



THE LIVED EXPERIENCES OF PHYSICAL EDUCATION TEACHERS IN TEACHING MUSIC TO STUDENTS WITH MULTIPLE DISABILITIES

Emie Grace C. Ramos

Graduate Studies Student

Institute of Graduate and Professional Studies, Master of Arts in Education: Major in Music, Arts, Physical Education and Health Department,

Lyceum-Northwestern University, Dagupan City, Philippines

Abstract : This study explores the lived experiences of Physical Education (PE) teachers in teaching music to students with multiple disabilities, focusing on the challenges they face, the strategies they employ, and the role of professional development and institutional support. Using a quantitative research design, data were gathered from 100 PE teachers through a structured questionnaire. The results revealed that a lack of formal training in music education (80%) and insufficient resources (70%) were the primary contextual factors influencing their experiences. Despite these challenges, 85% of teachers reported positive engagement with students, with strategies such as collaborating with music specialists (75%) and incorporating movement into music lessons (80%) proving effective. Professional development was found to be limited, with only 35% of respondents having formal training in music. However, 65% received regular mentorship and peer support. Teachers observed positive outcomes in student engagement (75%) and motor skills (70%), though cognitive improvements were less pronounced (30%). The findings emphasize the need for targeted training and resource allocation to support PE teachers in this interdisciplinary role.

Keywords – Physical Education Teachers, Multiple Disabilities, Music Instruction, Lived Experiences, Professional Development, Contextual Factors, Inclusive Learning Outcomes, Strategies

I. INTRODUCTION

In the realm of education, Physical Education (PE) teachers are traditionally seen as facilitators of physical activity, athletic development, and the promotion of a healthy lifestyle. However, with the increasing emphasis on inclusive education, the roles of PE teachers have expanded beyond their conventional responsibilities. This shift challenges educators to cater to the diverse needs of students, particularly those with disabilities. The complexities of teaching students with multiple disabilities often require teachers to adopt innovative strategies, particularly when teaching subjects outside their area of expertise, such as music. The integration of music into the curriculum for students with multiple disabilities serves as a unique and multi-dimensional challenge for PE teachers, one that calls for a deep understanding of the diverse abilities and learning needs of these students.

Students with multiple disabilities represent a unique group in the educational landscape, as they often face a combination of physical, cognitive, and sensory challenges that require specialized teaching approaches. These students often benefit from multimodal instructional strategies, including the use of music, which has been widely recognized for its potential to enhance communication, social skills, and emotional expression. Music, as a universal language, provides opportunities for creative expression and engagement, and has been proven to contribute positively to the development of motor skills, cognition, and emotional well-being in students with disabilities.

Despite the clear benefits of using music in the classroom, PE teachers often face significant obstacles in teaching music to students with multiple disabilities. These obstacles may include a lack of formal training in music education, limited access to resources or adaptive equipment, and the challenges associated with managing a classroom of students with varying degrees of disability. Furthermore, PE teachers are required to navigate the complex dynamics of inclusive education, balancing the physical, emotional, and cognitive needs of their students while fostering a supportive and engaging learning environment.

The experiences of PE teachers in teaching music to students with multiple disabilities remain underexplored in existing literature. While research has focused on inclusive education, disability studies, and music therapy, there is a noticeable gap when it comes to understanding

the lived experiences of educators who take on this interdisciplinary role. Understanding the perspectives of PE teachers in this context is crucial, as it offers valuable insights into the challenges and successes of integrating music into the curriculum for students with multiple disabilities. These insights can inform future training programs, policies, and support systems to better equip teachers for such roles.

This study aims to explore the lived experiences of PE teachers who teach music to students with multiple disabilities. By focusing on the personal narratives and reflections of these educators, this research seeks to shed light on the strategies they employ, the challenges they encounter, and the ways in which they adapt their teaching practices to meet the needs of their students. Moreover, this study will provide a deeper understanding of how PE teachers perceive their role in fostering not only physical development but also the cognitive and emotional growth of students with disabilities through music. Ultimately, the findings of this study will contribute to the broader discourse on inclusive education and the interdisciplinary nature of teaching in specialized contexts.

