Teaching Competence and Self-Regulated Learning Strategy in Science of Senior High School Students

Jed P. Batonghinog

Holy Cross of Davao College

ABSTRACTION

The term teaching competency is a comprehensive evaluation of a teacher's performance in the classroom based on standards such as subject matter expertise, instructional strategies, ability to ask questions, use of teaching aids, student involvement, personality, classroom management, and goal clarity. This research aims to determine the teaching competence and self-regulated learning strategy in science of senior high school students. This research used a non-experimental quantitative research design, which is employed in the collection and analysis of numerical data. Moreover, the respondents of this study were chosen through purposive sampling to 100 senior high school students from a private school in Davao City during the school year 2023-2024 and answered the adopted 3 survey questionnaires. Using Mean and Pearson r, the findings indicated the following; teaching competence significantly influences the self-regulated learning strategies in science of senior high school students.

Keywords: teaching competence, self-regulated, strategies, instructional materials. competency

INTRODUCTION

Various universities and colleges worldwide reported that many science teachers lack competencies in delivering lessons inside the classroom. Students learning felt uninterested in listening to the discussion due to the lack of strategy, and motivational use by the teachers. Less motivational use during the discussion can cause students to feel bored and do some unnecessary things that can disrupt the class. Moreover, Numerous studies show that self-regulation strategies are an important factor in student learning. The self-regulation learning of students is crucial worldwide due to the uncompetitive delivery of lessons that can lead students to not participate, interact, and collaborate with their teacher and classmates. Teachers nowadays are equipped with many learning styles and skills to teach Senior High School students and utilize effective tools to deliver the teacher's expertise. The standard of teaching has drastically improved recently. Universities now place a greater emphasis on "practical skills" than in the past, when their primary goal was to provide students with specific types of knowledge that they would later be required to use. Teachers require a wide range of abilities to meet the complex problems of the modern world. Teaching competence is a fundamental component of an excellent training program to improve the welfare of a certain nation or the wider world. Teachers' competence in the field of motivation mainly refers to their self-efficacy and teaching enthusiasm, which directly determine their teaching activities and professional engagement (Lauermann, F.; König, J., 2016).

Self-regulate is the ability to understand and control their behavioral responses to emotions and events happening around you, it is being able to upset, and control impulses and can help to behave when you acquit other people. The contribution of teachers' skills to pupils' learning progression has become a hot topic in academic studies. In particular, this is the case in the subject of math instruction (Kaiser & Konig, 2020). In addition, self-regulation techniques enable students to achieve educational objectives, control emotional, impulsive, and distracting thoughts (Lambert, 2018).

In Malaysia, the competency of the teacher is required to fulfill the effectiveness of the teacher in delivering the lesson. Most of the factors they saw are the lack of teaching competence of the teacher and low learning assessment conducted inside the classroom, which can affect the student's learning. The competencies required

professional judgment in order to fulfill the responsibilities of implementing the classroom assessment, which included knowledge, professional responsibility, experience, and student input (Sajali, 2018).

Meanwhile, teacher competence is regarded as a cornerstone of any educational activity in the Philippines. The need for highly trained graduates on the international market is a significant challenge for educators all around the world to gradually build increasingly complicated teaching competencies. The PPST's domains make up the full competency that ensures the application of the world's best teaching techniques (Petalla & Madrigal, 2017; Roberto & Madrigal, 2018).

In a study conducted in Davao City, self-regulated learning one of the shreds of evidence shows that learners can't understand easily the lesson and lack motivation due to the learning environment and lack of teaching competence of the teachers. Various studies found that there is a significant relationship between teacher competence and self-regulated learning (Basila, 2016).

The researcher gives importance to this study because in most Philippine colleges and universities there hasn't been enough research done to examine the impact of teachers' competence on students' ability to self-regulate their learning. By carrying out this research, the researcher hopes to close the gap. Teachers deliberately select learning strategies to match the needs, interests, and motivations of the learners. Learning outcomes are of greater magnitude and is more likely to be produced by excellent teachers using various methods and learning strategies.

