

## The plight of Modified Work and Study Program (MWSP) students in learning mathematics

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### Abstract

The Philippine educational system established alternative delivery modes of education, such as the Modified Work and Study Program, to eradicate student dropout incidence. This phenomenological study aims to probe the challenges and explore the coping mechanism of MWSP students in studying mathematics. The study was conducted at a public high school offering the program. Six students were chosen to participate in the study. Focus group discussion was utilized for the data gathering of the study. Results showed that mediocrity of resources and conspicuous learning environment were the leading challenges that MWSP students encounter. Moreover, the coping mechanisms include good classroom management, utilization of concrete examples, time scheduling, steward support, motivational encouragement, and recreational and body relaxation. It is recommended that MWSP mathematics teachers integrate innovative strategies, provide more concrete contextualized examples, intensify the development of learning kits, and reinforce teaching and learning through supplementary materials.

**Keywords:** Mathematics Learning; Modified Work and Study Program; Phenomenology

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## 1. Introduction

It is a sad reality that some children cannot afford to go to school because of internal and external factors. The Philippine educational system aims to increase the number of marginalized and underprivileged students with access to high-quality basic education. Thus, to eradicate the dropping incidence of students and eliminate non-promotion, the alternative delivery mode (ADM) was established, such as the Modified Work and Study Program (MWSP) (D.O. 54, 2012). As stipulated in the policy guidelines on implementing alternative delivery modes, it primarily seeks to solve the issue of overcrowding in classrooms and other issues that impede children from going to and remaining in school. (Rivera-Santisimo et al., 2019). Within the framework of a formal system, alternative delivery modes of education are tried and tested alternatives to traditional methods which allow schools to serve marginalized students and those in danger of dropping out with quality education to support them in overcoming personal, social, and financial barriers to their education (Arzadon & Nato, 2015). Working students are given access to fundamental knowledge, abilities, and values through the Modified Work and Study Program (MWSP), enabling them to enhance their quality of life. The MWSP introduces a 5-day modular modality and one-day face-to-face class, allowing the students to choose their most available day for face-to-face instruction, usually on their most vacant day. The program was specifically designed that way so that more working students will be encouraged to enroll in the program, thus, decreasing the number of out-of-school youth in the country.

Countries around the globe come up with different programs to improve school performance indicators in their country. In the United States of America, they introduced alternative schools to prevent students from dropping out of school. Administrators allow these students to enroll in alternative schools, which are more likely to serve high school students. They provide more access to psychoanalysis, more personalized attention, and improved links with social services (Dynarski & Gleason, 1998). Almost the same program was established in Canada to solve the problem concerning Canadian youth who dropped out of school. Alternative Delivery Mode (ADM) enables the integration of language literacy and quantitative skill development and values in each subject area, aligns with learning outcomes, teaching strategies, learning opportunities, instructional materials or resources appropriate to learners, creates situations that encourage students to use higher order thinking skills and engages and maintains students' interest in the subject by making the material meaningful and relevant to them (Lucero, 2020).

On the contrary, the ADM students observed that their teachers moderately show appropriate behavior even during unguarded moments and apply knowledge of social learning in dealing with them (Lucero, 2020), which means that ADM teachers teach their students functionally. Teachers continue to guide the students (Rodriguez-Dorta & Borges, 2017); and show teaching practices and teacher-student interaction on a minimal level (Shin & Ryan, 2017). Also, teachers contextualize the subject matter to fit students' social conditions (de Azevedo et al., 2017) and enrich students' understanding of the real environment (Maristy & Margana 2020).