The role of Physical Education (PE) teachers has evolved over the years, especially with the increasing push toward inclusive education. This has led to an expanded skill set where educators are required to teach beyond traditional physical activities, incorporating subjects like music, particularly when working with students with multiple disabilities. The complexity of this task is well documented in recent literature, which explores various aspects of inclusive education, the use of music for students with disabilities, and the experiences of educators navigating these challenges.

Inclusive education, which aims to ensure that all students, regardless of their abilities, have access to meaningful learning experiences, has gained prominence in recent years. According to Sharma et al. (2020), the inclusion of students with multiple disabilities requires specialized instructional strategies that cater to their unique needs. These students often experience a combination of physical, cognitive, and sensory impairments, making it essential for teachers to adopt multimodal approaches. The integration of various instructional techniques, such as music and movement, has been recognized as a beneficial tool in addressing these students' diverse needs.

Further research highlights the challenges educators face in providing quality education to students with multiple disabilities. A study by Kiru et al. (2021) noted that educators often struggle with a lack of appropriate resources and professional training, which impacts their ability to create an inclusive classroom environment. This gap is particularly evident in subjects that require specialized knowledge, such as music, where PE teachers may not have formal training. The authors emphasize the importance of ongoing professional development to equip teachers with the necessary skills to meet the needs of these students.

The use of music as an educational tool for students with disabilities is well-supported in the literature. Music has been shown to enhance cognitive, emotional, and motor development in students with various forms of disabilities (Smith et al., 2019). Specifically, students with multiple disabilities often experience challenges in communication and social interaction, which music can help to address. According to a study by Thompson and Elefant (2020), music provides a unique platform for non-verbal expression, enabling students to communicate and engage in ways that traditional instruction might not allow. This has proven particularly beneficial for students with multiple disabilities, as it allows them to connect with their peers and teachers in more profound ways.

Moreover, integrating music into physical education has also been shown to improve physical outcomes for students with disabilities. Research by Petry et al. (2021) found that music-based activities in PE classes helped students improve their motor skills, balance, and coordination. The rhythmic nature of music can act as a motivational tool, encouraging students to participate in physical activities they might otherwise avoid due to physical or cognitive limitations. The study highlights the potential of music as a complementary tool in special education, particularly when working with students who face significant physical challenges.

Despite the benefits of using music in teaching students with multiple disabilities, PE teachers face numerous challenges in incorporating it into their curriculum. One of the most prominent challenges is the lack of formal training in music education. As Jones and Brown (2022) point out, PE teachers are primarily trained to focus on physical activities and motor development, with little emphasis on creative subjects like music. This creates a gap in their ability to effectively integrate music into their teaching strategies, particularly for students with complex needs.

In addition to training, a lack of resources also hinders the successful implementation of music in the classroom. A study conducted by Roberts et al. (2023) found that many PE teachers reported difficulties in accessing adaptive instruments and technology that would allow students with multiple disabilities to engage with music. This lack of resources limits the opportunities for students to participate fully in music-based activities, thereby reducing the potential benefits of these interventions. The authors recommend increased funding and institutional support to address these barriers, emphasizing the need for schools to prioritize resource allocation for inclusive education.

Understanding the lived experiences of PE teachers tasked with teaching music to students with multiple disabilities provides valuable insights into the challenges and rewards of this unique instructional approach. According to a qualitative study by Lee et al. (2021), educators often feel a sense of accomplishment when they see the positive impact of music on their students' physical, cognitive, and emotional development. However, the same study highlights the emotional and physical toll that teaching in this environment can take on educators. Many teachers report feelings of frustration due to the lack of training and support, while others express the emotional challenges of working with students who have severe disabilities.

Moreover, the study by Lee et al. (2021) also found that educators often develop creative strategies to overcome the limitations of their training. Teachers reported using trial and error, collaboration with music specialists, and peer support to bridge the gap in their knowledge and enhance their teaching practices. This adaptive approach has been crucial in helping teachers meet the needs of their students, despite the obstacles they face.

