Music as Instructional Strategy in Teaching Multiplication: A Qualitative Study

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Abstract

Applying appropriate teaching strategies to learners has a tremendous impact on numerical literacy. This study aimed to explore teachers' lived experiences in specific phenomena in the context of using music as a strategy in teaching multiplication. The participants of this study are composed of five learners and five teachers from public elementary schools in the Division of Davao City, Region XI, Philippines using purposive sampling. A researcher-made survey questionnaire was utilized to gather relevant information with the proper observance of ethical protocols. This study revealed that learners and teachers find music an effective strategy for teaching multiplication. The product of this study provided educational leaders with concrete alternative ways to gain mastery in learning and make every learner numerically literate.

Keywords: Mathematics, music, multiplication, instructional strategy, Department of Education, public elementary learners

1. Introduction

Many learners need help in learning concepts in Mathematics. Results from a series of international assessments showed that Filipino learners have low achievement levels in Mathematics aside from Reading and Science competency standards. The international program, such as Programme for International Student Assessment (PISA) 2018, showed that the Philippines ranked second to the lowest in Mathematics (OECD, 2019). The Philippines did not fare better according to the 2019 survey Trends in International Mathematics and Science Study (TIMSS), which evaluated the performance of Grade Four students in math and science proficiency. It ranked the lowest among the 58 countries included in the study. The Philippines also could have done better in the 2019 Southeast Asia Primary Learning Metrics (SEA-PLM), which measured the capacity of Grade 5 students. Results showed that 41 percent still needed to meet the minimum proficiency level in mathematics expected at the end of lower primary education (UNESCO, 2022).

The study conducted by Callaman and Itaas (2020) on students' mathematics achievement in the Mindanao context, specifically Region 10, 11, and 12, showed that mathematical skills, attitude, and self-efficacy predict students' mathematical achievement. It also recommended that teachers may utilize varied teaching strategies so that students would develop an interest and positive learning attitudes toward mathematics.

In the context of using Music as an instructional strategy, Music has been significantly utilized in early childhood as it improves the development of a child's self-confidence, self-esteem, and oral and mental expression. However, research on using Music as an instructional strategy that motivates and sustains learners' interest in mathematics is limited; thus, this research study will be conducted. Therefore, the reason for conducting this research is to discover the use of Music as an approach to teaching mathematics, particularly in teaching multiplication among elementary learners.

1.1 Review of Related Literature

This section presents some works of literature, concepts, theories, insights, and ideas from various authors drawn from books, theses, and internet sources that give relevance and support to the present study. The discussions are focused on music as a teaching strategy in teaching multiplication among elementary learners.

Strategy for Teaching and Learning Multiplication

The foundation of the students' knowledge on the basic concepts of mathematics is necessary in mathematical operation and numeracy skills. Problems and difficulties have been noted particularly in Multiplication such as lack of Multiplication skills in computing numbers outside the Multiplication table, poor comprehension on how Multiplication works, carelessness and overlooking placement of numbers while performing multiplication operation, among others. Hence, numerous studies on teaching strategies for primary school students to learn the concept of multiplication have been undertaken by researchers. The methods and techniques have been studied in order to give Math teachers a resource for better classroom instruction (Mahmud & Rahim, 2023).

Music as Instructional Strategy

In the study conducted by An et al. 2015, results showed that there are advantages to teachers utilizing music-themed activities as a context for offering students the opportunity to learn mathematics in a challenging yet enjoyable learning environment. Findings suggested that music-related activities may be treasured in mathematics education when teachers seek to provide more effective instructional strategies. Mathematics teachers who desire to go beyond the traditional teaching approach may be able to use various types of student-centered activities to facilitate students' understanding of mathematics concepts. JL Dyer (2011), a leading proponent of adopting music-based activities for literacy education, claimed that music boosts phonemic awareness, improves memory and recall, and increases student engagement when learning literacy particularly elementary students (DiDomenico, 2017).