On top of the personal challenges MWSP students face, they also have to face the challenges brought up by schooling. Mathematics is frequently perceived to be difficult (Fritz et al., 2019). Many students discontinue studying mathematics as soon as they are no longer obligated to do so due to these views. For people who view mathematics as optional, giving up on learning it may seem acceptable. However, it is deeply problematic for society since a variety of scientific and technological domains can be acquired through mathematics. This situation needs to be changed, especially as we prepare students for the continuously increasing demand for quantitative and computational literacy over the twenty-first century (Committee on STEM Education, 2018). Additionally, the importance of mastering mathematics has long been acknowledged, not only for academic success but also for effective day-to-day functioning. (Carey et al., 2017). Due to the global awareness of the importance of Mathematical knowledge and the

concern expressed for many years at various levels of education about underachievement in Mathematics, the performance of students in Mathematics from primary school to higher education is still a topic of concern (Eng et al., 2010; Wahid et al., 2014).

In the Philippines, the result of the Third International Mathematics and Science Study ranked Philippines (TIMSS) 39th out of 41 countries. Also, Mathematics performance as measured by the National Achievement Test (NAT) result is below the 50% requirement of DepEd. The present PISA result measures 15-year-old performance in mathematics, indicating that the Philippines ranked 78th or second to the last, scoring only 353 which is way far from the standard (Punongbayan, 2023). Most of the students in the MWSP must be given enough attention since students in the regular class have been showing dismal performance.

Limited avenues and opportunities among at-risk students to continue their studies have been offered. Hence, implementing and sustaining alternative delivery modes are very promising for educating students. However, in the Philippines, significant findings about the implementation of MWSP still need to be uncovered. Public and private schools offering MWSP face significant challenges since performance in mathematics still needs to be at par with the standard. Mastering the competencies is quite a challenge for the teacher since these students have to report once a week, also considering their work engagement, where most serve as houseboys, helpers, and crew in a fast-food chain. The gaps identified are the need for more existing studies and information about the program. Therefore, the urgency of this endeavor is essential to uncover the challenges and coping mechanisms the students utilize. With this study, the researcher would be able to identify or unlock the struggles of the students and their insights that would help them overcome those challenges in learning mathematics in the program. Indeed, the success of this undertaking would benefit several individuals. The result of the study will also serve as baseline data for the improvement of the said program.

### **1.1. Purpose of study**

This study aimed to uncover the experiences of grade 9 MWSP students in learning mathematics. Specifically, it sought to answer the following questions:

1. What are the challenges encountered by MWSP students?
2. What are the coping mechanisms of the MWSP students?

## **2. Method and materials**

### **2.1. Research Design**

The study utilized a qualitative method, specifically, the phenomenological research design. The phenomenon's depth, richness, and complexity were studied through this research design to gain a new understanding. This approach applies the aspects of reality that cannot be measured; it centers its concept on the point of view and justification of the indication of social relations (Queirós et al., 2017).

### **2.2. Participants**

The participants of the study were the Grade 9 students enrolled in a public high school in Davao City offering the Modified Work Study Program. Six (6) MWSP students were selected purposively for this study. The researcher conducted the 3rd quarter examination by the Department of Education, wherein the student's scores served as the basis of selection.

### **2.3. Data collection instrument**

An interview guide was developed for this study. A pool of experts validated the interview guide to establish the validity of the tool. It is noted by the experts that the questions developed suited the goal of the study.

## 2.4. Procedure

The researcher started the data gathering by securing first an endorsement letter from the Dean of the Graduate School. Once the endorsement was secured, a request letter to conduct the study was submitted to the office of the Division Superintendent. Once approved, the letter was presented to the school principal and the selection of participants commenced. Informed consent was distributed to the participants. They were requested to affix their signature on the informed consent form to indicate their willingness to participate, thus risk and other harm were prevented. The researcher conducted an FGD using the developed interview guide. The researcher then transcribed the recorded narratives of the participants followed by data analysis through thematic content analysis.

## 2.5. Data Analysis

Data gathered were analyzed using Thematic Content Analysis (TCA). Thematic Content Analysis is a descriptive presentation of qualitative data (Anderson, 2007). Interview transcripts from study participants or other materials that reflect experientially on the subject matter were used as the primary sources of qualitative data. In addition, thematic content analysis is the most common form of analysis in qualitative research (Guest et al., 2012). It emphasizes pinpointing, examining, and recording patterns (or "themes") within data (Braun & Clarke, 2006).

