



Teacher's Sense of Efficacy and Students' Motivation: The Mediating Effect of Parental Involvement

Maryam Dessa H. Buat ^{a*} and Marilou Y. Limpot ^a

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

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 mediating effect of parental involvement in the relationship of teacher's sense of efficacy and students' motivation.

Study Design: Quantitative non-experimental design.

Place and Duration of Study: The study was conducted among secondary school teachers in all public schools in the Division of Davao del Sur, Region 11, Mindanao, Philippines during the school year 2021-2022.

Methodology: The respondents were 308 secondary school teachers from the Division of Davao del sur, selected using stratified random sampling. The data were collected using google forms. Mean, standard deviation, Regression Analysis, and Medgraph using Sobel z-test were used to analyze the collected data.

Results: The overall results showed that the study had very high mean of teacher's sense of efficacy, high mean of students' motivation and very high mean of parental involvement. From the significant relationship of each variable, parental involvement partially mediates the relationship between the teacher's sense of efficacy and the students' motivation. There is not only a significant relationship between parental involvement and teacher's sense of efficacy but there is also a direct

*Corresponding author: Email: maryamdessa.buat@deped.gov.ph;

relationship between the teacher's sense of efficacy and students' motivation.

Conclusion: The results proved that the teacher's sense of efficacy directly affects the students' motivation with the influence of parental involvement.

Keywords: Education; teacher's sense of efficacy; students' motivation; parental involvement; mediating effect; Philippines.

1. INTRODUCTION

One of the leading problems in education today is the lack of motivation [1]. Due to low motivation, students face the problem of lack of focus on the lesson, whether inside or outside the classroom [2]. This can be considered the most critical factor in student learning success [3].

Student learning motivation needs to be considered in having an effective teaching and learning process [4]. The student who lacks attention in class needs to be paid attention to for it can have a negative effect on his/her studies [5]. This causes difficulty in achieving the expected goals in the class [6].

In this regard, a school's level of competence is said to depend on the teaching performance of teachers. It is said that the teacher plays a major role in student motivation [7]. The quality of teacher-student relationships has been found to affect student achievement [8]. It is necessary for the teacher to better recognize the different characteristics of the students to discover their internal and external motivation. When the teacher learns how the students feel, students will be motivated, and their learning is improved especially when they can feel that what they are learning is important [9].

On the other hand, another big aspect in student motivation is the parental involvement. Students feel secure when their parents have a close relationship with the teacher and the school [10]. Students are more motivated to achieve effective learning when their parents are involved in their education [11].

Moreover, the main purpose of this study is to determine the mediating effect of parental involvement between the relationship of teacher's sense of efficacy and students' motivation. Specifically, this study aimed the following, first, to describe the teacher's sense of efficacy according to the following indicators: efficacy for instructional strategies; efficacy for classroom management; efficacy for student

engagement. Second, to describe students' motivation according to the following indicators: effort; engagement; general interest; home factors; relevance; future utility; peer factors; personal factors. Third, to describe the parental involvement. Fourth, to determine the significant relationship between teacher's sense of efficacy and students' motivation; teacher's sense of efficacy and parental involvement; and parental involvement and students' motivation. Fifth, to describe the mediating effect of parental involvement in the relationship between the teacher's sense of efficacy and students' motivation.

This research is anchored in the Self-Determination of Edward L. Deci and Richard M. Ryan. This theory is about students' motivation which is related to a person's personality and motivation. It contains two types of motivation, intrinsic and extrinsic motivation which are both powerful forces in shaping a person's behavior [12]. Lev Vygotsky's Sociocultural Theory can also be used to support this study where it states the existence of what is called "scaffolding" or having a guide to learn what is desired to be achieved. This guide is provided by More Knowledgeable Others or the MKO who can be teachers or parents who can guide them to the Zone of Proximal Development [13]. In addition, Jean Piaget's Cognitive Development can also be used in this study where the role of experience from people around and family members in the cognitive development of the individual is emphasized [14].

In the conceptual framework, the independent variable focuses on the teacher's sense of efficacy derived from the study of Goddard, Roger, Hoy W., and Hoy A. [15]. The independent variable is the students' motivation from the teacher's perception derived from Hardre, David and Sullivan's study [16]. The mediating variable of this study is parental involvement derived from the study of Jumu'ah [10].

In this study, the researcher emphasized the goal of getting the mediating effect of parental

involvement in the relationship between the teacher's sense of efficacy and students' motivation. It is necessary to study about this to respond to the needs of students to increase their motivation in learning, develop teacher's efficacy, and strengthen the relationship of parents in the education of students.