This study aims to determine which domain of teaching competence significantly influences the self-regulated learning strategies in science of senior high school students. Furthermore, this study specifically aimed to answer the following questions:

1. What is the level of the teaching competence of the teacher as perceived by the science of senior high school students in terms of:

    1.1.   Professional knowledge

    1.2.   Professional skills

    1.3.   Personal characteristics

    1.4.   Ethical standards and values

2. What is the level of self-regulated learning strategy in science of the senior high school students in terms of:

    2.1.   Cognitive strategy use;

    2.2.   Self-regulation.

3. Is there a significant relationship between teaching competence and the self-regulated learning strategy in science of senior high school students?

4. Is there a domain of teaching competence that significantly influences the self-regulated learning strategies in science of senior high school students?

Hypothesis

In this section, the hypotheses of this study are tested at a 0.05 level of significance.

H01: There is no significant relationship between the teacher's competence to the self-regulated learning strategies in science of senior high school students.

H02: There is no domain of teacher competence that significantly influences the self-regulated learning strategies in science of senior high school students.

This section shows the literature and studies which are related to the present study. Teacher competence in learning science is complemented by related studies and literature with its indicators. The other variable is the self-regulated learning strategies and academic behavior of students with its indicators is also supplemented with related studies and literature.

Teacher Competence

Teacher competence conceptualizes a broad range of cognitive and affective-motivational characteristics teachers need to successfully perform their work (e.g., Baumert & Kunter, 2006; for an overview see Blᵒ̈meke & Kaiser, 2017). The learning environment of today is starting to appear more difficult. A benchmark that assesses the performance of the employee in carrying out their responsibilities is called competency (Ibrahim, 2015). In modern education, teachers must meet the set standards for the teachers for educational needs and improve their ability to administer assessments. The competencies demand a professional judgment that considers knowledge, professional responsibility, experience, and input from students in order to perform the duties of carrying out the classroom assessment (Sajali, 2018). These elements require knowledge, skills, and a positive attitude of teachers to produce effective classroom assessments in schools.

Teachers have a responsibility to ensure the modern system of assessment in both public and private schools to assist learners to learn excellently of the current world of education. Thus, in order to implement the best assessment in the classroom and ensure that students learn effectively, teachers continuously increase their knowledge and skills (Nawi, 2011). According to Rahman & Mahamood (2017), Curriculum planning and implementation requires mastery of thinking and study skills to produce students who are capable of rationally solving increasingly complex life problems. Numerous studies have shown that the quality of instruction is the most important factor in improving student achievement. Curriculum innovation, especially assessing student progress through assessments, requires a high level of teacher competence (Hasnah 2017).

According to Sh. Siti Haizumah (2019), states that teacher quality is based on a teacher's ability to determine learning outcomes and learning support. Teacher quality is a group of experienced, competent, qualified, passionate, dedicated, and educator souls (Ministry of Education Malaysia, 2006). Therefore, in order to attain the goal of discussion assessment, it became clear that the ability of teachers to conduct effective lesson assessment be placed extremely prominent. Priority should be given to proficiency in assessment based on Learning and Facilitation Standard 4 SKPMg2 by Quality Assurance of Education Ministry (2017); teachers need to meet the set standards in order to provide quality education to their students and develop their skills. Guerriero and R.vai (2017), effective motivational skills include the aspects such as a change to negative form-only characteristics such as career choice motivation, achievement motivation, and goal orientation, but also subject areas, teachers' beliefs about teaching and learning, and their perceptions of teaching and learning.

Teachers are responsible for producing excellent, high-quality students through effective learning processes. However, study shows that teachers are underperforming in terms of subject matter acquisition, teaching skills, resources, technology, and communication (Hanafi & Badusah, 2016). Learning can attain its goals when it involves two-way interaction between teacher and student (Mahamod & Lim, 2011). Collaboration among students and teachers it gives great learning result by interchange of information and involving different learning procedures all together the students to learn at a most elevated level. In efforts to advance student instruction, changing teaching strategies and instructional methods are essential. This effort should be continued and realized so that students for the next generation learn at the highest level. According to (Kementerian Pendidikan Malaysia, 2018), Professionalism is a decision made based on knowledge, skills, values, accomplishment evidence, instructional strategies, assessment methods, and established criteria. To achieve high-quality teaching and learning, it is important to emphasize professionalism and competence (Hyvarinen, K. Saaranen, T. & Tossavainen (2015). As a result, all teachers must attain the three professional competencies listed in the areas of knowledge, abilities, and attitudes in order to raise the value of professional practice (Kementerian Pendidikan Malaysia, 2015). The element in implementing professional consideration that needs the competence of a teacher (knowledge, skill and attitude). Esmali (2017), states that effective teachers are those who contribute to professionalism in areas of learning including information exchange and ethics in official or informal situations. Such as conference, seminars, collaborative learning among members and independent reading to improve

teaching and students learn at the highest levels.