Moreover, in the study conducted by Macharia et al., 2019, teachers should be trained in using music as an instructional strategy, and it recommended that in the curriculum development, prepared modules provide step-by-step guidelines on how teachers should integrate music during math lessons.

Experiences of Teachers & Learners in Using Music as an Instructional Strategy

Learning Makes Easy and Fast

An (2013) claims that teachers who incorporate music into their math sessions have a significant possibility of improving their students' attitudes toward learning mathematics and, as a result, have a larger opportunity to raise their students' arithmetic success levels. Furthermore, Cornett (2007) makes a strong case for the inclusion of music in all subject areas. Cornett outlines a number of research-based findings from the same study that generally support the idea that music-based instruction improves kids' language, social, cognitive, listening, and socio-emotional skills. She asserts that "every musical experience we provide our children has an impact on their bodies, minds, and emotions. In other words, it permanently alters their perceptions. Additionally, Dyer (2011) is a strong supporter of the use of music-based activities to advance literacy skills. According to Dyer, while teaching reading to primary school pupils, music can boost interest, aid in retention and recall, and improve phonemic awareness.

Learning Is Fun and Enjoyable

Through the incorporation of background music, teachers may all contribute to the creation of a "aesthetic learning environment". Additionally, listening to music while reading, writing, or creating art can heighten awareness, encourage imaginative thought, improve focus, help you relax during tests, and more (Cornett, 2007). Similar to this, enthusiasm and involvement are crucial when examining students' math engagement. In order to enhance the teaching of fractions, Lovemore, Roberson, and Graven (2021) used music, which included imparting knowledge of musical note values. They observed that this increased motivation among learners to engage with and actively engage with the classes.

Difficulty in Memorizing

It is well agreed that students frequently have a negative attitude about arithmetic (An, Capraro, & Tillman, 2013; Larkin & Jorgenson, 2015). Anxiety is the common emotional reaction to math, which can lead to unfavorable feelings (both emotionally and physically) while math is being taught. These unfavorable emotional reactions to math can frequently affect pupils' math performance and involvement.

Coping Mechanisms in Using Music as an Instructional Strategy

Assistance from Classmates and Colleagues

According to theory, supportive relationships serve as resources that aid in managing and overcoming difficulties that call for additional resources, hence ensuring the wellbeing of the individual (Hobfoll, and Ford, 2007). Peer interactions aid in the social, emotional, and cognitive development of adolescents during adolescence (Reitz et al., 2014). According to Buchwald and Schwarzer (2010), "human beings' primary motivation is to build, protect, and foster their resource pools in order to protect the self-bond and the social bond that support the self."

Motivation to Learn

It has been determined that motivation plays a significant role in both determining student success and retention in higher education. Numerous things can influence a student's drive to learn. These include their affective, expressive, and emotional experiences (Deci, 2014).

For someone to be motivated to do action, motivation is crucial. Involvement and participation in a program can also be based on motivation (Santoso et al., 2017). Additionally, motivation serves as a foundation for someone to be engaged in and participate in a program. It takes enthusiasm in studying and discipline to motivate students to learn. The success of learners is significantly influenced by their interest in their studies (Slameto, 2010).

Suggestions and Advice from Classmates and Colleagues

Contact between students and faculty is highlighted as a pull element that encourages pupils to learn more quickly and effectively (Singh, 2019). It is one of the fundamental principles of giving kids the finest services possible and involves using high levels of cognition to deliver content effectively. Research has demonstrated that professional collaborative activities may have a good impact on student achievement; this effect extends beyond the teaching community (Dumay et al., 2013).

Insights and Lessons in Using Music as an Instructional Strategy

Extending More Effort in Learning

Learners' motivation and interest affect learning outcomes. Learners who have demonstrated higher self-efficacy, interest and valued mathematics achieved higher learning outcomes on the subject (Michaelides et al, 2019). An active learning strategy contributes to student-centered learning and shifts student attitudes and behaviors about learning. Using a coordinated and strategic approach to implementing active learning led to positive changes in student attitudes to their learning and associated behaviors (Lumpkin et al., 2015; White et al., 2015). In this sense, learners will be motivated to explore, learn and practice more about basic Mathematical concepts and its complexities.

