Involvement of Parents, Teaching Strategies of Teachers and Academic Performance of Students in Mathematics

Cristy Pearl G. Quibod, MAEd[a]

[a] *cristypearlgq@gmail.com*
[a]*Currently Teaching at GSIS Heights National High School, Teacher I, Department of Education, Davao City, 8000, Philippines*

Abstract

The academic performance of students is valued by parents, teachers, administrators, and the public. The main objective of this study determined the domains of involvement of parents and teaching strategies of teachers which significantly influence the academic performance of students. It looked also into involvement of parents, teaching strategies of teachers, and academic performance of students in Mathematics. This study used non-experimental quantitative research design utilizing descriptive correlational approach. The students were 100 public junior high school students, chosen through simple random technique using the fishbowl method. The data were analyzed using mean, Pearson product-moment correlation coefficient, and linear regression. Results revealed that significantly high involvement of parents, very high teaching strategies of teachers, and low academic performance of students. It was found that there is a significant relationship between involvement of parents and academic performance of students, but no significant relationship between teaching strategies of teachers and academic performance of students. More so, involvement of parents in terms of educational expectations influenced academic performance of students. It implied that students are expected by their parents to be literate to succeed in life and even graduate from high school. It was recommended to reinforce parental expectation in terms of their academic to monitor their child school standing so that students can perform well in school.

Keywords: Mathematics; involvement of parent; teaching strategies of teachers; academic performance; parent's educational expectations

1. Introduction

Mathematics has been a challenging subject for many students to effectively learn. Some are gifted to academically excel in Math, and some are not resulting to a varied mathematics performance. Mathematics performance has been a perennial concern that needs to be addressed by many. Low academic performance in mathematics greatly affects the over-all performance of the students. Having said that, several studies have been performed throughout the years to investigate the elements influencing mathematics achievement. Factors such as parents and teachers significantly contribute to the academic performance of students in mathematics.

Nonetheless, according to the DepEd - National Report of the Philippines (2019), the Philippines finished second from the bottom in the recent Programme for International Student Assessment (PISA) 2018. This alarming discovery indicated that Filipino students got a mean score of 353 points in Mathematics Literacy, which is much lower than the OECD average of 489 points. It is also reported that just one in every five Filipino students, or around 19.7 percent, achieved the necessary proficiency level (Level 2) in Mathematics Literacy.

Parents, teachers, administrators, and the public assume involvement of parents and teaching strategies to be indispensable elements for the child's academic success. Involvement of parents and teaching strategies of teacher are two distinct aspects that, when combined, perform flawlessly. Ntekane (2018) defined involvement of parents as a circumstance in which parents are actively engaged in their children's education and fulfill their duties as parents by ensuring that the learner is assisted in learning to the greatest extent possible. While on the other hand, a teaching strategy is essentially a comprehensive plan that encompasses all aspects of the teaching scenario, such as objectives, teaching methods, teaching aids, and evaluation systems (Hamzeh, 2014).

In Jordan, a study was piloted in public schools to Mathematics teachers where findings revealed that the general level of using teaching strategies was moderate. In contrast, behavioral strategies of teachers were high, and cognitive and affective processes were sensible (Hamzeh, 2014). It implies that they are probably better familiar with educational theories and their applications, which helps such teachers to comprehend cognitive processes more deeply and apply them in their studies.

Conversely, according to a survey of 48 schools in Maine, USA, schools were primarily active in striving to both involve parents in the school and facilitate collaborative parent-child learning activities at home (Thompson et al., 2014). The findings imply that involving parents in student learning—both at home and school—may boost academic achievement, particularly in mathematics. In South Africa, Mosimege and Winaar (2021) administered a study on teaching strategies of teachers and their impact on learner performance. The results show that the two instructional strategies of problem-solving with direct instructor guidance and teacher-teacher interaction are strongly related to learner performance across the four curriculum domains of algebra, numbers, geometry, and data and chance.

On the other hand, in Chicago, Smokoska (2020) claimed on the research on involvement of parents and student academic achievements assert that Pearson correlation showed there were two statistically significant positive connections between parental participation and academic achievement of student, which were parents engaging weekly grade reports, initiating calls with the school and returning calls from school.

Additionally, a study conducted in Bulacan, Philippines, titled Teachers' Instructional Techniques and Their Effects on Students' Academic Performance, discovered that instructional practices have variable effects on students' academic performance in English, Mathematics, Science, Filipino, and Araling Panlipunan. It anticipates that students' academic performance may improve in the instructional management approaches (Francisco & Celon, 2020). Similarly, in the same area, Tus (2021) found that parents were still in the process of developing their involvement in school based on the statistical analysis of the study, which revealed a significant association between involvement of parents and pupils' academic success.

In a university in Davao City, San Jose and Galang (2015) conducted a focus group discussion with AB English students. It was shown that teaching strategies were employed to address the students' various learning skills and were pleased with the teaching strategies of teachers. Both also suggested that innovations of existing effective teaching strategies be developed to accomplish desired learning outcomes. On the same locale, in a public secondary school in Davao City, where the researcher is affiliated, discovered that parental participation substantially enhances academic performance of students. She also found that involvement of parents significantly affects academic performance (Tambis, 2020). She also said that there is a significant difference in academic success between parental participation and learning at home and decision - making process.

With the information provided on the implications of involvement of parents and teaching strategies

of teacher, it is considered that both variables are deemed essential in obtaining academic brilliance. However, the researcher did not come across on research about involvement of parents, teaching strategies of teachers and academic performance in one study. Hence, the researcher believes that there is a need to address the gap on the literature putting involvement of parents, teaching strategies of teachers and academic performance all in one picture. Having said that, the study seeks to determine whether there is a real relationship between involvement of parents and student academic performance as well as teacher teaching strategies.

1.1. Review of Related Literature

This section manifests the related literature and studies pertinent to this study. It examines past studies that can provide a foundational backbone for readers to surmise and understand the investigated variables.

Involvement of Parents

Positive involvement of parents has improved student achievement, parent and teacher satisfaction, and school atmosphere. Involvement of parents offers schools a significant chance to enhance existing programs by involving parents in the educational process (Durisic & Bujenivac, 2017). It can also be called parent engagement. As parents and teachers sharing a responsibility to assist their children in learning and meeting educational goals, it is evident that their children perform well in school. When teachers include parents in school meetings or events, parents volunteer their help at home and school. They commit in this way. Parents agree to prioritize their child's educational aspirations, while teachers agree to listen to parents and provide a space for discussion.

Moreover, it has been presumed that academic performance of students depends not just on the quality of schools and instructors but also parental participation in their academic achievement of their child. Studies by Kim and Hill (2015) and Osward et al. (2017) discovered that the various factors that lead to involvement of parents could produce various outcomes in terms of academic achievement of students.

A meta-analysis of over fifty studies on involvement of parents in secondary schools discovered a substantial relationship between academic success of students and involvement of parents in their children's education (Delgado, 2019). The sooner a relationship between parents and their children's educational process is established, the better the basis for the achievement of student. Students who have parents or guardians actively involved in their education had higher grades and test scores, more excellent social skills, and better behavior.

Level of Involvement of Parents

Educational Expectations

Parents who expect their child to excel in class have been found to improve their performance in school, academically significantly, and in extra-curricular activities. Parents' educational expectations of their child can help their child to build confidence in class. In a meta-analysis of parental educational expectations and academic achievement in children and adolescents, Pinquart and Ebeling (2020) found that educational expectations in children, child academic engagement, and parental achievement-supportive behaviors mediated the associations between expectations and achievement.

They concluded that it is essential for parents to communicate positive educational expectations to their children. Positive parental expectations and encouragement of academic engagement appear to be more effective in realizing parental expectations than parental behavioral, academic involvement such as checking homework and staying in contact with teachers.

Furthermore, Ma and her colleagues (2018) explored the impact of increased parental expectations on adolescent academic performance and depression. They probed whether these relationships could be linked by adolescents' values of academic success, self - efficacy, and parental and school assistance. The findings primarily revealed that, on the one hand, solid parental expectations were favorably associated with adolescents' academic performance, such as through adolescents' value of academic success and frequency of school support. Students whose parents have lofty aspirations achieve higher grades, higher standardized test scores, and pursue higher education longer than students whose parents have low expectations.

On a correlational study conducted by Katherine Clophus (2018), it shows that as students move into middle and high school, involvement of parents in the form of parental expectations becomes important and often guides much of students' decision making. The effect of family characteristics on post-secondary enrolment two years following participants predicted high school graduation where parental expectations were found to be a significant predictor of post-secondary enrollment in a multiple regression analysis, even after taking past events into account. More so, study after study shows a direct correlation between student achievement and parental expectations not only in high school but also in postsecondary education and career choices (Ross, 2016). Parents play an important role in determining whether or not their children will graduate from high school and go on to college, but they also have a huge impact on helping their children turn their current aspirations into long-term plans.

Finally, educational expectations from parents emerge to be both a cause and an effect of educational excellence (Holmes, 2013). It is suggested that future research in this area be devoted to elucidating the trajectory of parents' instructional expectations, with a focus on the precursors of these expectations and the factors arbitrating linking these expectations and the student's educational performance. The antecedents are school feedback, parental aspirations, and parental knowledge. Achievement-supporting behaviors, differential reinforcement, and the child's aspiration are the mediating factors.