2. MATERIALS AND METHODS

2.1 Respondents

The study was conducted in public secondary schools in the Division of Davao del Sur, Region XI, Mindanao, Philippines. The participants were 308 teachers from secondary schools in Davao del Sur in the school year 2021-2022 from seventh to twelfth grade. Stratified random sampling was used to determine the respondents to clarify differences between groups in a given population [17].

The researcher's basis for the selection of respondents is secondary school teachers who have an advisory class and come from the same division. Elementary school teachers, teachers without advisory classes and non-teaching staff cannot be respondents. It was made sure that only teachers who held advisory classes participated to ensure that there was direct contact with the students and the parents of the students. The respondent's decision is respected if they do not want to be part of the study.

2.2 Research Instrument

This study used three sets of questionnaires that were adapted from existing materials developed and used by credible scholars and researchers on the topics of teacher's sense of efficacy, students' motivation, and parental involvement.

Before the data collection was carried out, the researcher had the questionnaire checked by statistician using Cronbach's alpha and it appeared from his analysis that the three questionnaires scored more than 0.7 which means that this instrument can be used in research.

The three sets of questionnaires from the independent variable that focused on the teacher's perception of self-efficacy, the independent variable that focused on the students' motivation and the mediating variable that focused on parental involvement were given

an interpretation from a single scale suitable for use in all three.

The following scale was used: When the range of the mean is in 4.20 – 5.00, it indicates that it has a descriptive level that is very high with the meaning that the referred item is strongly agreed in almost all cases. When the range of the mean is 3.40 - 4.19, it indicates that it has a descriptive level that is high, which means that the referred item is agreed. To the extent of the mean of 2.60 - 3.39 with a descriptive level of medium, it indicates that the referred item is not sure to agree. In addition, when the range of the mean is in 1.80 – 2.59, it has a descriptive level that is low which means that the referred item is not agreed. And when the range of the mean is in 1.00 - 1.79, it has a descriptive level that is the very low which means that the referred item is strongly not agreed in all cases.

2.3 Research Design and Methodology

This research was conducted according to a quantitative non-experimental design and descriptive-correlational research method. The researcher used questionnaires to collect the data required for the analysis.

This study is descriptive to assess the teacher's sense of efficacy and students' motivation. It is correlational because it investigates the relationship between variables using questionnaires as a tool to gather the necessary data. The purpose of the study is to investigate the effect of parental involvement as a mediator in the relationship between the teacher's sense of efficacy and students' motivation. The Mediation Approach was also used to show and know the mediating effect of parental involvement in the relationship between teacher's self-efficacy and students' motivation.

For the comprehensive interpretation and analysis of the data, the following tools were used: The Mean was used to obtain the level of the teacher's sense of efficacy and the students' motivation. The Regression Analysis was used to identify a significant relationship between the teachers' sense of efficacy and the students' motivation. Lastly, the Medgraph using the Sobel z-test was used to verify the mediating effect of parental involvement in the relationship between the teacher's sense of efficacy and the students' motivation and strengthen the results obtained.

3. RESULTS AND DISCUSSION

3.1 Teacher’s Sense of Efficacy

Table 1 shows the teacher's level of perception of his competence. From the three indicators, it obtained a total ($\bar{x} = 4.38$, $SD = 0.46$) which means that it has a descriptive level that is very high indicating that teachers strongly agree with their effectiveness in teaching strategies, classroom management and students' engagement.

It shows that teachers are more likely to agree that they frequently demonstrate their competence in teaching strategies, classroom management, and student interaction. This showed a good indication that teachers in public secondary schools in this division believe that they can provide effective quality teaching to students.

This is supported by a study that says teachers with experience have a higher perception of self-efficacy in teaching strategies and classroom management [18]. Teachers with high self-efficacy consider experiencing negative teaching experiences as a good teaching challenge. They consider this challenge to be more than improving their teaching without affecting their perception of their efficacy [19]. In addition, a study shows that not paying attention to the student's identity, not having a good relationship with them, providing monotonous learning activities, not establishing appropriate goals and clear instructions to class reduces students'

motivation [20]. Therefore, the teacher needs to consider avoiding things like this.

A study also shows that a good student-centered teacher has interventions such as competence in curriculum development, effective communication with students, approachability, allocating of time in responding to student needs, effectively uses a variety of up-to-date teaching tools, deep understanding, effectively responds to culture, and responds to the need to understand and empower students [21].

