
Teaching Physical Education to Students with Hearing Impairments: An Approach to Physical Educators' Practices

Stephen A. Fadare^{1,2*}, Maria C. Fadare³, Hendely A. Adlawan¹, Ana Isabel G. Espino⁴, Gumanoy, A. Dina¹ Benjamin L. Serrano⁵, Chaymie M. Pagalan¹

¹Assistant Professor, CSPEAR, Mindanao State University (Main), Marawi, Philippines.

²Research Fellow, Department of PE, University of South Carolina, Columbia, SC, USA.

³School Nurse/Special Education Instructor, Saint Louis College, La Union, Philippines.

⁴Associate Professor, CSPEAR, Mindanao State University (Main), Marawi, Philippines.

⁵Bonham Middle School, Texas Council for Social Studies. USA.

⁵Sandy Miller Elementary School, USA.

¹Research Fellow, CSPEAR, Mindanao State University (Main), Marawi Philippines.

Abstract: Introduction: Hearing-impaired students face challenges in physical education, including social interaction, communication, and auditory signals. However, creative instructional strategies can help them fully participate in physical activities, promoting inclusion.

Objective: The aim is to investigate the techniques and tactics that special education teachers employ when instructing physical education to students with hearing impairments. Furthermore, it will provide valuable support by shedding light on the most effective methods and suggesting potential areas for improvement within this specific educational context.

Methods: The study employed a qualitative method using convenient sampling and a purposive approach to gather data from (3) three special education teachers teaching students with hearing impairment at La Salle University in the City of Ozamis during the school year 2023-2024. The tools that were used to gather information from participants were semi-structured interview guides, which were validated by 3 experts in the specialization. Subsequently, a focus group discussion was conducted with two teachers while the other was interviewed via phone because of availability during the said FGD which lasted for 28 minutes due to some clarifications and additional follow-up questions of the researchers' observations.

Results: The study reveals the theme and sub-themes generated from this study participants as diversity and professional development; enhancing communication and teaching strategies; overcoming challenges in inclusive education; empowering growth and learning through involvement and engagement; and by empowering inclusive classrooms, they can help overcome and be where they intended to be in the future.

Conclusion: The study found that while teachers instructing students with hearing impairments have expertise in their field, they lack fundamental training in teaching physical education, which is one of the challenges faced. They use various strategies to enhance communication, adapt teaching methods, and overcome challenges in inclusive classrooms. This promotes social interaction, skill development, and overall educational outcomes for these students. Special education teachers play a crucial role in empowering hearing-impaired students to participate fully in physical education classes. The researcher constructed a conceptual model to elucidate the study's outcomes and provide a framework for future investigations, drawing upon the aforementioned findings and suggestions.

Keywords: Physical Education, Hearing Impairments, Educators' Practices, Inclusive Pedagogy, Adaptive Strategies

Introduction

Students with hearing impairments (HI) are at risk for lower educational achievement. In education, teaching is the compass that directs the creation and use of procedures that guarantee every student fair access to educational possibilities (Van-der-Straaten et al., 2021). This philosophy assumes a more complex meaning in physical education (PE) in association with meeting the requirements of students with hearing impairments. It is the responsibility of educators to negotiate the terrain of integrating with tact, empathy, and a dedication to creating learning environments in which each student can thrive (Xu et al., 2020; Satoh et al., 2020).

Physical education presents several difficulties for those with hearing impairments, which can range in severity from minor to profound. The difficulties go beyond the domains of physical fitness and the development of motor skills and include social interaction, communication, and the ability to

receive auditory signals that are essential for engagement. However, these difficulties also present chances for creative instructional strategies that put inclusion first and enable hearing-impaired students to participate fully in physical activities (Olusanya et al., 2019; Blanchet & Assaiante, 2022). A thorough grasp of the various requirements and skills of students with hearing impairments is essential for effective teaching in this field. It means realizing the value of customized approaches that go beyond simple tolerance to promote genuine integration. To ensure understanding and involvement in this endeavor, instructors need to use a variety of strategies that make use of tactile, visual, and other communication modalities (Brown & Davis, 2018; Young & Scott, 2021; Molina et al., 2021; Georgia et al., 2024). Furthermore, for inclusion in physical education to be effective, a collaborative ecosystem involving teachers, students, families, and other pertinent stakeholders must be established to break down barriers and foster an environment of acceptance and support. Professional development initiatives—informed by best practices and insights from the field of special education—are crucial to equipping educators with the knowledge and skills necessary to effectively navigate the demands of inclusive teaching (Hamblin, 2021; Van-Doodewaard et al., 2022).

It is imperative to emphasize the transformational power of inclusive physical education as we set out on this path. It fosters a culture of empathy, resilience, and respect for one another, in addition to improving motor skills and physical health (Zeng et al., 2017; Fadare et al., 2023). Students with hearing impairments discover not only a way to engage but also a platform to thrive and make a significant contribution to the tapestry of their educational communities within the crucible of inclusive pedagogy.