Communication on School-Related Matters

In academic institutions, communication between teachers and parents is significant in student performance and attendance. Parent-teacher communication has numerous advantages for teachers, schools, and parents. The series of research encouraging parents to play a more proactive role in school activities increases as people grow more cognizant of the assumptions of parent-school cooperation in ensuring optimum education. A school-parent relationship is regarded as essential by school organizations to implement effective education that promotes student performance (Acikalin & Turan, 2015). The schools' manner of communicating and interacting with parents impacts the extent and quality of parents' home involvement in their children's learning.

Parents can obtain from being involved in their children's education by collecting ideas from schools on how to help, assist their children, and uncovering more about the educational program and how it functions (Ozmen et al., 2016). They can gain conviction in the value of their child's school involvement. Parents obtain a better perception of the illustrative purpose they play in their children's education.

Additionally, communication is a two-way process. Schools can listen to the sentiments of the parents through their teachers. Teachers are the primary source of all school information and communications. Consequently, the practical communication skills of teachers are fundamental for students' academic achievement and their professional accomplishment in life. Some research has been administered on the association between parent and teacher to increase student involvement. As reported by Ekayani et al. (2016), Turner demonstrated a good and significant association between parental engagement in the learning process as viewed by the student and teacher reports to the emotional engagement of children in the classroom.

Furthermore, Palts and Harro-Loit (2015) emphasize in their research that the lack of contact between parents and instructors will only be reflected in health and grade issues. With this, the link between parents and teachers will influence students during the learning process in which active parental engagement directly benefits students. Involvement of parents is a critical component in supporting children's learning in formal school or courses of study. Through teachers, schools can communicate with parents in one direction, but parents have the right to respond. It allows for two-way communication between school-teacher-parents who may have an impact on pupils.

Home-Structured Supervision on School-Related Matters

. It has been noted that learning must continue at home, which is only possible if parents monitor and supervise their child's activities at school. Some studies have found that parents checking their children's homework has a favorable relationship with academic progress. For example, Hansen and colleagues (2011) articulated Keith and her collaborators, who discovered that children whose parents were involved in homework checking performed better than students whose parents were not concerned in homework checking. Parenting style, discussing school activities, checking homework, ambitions, and expectations, reading at home, supervision, and home rules were among the home-related parental participation kinds highlighted. Patall, Cooper, and Robinson's 2008 meta-analysis study was acknowledged by Erdem and Kaya (2020) in their research. The meta-analysis emphasized the association between academic accomplishment and involvement of parents at home through homework assistance.

However, other research has found a negative relationship between parents monitoring their children's homework and academic progress. In his meta synthesis analysis, Wilder (2014) discovered no evidence of a favorable association between homework assistance and student academic progress. There are also inverse relationships. According to him, this is due to variables such as that most parents are not educated to teach their children and are unfamiliar with teaching methods. Having said that, it was concluded that parents assisting their children with academic obligations such as homework completion, assisting with challenging academic subjects, or tutoring are all part of the learner support that must be strengthened.

Participation in School Activities

Participation of parents in school activities reflects parent's eagerness and full support towards the holistic development of their child. They believed that the participation of students in school activities could also exhibit an academic success. School involvement (such as volunteering and participating in school events) was the most significant influence on achievement among the involvement of parents characteristics assessed in one study (Xu, Benson, Mudrey-Camino, & Steiner, 2010).

On the review conducted by Boonk and colleagues (2018) on involvement of parents and the indicators of academic achievement, they asserted that when examining the relationship between parental participation and academic achievement, it is vital to recognize between home-based and school-based characteristics. Hence, school-based involvement refers to school parental activities, such as attending school events or parent-teacher conferences.

In contrast, research has discovered that involvement of parents is inversely correlated with student's academic achievement. An example provided by Boonk and colleagues (2018) conveyed the study of Singh and colleagues in 1995. There was an investigation on the effect of four components of parental aspirations for children's involvement on the accomplishment of eighth-graders: parental education, parent-child communication about the school, home structure, and parental participation in school-related activities. Results unveiled that involvement of parents in school activities did not affect achievement, whereas home structure had a minor negative effect. Even involvement in school activities was proven to be a detrimental predictor of achievement by Stright and Yeo (2013).

General Parenting

Parenting, in general, involves behaviors such as creating a proper atmosphere for children, complimenting them, or demonstrating that they care about them (Boonk et al., 2018). As part of general parenting, parental encouragement and support are favorably related to student academic progress. This parental engagement variable is defined as providing support and encouragement to children, such as complimenting their performance, growth, and efforts and letting them know they care about them and their school performance. Academic achievement was significantly predicted by encouragement and support.

Additionally, Mahuro and Hungi (2016) explained that when families, schools, and communities work together to support their children's schooling, they devise a favorable learning environment. They can strengthen parenting and communication skills, enhance their children's academic achievement, and develop social values and good citizenship. More so, traditional communication forms of parental participation, such as rendering a conducive home environment, monitoring children's progress records, and making random visits to the school, significantly raise students' numeracy and literacy scores. This result is logical with other education research, such as one administered in Kenya by Abuya et al. (2014), who discovered that parental participation in employing and developing open communication with teenage school-going children dramatically enhanced their learning outcomes. Teenagers grew more engrossed in school, obtained available communication skills, and made important decisions.

Teaching Strategies of Teachers

Being the central figure in education, teachers must be fully qualified to convey knowledge to their students. To increase students' understanding of fundamental concepts, teachers may employ several teaching strategies that are appropriate for their students. The teacher must recognize individual differences among students, and teachings must be tailored to the students' needs. Hamzeh (2014) defined teaching strategy as a comprehensive plan encompassing all aspects of the teaching scenario, including objectives, teaching methods, teaching aids, and evaluation systems. Hence, the primary components are the teacher's activities in class to achieve the lesson's goals.

In the study performed by Behzadi, Lotfi, and Mahboudi (2014), students' math and reading abilities and study skills, which have an impact on their academic advancement, were analyzed. The primary goal of the research is to compare teaching with an emphasis on training study methods to teach without an emphasis on training study strategies to improve mathematical concept learning. Thus, the T-test findings revealed that pupils who were educated emphasize study skills outperformed students who were traditionally trained in math and academic accomplishment. As a result, it appears that teaching reading strategies such as cognitive and meta-cognitive will promote mathematics learning. Finally, it implies that unfamiliarity or lack of understanding of learning strategies and mathematics is one of the most critical determinants in students' learning weaknesses and poor academic achievement.

From a study conducted by Isa et al. (2020) on Nigerian students, the teaching methods used by teachers have a significant impact on how well pupils perform academically. The purpose of this study is to determine the association between teaching methods and academic performance of Nigerian secondary school pupils. The outcomes of this study indicated that the majority of teachers' teaching techniques have a significant impact on students' academic performance; consequently, the Student-Centered Method and Teacher-Student Interactive Method were recommended for improving students' academic performance.

According to Han (2021), effective instructional strategies can attract students to learning and boost teachers' self-concept about teaching. In her study, she experimentally explored the contributions of four prominent teaching strategies to students' engagement in learning and teachers' self-concept in teaching, including feedback, scaffolding, active learning, and collaborating. Correlation results uncovered that all four teaching styles were favorably connected with student involvement and teachers' self-concept. Hence, teachers should consider the age of their students while developing instructional tactics, according to the findings of the study.

In Thailand, an analogous finding was unveiled in the study performed by McWinner Yawman and Justice Appiah-Kubi (2018) on how innovative teaching methods improve students' performance in science. The authors utilized experimental and control groups to distinguish which innovative or traditional strategy is effective. Through experiment, it was found that students who were taught using creative teaching methods performed much better on the post-test than their counterparts who were taught using traditional teaching methods. Thus, teaching strategies necessitate a thorough understanding of when and how a teacher or student should employ them.

In this case, the student progresses when parents are interested, engaged, and concerned about student performance. It is assumed that the link between involvement of parents and student performance is evident and correct. The researchers discovered a strong link between parental participation and overall academic attainment. They discovered that parental and familial involvement boosted grades in each subject. Besides that, this study discovered that parents' or families' hopes and aspirations for their children have the most significant impact on academic accomplishment. Even if it is just communicating that school is essential, children from families that take an active role in their children's education perform better academically than children from less engaged families.

On the other hand, a study was conducted on science teachers and students in Cavite. It determines if the science teachers' strategies help students learn science (Lucero, 2021). Overall, teachers deploy teacher-centered, student centered, and student-teacher interactive strategies. While their kids do well in science, the utilization of teacher-centered, student-centered, and student-teacher interactive techniques has no meaningful

association to their science performance. Applying knowledge and content of the subject matter using a spiral progression strategy; applying various teaching tactics to increase learners' performance and attitude towards the subject matter; and establishing appropriate evaluation procedures. To address the issues raised by instructors, an in-service training program was established with the goal of demonstrating a well-crafted lesson plan and applying the topics covered.

Similary, the findings indicated on the research of Atandi, Gisore and Ntabo (2019) that teachers utilized a combination of lecture, group work, and question and answer methods to teach Kiswahili to a greater amount and demonstration, guided learning, and role-playing methods to a lesser extent. Teaching approaches had an effect on students' performance in Kiswahili in both positive and negative ways. To summarize, instructional strategies have an effect on students' academic progress in Kiswahili. The study proposes that Kiswahili instructors receive regular in-service training since it is thought that in-service training covers modern topics that will assist teachers in comprehending diverse techniques and how to implement them into their daily teaching.