This is also supported by a study that says that a teacher's effective classroom management is a very important topic that cannot be ignored in teaching. When teachers know effective classroom management techniques, students' learning becomes more effective [22]. Additionally, the quality of teacher-student relationships has been found to affect student achievement by some studies [23]. A study also mentioned that the professional development of the teacher is necessary because it can provide a moderate effect on the outcome of the students [24].

3.2 Level of Students’ Motivation

Table 2 shows the level of students' motivation with indicators: effort, engagement, general interest, home factors, relevance, future utility, peer factors and personal factors, obtained overall high descriptive level. From the indicators, this variable obtained total of ($\bar{x} = 4.02$, $SD = 0.70$).

Table 1. Level of teacher’s sense of efficacy

Indicator	Mean	SD	Descriptive Level
Efficacy for Teaching Strategies	4.45	0.43	Very High
Efficacy for Classroom Management	4.40	0.47	Very High
Efficacy for Student Engagement	4.30	0.48	Very High
Overall	4.38	0.46	Very High

Table 2. Level of students’ motivation

Indicator	Mean	SD	Descriptive Level
Effort	3.85	0.65	High
Engagement	3.86	0.56	High
General interest	4.03	0.80	High
Home factors	3.87	0.75	High
Relevance	4.14	0.67	High
Future utility	3.91	0.79	High
Peer factors	4.31	0.67	Very High
Personal factors	4.22	0.73	Very High
Overall	4.02	0.70	High

The peer factor and personal factor have a very high descriptive level which means that the teachers strongly agree that these are greatly the source of students' motivation. Effort, engagement, general interest, home factors, relevance, and future utility are factors that got the same high descriptive level which means that the teachers agree that they are factors in showing the motivation of the students.

This is supported by the study that says that the interaction of students with their surroundings or with their fellow students has an important part in instilling their learning [25]. Also, a study proves students' engagement is related to their willingness to have motivation in continuing their studies and graduate [26].

In addition, a study also affirmed that the interaction of students with their surroundings is considered as a strength in having meaningful participation in learning inside and outside the classroom resulting in effective learning [27]. A study also shows evidence of quality education can be seen when students learn how to establish a control system in their lives [28]. It was also found in a study that students' motivation can be related to their ability to think for themselves [29].

3.3 Level of Parental Involvement

Table 3 presents the level of parental involvement as a mediating variable in this study. It can be noted that this variable obtained a very high descriptive level with ($\bar{x} = 4.22$, $SD = 0.73$). This means that teachers strongly agree with the importance of parents' involvement in students' learning. This was supported by a study which

found high levels of parental involvement among secondary public-school students [30]. In addition, a study proves that there is a significant relationship between the academic performance of students and the interaction of their parents within the school [31]. Also, a study shows that when there is a relationship between parents and teachers, the importance of the family will be at the center of it, which can lead to a good teacher-student relationship that is necessary in effective teaching-learning process [32].

3.4 Analysis of the Relationship between Variables

Presented in Table 4 was the relationship between the variables. In terms of the relationship between the independent and dependent variables, it was revealed that the teacher's sense of efficacy and students' motivation have a low or weak relationship given the prevalence of the r-value, which is 0.314. It implies that the increase in the teacher's sense of efficacy also tends to increase the teachers' sense of efficacy. Additionally, the p-value was found to be at 0.000, which is less than 0.05, the alpha level of significance. This means that null hypothesis stating that there is no significant relationship between teacher's sense of efficacy and students' motivation was rejected.

It was found in a study that the quality of teaching in the classroom is a realistic and valid predictor of students' learning progress and controlling students' behavior [33]. A positive relationship between the teacher-student and the socio-emotional personality of students is also confirmed in a study [34].

Table 3. Level of parental involvement

Indicator	Mean	SD	Descriptive Level
Parental Involvement	4.68	0.48	Very High

Table 4. Analysis of the relationship between variables

Pairs	Variables	Correlation Coefficient	P-Value	Decision on Ho
IV and DV	Teacher's Sense of Efficacy and Students' Motivation	0.314*	0.000	Reject Ho
IV and MV	Teacher's Sense of Efficacy and Parental Involvement	0.494*	0.000	Reject Ho
MV and DV	Parental Involvement and Students' Motivation	0.234*	0.000	Reject Ho

Concerning the relationship between the independent and mediating variables, results revealed a significant relationship. The teacher's sense of efficacy and parental involvement have a moderate positive correlation with an r-value of 0.494. It implies that the increase in the teacher's sense of efficacy also tends to increase the parental involvement. In addition, the p-value was found to be at 0.000, which is less than 0.05, the alpha level of significance. This means that null hypothesis stating that there is no significant relationship between teacher's sense of efficacy and parental involvement was rejected.