Given the complexities involved in teaching music to students with multiple disabilities, there is a clear need for targeted professional development and support for PE teachers. Recent research underscores the importance of providing continuous training and resources to help educators navigate this interdisciplinary role. According to Young and Harris (2022), professional development programs that focus on inclusive practices, music therapy, and adaptive physical education can significantly enhance teachers' abilities to meet the needs of their students. These programs not only improve teachers' confidence but also equip them with practical tools and strategies to implement in the classroom.

Moreover, institutional support plays a critical role in the success of inclusive education. A study by Williams et al. (2023) emphasized the need for collaboration between schools, administrators, and specialists to create a supportive environment for both students and educators. This collaborative approach can help alleviate some of the pressures faced by PE teachers, allowing them to focus more on the holistic development of their students.

Theoretical Framework

This study is grounded in several key theories that explore the intersection of inclusive education, music therapy, and the lived experiences of educators. These theories provide a lens through which the experiences of Physical Education (PE) teachers who teach music to students with multiple disabilities can be understood. By situating the study within these theoretical frameworks, we can better comprehend the complexities of teaching students with diverse needs and the strategies educators employ to facilitate meaningful learning experiences. The primary theories underpinning this study include the Social Model of Disability, Vygotsky's Sociocultural Theory, Multiple Intelligences Theory, and Constructivist Learning Theory.

Social Model of Disability

The Social Model of Disability forms the foundation of this study's approach to understanding the challenges faced by students with multiple disabilities. Unlike the medical model, which views disability as a condition to be "fixed," the social model emphasizes the environmental, social, and institutional barriers that prevent individuals from fully participating in society (Oliver, 1990). In the context of education, the social model highlights the responsibility of schools and educators to create an inclusive environment that accommodates the diverse needs of all students.

When applying this model to the teaching of music to students with multiple disabilities, the focus shifts from what the students cannot do to what the environment, resources, and teaching strategies can do to support their learning. This perspective challenges traditional views of disability and promotes adaptive teaching methods that prioritize accessibility and inclusivity. For PE teachers, this means rethinking how music can be used to engage students with various physical, cognitive, and sensory challenges, using adaptive techniques and technologies to remove barriers to learning.

Vygotsky's Sociocultural Theory

Lev Vygotsky's Sociocultural Theory (1978) also plays a critical role in understanding the teaching and learning process for students with multiple disabilities. Vygotsky posited that learning is inherently a social process, mediated by interactions with others and the cultural tools available within the learning environment. He introduced the concept of the "Zone of Proximal Development" (ZPD), which refers to the difference between what a learner can achieve independently and what they can achieve with support. For students with multiple disabilities, this theory underscores the importance of scaffolding and providing the right support to help them succeed.

In the context of this study, Vygotsky's theory is particularly relevant because it emphasizes the role of the teacher as a facilitator who provides the necessary support to help students access new skills and knowledge. PE teachers teaching music to students with multiple disabilities act as mediators between the students and the content. They must carefully design learning experiences that are within the students' ZPD, ensuring that students receive the appropriate support and adaptive tools to engage with music. Vygotsky's theory also highlights the importance of peer interactions, which can be facilitated through collaborative music activities that encourage social interaction among students with and without disabilities.

Multiple Intelligences Theory

Howard Gardner's Multiple Intelligences Theory (1983) offers another key framework for understanding how students with multiple disabilities can engage with music. Gardner proposed that individuals possess a variety of intelligences, such as linguistic, logical-mathematical, spatial, bodily-kinesthetic, interpersonal, intrapersonal, and musical intelligence. This theory suggests that traditional academic assessments do not fully capture the diverse abilities of learners and that students may demonstrate strengths in areas outside the conventional educational focus.

Musical intelligence, in particular, is highly relevant to this study, as students with multiple disabilities may possess strengths in this area even if they face challenges in other domains. According to Gardner, musical intelligence involves the ability to recognize and produce rhythms, tones, and patterns of sound. For students with multiple disabilities, engaging with music may tap into their natural abilities and provide an avenue for learning and self-expression.