Behavioral Strategies

Teaching is commonly carried out in a manner performed to promote learning or desired changes in a learner's behavior. Learning may only be deemed to occur if the learner's behavior improves due to instruction at the end of a lesson. Behavioral strategies used to have a great deal of power in the theoretical world; they were thought to be the strategies or carefully directed behaviors that could be quantified and monitored (Cakici et al., 2011). The purpose of such strategies is to correct undesirable habits while also striving to educate favorable ones.

A learner's efficacy can be measured by the change that occurs in a particular behavior. Behavioral strategy research has shed light on the need to use behavioral strategies by both the instructor and the student to comprehend and learn the fundamentals of enhancing, designing, and deciding on desired behaviors and the method of evaluating results. Duong and colleagues (2019) investigated the effects of employing the Establish-Maintain-Restore paradigm in the teaching-learning process. Their study tested an innovative, brief course for middle school teachers. Students of EMR-trained teachers had better classroom behavior, and it is a promising cost-effective technique for changing student behavior.

As well, Lippard et al. (2018) suggested that when children grow in class due to teacher support, they are more likely to participate in positive conduct and less likely to misbehave. They also unearthed that when teachers focus on support, it improves children's performance and helps them build cognitive skills.

Furthermore, the rubrics establish clear guidelines for appropriate behavior and enable both teachers and students to track their progress. A thorough rubric that was originally created as a scoring tool for APA-style empirical research papers was evaluated for its capacity to assist students in improving their scientific writing skills (Greenberg, 2015). Students who used the rubric to create their reports produced a higher-quality product than those who did not. Additionally, students improved the quality of their own reports after grading a report authored by one of their classmates using the criteria. These findings provide some of the first empirical evidence for the critical function rubrics can play in the formative assessment process. Similarly, Sambamurthy and Cox (2016) articulated how to create a behavior-based hiring rubric using team-building games in the engineering business. The development process might extend beyond hiring in industry

to evaluating engineers for advancement. A detailed behavior-based rubric can help explain cultural, gender, and racial behaviors that may be perceived negatively in the setting.

Cognitive Strategies

Cognitive strategies are effective procedures for supporting and sustaining students with learning challenges. Its most basic form pertains to using the mind (cognition) to solve a problem or complete a task. The application of cognitive methods can improve the learner's efficiency when approaching a learning activity (Dinsmore & Fryer, 2019). The teacher plays a vital role in bridging the gap between the student and the content/skill to be learned in a classroom where cognitive methods are used. This function necessitates comprehension of the job at hand and knowledge of a strategy to the work that can be communicated to the learner.

Further, Carr-Lopez et. al (2014) summarized their study stating that in a therapeutics course taught in a large classroom, concept maps proved to be an effective teaching tool. Treatment plans and objectives for five chronic heart diseases were better understood by students after using idea maps. Students performed just as well on concept-mapped exam questions as they did on non concept-mapped exam questions, despite the fact that Bloom's Taxonomy cognitive classification for the former was higher. Students acknowledged using concept maps in different contexts, such as practice experiences and practicum discussion sections, indicating their potential for use beyond the course.

Cognitive strategies arose in response to the dominance of behavioral strategies. In contrast to behavioral strategies, which focus on externally measured behaviors, cognitive strategies strive to develop cognitive processes on the learner's side. It was described as the plans that a student employs to achieve the goal they are pursuing (Cakici et al., 2011). When a task cannot be done in a sequence of steps, it gives a structure for learning. Algorithms in mathematics, for illustration, provide a series of procedures to solve a problem. Paying attention to the steps culminates in the problem being addressed successfully. Also, a learner could practice summarizing a material by writing down all his notes and then assessing his comprehension of what he read.

Affective Strategies

Affective strategies are learning strategies that deal with the management of emotions, both good and unfavorable. The link between affective methods and learning is unclear, but a favorable affective environment promotes learning in general. Student motivation, attitudes, beliefs, and values are examples of affective domain factors. Teachers can improve their competence by creating courses, presenting lectures and activities, and measuring student learning with an eye toward the affective domain. According to studies on affective approaches, training a student's psychological and social skills affects their ability to organize their reactions and solve problems after having painful thoughts about them (Hamzeh, 2014). This would undoubtedly assist them in overcoming the challenges that impede their development and thus their ability to cope with various situations. It would also protect them from the strain that they may face throughout their affective times. Moreover, those learning a subject may understand it without necessarily having particular views toward it. This information, however, would be meaningless to them until psychological reactions to it were created. Simply put, facts are useless to the brain unless we perceive them to be such. Learning that lacks psychological reactions is imperfect learning.

With the advancement of humanism, the non-intelligence qualities of learners are becoming increasingly important. Humanistic educators emphasize the importance of effective and learners' core positions. Affect is the outward manifestation of one's inner world and attitude toward a sure thing, circumstance, or experience. Yuan (2020) quoted Ellis and Stern in the 18th century, who stated that learners' affective states vary dynamically and significantly impact their ability to learn and that learners' affective factors contribute to cognitive skills or even more to language learning. A person's attitude, emotion, feeling, and mood are all examples of affect in language studies. Motivation, self-esteem, self-confidence, self-image, empathy, and other affective elements are examples of affective factors.

Academic Performance in Mathematics

Academic performance is used to assess a student's educational progress in school, whether the student excels or not. Every quarter, schools evaluate students based on their final grades. Their final grade is the basis of whether the student performs well academically.

Today's multifaceted society indeed necessitates the learning of mathematics to function correctly, in which technological improvements and the increasing prominence of the media push people to adapt to new ways of socializing as a result of social change. However, despite its importance and utility, most people, particularly students, regard mathematics as a subject that has no practical application, is difficult, tedious, abstract, and in general impractical, believing that learning requires a high level of dedication, concentration, and intelligence that is not suitable for everyone (Rincon et al., 2020).

On the other hand, an updated list of factors influencing students' achievement. These elements include the things that instructors, school administrators, students, or parents can manage or influence and the impact value associated with each component (Hattie, 2017). Despite determining the effect size of each factor, no historical research would synthesize the interaction or combination of these hierarchical factors in mathematics achievement in the Philippines.

Nevertheless, according to the DepEd - National Report of the Philippines (2019), the Philippines scored second from the bottom among participating countries in the recent Programme for International Student Assessment (PISA) 2018. This troubling finding revealed that Filipino pupils received a mean score of 353 points in Mathematics Literacy, enormously lower than the OECD average of 489 points. It is also claimed that just one in every five Filipino pupils, or around 19.7 percent, earned the required competency level (Level 2) in Mathematics Literacy.

In the Mindanao context, recent research was conducted on causal comparative studies integrating existing research on student-related, teacher related, and school-related factors that have significantly influenced kids' mathematics achievement (Callaman & Itaas, 2020). According to the data, the overall effect sizes had a minor impact on mathematical achievement. Mathematical skills, attitude, and self-efficacy, on the other hand, have been associated with an increased likelihood of students' mathematical accomplishment. It was also noted that the type of school where the student is enrolled could generate a significant difference in the effect sizes. It is urged that academic institutions regularly assess the curriculum targeting the education gap between public and private schools. In addition, teachers can use a range of instructional strategies to help students develop an interest in mathematics and favorable learning attitudes.

Furthermore, a study is being conducted to investigate the causes of poor mathematics performance in Zimbabwe. According to findings of Varaidzaimakondo & Makondo (2020), it was revealed that teaching methods, pupils', teachers', and parents' negative attitudes toward mathematics, a lack of teaching experience by some teachers, teacher instability, and a lack of adequate resources are some of the causes of poor academic performance in Mathematics at the elementary level. A handful of suggestions have been made, notably student motivation and staff development sessions. Furthermore, it is advised that Mathematics teachers employ various instructional resources and strategies to help students understand effectively. It demonstrated the importance of mathematics practice. As a result, teachers should assign appropriate homework to students to keep them practicing.

Written Works

One of the components of academic performance of student is written works. The written work component ensures that students may convey their newly acquired abilities and concepts in writing (Loyola, 2016). Essays, written reports, extended quizzes, and other written output may be included. Kant (2018) asserted that all mathematics activities cannot be done orally. Hence, all oral activities must be supplemented by written works. With this, it aids teachers to evaluate the student's mistakes properly. And by checking mistakes properly, it reduces the chances of errors. On the action research administered by Ashley Harlan (2018), the purpose of it was to grasp the impact of incorporating writing into a third-grade math sequence. She was sought to understand students' and her own impressions of incorporating writing into arithmetic, as well as how this affected student progress. Writing samples, assessment scores, observations and reflections, questionnaires, and interviews were used to collect data. The results implied that this study would help instructors understand what it looks like to incorporate writing into a classroom's arithmetic sequence, as well as how it affects students' perspectives and achievement.