A study also proved that the teacher's perception regarding student motivation has a significant relationship with the understanding of student motivation [35]. Teachers' perception of their efficacy to affect student motivation stems from their sense of competence, knowledge of student motivation strategies and interaction with students [16].

Furthermore, the data regarding the relationship between the mediating and dependent variables shows a significant result. The r-value of 0.234 denotes a weak or low relationship between parental involvement and students' motivation. It implies that as the parental involvement increases, the students' motivation also tends to increase. Moreover, the p-value was found to be at 0.000, which is less than 0.05, the alpha level of significance. This means that null hypothesis stating that there is no significant relationship between parental involvement and students' motivation was rejected.

One of the characteristics that should be considered by the teacher is cooperation and communication with the administration and the parents [36]. A study also proved that when students' parents have a close relationship with the teacher and the school, they feel more secure in learning [10].

Meanwhile, based on the results of the study, parental involvement and students' motivation have a significant relationship. This indicates that

with the increase in parental involvement is also an increase in the students' motivation.

This is supported by a study which proves that high achievement motivation develops in students whose parents raise their claim that they competently guide and help their children and that they show understanding and calmness in interacting with them [37].

3.5 Mediating Effects of Parental Involvement on Teacher's Sense of Efficacy and Students' Motivation

Mediation analysis developed by Baron and Kenny (1986) is the relationship between the mediator and dependent variables when yearning for the relationship between the mediating variable and independent variable [38]. A study cited that mediator variables lie along the causal pathway between an independent and dependent variable, explaining all or part of the effect of the independent variable on the dependent variable [39].

There are four steps to be met for a third variable acting as a mediator. In Table 5, these are categorized as follows: step 1 is the relationship between the independent and dependent variables; step 2 is the relationship between the independent and mediating variable; step 3 is the relationship between the mediating and dependent variable; and lastly, step 4 is establishing that mediating variable mediates the relationship between the independent and dependent variables considering the effect of the latter relationship controlling for mediating variable (path c') should be equal to zero [40]. After establishing the three conditions for mediation, the next step is to examine if the mediating variable Parental Involvement is statistically significant using the Sobel test (using the Z formula).

Table 5 presents the results of the regression of the variables on the four criteria related to obtaining the mediating effect.

Table 5. Regression results of the variables in the four criteria of presence of mediating effect

Step	Path	Beta (Unstandardized)	Standard Error	Beta (Standardized)	p-value
Step 1	C	1.098	0.190	0.314	0.000
Step 2	A	1.562	0.157	0.494	0.000
Step 3	B	0.259	0.062	0.234	0.000
Step 4	c'	0.917	0.218	0.262	0.000

In step 1, the independent variable teacher's sense of efficacy significantly predicts the dependent variable students' motivation. Since the p-value of 0.000 is lower than 0.05, the alpha level of significance means that the relationship is significant. Moreover, there is a significant relationship between the teacher's sense of efficacy (IV) and the students' motivation (DV); there is something to mediate. Explicitly, in every unit increase in teacher's sense of efficacy, holding other variables constant, can also give a percentage increase of 1.098 in students' motivation.

In step 2, the teacher's sense of efficacy (IV) significantly predicts the parental involvement (MV). The beta coefficient table shows the p-value of 0.000 for teacher's sense of efficacy, which suggests that there is a significant effect on parental involvement. Explicitly, in every unit increase in teacher's sense of efficacy, holding other variables constant, can also give a percentage increase of 1.562 in parental involvement.

In step 3, the parental involvement (MV) significantly predicts students' motivation (DV). As shown in the table above, step 3 has a p-value of 0.000, which is lower than 0.05, the alpha level of significance; then, the relationship is significant which suggests that parental involvement has a significant effect on students' motivation. Explicitly, in every unit increase in parental involvement, holding other variables constant, can also give a percentage increase of 0.259 in students' motivation.

All three steps (paths a, b, and c) show significance. Since there is an effect of teacher's sense of efficacy (IV) on the students' motivation (DV), but in a smaller magnitude of beta, so partial mediation exists [41]. So, the parental involvement (MV) partially mediates the relationship between the teacher's sense of efficacy (IV) and the students' motivation (DV). It implies that there is not only a significant relationship between the mediating variable parental involvement and dependent variable students' motivation the independent variable teacher's sense of efficacy but also some direct relationship between the independent variable teacher's sense of efficacy and the dependent variable students' motivation.