Teacher performance in the classroom and its assessment, which is a crucial component of quality assessment, is one of the important elements affecting quality at the micro level, as was previously mentioned (Avalos-Bevan, 2018; Derrington & Campbell, 2018; Elstad & Christophersen, 2017; Flores & Derrington, 2018). The evaluation of academics' and teachers' performance in higher education appears critical in maintaining standards, which has a direct impact on students' performance and, most importantly, their satisfaction (Bini & Masserini, 2016; Gómez & Valdés, 2019). One of the widely used measures for evaluating teaching quality in Higher Education is the Students' Course-instructor Evaluation survey (SCE) (Vanacore & Pellegrino, 2019). The evaluation of teachers, such as EAP teachers, has garnered a lot of attention in the process of assessing the quality of higher education. Effectiveness and efficiency, two key ideas in quality assessment, can be assessed using a variety of methodologies.

Teachers view student feedback as a vital indicator of the effectiveness of their instruction and the curriculum (Surujlal, 2014). In the majority of the research, the degree of the effectiveness of teacher performance has been evaluated from different perspectives in higher education, such as course content (Hsu, 2014), evaluating a teacher's efficacy through classroom observations (Garrett & Steinberg, 2015), effectiveness in the instruction of teachers (Darling-Hammond et al., 2013), in-classroom behaviors of teachers (Seidel & Shavelson, 2007), and psychological characteristics of the teachers and evaluating teaching effectiveness (Klassen & Tze, 2014).

Self-regulated Learning

Self-regulated learning (SRL) has been found to be a key element in online environments for mitigating the effects of poor academic performance (Chmiliar, 2011). According to recent studies, self-regulated learning (SRL) can improve academic accomplishment results or is favorably correlated with success in online courses (Barnard-Brak, Lan, & Paton, 2010). Academic performance can be described in terms of grades for assignments, course grades, or grade point average, depending on the subject average (GPA) (Broadbent & Poon, 2015). The use of different learning strategies, to be self-efficient when applying the strategies and to be committed to achieving goals. A self-regulating culture's main objective is to make sure that the entity participating in it is capable of searching out and enhancing its inherent qualities and that such a culture is the result of the individuals who are part of it.

For that reason, the notion of self-regulated learning has increased the number of students who actively participate in their learning, monitoring and controlling fundamental processes in order to meet academic objectives (Schunk, 2012). Self-regulation of cognition and behavior are vital components of learning, the extent to which students are able to control their own learning has an impact on their academic progress (Beishuizen & Steffens, 2011; Lyn, Cuskelly, O'Callaghan & Grey, 2011; Zimmerman, 2008; Zimmerman & Schunk, 2011).

Research on self-regulation of academic learning and performance developed two decades ago to answer the question of how students become master of their own learning processes. In contrast to measures of mental ability or academic performance skills, as Soureshjani (2011) state self-regulated learning (SRL) refers to the self-directed processes and self-beliefs that allow students to convert their mental aptitudes, such as verbal aptitude, into an academic performance competence (Pintrich 2002 Cited in Soureshjani 2011).

According to Zhao and Chen (2016), Many students lack the awareness, necessary to successfully manage and regulate their learning processes. Students are needed to actively create their learning objectives, analyze their learning outcomes, and keep track of their own learning progress in this situation. One's "ability to effectively employ self-regulation skill is more critical in distance education environments than in traditional classrooms" (Bol & Garner, 2011, p. 105). Since use of SRL strategy is important in online environments, Rowe and Rafferty (2013) reviewed 11 studies on the use of self-regulated strategies online. They emphasized the value of employing learner prompts and teaching the SRL process. Both strategies (e.g., teaching SRL and learner prompts) involve metacognition. Metacognition, along with effort regulation, are two variables significantly associated with academic achievement (Broadbent & Poon, 2015). MSR and ER, combined provide insight into learner regulation (Kim et al., 2015).