Performance Tasks

Another component of mathematics academic performance is the performance tasks. Any learning activity or evaluation that requires students to perform in order to demonstrate their knowledge, understanding, and competency is referred to as a performance task. Performance tasks are designed to allow students to demonstrate their ability to apply their knowledge and higher-order thinking skills to investigate and analyze a complicated, real-world problem (Forstall, 2019). Lastly, it measures the integration of knowledge and skills of the students. In a present study conducted by Tayag and colleagues (2020), they investigated the relationship between math achievement and performance task scores of forty-three fourth grade pupils. The results showed a substantial disparity between the students' average achievement (59.40%) and their performance task scores (97.57%). Correlation results demonstrate a weak but positive association between math achievement and performance task scores ($r = 0.311$, $p = 0.042$). When the performance task scores of students with high and low achievement levels were examined, there was no significant difference in their scores ($p = 0.524$). These findings suggest that the assessment of learning practices, particularly on performance tasks, should be re-evaluated to verify that it accurately reflects students' actual achievement. Teachers and school administrators can obtain a more accurate assessment of the level of mastery of the abilities of their pupils by maintaining consistency between the two. Furthermore, another study was administered to senior high school students in Cape Coast Metropolis, Ghana wherein it to explored the effect of performance assessment-driven instructions on the attitude and achievement in mathematics (Arhin, 2015). According to the findings of this study, PA-driven instruction improved students' problem-solving abilities and increased student confidence in practicing mathematics since they felt more competent in working with

mathematical problems. Hence, it was suggested that the Ghana Education Service organize in-service training for mathematics instructors on the use of PA-driven instructions, and that mathematics teachers integrate performance assessment-based activities into their students' exercises. On the contrary, performance tasks are crucial in providing a comprehensive picture of a student's overall performance, they cannot always be used in the same way as standardized tests. Performance-based evaluation, like any other assessment tool, has drawbacks. It frequently relies on a student's specialized skill set, such as originality, adaptability, or a willingness to engage in public speaking. Performance-based examinations have drawbacks for students who are not particularly creative or prepared to exhibit their knowledge in front of a large number of people (Forstall, 2019).

1.2. Research Objectives

This study aimed to answer the following questions:

1. What is the level of involvement of parents as perceived by the students in terms of:
    1.1 educational expectations
    1.2 communication on school-related matters;
    1.3 home-structured supervision on school-related matters;
    1.4 participation on school activities; and 1.5 general parenting?

2. What is the level of teaching strategies of teachers as perceived by the students in terms of:
    2.1 behavioral strategies;
    2.2 cognitive strategies; and
    2.3 affective strategies?
3. What is the level of academic performance of students in Mathematics in terms of:
    3.1 written works; and
    3.2 performance tasks?
4. Is there are significant relationship between involvement of parents and academic performance of students?
5. Is there are significant relationship between the teaching strategies of the teacher and academic performance of students?
6. Is there a domain in the involvement of parents that significantly influences academic performance of students?
7. Is there a domain in the teaching strategies of the teacher that significantly academic performance of students?

1.3. Theoretical Framework

The researcher examined the main theory and supporting theories in this study. The main theory is the Educational Productivity Theory of Dr. Herbert J. Walberg. Theories including Dr. Joyce Epstein's Six Types of Involvement of Parents Framework and learning theories such as B.F. Skinner's Behaviorism, Jean Piaget's Cognitive Theory, and Abraham Maslow's Humanism are also anchored as supporting theories. These theories are found relevant to the current study.

The main theory anchored to this study is the theory of Walberg on Educational Productivity. The primary goal of Walberg's theory of educational productivity was to identify what factors impacted students' academic performance and how they did so (Walberg et. al, 2015). Its backbone rests on the four elements: aptitude, environment, quantity, and quality. Academic performance holds that individual students' psychological traits, as well as their immediate psychological surroundings, impact educational accomplishments (cognitive, behavioral, and attitudinal). More so, it is concerned with the effects on learning that affect a student's academic achievement. It is an investigation of academic achievement in which Walberg employed a range of approaches to determine the elements that influence a academic performance of students which includes student-teacher relationship and parental support. He emphasized that these factors have impacts that may create challenges with students' academic achievement if they are not appropriately supervised. Giving weight to a certain factor can have a significant influence on a student's academic achievement. Thus, this theory is best suitable for this study as it can explains that teaching strategies of teachers and involvement of parents significantly influence the academic achievement of the students in mathematics.

This study was anchored to the Parental Involvement Framework of Dr. Joyce Epstein. Epstein argued that school, family, and community are essential "spheres of influence" on children's development which is found in a 1995 article and a 2001 book titled School, Family, and Community Partnerships. When these contexts work collectively toward common goals, a child's educational development is enhanced (Epstein et. al, 2019). Epstein advised schools to increase the overlap between the school, home, and community by implementing activities in six categories of involvement: parenting, communication, volunteering, learning at home, decision-making, and community collaboration.

Further, the Epstein model acknowledged the six specific types of family behaviors that were assumed to promote children's academic achievement: favorable home conditions, constant communication between parents and children about schoolwork, parental participation in school, learning activities at home, shared decision making with the school, and community partnership (Epstein et al., 2009). Educators can help increase student achievement and experiences in school by providing activities across all six categories of involvement. Hence, this theory is best for this study because it examines the effects of parent-supported education on various parenting styles and their impact on addressing gaps between parents, children, and school routines. It also reviews the effects of involvement of parents on the academic performance of students.

Teaching strategies are fundamentally built on patterns and beliefs known as learning theories (Hamzeh, 2014) anchored explicitly to behaviorism, cognitive theory, and humanism. Learning theories are examined on how students absorb, process, and retain knowledge during their learning experiences. Cognitive, emotional, and contextual variables and prior expertise play a role in how understanding is gained or altered, and knowledge and skills are kept. These theories are grouped into three types: behavioral, cognitive, and affective. The primary principle behind behaviorism is that learning is characterized by a change in behavior due to the acquisition, reinforcement, and application of associations between stimuli from the environment and observable responses of the human. Behaviorists are concerned with measurable behavioral changes. Behaviorist Learning Theory (or Behaviorism) draws on essential principles from the work of B.F. Skinner proposed that learning takes place through a succession of rewards or punishments. While Skinner (1950) claimed that this was the only way to learn, Behaviorist Theory is now most generally used in classrooms as a technique for behavior management. Nonetheless, educators continue to use rote practice and repetition, which are tied to Behaviorist Theory.

Moreover, the work of Jean Piaget in 1957 was cited by William Swann (2013), who disputed the assumption that learners are passive and react to stimuli in their environment, is the foundation of Cognitive Learning Theory. It aims to explain how the mind operates during the learning process rather than relying exclusively on observable behavior. The reason, like a computer, receives information, analyses it, and then applies that knowledge to produce learning outcomes. The four stages of development classified by Piaget demonstrate the learner's ability to comprehend abstract, complicated concepts.

Finally, humanist learning theory views learning as realizing an individual's potential rather than accomplishing specific learning objectives. Abraham Maslow's research on the Hierarchy of Needs is crucial in this theory since it focuses on the entire person, precisely the learner's cognitive and affective needs (Padgett, 2020). According to the idea, the goal of everyone is self-actualization. Learners are trusted to create their purposes, set their criteria, and assess their performance. As a result, students are at the heart of the humanist classroom focusing on the student's full potential rather than predefined educational resources, allowing for a meaningful and practical learning experience that the learner may utilize in various scenarios (Hare, 2019). Teachers act as facilitators recognizing each student's requirements and encouraging their academic and social development. When analyzing these approaches in-depth, one may immediately detect direct integration, even though there are disparities in theory and practical applications. Thus, learning theories are best anchored to this research because it encompasses the teaching strategies that considerably influence the academic performance of the students. When students are actively engaged with their academic performance, there is a tendency to relate to their teacher's strategies.

2. Methods

2.1. Research design

In this research, it employed a non-experimental quantitative research design applying a descriptive correlation approach. Non-experimental quantitative research used statistical, logical, and mathematical techniques to generate numerical data and concrete facts (Ahmad et al., 2019). In this study, a quantitative method emphasized accurate measures and investigates the relationship between variables' causes and effects, such as involvement of parents, teaching strategies of teachers, and academic performance. Davis (2020), on the other hand, referenced Creswell's definition of the descriptive correlational technique as describing the variables and the natural correlations that exist between and among them. In that case, it analyzed and described the relationship between involvement of parents and teacher teaching strategies on students' academic success. Hence, the quantitative descriptive-correlation approach was the best suitable for this research as it can describe the relationship between involvement of parents and academic performance of students and the teaching strategies of teachers.

2.2. Research locale

This research was conducted to one of the public secondary schools located in Davao City (see map in Appendix A), Region XI. The Davao City Educational Benefit System Unit was set up by Davao City in terms of the educational system (DCEBSU). It is part of the Office of the City Mayor's Office, and it stated that quality education is a right that all citizens should be able to enjoy. It also says that good education is

important for the development, promotion of social justice, productivity, and economic prosperity of its people. It is in charge of making sure that everyone has a fair chance to go to school, especially the poor, underprivileged, and vulnerable parts of society. The office was established to administer the City Government of Davao's existing educational support programs, which include the Scholarship on Tertiary Education Program (STEP), the Financial Assistance Program for Lumad, and the Medical and Law Educational Assistance Program, among others. The school is part of the Schools Division of Davao City. Davao City Division, as a divisional entity of the Department of Education, offers educational resources for basic education and supervises elementary and secondary education schools in the city. For its basic education programs, the division's top management engages with parents and the Davao City community.