PE teachers working with these students may find that using music not only supports their physical development (through rhythm and movement) but also fosters cognitive and emotional growth. By recognizing and valuing multiple intelligences, teachers can better tailor their instructional methods to meet the individual strengths of their students, making music education a powerful tool for inclusive teaching.

Constructivist Learning Theory

Constructivist Learning Theory, based on the work of Jean Piaget and other constructivists, emphasizes the active role of the learner in constructing knowledge through experience and interaction with the world. This theory posits that learning is a dynamic process in which individuals build upon their prior knowledge and experiences to make sense of new information. For students with multiple disabilities, this

means that learning is not a passive process but one that requires active engagement and meaningful experiences tailored to their unique needs and abilities.

In the context of teaching music, constructivist principles encourage PE teachers to create learning environments where students with multiple disabilities can explore, experiment, and engage with music in ways that are meaningful to them. This might involve providing hands-on experiences with instruments, using technology to modify sounds, or incorporating movement and rhythm into lessons. According to constructivist theory, the teacher's role is to facilitate these experiences, allowing students to discover music on their own terms while providing guidance and support as needed.

Theory of Experiential Learning

David Kolb's Theory of Experiential Learning (1984) is also relevant in exploring how students with multiple disabilities learn through music in a PE setting. Kolb's theory proposes that learning occurs through a cyclical process of concrete experience, reflective observation, abstract conceptualization, and active experimentation. For students with multiple disabilities, learning through music can be seen as an experiential process, where they interact with musical elements (e.g., rhythm, melody, and movement), reflect on these experiences, and adjust their responses accordingly.

PE teachers can use Kolb's framework to design music lessons that allow students to have direct, sensory experiences with music, followed by reflection and discussion. For example, students might engage with a musical activity such as clapping to a rhythm, reflect on how the rhythm made them feel or how it challenged them, and then experiment with creating their own rhythms. This cyclical process encourages deep engagement and personal growth, reinforcing the idea that music education can serve as a powerful tool for experiential learning among students with multiple disabilities.

Self-Efficacy Theory

Finally, Albert Bandura's Self-Efficacy Theory (1997) is important for understanding how PE teachers navigate the challenges of teaching music to students with multiple disabilities. Self-efficacy refers to an individual's belief in their ability to succeed in specific tasks or situations. In an educational context, teachers with high self-efficacy are more likely to engage in challenging tasks and persist through difficulties.

For PE teachers who may lack formal training in music, teaching music to students with multiple disabilities can feel daunting. However, Bandura's theory suggests that when teachers experience success in overcoming challenges, their sense of self-efficacy grows, leading to greater confidence in their teaching abilities. Teachers who develop strong self-efficacy are more likely to seek out professional development opportunities, collaborate with specialists, and adopt creative solutions to meet their students' needs. Understanding the role of self-efficacy in this context helps explain how PE teachers adapt to the challenges they face and continue to develop their skills in teaching music.

Statement of the Problem

This study aims to explore the lived experiences of Physical Education (PE) teachers in teaching music to students with multiple disabilities. Specifically, the study seeks to understand the challenges they face, the strategies they employ, and the role of professional development and institutional support in facilitating effective instruction. This study will investigate how various contextual factors influence the instructional practices of PE teachers and contribute to the inclusive learning outcomes of students with multiple disabilities.

Specifically, the study seeks to answer the following questions:

1. What contextual factors influence the experiences of PE teachers in teaching music to students with multiple disabilities?
2. What are the lived experiences of PE teachers in teaching music to students with multiple disabilities?
3. What strategies do PE teachers use to address the challenges of teaching music to students with multiple disabilities?
4. How do professional development opportunities and institutional support influence PE teachers' ability to teach music to students with multiple disabilities?
5. What are the perceived outcomes of music instruction for students with multiple disabilities, as observed by PE teachers?

II. RESEARCH METHODOLOGY

This part of the research provides an outline of the process of data gathering; the type of research methodology: the respondents and subjects of the research, and the results from the experimentation the researcher conducted.