## 3. Results

### 3.1. Challenges encountered by MWSP students

Figure 1 shows the emerging themes from participants' responses. These themes are mediocrity of resources and conspicuous learning environment.

**Figure 1**

*Themes on the Challenges Encountered by MWSP Students*



Mediocrity of resources refers to insufficient materials to support students' mathematics difficulties. Specifically, this is directed at the availability of time and money to support their studies. In this regard, students lack the resources to answer their problems in Mathematics. Thus, this manifested that students have to manage their resources efficiently to continue their studies. Participants stated that since they are studying and at the same time they are working, their resources are just enough and sometimes scarce. Thus, it contributed to their difficulty in answering mathematics problems. Participants stated that their employment obstructs their motive to engage in mathematics, and their financial condition hampers their focus on the subject. Further, these experiences by MWSP students are witnessed by their teachers. Teachers as second parents have initiated means to assist their students in the class, particularly in providing enough materials to learn their subject. Teachers also experience the same sentiment where one has to use their money to provide enough materials to teach their students.

The above results imply that the insufficient resources experienced by students in their studies can affect their performance in mathematics and other subjects. This will lead to poor motivation and lack of interest which would affect their mastery of the learning competencies. The findings above support the claim of Orodho et al., (2013) that the adequacy of instructional resources such as textbooks enables learners to follow the teacher's sequence of the lesson presentation and subsequently aid in

understanding the lesson. Also, Yusta et al., (2016) add that the teacher's first responsibility is to ensure that his or her class is adequately provided with resources. Herward (2009) noted that the availability and adequacy of a wide variety of instructional resources could stimulate interest and actively engage learners with learning disabilities in mathematics.

The second theme, conspicuous learning environment, refers to the visibility or inherent difficulty experienced by students during their mathematics class. The learning environment is where students gain valuable lessons from their teacher's input and peer collaboration. However, most of the participants have indicated that the class or the learning environment is challenging since the subject is mathematics. Mathematics is a challenging subject. Participants have indicated the difficulty of solving a problem. Lack of skills could be a big problem. Therefore, a conducive learning environment and teachers; ability are primary factors for them to focus and learn mathematics meaningfully. Despite the difficulty experienced by students, teachers stated that MWSP students were responsive in their discussion if they could relate to the concept being taught. The difficulty experienced by the students is part of the learning process. However, their teachers are finding ways for them to interact in class. Thus, most of the students have displayed participation in learning their math lessons.

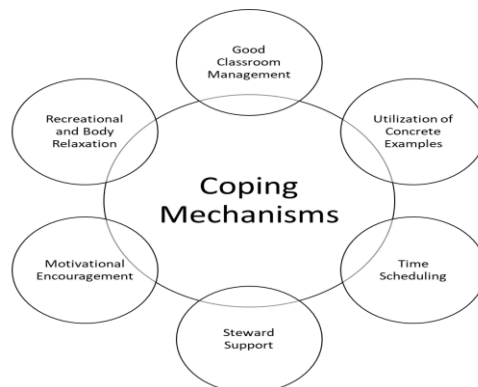
The findings of the study imply that a classroom environment should be established where communication, exchange, and interaction between students and teachers are possible. It should be built where excitement and interest among students to learn must prevail. Hence, teachers should create a learning environment where anxiety or fear must not dominate; instead, it should capture students' presence to be engaged in the discussion and take part in his/her learning. The findings above support the claim of Waldman (2016) that before students can succeed academically, they must feel physically and mentally safe. Students must feel welcomed, supported, and valued to have a secure learning environment. The development of critical thinking, problem-solving abilities, teamwork, effective communication, learning how to learn, and academic attitudes that dramatically boost student engagement are all skills that personalized learning helps students acquire (Movchan, 2023). A conducive learning environment doesn't just happen on its own or by chance. They should be created through conscious procedures like interacting with students positively, exhibiting positive behaviors, etc., and promoting learning activities in the learning environment (Becton, 2017; Creed et al., 2020).