2.3. Research respondents

The respondents of the study were 100 public junior high students, from seventh to tenth grade, who were identified through a simple random sampling technique specifically fishbowl method. For each grade level, there were 25 public junior high school students who were randomly selected. Simple random sampling implied that every case in the population has an equal chance of being included in the sample (Hayes, 2021). Simple random sampling, such as a fishbowl, in which a sample was chosen by selecting a random piece of paper from the bowl. This technique was deemed appropriate for this study since it allowed researchers to extrapolate a given demographic while eradicating bias. It was beneficial because it guaranteed the scientific selection process of the respondents as well as an accurate representation. The researcher employed a simple random sampling technique using the fishbowl method to determine 100 public junior high school students from seventh, eighth, ninth and tenth grade levels. The researcher assigned number coding to the students for each grade level, wrote it to a slip of paper, folded and dropped it on a bowl for each grade level so that the number is hidden. The researcher placed all the slips of paper in a bowl per grade level and randomly choose samples from it.

2.4. Research instruments

There were two adapted survey questionnaires employed in this study to collect data for independent variables which are involvement of parents and teacher’s teaching strategy.

The first research instrument was the Involvement of Parents Questionnaire by which involvement of parents will be measured. The respondents answered the questionnaire with the following rating: 5 as strongly agree; 4 as agree, 3 as neutral; 2 as disagree and 1 as strongly disagree. The 5-point Likert scale will be scrutinized the findings. The first questionnaire was used by Apodaca and colleagues (2015) in conducting their research about involvement of parents as a mediator of the academic performance of middle school students with special needs. The questionnaire consists of twenty modified statements following the perspective of the students. Each indicator of the variable has four statements.

Moreover, the second research instrument was the Teaching Strategies of Teachers by which teaching strategies of teachers will be measured. The respondents answered following rating: 5 as strongly agree, 4 as agree, 3 as neutral, 2 as disagree and 1 as strongly disagree. The 5-point Likert scale was applied to analyze the findings. It was developed by Hamzeh (2014) in his study on the investigation of the teaching strategies of Mathematics Teachers in Jordan public schools. The questionnaire is composed of 30 statements

that has been modified by the researcher applying the perspective of the students. There are three indicators in the questionnaire. It comprises three parts: behavioral, cognitive, and affective strategies. As such, each indicator contains 10 items respectively.

On the other hand, to gather the data for dependent variable, which is the academic achievement of students, the researcher asked and collected their numerical grade in written works and performance task for the first quarter in school year 2021-2022 in Mathematics. The 5-point Likert scale was applied to examine the findings. The data were taken from the written works and performance tasks of the students in the first quarter which the research will ask from the school head and/or subject teachers. The respondents knew their grades for each grade component so that they can be guided in answering. The respondents answered the following rating based on the mathematics grades: 96-100 grades selected 5 as outstanding; 91-95 grades selected 4 as very satisfactory; 86-90 grades selected 3 as satisfactory; 81-85 grades selected 2 as fairly satisfactory and 80 and below grades selected 1 as did not meet expectations.

To recapitulate, there were a total of fifty items. The first and second parts were questionnaires with twenty and thirty items, respectively. Before executing the questionnaire's pilot testing, experts were consulted to validate its content. Following content validation, researcher altered and revised statements that are based on feedback of the content experts. Once the survey questions were

In the validity process, the survey questionnaire got an average of 4.6 which means that it passed the validity stage, and it is excellently valid. More so, out of 20-item questions under involvement of parents' scale, it has a Cronbach alpha reliability result of 0.916 which means it has excellent internal consistency. Also, in the teaching strategies of teacher's scale, it results to 0.948 out of the 30-item questions which means it has excellent internal consistency. Similarly, using a sample of 30 respondents during the pilot testing, Cronbach alpha reliability coefficient of the survey questionnaire equaled 0.941 indicating a high level of internal consistency. Gregory and Mallery (2003) stated that a reliability coefficient greater than 0.90 is excellent.

2.5. Data gathering procedure

To collect data for this study, the researcher gone through the following processes and procedures: Asking permission to conduct the study. The researcher secured a permission and endorsement letter to conduct the study duly signed by the Dean of the Graduate School of Holy Cross College of Davao. After the permission letter from the Dean, another permission letter was secured and sent to the Schools Division Superintendent (SDS) of the Division of Davao City to administer the study to one of the secondary public schools under his sovereignty. Once the permission letter from the SDS was obtained, another permission letter addressed to the school head of the said school with the attachment letters from the Dean and the SDS for actual gathering of data. Distribution and retrieval of informed assent and consent form. With the full approval and assistance from the Dean of the Graduate School, Schools Division Superintendent and school head, the researcher prepared the informed assent form for the minor respondents while informed consent form for parents and/or guardians of the minor respondents. The distribution of informed assent and consent forms were distributed to them prior to the actual administration of the study. They were given at least a week or two to return the forms with their positive and full support in participating in the study as research respondents. Administration and retrieval of questionnaires. Once permission letters were approved, secured, and gathered, actual data gathering commenced, as well as returned informed and assent form. Google Forms

was used as a platform to collect the data during the conducting of the study. The survey questionnaire link was sent to the personal e-mail address of the respondents. To ensure that they fully participate, a screenshot was sent to the researcher once they finished answering the survey. The use of Google Forms paved a way to help control and mitigate the spread of COVID-19 as well as following the safety and health protocols as mandated by Inter-Agency Task Force (IATF) and the Department of Health (DOH). Tabulation and organization of data. The data were compiled and calculated following the positive administration of the study and retrieval of the survey questionnaires. The organization of data utilized tables that are arranged based on the statement of the problems. Analysis and Interpretation of data. Subsequently, appropriate statistical methods were applied to the collected the data which were required for interpretation and further analysis. Once all the collected data were analyzed using the statistical tools, the interpretation of data will follow with the help of the matrix

2.6. Data analysis

The data collected was analyzed and interpreted using the statistical instruments listed below. Mean. It is the most frequently used metric of central tendency, referring to the average value of a collection of values (Skyes, Gani & Vally, 2016). It was utilized to determine the level of involvement of parents and teaching strategies of teachers per indicator. Pearson Product-Moment Correlation Coefficient (r). Mike Allen (2017) stated that the Pearson correlation coefficient r is used to determine the relationship between two quantitative variables rather than their difference, as well as the degree to which the two variables coincide—that is, the extent to which two variables are linearly related: changes in one variable correspond to changes in the other. It was used to determine the degree of relationship between involvement of parents, teaching strategies of teachers and the academic performance of the students. Linear Regression. It is a statistical process that analyzes the values of a continuous dependent variable Y using the values of a categorical or continuous independent variable X (Allen, 2017). In other words, this is the amount of volatility in Y that X can best predict. It was utilized to identify which domain significantly influenced the involvement of parents on the academic performance as well as the domain that significantly influence the teaching strategies of teachers towards the academic success of the students.

3. Results and Discussion

The results, analysis and interpretations of the data gathered by the researcher were presented in this section. The discussions were organized according to the order in which the statement of the problem is presented.

Level of Involvement of Parents as Perceived by the Students

The first statement of the problem is to determine the level of involvement of parents of the students in junior high school during modular learning. Table 1 presents the answer to this question.

The level of the involvement of parents as perceived by the public junior high school students in terms of educational expectation, communication on school-related matters, home-structured supervision on school-related matters, participation on school activities, and general parenting is presented in Table 1.

Among the indicators shown in Table 1, parent's educational expectation showed the highest with a mean of 4.44. Based on the data result, the educational expectation of parents gets a mean of 4.44 or very high which means that it was always manifested by the parents as perceived by the students. This implies that parents place a greater importance on their child's academic accomplishment. Additionally, these students embrace their parents' expectations and assimilate them into their own definitions of success, which may contribute to their academic progress.

Table 1. Summary of the Level of Involvement of Parents as Perceived by the Students

Indicators	Mean	Description
Educational Expectation	4.44	Very High
Communication on school-related matters	3.84	High
Home-structured supervision on school-related matters	3.81	High
Participation on school activities	4.02	High
General Parenting	3.95	High
Overall	**4.01**	**High**

This result corroborates Pinquart and Ebeling's (2020) assertion that favorable parental expectations and promotion of academic engagement are more effective at motivating children to participate actively in school. Students who have parents that have high educational expectations perform better in school and prosper academically. Similarly, involvement of parents in terms of high educational expectations can help students gain confidence and increase their performance in the classroom.

The second highest indicator is the participation on school activities with a mean score of 4.02 or high which indicates that students perceived their parents in terms of their participation during school activities is oftentimes manifested. This entails participation of parents during school activities could exhibit success in their academic performance. Parents who attend school activities reflects their involvement of parents not just on the academic performance of their child but also to its holistic growth and development.

This appears to support the idea that school involvement, including participation in school events, had the greatest impact on achievement (Xu, Benson, Mudrey-Camino & Steiner, 2010). They believed that students' engagement at school demonstrates their parents' unwavering commitment to their child's overall development. Boonk and colleagues (2018), on the other hand, contradict the findings that involvement of parents in school-related activities had no effect on achievement.

The third highest factor is general parenting. General parenting has a mean of 3.95 or high, indicating that it is oftentimes manifested. This means that parents are responsible for creating a favorable learning environment for their children, which results in improved academic performance. Additionally, parents' positive general parenting motivates and empowers students to excel in class. Students develop a greater sense of responsibility and commitment to their academic success.

Mahuro and Hungi (2016) validate and substantiate their findings on general parenting. They said that when families, schools, and communities collaborate to support their children's education, a conducive

learning environment is created. It was emphasized that strengthening parenting and communication improves their child's academic progress.

The fourth highest indicator is communication on school-related matters with a mean of 3.84 or high which indicates that it is oftentimes manifested. Positive and constant communication of parents on the academic performance of their child can motivate students to participate in class. Communicating and interacting between parents and child at home about school impacts the extent and quality of the parent's home involvement in their children's learning leading to performing excellently in school.