For partial mediation to be established, the Sobel test was performed to explain variance reduction by the teacher's sense of efficacy before

asserting partial mediation. To further investigate the mediator, the Sobel test was utilized to examine if parental involvement (MV) mediated the relationship between teacher's sense of efficacy (IV) and students' motivation. The results confirmed that parental involvement (MV) significantly mediates the relationship between teacher's sense of efficacy (IV) and students' motivation (DV) ($Z = 3.85, p < 0.05$). Teacher's sense of efficacy directly affects the students' motivation with the influence of parental involvement.

Overall, this study showed a significant correlation of each variable. There is a significant relationship between the teacher's sense of efficacy and students' motivation, the teacher's sense of efficacy and parental involvement. Therefore, the null hypothesis that states that there is no mediating effect of parental involvement on the teacher's sense of efficacy and students' motivation was rejected.

The overall result is anchored in the theory used by the researcher, Self-Determination Theory, derived from the research of Edward L. Deci and Richard M. Ryan that regarding the motivation of students can be related to a person's personality and motivation [12]. In this study there is an overall level that the teacher's perception of the student's motivation is very high which indicates that the teachers have strongly agree that the indicators that can be internal or external constructs are factors in student motivation.

4. CONCLUSION

The teacher's sense of efficacy obtained a descriptive level that was very high which means that the teachers strongly agree with their efficacy in their teaching strategies, classroom management and students' engagement. The students' motivation level obtained a total descriptive level of high which means that the teachers agree with the students' motivation factors. The mediating variable parental involvement obtained a descriptive level that is very high which means that teachers strongly agree on the importance of parental involvement in students' learning.

In the relationship between the dependent variable and the independent variable, it emerged from the study that the teacher's sense of efficacy and the students' motivation have a low or weak correlation which still means that the increase in the teacher's sense of efficacy is also

increasing their perception of students' motivation. Relatedly, it also emerged from this study that the increase in the teacher's sense of efficacy is also the increase in the parental involvement. The study also revealed that parental involvement and student motivation are related. This indicates that with the increase in parental involvement is also an increase in the students' motivation.

From the results, it was proven that the study is anchored in Deci and Ryan's Self-Determination Theory, where intrinsic and extrinsic motivation are both powerful forces in shaping learners. Extrinsic motivation is what prompts them to act in accordance with an external source that produces an external reward. While internal motivation comes from the self, where there are internal motivators such as core values, interests, and personal morality [12].

Based on the findings of the researcher on the involvement of parents as a mediating effect on the relationship between the teacher's sense of efficacy and the students' motivation, the following is recommended:

The researcher suggests that seminars or workshops can be conducted to further develop the teacher's ability to develop more the students' motivation. The researcher also suggests that there should be effective implementation especially in curriculum designing by administrators, officials of the Department of Education, and school administrators to further improve the quality of teachers considering the motivation of students.

It is also recommended for teachers to strengthen their sense of efficacy in providing student motivation by having a regular evaluation of their strategies used in teaching so that they are more effective in meeting the needs of the students.

In addition, the relationship between the teacher's sense of efficacy and the parental involvement, and the parental involvement and the students' motivation means maintaining or further intensifying the development and strengthening of the relationship of the teachers to the stakeholders, especially to the parents of the school.

And, since this research was conducted from the teachers' perception, it is suggested to the next researcher that there may be a comparative study about this from the students' perception.

ETHICAL APPROVAL AND CONSENT

In conducting this research, the ethical consideration and safety of each participant is in the mind of the researcher. Each participant in this study freely agreed to participate and was not coerced. The researcher kept the credibility of the names of the respondents. The researcher endeavored to fully preserve any confidential data obtained from the respondents. The researcher also explained the potential benefits of any outcome of the study.

In addition, the researcher considered the appropriate rule in conducting the research. Regardless of the steps to be taken, the researcher ensured that it complied with the standards for conducting the study including the protocol for the assessment and management of the population and data. All the necessary documents including the manuscript, valid questionnaire, and forms were submitted to the University of Mindanao Ethics Review Committee (UMERC). Along with this, the ethics of the conducted study were also followed and considered such as voluntary participation, confidentiality of data, risks, and benefits to be obtained by the participants, and the process of requesting permission for the conducted study. U MERC Certification was issued to the researcher for the implementation of the study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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