On the other hand, student self-regulated learning strategies can enhance teachers' understanding of students' complex processes and offer new insights into this emerging area of student learning (Ning & Downing, 2015).

Provision of Effective Teaching Strategy

Teachers' provision of varied learning strategies promotes creativity and productivity and is expected to help improve student learning outcomes (Purba & Situmorang, 2019). Teachers who have mastered practical

approaches and strategies in teaching Mathematics can help increase students' Mathematical knowledge and improve Math outcomes. When equipped with efficient methods of Math instruction, teachers can move the needle on student mathematics achievement (Core Learning, 2023).

Easy Learning Acquisition

In the study conducted by Barry, 2019 findings revealed that learners need instructional materials, practices and school structures to help them learn best in Mathematics.

On this note, teachers who aim to address the educational needs of children at a crucial moment for their overall development will find that using musical activities as a resource in mathematical learning is a good alternative. More so, through supervised and planned musical experiences, the basic knowledge of mathematics was taught and attained. Teaching strategies which allowed students to be stimulated and motivated in a pleasant and conducive environment (Chao-Fernández, 2020).

1.2 Research Objectives

This study aimed to generate a deeper understanding of the specific phenomena in the context of using music to teach multiplication. It has the following specific objectives:

a) to describe the experiences of teachers & learners in using music as an instructional strategy in teaching and learning multiplication;
b) to explore the coping mechanisms employed by teachers and learners in using music as an instructional strategy in teaching and learning multiplication; and
c) to give insights and lessons in using music as an instructional strategy in teaching/learning multiplication.

1.3 Scope and Delimitations

This study was delimited to bring out the experiences of the teachers and students-participants who were chosen from public elementary schools in Davao City Division, School Year 2022-2023. The five teacher-participants utilized Music as Instructional Strategy in Teaching Multiplication and the learners-participants were under the advisory of these teachers who were noted to have difficulty in learning Mathematics. The results of this study were confined only from the responses of these ten participants from the interview and focus group discussions and cannot be used to generalize the entire populations of teachers and students in the schools or the entire divisions.

2. Methods

2.1 Research Design

In this study, the researchers want to explain the experiences of a specific phenomenon in the context of using music as a strategy in teaching multiplication. Hence, a qualitative approach was used. Researchers thoroughly examined complex phenomena within a particular environment using the qualitative study methodology. A phenomenological researcher must focus on people's experiences of the topic under study to acquire comprehensive material for a reflective structural analysis that eventually reveals the core of the experience (Bliss, 2016). Our understanding of the significance of people's actual experiences is aided by phenomenology. Phenomenological research focuses on how people experience a thing and how they perceive it. We conducted a semi-structured interview with the participants to gather information from them. In a semi-structured interview, the participants were asked a series of probing questions and three main questions to elicit information. Semi-structured interviews will allow for both frameworks and the possibility of going deeper based on participant responses.

2.2 Participants and Sampling

Five teachers were interviewed for the study, and five learners who participated in the focus group discussion came from public elementary schools in the Division of Davao City, Region XI, Philippines. The researchers selected each of them using a purposeful sampling method. Purposive sampling, according to Nikolopoulou (2022), is most effective when you wish to pay close attention to a small number of samples. If you are investigating a topic likely to have unusual cases, you might prefer to access a select subset of the population that shares specific criteria. Finding the examples, people, or groups most likely as a means of guiding you toward

the solutions to your research issue is the goal of purposive sampling. Purposive sampling is, therefore, most effective when researchers have much background knowledge of the research issue. Samples with higher quality are more precise. When researchers wanted to speak with a specific group of people, they used sampling, and all the survey respondents were chosen to match a particular profile.

2.3 Research Instrument

The researchers in this study utilized an interview guide. An interview guide was just a list of the elevated themes the researcher intended to cover with high-level questions. It was usually a single page long so that it may be easily referred to. Establishing such a guide assisted the researchers in focusing and organizing thoughts and questioning. As a researcher, there is no need to stick to the exact order, and there is nothing wrong with occasionally deviating from the script if a particular line of inquiry that had not been planned seems valuable (Creswell, 2013).