This is reinforced by Acikalin & Turuan (2015), who claim that school organizations view the school-parent relationship as critical for implementing effective education that improves student achievement. Parents can benefit from being involved in their children's education by gathering suggestions for how to assist their child from their schools. Parents can obtain conviction in this instance about the importance of their child's school involvement.

Finally, the lowest indicator is home-structured supervision on school-related with a mean of 3.84 or high describes that it is oftentimes manifested. This emphasizes that once a child returns home from school, parents must monitor and check on them. Learning does not stop at the conclusion of the school day; it extends at home as parents monitor their child's activities at school. Parents regularly monitor or inquire about their child's homework or assignments. This manner, parents who check and monitor their children at home contribute to their child's academic success.

This confirms the assertion made by Patall, Cooper, and Robinsons in their meta-analysis study, which Erdem and Kaya (2020) validated. The meta-analysis underlined the relationship between academic achievement and involvement of parents at home, specifically through homework aid. It was discovered that parents who check or monitor their child's location in school had a positive correlation with their child's academic achievement. In contrast, Wilder (2014) does not complement the findings because he identified a negative association between parental aid with homework and academic success. There is insufficient empirical data to support this claim because most parents are unprepared to teach their children and are unfamiliar with the methods provided in class.

As presented in Table 1, the level of involvement of parents gets an overall mean of 4.01 or high indicates that involvement of parents is oftentimes manifested as perceived by students. Positive parenting involvement has improved student academic achievement. It generates parent's responsibility on the school-related matters of their child allowing them to create a positive learning environment both in school and at home. Parents who prioritize their involvement on their child's academic performance is presumed to make a learning environment where student can holistically grow and develop.

In fact, Kim and Hill (2015) and Osward et al. (2017) confirms that there are various factors that lead to involvement of parents could produce various outcomes in terms of student academic achievement. Once the relationship between parents and students is established, the better the basis of student's academic achievement. Parents who have high expectations for their children are more likely to participate in their children's achievement-related activities and provide additional support, such as assisting with homework and monitoring their academic progress or providing additional educational resources for their children. Additionally, children may benefit from increased academic support resources in terms of involvement of parents, such as communication with teachers and participation at school activities and meetings.

Results can be anchored on the Parental Involvement Framework of Dr. Joyce Epstein in his 1995 article and 2001 book where she argued that it high and satisfactory academic performance can be enhance and improve if there is a parent-supported education. In her framework, she highlighted the importance of involvement of parents in six categories such as favorable home conditions, constant communication between parents and children about schoolwork, parental participation in school, learning activities at home, shared decision-making with the school and community partnership (Epstein et. al, 2019).

Level of Teaching Strategies of Teachers as Perceived by the Students

The second statement of the problem is to determine level of teaching strategies of teachers as perceived by the junior high school students to their teachers. Table 2 presents the answer to this question, and it is tabulated. It has three indicators, which are behavioral strategies, cognitive strategies, and affective strategies. Their corresponding mean value and equivalent verbal description is also included.

Among the three indicators of level of teaching strategies of teachers, the first and highest indicator is the affective strategies with a mean of 4.42 or very high. It means that it is always manifested as perceived by the students to their teachers. This implies that the affective realm that teachers portray to the students promotes and enhances the ability of the students to perform better in school particularly in school activities. It has been said that a way to student's inner core is a teacher who touches the lives of the students.

Table 2. Summary of the Level of Teaching Strategies of Teachers as Perceived by the Students

Indicators	Mean	Description
Behavioral Strategies	4.41	Very High
Cognitive Strategies	4.38	Very High
Affective Strategies	4.42	Very High
Overall	**4.40**	**Very High**

This result is consistent with Yuan (2020) as he quoted Ellis and Stern in the 18th century, who stated that learners' affective states vary dynamically and significantly impact their ability to learn and that learners' affective factors contribute to cognitive skills or even more to language learning. A person's attitude, emotion, feeling, and mood are all examples of affect in language studies. Motivation, self-esteem, self-confidence, self-image, empathy, and other affective elements are examples of affective factors.

The second highest indicator of the level of teaching strategies gets a mean of 4.41 which is the behavioral strategies. This indicator is described as very high which means it is always manifested by teachers as perceived by the students. This implies that teacher does not focuses on cognitive realm of the study but also to their behavior. Teachers train students during classes or in school activities to always display good behavior. School-wide, classroom-based, or individual child-focused interventions can be used to manage or improve behavior in schools.

With this result, it is validated by Lippard et al. (2018). They firmly pointed out that students who have grown up in the classroom with the help of their teachers are more likely to engage in good behavior and

less likely to engage in bad behavior. When teachers focus on supporting students, it improves their academic performance and helps them develop cognitive skills, as per the findings of the study.

The last indicator of the level of teaching strategies is the cognitive strategies. Though it came in the last, it has a mean of 4.38 or very high which means it is always manifested by teachers as perceived by students. This implies that the cognitive aspect of teachers is still relevant for students as it can provide them new knowledge which can help them to reach their future or goals or even enhance their academic performance.

It is agreeing to the idea of Dinsmore and Fryer (2019) that the use of cognitive strategies can increase a learner's efficiency while approaching a learning activity. In a classroom where cognitive methods are used, the teacher is critical in bridging the gap between the student and the content/skill to be learnt. This function requires an understanding of the task at hand as well as knowledge of a work strategy that can be communicated to the learner.

The level of teaching strategies of teachers gets an overall mean of 4.40 or describes as very high. It means that the level of teaching strategies of teachers as perceived by students are always manifested. This indicates that teachers, as the central figure in education, must be properly competent to transmit knowledge to their students. Teachers may use a variety of teaching strategies that are appropriate for their students to boost students' grasp of essential ideas.

As Han (2021) pointed out, teachers' self-esteem and motivation to teach can both be improved through the use of successful instructional practices. In her research, she looked at the effects of feedback, scaffolding, active learning, and collaboration on students' interest in learning and teachers' self-concepts as educators. All four teaching methods were found to have a positive correlation with student engagement and teachers' self-concepts, according to correlation results. According to the conclusions of the study, teachers should take into account the age of their pupils while devising instructional strategies.

Finally, results on the level of teaching strategies of teachers is anchored to the idea of learning theories. The theories of how students learn, process, and remember information are addressed in depth (Hamzeh, 2014). For example, prior expertise has a role in the acquisition or modification of knowledge and the retention of abilities. There are three types of theories that fall under this category: behavioral, cognitive, and affective. Rather than lecturing, teachers serve as guides, recognizing the unique needs of each student and guiding them toward academic and social success. Even if the theoretical and practical applications of these ideas differ, one can clearly see how they are intertwined.

Level of Academic Performance of Students in Mathematics

The third objective of this study seeks to determine the level of academic performance of junior high school students. Table 3 presents the answer to this objective.

As shown in the table, both the components of the academic performance of public junior high student resulted as low with mean of 2.20. It means that both written works and performance tasks are low which means that is seldom manifested. This implies that the level of academic performance of students both in written works and performance tasks is fairly satisfactory. Also, this indicates that this second year of the implementation of modular learning, learners are still having difficulty in Mathematics.

Table 3. Summary of the Level of Academic Performance of Students in Mathematics

Indicators	Mean	Description
Written Works	2.20	Low
Performance Tasks	2.20	Low
Overall	**2.20**	**Low**

PISA's recent survey confirmed this. In the current Programme for International Student Assessment (PISA) 2018, the Philippines ranked second from the bottom among participating countries. This alarming research revealed that Filipino students scored 353 out of 489 in Mathematics Literacy. It is also alleged that just 19.7 percent of Filipino students achieved the required competency level (Level 2) in Mathematics Literacy.

In line with this result, the written output may include essays, reports, extended quizzes, etc. Kant (2018) claims that no mathematics can be done orally. Written efforts must accompany all speaking actions. This allows professors to correctly analyze student errors. It also lowers errors by appropriately checking mistakes.

To support further, Tayag and companions (2020) evaluated the link between math achievement and performance task scores of 43 fourth grade students. The results revealed a large gap between students' average achievement with 59.40 percent and performance task scores of 97.57 percent. The correlation between arithmetic achievement and performance task scores is small but positive with a r-value and p-value of 0.311, 0.042 respectively. The scores of pupils with high and low accomplishment levels were not significantly different. In light of these findings, re-evaluation of assessment of learning methods, particularly performance tasks, is warranted. Consistency between the two can help teachers and administrators assess their students' talents more accurately.

Similarly, performance tasks cannot always be used in the same way as standardized tests. Like any other instrument, performance-based evaluation has flaws. Students' abilities to think creatively, adapt, and speak in public are regularly tested. Performance-based tests have disadvantages for students who are not creative or prepared to present their knowledge in front of a large audience (Forstall, 2019).

Significance on the Relationship Between Involvement of Parents and Academic Performance of Students

The fourth objective of this study is to determine if involvement of parents in junior high school students is significantly correlated to academic performance of junior high students. Table 4 presents the answer to this objective the corresponding value of Pearson R, significance value and decision on null hypothesis.

Table 4. Significance on the Relationship Between Involvement of Parents and Academic Performance of Students

	Academic Performance of Students			
	r	p value	Decision on Ho	Interpretation
Involvement of Parents	0.22	0.028	Reject Ho	There is a significant low correlation.