In a similar Lim et al. (2020) and Zalli et al. (2019) found that in the context of online learning, self-regulation acts as a mediating variable to influence students' satisfaction. Therefore, determining a student's level of SRL is crucial, especially in online learning contexts where students are encouraged to independently manage their learning development. For instance, Ariyanti et al. (2018) discovered that self-regulated learners made more effort to learn to write and achieved better results in writing. The self-regulated learning is connected to motivation which is essential for the students to complete their perquisite requirements (Mbato & Cendra, 2019).

As a result, SRL is discovered to be essential for a variety of learning processes, including students' writing proficiency. Studies have shown that self-regulated learning is an essential component of the learning process in both online learning and language learning contexts (Ariyanti et al., 2018; Lim et al., 2020; Mbato & Cendra, 2019). In the context of online learning, it is crucial to assess the level of students' SRL abilities as well as the difficulties they encounter and the techniques they employ to complete a course requiring a lengthy project.

Lambert (2018), he contends that employing self-regulated learning techniques can boost academic self-efficacy and offer a potential connection to lowering stress that is related to academics. Accordingly, in the study of Augustiani, Cahyad, and Musa (2016) moreover discovered proof of the association between self-regulated and self-efficacy. Cognitive strategy is the first area of self-regulated learning strategies. usage, which is the term for practices that students engage in to acquire, save, and retrieve knowledge (Basso & Abrahão, 2018). In the study conducted by Vahdany et al. (2016) on cognitive strategies, to complete a task, the responders draw on their linguistic and global knowledge. It has been shown that the application of cognitive strategies has a correlation with grades on tests and quizzes, grades on essays and reports, and total class grades (Villares et al., 2014).

The literature mentioned above made clear the significance of self-regulation students' educational learning methods includes learning strategies. Based on several studies, it is abundantly evident that students who employ self-regulated learning strategies do very well in their academic work, with teachers playing a vital role in helping students acquire these skills. Students will be more engaged and motivated to learn if their teachers create learning activities that let them employ their own self-control.

The conceptual paradigm illustrating the relationship between the two variables of this study is shown in Figure 1. Teachers Competence has to be emphasized in the areas of knowledge, skills, and attitudes for all teachers to attain in order to provide quality teaching and learning and to raise the value of professional practice (Hyvarinen et al., 2015).

On the other hand, Self-regulated learning strategies has domains which is cognitive strategy utilization, which refers to actions taken by students to acquire, store, and retrieve information, and self-regulation, which refers to actions taken by students to keep an eye on and reflect on their learning process in order to reach a goal (Long, 2016).

This current research builds on Albert Bandura's theory of social cognition, in which student learning behavior is closely linked to social experiences and interactions with teachers. The importance of self-regulatory activities to learner achievement would make one expect that good self-regulatory skills contribute to better academic performance (Basila, 2016).

Competency Motivation Theory highlights the idea that people are motivated to do things so they may practice or show off their talents. When someone completes a challenging activity and receives praise from family or peers for it, they develop confidence in their competence in that achievement domain—physical, cognitive, or social. (Susan Harter, 1970). This theory says that it is important to have motivation to meet the competency of individuals.

According to (B.F Skinner, 1974). Behaviorism theory emphasizes the notion that all behaviors are acquired through contact with the environment. According to this learning theory, environmental factors such as upbringing play a much smaller role in determining behavior than innate or inherited traits. This theory in teacher competence in involves the behavior of the teachers and students on how they link to each other and exchange learning and understand each one.

Additionally, this analysis is based on Muhammad's and Abubakar (2015), that self-regulated learners use a variety of strategies to maximize learning for improved student performance, including memory strategy, self-improvement, self-evaluation, help-seeking, environmental structuring, learning responsibility, planning, repetition, rehearsal, elaboration, organization, reflective practice, cooperative learning, and a multitude of everyone else. Furthermore, this study supported by this research which according to (Spruce & Bol, 2015), through instructional activities that empower students to self-monitor and control their performance, self-regulated learning processes can be improved.

