict of Interest (COI), Permission from Organization/Location, and Technology Issues were thoroughly followed as stipulated by the University of Mindanao Ethics Review Committee. Certification was issued to the U MERC researcher with the number U MERC-2022-046 for the implementation of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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