It can be seen in Table 4 the result for test of significant relationship between involvement of parents and academic performance of junior high students. There is a low positive correlation with Pearson r value of 0.22, between involvement of parents and academic performance in learning mathematics of the respondents and this relationship is statistically significant with a p-value of 0.028. The null hypothesis is therefore rejected. This implies that, although it gets a significant low correlation, there is still relationship that link between involvement of parents and academic performance of students. It also means that involvement of parents student attain more or excel in their academic performance if their parents are actively engaged in the learning. More so, the r value of 0.22 is interpreted as low positive relationship which implies that the domain of the involvement of parents has a low to no significant relationship to the academic performance of students. Having said this, the domains of involvement of parents such as educational expectation, communication on school-related matters, home-structured supervision on school related matters, participation on school activities and general parenting. Hence, the role of the parents in the academic aspect of their child is still relevant and visible. The involvement of parent affects on how student perform during class and how they engage in school activities. As a result, based on the data, it appears that the academic performance of pupils is still oscillating, but it is still low.

It validates the claim that states involvement of parents has enhanced student success, parent and teacher satisfaction, and school climate. Involvement of parents provides schools with an excellent opportunity to improve existing programs by incorporating parents in the educational process (Durisic & Bujenivac, 2017). It is obvious that their children perform well in school since parents and instructors share the responsibility of assisting their children in learning and reaching educational goals. When teachers invite parents to school meetings or events, parents volunteer to help both at home and at school. They make a commitment in this manner. Parents commit to emphasize their child's educational goals, while teachers promise to listen to parents and create a dialogue space. In this case, parents, teachers and students create a harmonious and effective teaching and learning experience for the sake of the students in order to attain academic excellence. Additionally, in a meta-analysis of more than fifty studies on involvement of parents in secondary schools, researchers found a strong correlation between students' academic success and involvement of parents (Delgado, 2019). In order for students to succeed, they must have a strong relationship with their parents and their teachers early on in their schooling. Student achievement, social skills, and conduct all improved for students with parents or guardians who were actively involved in their education. With this, involvement of parents and academic performance of students gets significantly low correlation.

Significance on the Relationship Between Teaching Strategies of Teachers and Academic Performance of Students

The fifth objective of this study is to test if teaching strategies of teachers is significantly correlated to their academic performance. Table 5 presents the answer to this objective the corresponding value of Pearson R, significance value and decision on null hypothesis.

Table 5. Significance on the Relationship Between Teaching Strategies of Teachers and Academic Performance of Students

	Academic Performance of Students			
	r	p value	Decision on Ho	Interpretation
Teaching Strategies of Teachers	0.163	0.105	Failed to reject Ho	There is no significant.

It can be seen in Table 5 the result for test of significant relationship between teachers' teaching strategies and academic performance of junior high students. There is a low positive correlation of 0.163, between teaching strategies of teachers and academic performance of students in learning mathematics of the respondents and this relationship is statistically not significant with a p-value of 0.105. Therefore, the test failed to reject the null hypothesis. On simpler words, there is no significant correlation between those two variables. The result implies that the way students perform in school does not affect the teaching strategies of teachers. In connection, the r-value of the results yields low positive to no significant relationship on its domains namely behavioral, cognitive and affective strategies. Both the independent and dependent variable are two individual entities that does portray an insignificant relationship as well as the domains or indicators of the teaching strategies of teachers. More so, it implies that in this alternative delivery modality particular modular learning, teacher cannot exhibit their teaching strategies resulting to a not significant relationship between variables.

To support, a study is being done to determine the causes of Zimbabwe's low mathematics performance. Varaidzaimakondo and Makondo (2020) discovered that poor academic performance in mathematics at the elementary level is caused by a variety of factors, including teaching methods, pupils', teachers', and parents' negative attitudes toward mathematics, a lack of teaching experience for some teachers, teacher instability, and a lack of adequate resources. Numerous proposals have been given, including sessions on student motivation and professional development. Additionally, it is recommended that Mathematics teachers utilize a variety of teaching resources and tactics to assist pupils in comprehending successfully. It emphasized the critical nature of mathematical practice. As a result, teachers should assign appropriate homework to pupils in order to ensure that they continue to practice. As Behzadi, Lotfi, and Mahboudi (2014) assessed students' math and reading abilities, as well as their study skills, all of which have an effect on their academic advancement. The research's principal objective is to contrast teaching with an emphasis on training study methods with teaching without an emphasis on training study strategies to increase mathematical concept learning. Thus, the T- test results indicated that learners who were schooled with an emphasis on study abilities outperformed students who received typical math and academic achievement training. As a result, it appears as though teaching cognitive and meta-cognitive reading skills will aid in mathematics acquisition. Finally, it implies that students' unfamiliarity with or lack of comprehension of learning strategies and mathematics is a significant predictor of their learning deficiencies and academic achievement. Furthermore, the result is contrasting to the study of Isa et al. (2020) which states that teachers' teaching strategies have a considerable impact on students' academic performance. It examined the link between teaching styles and student academic achievement in Nigerian secondary schools. Students' academic performance was found to be influenced by teachers' teaching methods, and the student-centered method and teacher-student interactive method were found to be the most effective ways to improve students' academic performance. As the study's findings indicate a strong correlation between teaching strategies and student academic performance, it is indeed clear that active, student-centered approaches like discussion and demonstration outperform the more passive, teacher-centered lecture.

Regression Analysis on the Significant Influence of the Domains of Involvement of Parents on Academic Performance of Students

The sixth objective of this study seeks to determine the if there is a domain in involvement of parents that significantly influence their academic performance in learning Mathematics which are presented in Table 6.

Table 6. Regression Analysis on the Significant Influence of the Domain in Involvement of Parents on Academic Performance of Students

	Academic Performance of Students						
Involvement of parents	Unstandardized Coefficients		Standardized Coefficient				
	B	Std. Error	Beta	t	Sig	Decision on Ho	Interpretation
Constant	.518	.674		.769	.444		
Educational Expectation	.327	.146	.232	2.239	0.28	Reject Ho	Significant
Communication on School-Related Matters	.076	.125	.080	.610	.544	Failed to Reject Ho	Not Significant
Home-structured Supervision on School-related Matters	.147	.135	.159	1.092	.278	Failed to Reject Ho	Not Significant
Participation on School-Related Matters	-.230	.136	-.211	-1.686	.095	Failed to Reject Ho	Not Significant
General Parenting	0.76	.130	.082	.585	.560	Failed to Reject Ho	Not Significant

r=.333 r^2 =0.111 F-value=2.346 p-value=0.047

As shown in Table 6, the linear regression of the extent of the influence of the domains of involvement of parents on the academic performance of students. The analysis illustrates that the F-value of 2.348 with corresponding over-all p-value of 0.047 indicates that the involvement of parents as a variable has significant influence on the academic performance of students in mathematics. Among the five domains of the independent variable, educational expectation appears to be significantly significant. Hence, the analysis result accepted the null hypothesis. The rest of the domains did not significantly predict academic performance of students. The standard coefficient of the domain educational expectation gets the highest Beta of 0.232, it implies that educational expectation has the highest degree of influence and has a significant influence on academic performance of students. This is followed by home-structured supervision on school-related matters with a Beta of 0.159, general parenting with a Beta of 0.082 and communication on school-related matters with a Beta of 0.080. Also, participation in school activities yielded the lowest Beta of negative 0.211, it implies that the effect of independent variable to dependent variable is weak, and it is similar with four domains of involvement of parents. Analyzing the data in Table 6 bit by bit, it is found that educational expectation is the only domain that significantly influences the academic performance of students. It explains that this domain positively contributes and influences academic performance. It implies further that as educational expectation of parents increases, the tendency of the academic performance of students will increasingly improve. More so, the next three domains such as home structured supervision on school-related matters, general parenting and communication on school-related matters positively contribute to the variations of the academic performance but not significant. However, the negative Beta that belongs to the participation on school activities indicates the negative contribution to the variation on the academic performance. All these results are manifested in the regression analysis where the r^2 value is only 0.111, it

implies that 11.1 percent of the domains explain the academic performance of students, the other 89.9 percent is attributed to other factors.

To support the result on educational expectation, Holmes (2013) pointed out that parents' educational expectations emerge as both a cause and a result of educational achievement. In this topic, ongoing research needs to be focused on tracing the roots of parental educational expectations, and on identifying the factors that mediate the relationship between those expectations and kid academic performance. Differences in how children are rewarded and how they feel about their achievements are crucial mediators in the learning process. A student's academic performance in class is influenced by the educational expectations of his or her parents, according to Holmes' research. Parents' educational expectations are ingrained in their children's thoughts, which is why they enroll them in school on a regular basis.

Regression Analysis on the Significant Influence of the Domains in Teaching Strategies of Teachers on Academic Performance of Students

The last objective of this study seeks to determine the if there is an indicator in teachers' teaching strategies that significantly influence their academic performance in learning Mathematics. Table 7 gives a clear and comprehensive picture of all the domains of teachings strategies of the teacher. It presents the significance value of each indicator and decision on null hypotheses, whether each factor significantly predict the level of academic performance of students.