### 3.2. *The coping mechanism utilized by MWSP students*

Figure 2 encapsulates the coping mechanisms utilized by students. These themes are good classroom management, utilization of concrete examples, time scheduling, steward support, motivational encouragement, and recreational and body relaxation.

**Figure 2**

*Themes on the coping mechanisms utilized by MWSP students*



Good classroom management refers to how teachers facilitate and manage their mathematics class to make the students feel at ease. To address the difficulty in math lessons, the teacher has to be very efficient in managing his/her class for students to feel comfortable and relaxed. Participants stated that their math teacher smiles very often. With that, participants claimed that simple gestures eliminate fear and tension felt by students during their mathematics class. Another observation is that MWSP math teachers are good at teaching and communicating their ideas. Every teacher should deliver their best and simplify the lessons in mathematics so that students would appreciate the significance of the content. This will also lead to a better understanding of the lesson. Moreover, mathematics teachers are giving their best for their students to be motivated and would eliminate the anxiety felt. In addition, good classroom management exercised by mathematics teachers would result in better academic outcomes and promote good values in their students. The result is the idea of Bassey (2012) that classroom management increases engagement, reduces inappropriate and disruptive behaviors, promotes student responsibility for academic work, and improves students' academic performance.

The second theme is the utilization of concrete examples. This refers to providing examples for students to quickly understand the mathematics lesson, like using videos, manipulatives, or tools usually employed in teaching Mathematics. Teachers will give examples for students' guides or references in understanding the lessons. Additionally, teachers will continue providing more examples for students to understand math lessons better. This is an automatic gesture by the teacher to provide relevant examples that are anchored on the lessons discussed. Participants noted that some teachers present their examples through videos. Through video presentations, students acquire tips and improve their understanding of Math lessons. This will eliminate the difficulty they have experienced in learning the subject. The result is parallel to the idea of Darling-Hammond et al., (2014) that using technology, such as video tutorials, can improve student achievement in mathematics by providing multiple means and methods for learners to grasp traditionally difficult concepts. Also, the use of videos as instructional tools for teaching and learning can have more cognitive and emotional impacts on students, such as fostering deeper learning (Mitra et al., 2010), improving attitudes toward learning (Kinnari-Korpela, 2015), generating learning interest (Kamariah, 2018), building connections with peers (Tarantino et al., 2013), and fostering creativity (Nordstrom & Korpelainen, 2011).

Time scheduling refers to how students manage their time spent studying mathematics lessons and working hours. Participants noted that they have to be very wise in spending their time so that they can accomplish important things like mathematics tasks. During their free time, most are spending time on their math assignments or exercises for them to be at pace in their lessons. Also, scheduling of tasks is done for them to address their math activities and other tasks given by their teachers. The study's findings imply that students should balance their time to accommodate their dual tasks. By doing this, they could end up achieving their tasks successfully. The findings above strongly support the idea of Adebayo (2015) that time management positively impacts academic achievement and negatively due to the time spent on social media. Also, Gayef et al., (2017) added that students should be aware of time wastage and take responsibility for managing time more efficiently by increasing the awareness of their attitudes, planning, thinking, and behaviors. Further, Al-Khatib (2014) indicated that effective time management leads to greater academic performance and, at the same time, brings down the levels of anxiety and stress in students.

The fourth theme is steward support. This refers to the assistance and guidance provided by teachers, parents, and their peers to students on their math lessons or tasks. A support system is critical in overcoming challenges (Newton, Jansen & Puleo, 2022). Their presence and guidance will make the problem lighter, and appropriate solutions will be developed. During times of difficulty, the participants stated that they reached out to their teachers, family members, and even their friends to aid their