According to Sh. Siti Haizumah (2019), states that teacher quality is based on a teacher's ability to determine learning outcomes and learning support. Teacher quality is a group of experienced, competent, qualified, passionate, dedicated, and educator souls (Ministry of Education Malaysia, 2006). It is the obligation of teachers to ensure efficient learning processes that result in excellent, high-quality students. However, research demonstrates that teachers fall short in terms of topic knowledge, instructional abilities, resources, technology, and communication (Hanafi & Badusah, 2016).

The study will make use of the non-experimental quantitative research design, which is employed in the collection and analysis of numerical data. A descriptive correlation method was also used in this investigation. According to Sousa, et al. (2007, as cited by, Guido, et al., 2012), the quantitative approach is widely used and, in theory, represents the goal to ensure results are accurate, minimize analysis and interpretation errors, and so provide a margin of safety against interference. According to Hossein Nassaji (2015), In several academic fields, such as education, psychology, and social sciences, descriptive research methods have been used frequently. Stangor et al. (2015) stated that it provides a glimpse of the current scenario. They also noted that the correlation study approach is used to discover correlations between variables. The aforementioned research design is suitable for this study because there will be no variable manipulation, control groups, or random assignment; instead, data will only be gathered through survey observation. This design will help in describing the relationship between teacher competence and self-regulated learning strategy of senior high school students.

This research study will be conducted in one of the prestigious schools in the locality. This institution is divided in two departments, the basic educational department and tertiary education department. This institution also offers technical vocational education. This institution vision is to produce cream of crop graduates who are the source of inspiration, motivation, and strength of mature students' stewards. Their mission is to committed to the pursuit of knowledge and truth, to produce people who are God fearing, professionally competent service-oriented and peace-loving, whose lives are anchored on the tenets of our national hero. The researcher decided to choose the senior high school students. The researcher thought it was advantageous and handy because the researcher is currently employed by and teaching in the senior high school department.

The researcher will get 100 senior high school students as a respondent of the research. Purposive sampling will be used by the researcher to identify the study participants. In this study, 100 samples are sufficient to statistically examine the information gathered to answer the research question. This scope is very useful for the researcher to come up with a good outcome based on the respondents. The researcher chose the senior high school students to be part of this study since the senior high school students have the biggest population in the institution and are qualified to be part of this study since most of the senior high school students have major academic subjects. Another department is excluded due to fewer students.

The researcher adapts and modifies the questionnaire forms from the study entitled "The Development of Indonesian Teacher Competence Questionnaire" by Meicky S. Panggabean, Karel K. Himawan (2016) for the independent variable which is teacher competence while the "Self-Regulated Learning Strategies and Academic Performance of College Students in Assumption College of Davao: for the dependent variable which is self-regulated learning strategies of John Mart Elesio (2018). The first instrument is used to measure the level of teacher competence. The adapted questionnaire for teacher competence is composed of 20-items survey questions and consists of 3 indicators: (1) Professional Knowledge (2) Professional Skill (3) Personal Characteristics (4) Ethical Standards and Values. The second instrument was used to measure the level of self-regulated learning strategies of senior high school students. The adapted questionnaire for self-regulated learning strategies is composed of 18-item survey questions and consists of 2 indicators: (1) Cognitive strategy use (2)

Self-regulation. To evaluate the accuracy of the responses to each variable and its accompanying indicators, the study will employ exploratory factor analysis. The senior high school students were requested to rate each statement on a scale from five to one, 5 (strongly agree) to 1 (strongly disagree).

Raring Scale of Teacher Competence

Mean Interval	Descriptive Level	Descriptive Interpretation
4.20 – 5.00	Very High	The teacher competence is always manifested in classroom setting.
3.40 – 4.19	High	The teacher competence is oftentimes manifested in classroom setting.
2.60 – 3.39	Moderate	The teacher competence is sometimes manifested in classroom setting.
1.80 – 2.59	Low	The teacher competence is rarely manifested in classroom setting.
1.00 – 1.79	Very Low	The teacher competence is never manifested in classroom setting.