2.4 Data Gathering

The research data was collected using the following steps. First, the committee approved the proposed study. Then, the researchers created a data-gathering instrument. The constructed interview guide was handed over to the adviser for further suggestions and modifications. After checking the crafted interview guide, it was finalized and forwarded to the experts for validation. Subsequently, after making the permission letter, it was signed and granted by the authorities. Then, it was carried out to the school head, and the researchers administered the interview guide in person at the time and place most suitable to the participants. Before data collection, the researchers went through the proper protocol of asking permission from the gatekeepers. The researchers explained the purpose of the interview and the study to the participants. After all, the queries were answered; the researchers transcribed the participants' responses, developed themes, and interpreted the responses.

2.5 Theoretical Lens

This study was anchored on Howard Gardner's Multiple Intelligences Theory, positing that a person's ability to think critically and creatively is essential to intelligence and can do something valuable in one or more cultures. He identified eight intelligence bits: linguistic, logical-mathematical, spatial, bodily-kinesthetic, musical, interpersonal, intrapersonal, and naturalist. Among that intelligence, he pointed out that people with enhanced musical intelligence have a heightened ability to hear, recognize, and remember patterns. They think about music and cannot get it out of their minds (Howard, 2021). When this idea is applied in the teaching and learning process, Gardner thought that if a student was having difficulties understanding a principle in mathematics (the content), then the teacher could provide an alternative route (pathway) to understanding the concept using one of the other intelligence as a medium for comprehension (DiDomenico, 2017).

2.6 Data Analysis Plan

Credible qualitative research relies heavily on data analysis. In the context of learning and teaching research, a systematic approach is used to describe and explain the analytic process. Thematic analysis is a technique that can be used by researchers to find patterns or themes in qualitative data. (Maguire & Delahunt, 2017). It allows a systematic organization and analysis of huge, complex data sets. Finding themes that can include the narratives present in the account of data sets is the goal. Through attentive reading and rereading of the recorded material, themes must be identified (King, 2004). According to Braun and Clarke (2006), thematic analysis is theoretically adaptable for locating, outlining, and thoroughly analyzing patterns (themes) within a data collection. It works effectively with any qualitative study that tries to delve into difficult research questions.

2.7 Ethical Consideration

Ethical considerations guided this research throughout its phases. Also, the researchers identified and followed complete moral standards in the run of the study upholding the study code of ethics and the guidelines provided by extracting key ideas from various sources, including. However, it is not restricted to assent/informed consent. It was given online or personally, depending on the convenience, and was signed by the participants and their parent or guardian for minors prior to data gathering to ensure that the participants were given complete

information about the research; and the privacy and confidentiality of information. The participants' identities were kept, and number coding was used during data collation. This adhered to the Data Privacy Act of 2012, which reiterated that the data subject would be freely given a specific, informed indication of will, whereby the subject agreed to collect and process personal information about and to relate to him or her.

3. Results and Discussion

This chapter presents the findings to explore and understand the learners and teachers experiences with music as a teaching strategy in teaching multiplication. In order to answer this research question, in-depth interviews and focus group discussions were conducted. Emerging themes were generated from the responses of the participants. The following are the accounts of responses.

3.1 Experiences of the Participants in using Music as Instructional Strategy

The participants were asked about their experiences in using Music as Instructional Strategy in teaching and learning Multiplication. Several sub-questions were asked to elicit ideas regarding their experiences. Three (3) major themes and core ideas emerged from the data collected. The statements of the participants during the in–depth interview and focus group discussion support and justify these themes. The responses were drawn from their responses are learning makes easy and fast, learning is fun and enjoyable, and difficulty in memorizing.