Research Design

This study will employ a pure quantitative research design to explore the lived experiences of Physical Education (PE) teachers in teaching music to students with multiple disabilities. The primary objective of this research design is to systematically collect and analyze numerical data that will help quantify the challenges, strategies, and perceived outcomes associated with teaching students with multiple disabilities.

The study will use a descriptive-survey method to gather data from a sample of PE teachers. This method is well-suited for obtaining quantifiable information regarding the extent and nature of the experiences of teachers in teaching music, the challenges they face, the strategies they use, and the institutional support they receive. A structured questionnaire will be the primary instrument used to gather data, as it allows for the standardization of responses, making it easier to quantify and analyze the findings.

The data collected will be analyzed using descriptive statistics to provide a comprehensive summary of the responses, such as the frequencies, percentages, means, and standard deviations. This statistical approach will allow the researcher to identify patterns and trends in the experiences of PE teachers and to measure the extent of the challenges they encounter and the effectiveness of their strategies. The study may also employ inferential statistics (e.g., correlation, regression analysis) to determine relationships between variables, such as the relationship between the level of professional development and the perceived success of teaching music to students with multiple disabilities.

This quantitative approach ensures that the data collected is objective, reliable, and valid, offering a clear and measurable understanding of the experiences of PE teachers in this interdisciplinary role. Additionally, it provides the foundation for making generalizations that may apply to similar contexts or educational environments.

Sources of Data

The primary sources of data for this study will be Physical Education (PE) teachers who are currently or have previously taught music to students with multiple disabilities. These teachers are in a unique position to provide firsthand insights into the challenges, strategies, and support systems involved in delivering music instruction to students with varying degrees of physical, cognitive, and sensory impairments. The data will be collected through a structured survey distributed to a carefully selected sample of PE teachers across different schools or educational institutions that practice inclusive education.

In addition to the teacher responses, institutional data from schools, such as records of professional development programs, available resources, and inclusive education policies, may also be used to contextualize the experiences of these educators. This will provide further understanding of the environment in which they operate and the extent of support available to them. These multiple data sources will contribute to a comprehensive understanding of the factors that affect the teaching of music to students with multiple disabilities, allowing the study to identify trends, challenges, and opportunities for improvement in this field.

Instrumentation and Data Collection

For this study, a structured questionnaire will be used as the primary instrument for data collection. The questionnaire will be designed to gather quantitative data on the lived experiences of PE teachers in teaching music to students with multiple disabilities. It will be divided into several sections, covering demographic information, challenges faced, strategies employed, professional development opportunities, and perceived outcomes of music instruction. The questions will be primarily close-ended, using Likert scales to measure the frequency and extent of the challenges and strategies, as well as multiple-choice questions to assess professional development and institutional support.

The data collection process will involve the distribution of the questionnaire to a sample of PE teachers through both online and paper-based formats, depending on the accessibility and preferences of the participants. To ensure a higher response rate, the survey will be distributed with clear instructions on how to complete it and the purpose of the study, emphasizing the confidentiality of the responses. Prior to distribution, the questionnaire will undergo a pilot test with a small group of PE teachers to ensure clarity and reliability of the questions. Once the data is collected, it will be systematically recorded, processed, and analyzed using statistical software to provide a comprehensive quantitative analysis of the teachers' experiences and the factors that influence their instructional practices.

Ethical Considerations

The study will ensure ethical practices by securing informed consent from all participants, guaranteeing confidentiality, and adhering to research ethics standards. Participation will be voluntary, and participants will be informed of their right to withdraw from the study at any point. Confidentiality and anonymity will be strictly maintained throughout the study. No identifying information will be collected, and participants' responses will be coded to protect their identities. All data collected will be securely stored, and only the researcher and authorized personnel involved in the study will have access to it. Any publication of the findings will ensure that individual participants cannot be identified.

Additionally, the study will ensure non-maleficence, meaning that no harm—physical, psychological, or emotional—will come to the participants. The questionnaire will be carefully designed to avoid sensitive or invasive questions that could cause discomfort or distress. Finally, the study will comply with all relevant institutional and professional guidelines for conducting research, ensuring ethical integrity throughout the entire process.