Raring Scale of Self-regulated Learning Strategies

Mean Interval	Descriptive Level	Descriptive Interpretation
4.20 – 5.00	Very High	The means that self-regulated learning strategies in science of senior high school students is always observed.
3.40 – 4.19	High	The means that self-regulated learning strategies in science of senior high school students is oftentimes observed.
2.60 – 3.39	Moderate	The means that self-regulated learning strategies in science of senior high school students is sometimes observed.
1.80 – 2.59	Low	The means that self-regulated learning strategies in science of senior high school students is rarely observed.
1.00 – 1.79	Very Low	The means that self-regulated learning strategies in science of senior high school students is never observed.

The following statistical instruments are used to process the data collected:

Mean. This is helpful in determining the level of teacher competency and the level of the self-regulated learning strategies used by senior high school students.

Pearson Product Moment Correlation of Coefficient. The Pearson's product moment correlation coefficient measures how strongly two variables are connected, as measured at least on an interval scale. Using the = 0.05 level of significance, this is used to determine the significant relationship between teacher competence and self-regulated learning strategies of senior high school students.

Linear Regression Analysis. Regression analysis is an effective statistical technique that enable to investigate the relationship between two or more relevant variables. Regression analysis comes in a variety of forms, but all of them look at how one or more independent variables affect a dependent variable. This is useful in determining the domain of teacher competence that significantly influences the self-regulated learning strategies of senior high school students.

There are numerous ethical problems and worries with certain consequences of this quantitative investigation. These problems and issues can be mostly caused by the study's approach. The rights to perform the study,

secrecy, and anonymity are the main ethical disputes that are relevant to this research. The senior high school students of the chosen school were given the free will to participate in the study without any form of consequence, sanction, or loss of benefits. The researcher observed and adhered to the highest ethical standards in the management of the population and data, including but not limited to the willingness to participate. Consequently, the goal and advantages of the study were discussed.

Social Value. Numerous educational institutions are being compelled to adjust with the right modality to meet the learning demands of the students without jeopardizing their health because of the unexpected shift in instructional modalities brought on by the COVID-19 epidemic. The results of this study are useful to look at possible solutions to the problem of senior high school students in terms of their learning.

Informed Consent. The researcher asks permission from the students who are part of this study. This study allows the respondents to understand that they need to participate and respond to this study conducted by the researcher. Since some of the respondents are minors, they are given consent by their parents and guardians. The researcher will discuss the purpose of this study with the respondents and how their answers are to be used in this study. The researcher will give consent forms to the parents and guardians, once the consent form is signed by their parents and guardians the respondents will be joined to this study. The consent form signed by their parents and guardians is collected by the researchers.

Risks, Benefits and Safety. The researchers recognize the different harms to the respondents when conducting this study. The researchers ensured that the respondents did not encounter any harm when answering the survey. The researchers will minimize the risk of harm, obey the protocols, and secure the safety of the respondents. The researchers secure the confidentiality of the identity of the respondents and the researchers are open to providing the right of the respondents to withdraw or refuse this study. The respondents will undoubtedly benefit from the findings of this study by applying some of the concepts they have learned from it.

Privacy and Confidentiality of Information. The researcher kept private the personal information of the respondents. The researcher will not force the respondents to provide their personal information, it is optional to write their information on the questionnaire. The confidentiality of this information is essential for the researcher-respondent relationship of respect and trust. The data collected from the researcher will be used for this study. It provides respondents with a clearer idea of the benefits they may receive as a result of the study's completion.

Justice. The researcher will verify that the survey questionnaires are free of bias or prejudice against any particular religion, culture, gender, or other group. The researcher will ensure that acts fairly and equally to the school administration and senior high school students. The researcher will ask permission from the school administration they are also part of this study for the acknowledgment.

Transparency. This study does not involve a monetary budget from the respondents and no linkages of the possible survey questionnaire to the respondents. The researcher and members of the panels are not connected. The researcher will conduct the study smoothly with the permission of the school community. This study is helpful for the other researcher to serve as a reference for their study. The researcher will be producing a hard copy of the findings and results of this study for publication.

Qualification of Researcher. The researcher obtained his bachelor's degree from one of his community's private institutions. The researchers were graduated with a Bachelor of Secondary Education Major in Biological Science. The researcher will be equipped with ethical and methodological standards, and exhibit morality and competence in their work. As a researcher. The researcher will obtain informed and voluntary consent from respondents, the respondents can assure the trustworthy way of the researcher in conducting the study.