Learning Makes Easy and Fast

Math instruction while using music boosts not only the performance of pupils but also their attitudes about learning math. During our interview, the learner said, "I learn Math faster if there is music"-L2, and the other learner added, "Multiplication is easy to remember if there is music"-L5. According to a recent study, background music during a session may slightly boost learning, but learning becomes more meaningful when students can integrate many subjects (Giles & Frego, 2004). Some classrooms now use music integration to help students succeed and learn meaningfully. Howard Gardner referred to the ability to perceive, distinguish, change, and express musical forms as musical intelligence and proposed that there are eight different types of human intelligence. A few students learn best through music, too. As a result, sure students in a typical educational setting will comprehend their work better when music is used (Rodriguez & Bellanca, 2006). Math lessons can be made more engaging and effective for students by teachers using music. Students gain a love for math and the abilities they need to succeed when music is incorporated into math courses, whether through math songs, rhythmic counting, or musical patterns. Besides, singing helped all children learn throughout the curriculum by enhancing memory and phrasing (Johnson & Memmott, 2006).

Learning is Fun and Enjoyable

Music and movement have the potential to attract children to mathematical learning. During our interview, the learner said, "easier to remember if there is music, and I enjoy memorizing"-L5, and a teacher interviewee answered, "learners are enjoying and having an interest in learning Math. It becomes easy for me to teach multiplication to the learners". It makes the learners enjoy learning not just the number but also the music"-T2. The mathematics imparted in an exciting and enjoyable setting that is relevant to the students enhances their outlook on learning mathematics (An & Capraro, 2011). According to Csikszentmihalyi (1996), students who are sustainably driven to learn mathematics are likelier to show independent thinking, sense-making, and enjoyment. The use of music education as a tool for studying, enjoying, and understanding information is also supported by studies (Hetland, 2000).

Additionally, singing, storytelling, and role-playing activities can help teachers with teaching and learning in the classroom (Arshad, 2012). Moreover, singing is an integral element of children's lives; without music, their world would be devoid of all life. As a result, using music as a teaching and learning tool is creative and inventive (Yaakob, 2007).

Difficulty in Memorizing

Teachers must foster and preserve their pupils' enthusiasm for mathematics. This should include a variety of teaching methods. During our interview, the learner said, "I have difficulty memorizing 3 and 9 because they have

no music"-L1. Previous research has demonstrated that pupils have been found to have unfavorable attitudes about mathematics (Rameau & Louime, 2007). Pupils with negative mathematics dispositions showed noticeably higher anxiety levels regarding arithmetic and a general lack of confidence and drove to learn the subject (Ashcraft, 2002; Tobias, 1998). Teachers should use various instructional strategies emphasizing real-life contextualized activities that foster conceptual comprehension and application to foster and maintain students' positive attitudes toward mathematics (Bursal & Paznokas, 2006). Moreover, learners' desire to learn mathematics decreases when they have trouble comprehending mathematical concepts and find it challenging to apply mathematics in their daily lives outside of school, which further limits their ability to acquire mathematical knowledge (Gresham, 2008).

3.2 Coping mechanisms in using Music as Instructional Strategy

The participants were asked about the coping mechanisms they have employed in using Music as an instructional strategy. There were three (3) themes prevailed during the interview and the focus group discussion. These are: assistance from classmates and colleagues, motivation to learn, and suggestions and advice from classmates and colleagues.

Assistance from Classmates and Colleagues

Learning becomes easy if there is a collaboration between and among teachers and learners. During our interview, the learners said, "I ask my teacher how to answer and if my answer is correct" -L1 & L2. As tools that assist learning and reduce emotions of stress, social ties with classmates and teachers impact students' learning outcomes (Wentzel et al., 2017). According to Buchwald and Schwarzer (2010), "human beings' primary motivation is to build, protect, and foster their resource pools to protect the self-bond and the social bond that support the self. Students' interactions with teachers and peers at school offer promise for lowering stress and improving academic performance. Since it incorporates classmates, teachers, and parents, it has been characterized as a social method from the standpoint of self-regulated learning. A help-seeking technique is crucial to learning since it has an obvious and immediate effect on academic performance. Although there are many places to get assistance, classmates, teachers, and, more recently, the Internet—which became a crucial resource for connecting with experts and discovering specialized knowledge—are the most often used in the academic setting. Wang et al. (2020) examined classroom atmosphere in a meta-analysis and discovered that it was inversely correlated with students' socioemotional discomfort. Telzer et al. (2015) found that peer support helps students control their reactions to stressors on a neurobiological level. In the meantime, poor neurodevelopment is linked to peer social exclusion (Raufelder et al., 2021). Peer support has generally been shown to improve students' mental and physical health, including their stress and burnout, according to Suresh et al. (2021) in their review.