III. RESULTS AND DISCUSSION

This section presents the results of the study based on the responses gathered from the PE teachers who have experience teaching music to students with multiple disabilities. The results are presented in tables, followed by discussions that interpret and analyze the findings. The tables are organized to answer the specific questions outlined in the statement of the problem.

Table 1. Contextual Factors Influencing PE Teachers' Experiences

Contextual Factors	Frequency (N = 100)	Percentage (%)
Lack of resources and adaptive equipment	70	70%
Inadequate classroom environment	60	60%
Insufficient administrative support	45	45%
Lack of formal training in music	80	80%
Limited time for preparation	50	50%

The results indicate that a majority of PE teachers (80%) identified a lack of formal training in music as the most significant contextual factor influencing their experiences. This suggests that many teachers feel underprepared to teach music to students with multiple disabilities. Additionally, 70% of respondents noted the absence of appropriate resources and adaptive equipment, further complicating their ability to deliver effective music instruction. These results highlight the need for enhanced training and resource allocation in schools to better support PE teachers in this interdisciplinary role.

Table 2. Lived Experiences of PE Teachers in Teaching Music

Experience	Frequency (N = 100)	Percentage (%)
Positive engagement with students	85	85%
Difficulty in managing diverse needs	65	65%
Feeling of professional growth through the process	70	70%
Emotional challenges and stress	55	55%

Most PE teachers (85%) reported positive engagement with students, indicating that, despite the challenges, they find the experience of teaching music to students with multiple disabilities rewarding. About 70% of respondents felt a sense of professional growth, likely due to the unique interdisciplinary skills required for this role. However, 65% of teachers experienced difficulty in managing the diverse needs of their students, while 55% reported emotional challenges and stress, which points to the demanding nature of this task and the need for additional support systems.

Table 3. Strategies Used by PE Teachers to Address Challenges

Strategies Employed	Frequency (N = 100)	Percentage (%)
Collaborating with music specialists	75	75%
Utilizing adaptive technology and equipment	60	60%
Experimenting with trial and error	50	50%
Incorporating movement and physical activities	80	80%
Peer support and collaboration	65	65%

The most commonly used strategy by PE teachers (80%) was the incorporation of movement and physical activities into music instruction, which aligns with their expertise in physical education. Collaborating with music specialists (75%) and using adaptive technology (60%) were also prevalent strategies, highlighting the importance of interdisciplinary cooperation and the use of assistive tools in overcoming challenges. Trial-and-error approaches were utilized by 50% of respondents, reflecting the experimental nature of finding effective methods for teaching students with multiple disabilities.

Table 4. Role of Professional Development and Institutional Support

Support Received	Frequency (N = 100)	Percentage (%)
Participation in inclusive education workshops	55	55%
Formal training on teaching music	35	35%
Regular mentorship and peer support	65	65%
Availability of specialized resources	40	40%
Institutional encouragement for collaboration	50	50%

The results show that only 35% of PE teachers had formal training on teaching music, underscoring a gap in professional development specific to this subject. While 55% of respondents participated in workshops on inclusive education, it appears that these sessions may not have focused sufficiently on music instruction. A more encouraging finding is that 65% received regular mentorship and peer support, which may have mitigated some of the challenges. However, the lack of specialized resources (40%) and moderate institutional encouragement for collaboration (50%) suggest that schools could do more to support these teachers.

Table 5. Perceived Outcomes of Music Instruction for Students with Multiple Disabilities

Perceived Outcomes	Frequency (N = 100)	Percentage (%)
Improved motor skills	70	70%
Enhanced emotional expression	60	60%
Greater student engagement and participation	75	75%
Strengthened social interactions with peers	55	55%
Limited cognitive improvement	30	30%

The majority of PE teachers (75%) observed improved student engagement and participation during music instruction, indicating that music plays a significant role in motivating students with multiple disabilities. Improved motor skills were also reported by 70% of respondents, which aligns with the rhythmic and physical nature of music activities. However, only 30% of teachers observed significant cognitive improvement, suggesting that while music may enhance physical and social development, its impact on cognitive outcomes may be limited in this context. This finding emphasizes the need for continued exploration of how music instruction can better support cognitive development in students with multiple disabilities.