Adequacies and Facilities. Resources that are practical for our research participants will be made available by the researcher. The researcher will utilize Google Forms to distribute the survey questionnaire to the respondents and comply with health regulations that uphold the respondents' well-being. The survey form must be accessed using a laptop, a mobile device, and the internet; for students without internet access, a printed survey questionnaire is provided. The health protocol should still be followed by the survey participants who provided

paper questionnaires. Everything will be organized by the researcher before starting this study.

Community Involvement. The content of the study instruments was carefully screened by the researcher to make sure there was no prejudice. The researcher made sure the study materials did not contradict where the respondents' schools were. After the study is completed, the researcher aims to disseminate the findings to the school and to the respondents. The respondents will be acknowledged for their active participation in this study.

The researcher will collect all the data gathered after the survey. All the data will be tabulated and interpreted by the statistician. The response from each respondent will be written in each row and the indicators of each variable will be displayed in a column. The statistician will interpret the data, then the researcher will formulate a conclusion after the findings made by the statistician. The researcher gets the results from the statistician then the researcher starts constructing and identifying the result that's the time the researcher can formulate recommendations and conclusions.

RESULT AND DISCUSSION

This section shows the significance of the relationship between teaching competence and self-regulated learning strategies in science of senior high school students.

	Self-Regulated Learning Strategies			
	r	p value	Decision on Ho	Interpretation
Teaching Competence	0.596	<0.001	Reject Ho	There is a significant moderate correlation

It can be seen in this table that there is a significant relationship between the teaching competence and self-regulated learning strategies in science of the senior high school students at a p-value of <0.001. The null hypothesis is therefore rejected. It can be noted that there is a moderate positive correlation at an r-value of 0.596. It can be argued that an increase in teaching competence, and self-regulated learning strategies will also statically increase.

In line with this result of Prihantoro et. al (2022) pointed out that teacher performance is a combination of moral responsibility and a sense of duty to fulfill the duties and requirements of his profession. All of that will be demonstrated by their compliance and faithfulness in completing their homework assignments both inside and outside of the classroom. Moreover, A teacher's performance can be judged by fulfilling their key activities, which include generating learning plans, implementing learning, and evaluating/evaluating learning results Yustina et. al (2018).

Regression Analysis on the Indicators of Teaching Competence that significantly influence Self - Regulated Learning Strategies in Science of Senior High School Students

	Self-Regulated Learning Strategies					
	Unstandardized Coefficients	Standardized Coefficient	t	Sig	Decision on Ho	Interpretation
Teaching Competence	B	Beta	80.851	< .001		
(Intercept)	4.080	0.211	80.851			
Professional Knowledge	**0.147**	**0.188**	**1.952**	**0.054**	**0.05**	**Significant**
Professional Skills	0.148	0.182	1.464	0.146	0.15	Not Significant

Personal Characteristics	0.118	0.179	1.661	0.100	0.10	Not Significant
Ethical Standards	0.127	0.211	1.785	0.077	0.08	Not Significant

The regression analysis on the indicators of teaching competence that significantly influence self-regulated learning strategies in science of senior high school students. This table shows a linear regression was used to determine the indicators of teaching competence significantly influencing self-regulated learning strategies in the science of senior high school students. The analysis showed that teaching competence significantly predicts their self-regulated learning strategies students, with an F value of 13.241, and an overall p-value of <0.001.

Moreover, looking into specific domains, it was found that only professional knowledge significantly influences the dependent variable with a beta value of 0.211. Therefore, the null hypothesis is rejected. The rest of the indicators did not significantly predict the self-regulated learning of the students. Also seen in the table is the R^2 of 0.356, hence only 35.6 percent of the predictors explain the dependent variable, and the other 64.4 percent is attributed to other factors.

The variable professional knowledge has a standardized coefficient beta of 0.188 with a p-value of 0.054, indicating its significant influence on self-regulated learning strategies in science.

The t-value of 1.952 for the predictor variable professional knowledge has the highest value, and the professional skills with a t-value of 1.464 is the lowest. That suggests there is strong evidence against the null hypothesis since the higher the absolute value of the t-value, the lower the p-value, and the stronger the evidence against the null hypothesis.