Motivation to Learn

Motivation is one factor that can significantly affect how the students learn. In our interview, the learners said, "my classmates and teachers help and motivate me to answer"-L3 and "they guide and teach me how to do the multiplication process"-L4. Students who are motivated learn more (Theobald, 2006). Although outside variables like prizes or incentives may influence students' learning, it can also grow due to their intrinsic motivation to perform or complete a task (Theobald, 2006). By encouraging students' autonomy, relevance, relatedness, competency, instructors' interests in the subject, and self-efficacy, teachers can boost their students' motivation to learn (Ferlazzo, 2015). no matter the source (intrinsic or extrinsic), teachers must foster an environment where students are motivated to study. Positive feedback from teachers encourages pupils to learn in order for them to become competent. Giving feedback helps students take charge of their learning and develop confidence in their skills. Students who receive feedback from teachers about their efforts develop the belief that they can succeed by working hard.

Suggestions and Advice from Classmates and Colleagues

Teachers in school must work together to achieve the common goal of imparting learners the necessary skills and knowledge they need to acquire. One respondent said, "my colleagues give me suggestions and advice and teach me strategies to use that are better suited for the learners."-T2. According to research, high-performing teachers are more likely to ask their peers for help. High achievers may seek guidance to identify and address their weaknesses since they desire to get better. The Dunning-Kruger effect, which asserts that the least capable tend to

have an exaggerated impression of their talents, is used as a basis for a second explanation. Because they think their performance levels are already high, people who perform poorly are less inclined to seek advice. When instructors work together, a project can benefit from each teacher's expertise, experience, and interests. Teachers can assign tasks based on each team member's personality and competence areas when collaborating. This kind of teamwork fosters a more profound feeling of accountability and trust, giving teachers the confidence to use their most innovative skills to enhance their schools. Similar views are expressed by Darling-Hammond et al. (2017), who demonstrate how effective collaborative structures enabling instructors to problem-solve and learn together can favorably influence student progress. As one of seven factors that make up effective professional development, they listed teacher collaboration in their literature review (ibid), noting that teachers can influence the pedagogy of their entire grade, department, school, and district by forming communities (p. v). This has also been recommended for general education and special education instructors working in inclusive classrooms, where collaboration has been noted as a critical element in overcoming the difficulties that teachers in these settings face (Gebhardt et al., 2015).

3.3 Insights of the Participants in using Music as Instructional Strategy

There were three (3) essential themes generated from the responses of the participants when asked about their insights in using music as instructional strategy that they could share to their classmates and colleagues. There are as follows: extending more effort in learning, provision of effective teaching strategy, and easy learning acquisition.

Extending More Effort in Learning

When learners were asked about the insights they can share to their classmates about music as an instructional strategy in learning Multiplication, L1 answered: "All I can say to my classmates is if it is difficult, study hard so that you will learn*"*. L2 added: *"*Strive hard so that you will know numbers or ask your classmates or teachers so that you will learn*"*. These responses showed that learners must develop a good mindset to motivate them in learning. They could extend more effort into learning once they are interested to learn. Learners generally feel less anxious and more excited to explore concepts when they appreciate the value and connection of their learning to real-life situations such as future careers, everyday life activities, and patterns in the surrounding world. These connections are a significant source of motivation for students (Klanderman et al, 2019) to extend more effort and strive to learn. L5 reiterated that regular practice and frequent studying matters, "For you to know multiplication, you work hard and study your mistakes". More importantly, students with frequent involvement in math activities had high self-concept, instrumental motivation, and math interest. In contrast, students with high persistence and math achievement are characterized by low math anxiety and high perceived control in math (Xiao & Sun, 2021).