difficulty regarding their math tasks. This is an indication that support systems work. The presence of a supportive teacher works for a working student where good advice is shared for students to benefit her/his mathematics performance. Additionally, the support of the parents being near or abroad has been tremendous on the students' end. This serves as a morale booster to continue their studies and to strive harder to earn good grades in mathematics. The findings of the study imply that MWSP students need to have people who can be with them in times of challenges. These people, like their teachers, parents, or friends, will boost their morale to pursue their dreams in life. This will also mold them to become better students and citizens of the community. The result is supported by the ideas of Chiu (2010) and Little-Harrison (2011) that parental support can positively contribute to the achievement of students learning mathematics. Also, Kusumaningrum and Alsa (2015) revealed that teacher support positively correlated to the achievement of learning Mathematics. Ruzek et al., (2016) noted that proper student-teacher interactions stimulate learners to participate in class activities as they foster an emotionally favorable and supportive classroom environment. Ansonga et al., (2017) and Ruzek et al., (2016) found that students whose teachers provide considerable emotional support depict high levels of social, emotional, and cognitive engagement and vice versa.

Motivational encouragement refers to the words of hope and encouragement given by teachers and parents to the students for them to strive in their math class (Leenknecht et al., 2023). Words of encouragement are motivational forces that push one to strive for the better, particularly in dealing with a challenging subject like mathematics. Parents' presence and advice to encourage their students to exert effort in mathematics are indications of support to their students, enabling them to show courage and determination to deliver their best in math class. The findings of the study imply that students need to be inspired by their situation. They should receive constant encouraging words for them to work harder so that they can successfully finish their studies. The result is the idea of Nipaz et al., (2016) that to motivate students to learn, teachers should provide a classroom climate that would make students comfortable. A positive classroom environment can be created if the teacher develops the skill of using the language of encouragement. The language of encouragement not only uplifts morale and develops self-confidence in the learners but also improves the teacher-learner relationship.

The last theme is recreational and body relaxation. This refers to the activities exercised by the students to forget their problems or challenges encountered in math class by listening to Christian songs, playing online games, and others. Games eliminate boredom and stress if appropriately managed (Poole et al., 2022; Agbo et al., 2023). This is one of the means exercised by students to forget their problems in math class. It is important to note that game addiction may create another problem; thus, it should be balanced. These are their means of forgetting their problems in their math lessons by playing online games and chatting with their friends. Bonding time with friends will temporarily forget the difficulties experienced in mathematics. Participants also noted that rest and sleep are essential. Indeed, it is a way of making their selves relaxed for a particular moment. Lack of sleep affects their focus on mathematics; thus, they can focus more on their mathematics tasks by having enough sleep. In this manner, they can adequately address mathematical tasks correctly. The study findings imply that MWSP students need time to relax by engaging in activities they usually do. The result supports the idea of Syyyeda (2016) that students' enjoyment while learning can influence their behavior or cognitive aspect of attitude. Also, students may learn mathematics because they find it enjoyable and exciting. They further posit that interest and enjoyment affect both the degree and continuity of engagement in learning and the depth of understanding. This means that the more students enjoy doing Mathematics, the more likely they are to engage in problem-solving, thus enhancing their learning and performance. Since enjoyment, students' learning, and performance are related, it is worth evaluating the students' status of Mathematics enjoyment to keep track of students' learning and performance (OECD, 2013).

#### 4. Conclusion

The following conclusions were made based on the findings: (1) the challenges experienced by MWSP students in mathematics focused on the mediocrity of materials needed by students and clear manifestation of the difficulty of the subject; and (2) the coping mechanisms instituted by the MWSP students in mathematics were the observance of good classroom management; utilization of concrete examples by their teachers; time scheduling; steward support; motivational encouragement; and recreational and body relaxation.

Moreover, the researcher recommends the following: (1) MWSP teachers may employ innovative strategies or interventions that aid students in understanding their math lessons; (2) MWSP teachers may provide more concrete and contextualized examples in teaching mathematics; (3) MWSP teachers may intensify the design and development of learning kit in mathematics; (4) MWSP teachers may reinforce teaching mathematics through supplementary learning materials; (5) similar studies may be conducted to validate and reinforce the findings of this study; and (6) future researchers may consider other alternative delivery modes to enrich the scarce literature about the topic.

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