This section gives a background and aim of the researcher when they conducted the study. The study was conducted to find out the combined significant influence of teaching competence and self-regulated learning strategy in science of senior high school students.

This research investigates the level of teaching competence as perceived by the science of senior high school students in terms of professional knowledge, professional skills, personal characteristics, and ethical standards and values, and also the level of self-regulated learning strategy in science of the senior high school students in terms of cognitive strategy, and self-regulation. Moreover, this study determines the significant relationship between teaching competence and self-regulated learning strategies in science of senior high school students.

This study uses a non-experimental quantitative research design, which is employed in the collection and analysis of numerical data. Moreover, this study gathered responses from 100 senior high school students from a private school in Davao City during the school year 2023-2024, purposive sampling was used to select respondents while keeping their confidentially in mind.

This study used one survey questionnaire that was validated by an expert. The questionnaire was adopted from the study entitled: The Development of Indonesian Teacher Competence Questionnaire which comprises a 20-item survey questionnaire and consists of 3 indicators namely professional knowledge, professional skill, personal characteristics, and ethical standards. The second adopted questionnaire is entitled: Self-Regulated Learning Strategies and Academic Performance of College Students in Assumption College of Davao which comprises an 18-item survey questionnaire and consists of 2 indicators namely cognitive strategy use and self-regulation.

The level of teacher competence of the teacher perceived by the science of senior high school is high. The indicators are professional knowledge, professional skill, personal characteristics, and ethical standards which have a mean of high.

The level of the self-regulated learning strategies perceived by the science senior high school students is high. The indicators are cognitive skills which have a mean of very high and self-regulation which have a mean of high.

There was a significant influence of teaching competence and self-regulated learning strategy in science of senior high school students as predictors of professional knowledge the null hypothesis is rejected. The rest indicators namely professional skills, personal characteristics, and ethical standards did not significantly predict the self-regulated learning of the students.

CONCLUSION

Based on the findings of the study, the conclusions are herewith presented. The teaching competence shows a significant moderate correlation between self-regulated learning strategies in science of senior high school students. This implies that teaching competence greatly impacts the self-regulated learning strategy, the students can learn through the use of strategies, different techniques, and methods by the teacher. The students can learn through a series of sharing ideas and knowledge by the teachers.

Lastly, the regression analysis showed that the indicators of teaching competence such as professional knowledge indicate that has a significant influence on the self-regulated learning strategy of senior high school students. This further implies that teaching competence is very important in teaching science to senior high school students to have a smooth learning process. To provide high-quality learning, teachers' competency is crucial to the process of students' "well development." The academic growth and skill development of students will benefit from teachers' competency, which will also enable teachers to enhance their methods of instruction.
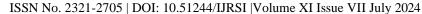
While professional skills, personal characteristics, and ethical standards are not significant indicators to influence the dependent variable. This means that the teacher's values and attitudes do not influence the learning of the students, however, the knowledge of the teachers greatly impacts the learning of the students. The students can learn from the ideas and opinions of the teachers. Through this, the students can get important knowledge and use the knowledge in real-life situations. It implies that putting 5 indicators, only one out of five indicators becomes a significant indicator of teaching competence to influence self-regulated learning.

RECOMMENDATION

Based on the conclusions of the study, the recommendations are herewith encouraged. With the result of this study, the teachers are equipped with the competence to give good quality education to the students. Teachers also use different strat egies, methods, and teaching styles that fit the needs of the students. Today's complex challenges require teachers to possess diverse competencies. Teaching skills and life-long competencies, teachers are required to be articulate, stable, tolerant, and in good physical and mental health, possess a willingness to interact with younger people, strong observational and communication abilities, tact, a lively imagination, and leadership.

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Lastly, future researchers can use this study as the basis for their research on how to develop, enhance, and use correctly the teaching styles and teaching competencies in delivering the lesson. This study will help future researchers to identify what teaching competence they need to use for the students to actively participate in classroom discussions. Aside from that choosing teaching competence greatly affects the learning behavior of the students. Using self-regulated strategies is a crucial thing for teachers in teaching science due to the lack of communication, that's why teachers must use fit strategies in teaching science in senior high school students. Through this study, they can get an idea regarding using different strategies in teaching science to senior high school students.

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