Provision of Effective Teaching Strategy

A teacher's influence is crucial in the learning of mathematics. Teachers need to know the skills and concepts a student must possess to make instructional decisions more effectively to meet students' needs and move students toward acquiring meaningful mathematical knowledge (Hulbert et al., 2017). T1, when asked about her experiences utilizing music as an instructional strategy, she said: "integrating music in memorizing multiplication is very effective to every learner, even the learners have no interest in Math". This means that teachers and educators should understand the diversity of students and provide theoretical and practical support for individualized and differentiated instruction (Xiao & Sun, 2021). T4 shared, "efficient, effective, and fun as children love to learn through song and play" and *"that learning is effective for children when the process is fun".* By understanding students' learning styles, teachers will be guided in designing different strategies to help students enhance learning for their improved performance in mathematics. T3 emphasized: "we should consistently implement it to ensure the strategy's effectiveness, we should apply it with heart and passion because integrating it in all subject areas, a big improvement might address". Furthermore, effective teaching requires flexibility, creativity, and responsibility to provide an instructional environment that responds to the learner's needs (Cardino & Cruz, 2020).

Easy Learning Acquisition

Utilizing music as an instructional strategy in teaching and learning able learners to learn Multiplication. When asked about it, L1 said: "I can learn fast when there is music*"*. L2 seconded: "It is easy to learn if it is music

because I enjoy it, and I do not need to be lazy because we need to work hard". This supports new research published by Stanford mathematics education professor and "Fluency without Fear" author Jo Boaler, who shared that students learn math best when they approach the subject as something they enjoy.

Additionally, T2, when asked what she can share with her colleagues about this teaching strategy, she said: "music can aid teachers in teaching Multiplication to learners. Learners can easily learn numbers, enjoy learning, and love Math subject as well". The influence of musical activities in acquiring mathematical knowledge and skills benefits the students. It was found to impact the development of spatial–temporal skills positively. T4 also emphasized: "it does not matter the easy or the hard way the children can learn, the most important thing to ponder is that they learned something, a little bit of everything is the start of something". It becomes evident after the implementation of this experience the fact that the application of musical activities as a resource in mathematical learning represents an excellent alternative for teachers of early childhood education who seek to meet the learning needs of children in a fundamental stage for their integral development (Holmes, 2017).

Conclusion

Based on the study's findings, the researcher concludes that music as an instructional strategy effectively teaches multiplication. Besides that, learners and teachers find that the specific strategy makes learning easy and adaptable. Additionally, participants find music as an instructional strategy as enjoyable. On the other hand, the learners and teachers reveal the main challenges as follows: (1) difficulty in following the beat of the music; and (2) difficulty in memorizing numbers without a corresponding beat.

Recommendation

This study's findings and conclusion researchers recommend the following: (1) Curriculum Instruction Division, conduct a review on school teaching-learning processes, including instructional strategies, and venture into more interventions relevant to music integration in teaching mathematical concepts; (2) learners- strive hard to learn and practice and make it habitual in learning mathematical concepts. Practice what has been taught to gain mastery and eventually become numerically literate; and (3) teachers- extend instruction bearing patience, perseverance, and creativity to develop learners' numeracy skills. Integrating music in teaching multiplication must be constant to ensure progress in learning numeracy.

Acknowledgment

The authors thank the five public school elementary teachers and five elementary learners from the Division of Davao City for their willingness to respond to the in-depth interview and focus group discussion. The researchers are also grateful to all relatives and friends who have given their moral, financial, and physical support in one way or another. The researchers are grateful to Dr. Wenefredo E. Cagape, research adviser for his guidance and motivation towards the completeness of the research study. Above all, the researchers are forever thankful to the Great Almighty, the author of knowledge and wisdom, for His countless love.

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