Table 7. Regression Analysis on the Significant Influence of the Indicators in Teaching Strategies of Teachers on Academic Performance of Students

	Academic Performance of Students						
Teaching Strategies of Teachers	Unstandardized Coefficients		Standardized Coefficient				
	B	Std. Error	Beta	t	Sig	Decision on Ho	Interpretation
Constant	1.077	.674		1.599	.113		
Behavioral Strategies	.167	.198	.119	.841	.402	Failed to Reject Ho	Not Significant
Cognitive Strategies	.149	.202	.115	.735	.464	Failed to Reject Ho	Not Significant
Affective Strategies	-.059	.215	-.045	-.276	.783	Failed to Reject Ho	Not Significant

r=.178 r^2 =0.032 F-value=1.045 p-value=0.376

Shown in Table 7 is a linear regression of the extent of the influence of the domains of teaching strategies of teachers and academic performance of students. The analysis demonstrates that the F-value of 1.045 with corresponding over-all p-value of 0.376 indicated that as teaching strategies as variable has an insignificant influence on academic performance of students. Of the three domains of the independent variable, none of these significantly influence academic performance. Therefore, the analysis result failed to reject the null hypothesis. The standard coefficient of behavioral strategies has the highest Beta of 0.119, it implies that behavioral strategies have the highest degree of influence on academic performance but the influence is not significant. This is followed by cognitive strategies with a Beta of 0.115 and affective strategies with a Beta of -0.45.

In order to perform a more thorough analysis, it is found that all standardized beta of the behavioral and cognitive strategies were positive but not significant. This further clarifies that behavioral and cognitive strategies positively contribute to the variations on the academic performance but is insignificant. More so, the affective strategies imply to be negative and insignificant. These are revealed in the results of the regression analysis where only 3.2 percent of the variance is explained by the three domains as indicated by the r2 =0.032. Thus, it signifies that 96.8 percent of the variation of the domains are attributed to other factors.

The result of the study is logical to the study conducted in Cavite on science teachers and students. It ascertains whether the strategies used by science teachers assist pupils in learning science (Lucero, 2021). Teachers employ a variety of strategies, including teacher-centered, student-centered, and student-teacher interactive procedures. While their children perform admirably in science, their parents' use of teacher-centered, student-centered, and student-teacher interactive strategies has no discernible effect on their children's science performance. Applying subject-matter knowledge and information through a spiral progression technique; utilizing a variety of instructional strategies to improve learners' performance and attitude toward the subject; and establishing proper evaluation procedures. To address instructor concerns, an in-service training program was developed with the objective of displaying a well-crafted lesson plan and applying the subjects addressed.

Another other study, on the other hand, refutes this finding. Researchers found that instructional techniques have an impact on the academic growth of Kiswahili pupils in a study by Atandi, Gisore, and Ntabo (2019). According to the findings, Kiswahili teachers should have regular access to in-service training to stay abreast of current teaching methods and best practices.

Finally, the result invalidated the findings. Recent study on causal-comparative studies incorporating previous research on student-related, teacher-related, and school-related factors that have significantly influenced children's mathematics achievement was undertaken in the Mindanao context (Callaman & Itaas, 2020). These effects have just a minor impact on math achievement, according to statistics. It was also highlighted that the type of school where the student is enrolled could have a substantial impact on the effect sizes. It is recommended that academic institutions evaluate the curriculum on a regular basis in order to close the educational gap between public and private schools. Furthermore, teachers can employ a variety of instructional tactics to assist kids develop an interest in mathematics as well as positive learning attitudes.

Findings

Involvement of parents, as perceived by public junior high school students, was very high in terms of educational expectations, except for communication about school-related matters, home structured supervision about school-related matters, participation in school activities, and general parenting, which all have a mean result interpreted as high. The overall mean of involvement of parents was determined to be

high.

Additionally, the level teaching strategies of teacher as regarded by students toward their Math teachers was examined and determined to be very high in terms of behavioral strategies, cognitive strategies, and affective strategies. This clearly revealed that the level of the Math teachers' teaching strategies was highly noticeable to the students.

On the other hand, academic performance of students in Mathematics was declared to be inadequate or described as low, both in written work and performance tasks. It was discovered that there is an issue with the academic performance of students in Math that has to be remedied.

Furthermore, Pearson r demonstrated a substantial negative or significant low positive relationship or correlation between involvement of parents and academic performance of the students. As a result, the researcher was able to rule out or reject the null hypothesis. Meanwhile, the Pearson correlation coefficient between the teaching strategies of teachers and the students' academic performance is not significant, indicating that the study failed to reject the null hypothesis.

Moreover, the results of the linear regression for the involvement of parents revealed that there is only one domain or indicator that significantly influence the academic performance of the students namely the educational expectation. The remaining four indicators and domain failed to reject the null hypothesis which means that the indicator does not significantly influence the academic performance of the students.

Finally, it was discovered that teaching strategies of teachers does not provide any domain or indicator that had a substantial effect on academic performance of students. Behavioral, cognitive and affective teaching strategies of teachers appeared to have insignificant relationship on the academic performance of students. Hence, it was demonstrated that the researcher did not successfully reject the null hypothesis.

Conclusion

In light of the findings of the study, the following conclusions are made and presented: Educational expectations of parents, as seen by their children, are always prominent and conspicuous from the start. This demonstrates that parents are confident in their child's ability to achieve their goals and expect them to participate fully in school. Likewise, parents anticipate their child to be literate in order to perform daily tasks and graduate from high school. It is established that anytime students in school, the academic expectations of their parents are imprinted in their thoughts. With these thoughts, students carry out or bring with them the expectations from their parents in school. The affective strategies of the teacher are found out to stand-out among the strategies of the teachers. The emotional aspect of the teacher to the students greatly affects on how students behave and participate during class discussion or even school-related activities. This means that a favorable learning environment enhances and influences students' willingness to participate actively in their academic success. Furthermore, the correlation between involvement of parents and academic performance of students is statistically significant low, implying that there is a positive and direct relationship, but it is of a weak character. It also implies that if the involvement of parents is increased, the academic performance of students will improve significantly. Consequently, it is impossible to emphasize the importance of parental involvement in their children's educational development. Despite its significance, it was discovered to be low or insufficient. Parents' involvement in their child's academic development leads in a satisfying level of academic accomplishment for the students. More so, a direct and significant relationship on the involvement of parents and the academic performance of students in Mathematics is revealed in this study which is in

congruent to other literature. Parents who are actively involved and present for their children, who are the students, have an impact on their children's capacity to perform well in school. It indicates that the more involvement placed on a kid by his or her parents to perform well to graduate from high school, the more probable it is that the student will satisfy those expectations. Similarly, as parents intensify their involvement to their children, students increase the number of activities they participate in and immerse themselves in school-related activities. Conversely, though a lot of literature stated that there is strong linkage between teaching strategies of teachers and the performance of students, it does not guarantee that is applies to all. The result of the study negated a lot of literature stating a strong correlation between teaching strategies of teachers and academic performance of students. This implies that there is no discernible effect on the academic performance of students and the teaching strategies of the teachers. It appears tha the result of the study bears no significant relationship. The result is worsened because of the modality adapted on the current school year particularly the modular learning. Thus, the strategies of the teacher are in exhibited because of the modular learning as personal student-teacher interaction is impossible. In addition, it appears that parents' educational expectations for their children's educational success are a key factor in their children's academic success. As a result, educational expectations ranked first in terms of average across all areas. Parental expectations can have a significant impact on students' academic achievement. Parents have faith in their child's ability to achieve their goals and live a normal life. Students in junior high school reportedly desired to graduate from high school because that is what their parents expected of them when they were kids.

Finally, it emerges that behavioral, cognitive and affective teaching strategies of teachers does not have a significant influence on the academic performance of students. No domain in the teaching strategies of teachers influences the academic performance of students especially in the academic set up in the new normal system that was utilized. Also, it appears that teaching strategies of teachers can vary from different learners to the other. Students can achieve their learning goals more easily when teaching strategies are implemented correctly and when teacher touches and taps the three different aspect to make the learning more effective.

Recommendations

Based on the findings and conclusions, the following recommendations are drawn to individuals involved: For the Department of Education officials, it is recommended that they may need to handle the new educational system during difficult times. Consider this when drafting new rules to ease students' workloads and distance learning teaching dynamics. Teachers may receive more hands-on training and seminars on student-centered learning. For school heads, they may need to conduct quarterly student-parent teacher conferences to provide an avenue where all the mentioned stakeholders can meet to address increasing gaps on the academic performance of the students. Further, it is recommended to them create and initiate school program where all the stakeholders meet and discuss school programs that can help achieve the optimum educational excellence. For parents, it recommended to start to be open with their child not just in the academic aspect of their child but also to the psycho-social aspect. It is encouraged that parents should regularly monitor and check the status of their child even if they are busy. In these ways, parents may acknowledge the difficulties that their child is experiencing but also, they can create new parenting styles that would help their child. For Math teachers, they are encouraged to immerse themselves in knowing the capacity of their learners to generate new teaching strategies that would improve the performance of their students. They may present rubrics as form of evaluation for both subjective and objective phase in assessment. More so, they may sustain their affective relationship with students so that students will be confident in doing school activities for junior high school students, they may always check their level of understanding in Mathematics so that they can devise new strategies that would help them transform their area of difficulties to strengths. They are encouraged to seek help from the parents or teachers when they are having a hard time. Finally, future researchers may investigate why none of the suggested teaching strategies

improves academic performance. To detect gaps in the study's findings, they may use qualitative or hybrid methods. They may build a new learning theory around it. Future researchers may look at additional factors of parent and teacher involvement that affect children academic success.

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