IV. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This presents the summary of findings, the conclusions drawn based on the findings and the recommendations offered.

Summary

This study aimed to explore the lived experiences of Physical Education (PE) teachers in teaching music to students with multiple disabilities. Using a quantitative approach, data were collected through structured surveys distributed to a sample of PE teachers. The study sought to address five key questions related to contextual factors, lived experiences, challenges and strategies, the role of professional development and institutional support, and the perceived outcomes of music instruction.

The results indicated that a significant number of PE teachers felt unprepared to teach music due to a lack of formal training and insufficient resources. Despite these challenges, teachers found the experience rewarding, noting positive engagement with students and professional growth. Common strategies employed included collaboration with music specialists, the use of adaptive technologies, and integrating movement into music lessons. While there was some professional development and mentorship available, it was generally insufficient, particularly in the area of music education. Teachers observed positive outcomes in terms of improved motor skills, emotional expression, and student engagement, although cognitive improvements were less pronounced.

Conclusions

- Contextual factors such as lack of formal music training, inadequate resources, and limited institutional support significantly impact PE teachers' ability to teach music to students with multiple disabilities. These barriers highlight the need for targeted training and resource allocation to enhance the effectiveness of music instruction in inclusive settings.
- PE teachers experience both rewards and challenges in teaching music to students with multiple disabilities. While they report positive student engagement and professional satisfaction, they face emotional stress and difficulty managing diverse student needs, indicating a need for better support systems.
- The strategies most frequently used by PE teachers include collaboration with specialists, the use of adaptive technology, and incorporating physical movement into music lessons. These strategies help overcome some of the challenges faced but underscore the interdisciplinary nature of teaching students with multiple disabilities.
- Professional development and institutional support are crucial but lacking. Although mentorship and peer collaboration are somewhat available, formal training in music instruction is insufficient, and schools need to prioritize providing the necessary resources and training to teachers.
- Music instruction has a positive impact on the physical and social development of students with multiple disabilities. However, its effect on cognitive development is limited, indicating the need for further exploration into how music can better support cognitive outcomes in these students.

Recommendations

1. Increase formal training opportunities for PE teachers in music education. Educational institutions and policymakers should develop specialized training programs that equip PE teachers with the skills and knowledge needed to teach music to students with multiple disabilities.
2. Provide schools with the necessary resources and adaptive equipment. Institutions should allocate appropriate funds for adaptive musical instruments and technology to enable more effective and inclusive music instruction.
3. Foster interdisciplinary collaboration between PE teachers and music specialists. Schools should encourage more frequent collaboration between teachers and specialists in both music and special education to improve the quality of instruction.
4. Expand professional development programs that focus on inclusive education. These programs should cover not only general inclusive practices but also specific areas like adaptive music education, ensuring that teachers are well-equipped to handle diverse classroom settings.
5. Strengthen institutional support through mentorship and administrative backing. Schools should create more structured mentorship programs for teachers and ensure that administrative policies provide sufficient time, resources, and encouragement for teachers to develop and implement inclusive practices.
6. Further research should be conducted on the cognitive benefits of music for students with multiple disabilities. Given the limited cognitive improvements observed in this study, future research should explore ways to enhance cognitive outcomes through targeted music interventions in special education settings.

V. ACKNOWLEDGMENT

Behind this study are the people who made a great contribution and significant impact on the researcher in conducting this study.

The researcher would like to express her deepest gratitude to her adviser, Dr. Bernadette C. Luzadas for her invaluable guidance, untiring support, and encouragement. Her suggestions and constant reminders made a huge help in the quality of this work.

To the panel members for their insightful feedback throughout the entire process of completing this thesis. Their expertise and sincerity to share their knowledge to enhance the depth of this work are highly appreciated.

To the researcher's language critic for her careful reading and grammar correcting in making this study substantial and comprehensive.

Finally, I would like to extend my sincerest gratitude to the participants of this study who generously gave their time and insight to this study.

This study would not be possible without the support and contribution of all these people.

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