In order to further understand the study, it was beacon on the few theories like social learning theory by well know psychologist Albert Bandura (1971), this has historically been used in a variety of contexts, and its application to individuals who have hearing impairments reveals a more complex picture of their educational experiences and behavioral development (Fryling et al., 2017; Bajcar & Babel, 2018). Within educational settings, communication difficulties, social dynamics, and resource accessibility pose particular problems for students with hearing impairments. These factors have a substantial impact on their learning process. Teachers and other professionals may understand the complex relationship between social interactions, observational learning, and the development of behaviors in kids with hearing impairments by using the lens of social learning theory. Social learning theory, at its core, emphasizes the significance of models—individuals whose behaviors are observed and may even inspire others to follow in their footsteps. Models for students with hearing loss include not just their classmates and teachers but also the representations they come across in the media and assistive technology. Creating inclusive learning environments requires an understanding of how these models affect students' behavior and learning results (Bouchrika, 2024).

Additionally, social learning emphasizes cognitive processes like motivation, attention, and recall, which can be challenging for students with hearing impairments. Teachers can maximize learning opportunities by addressing these cognitive characteristics. Social rewards and penalties can also impact behavior, with positive reinforcement boosting self-esteem and negative ones hindering growth. Understanding reinforcement mechanics is crucial for successful learning experiences.

Teachers and other professionals may provide inclusive learning environments that cater to the varied needs and experiences of students with hearing impairments by implementing the concepts of social learning theory. Throughout their educational journey, children may overcome obstacles, acquire necessary skills, and flourish both academically and socially with the help of focused interventions, positive modeling, and reinforcement techniques.

Another theory that was used is the Ecological Systems Theory, which was also by psychologist Urie Bronfenbrenner (1986) and offers a comprehensive framework for understanding human development in connection to several environmental systems. This theory highlights the importance of contacts in development by emphasizing the dynamic and reciprocal relationships that exist between individuals and their local and wider social contexts. Ecological systems theory offers a comprehensive framework that helps explain the complex relationships between individual hearing-impaired children and their social settings. Educators and practitioners may create more comprehensive solutions to serve these kids' different needs and experiences in inclusive educational environments by considering the relationships between the microsystem, mesosystem, ecosystem, and macrosystem (Foo & Goy, 2023).

This theory offers a useful lens through which to evaluate the complex aspects that influence the educational experiences and outcomes of children with hearing impairments. Teachers and other professionals can acquire an understanding of the distinct difficulties and assets that children with hearing impairments may face in many environmental settings by considering the interactions between the students and the varied systems they traverse. The core idea of the Ecological Systems Theory is the microsystem, which includes the proximate settings—like home, school, and peer

groups—in which people directly interact. Interactions with peers during extracurricular activities, teachers, and interactions within the family unit comprise the microsystem for individuals with hearing impairments. The theory also highlights the significance of mesosystem interactions, which are the linkages and links between various microsystem settings, in addition to the microsystem. This might involve discussing the student's educational requirements with parents and teachers, working together with professionals to assist the student's learning, and coordinating services between the school and local resources (McLinden et al., 2016; Ruppert et al., 2017).

In addition, the ecosystem includes larger institutions and social structures, including educational regulations, community support services, and access to assistive technology, that indirectly affect students' experiences, especially those with impairments. Several factors, such as the availability of specialized educational programs, the accessibility of learning materials, and social attitudes toward disability, can have a significant influence on the educational opportunities and outcomes for children with hearing impairments.

Inclusive physical education is crucial for both the concepts and practice of this field. In the context of physical education (PE), inclusive education ensures that all students, irrespective of their abilities, backgrounds, or distinctions, can fully and effectively participate. This method is based on principles that are specifically developed to ensure that every student has equal chances, fairness, and access. When analyzing the fundamental principles, it is of utmost importance to adopt a universal design of learning. These ideas provide universal access and equitable participation in physical education programs for all students. To cater to various learning styles and abilities, it may be necessary to offer several options for presenting information, engaging with the material, and demonstrating understanding. Teachers in standards-based classrooms can provide adaptable alternatives and assistance to ensure that a diverse range of learners may engage with the material while adhering to the principles of Universal Design for Learning (UDL). Here is a technique that educators may utilize to develop lesson plans that align with established criteria. Teachers can establish explicit objectives that are in line with educational standards and modify instructional methods, assessments, and materials to accommodate the diverse needs and preferences of their students (Foley et al., 2020). This can be achieved by thoroughly analyzing academic standards and using Universal Design for Learning (UDL) principles (Rao and Meo, 2016; Qais et al., 2020).

A comprehensive physical education curriculum should encompass a variety of activities that accommodate the diverse interests, proficiency levels, and cultural backgrounds of children. This will guarantee that each student has a sense of inclusion and active participation in the learning process. Creating inclusive physical education settings necessitates collaboration among instructors, students, parents, and support staff. Effective communication enables the recognition of students' requirements and the development of strategies that improve their engagement and educational progress. Peer assistance and tutoring foster a collaborative learning environment where students learn from and help one other, as supported by Langco et al. (2022). Engaging in activities that include peer help can enhance learning outcomes, promote interpersonal connections, and facilitate social integration (Gonzales, 2020; Fadare et al., 2022).

Providing students with disabilities the opportunity to use technology and modified equipment can empower them to actively participate in physical education classes (Tuttle & Carter, 2023). To address the mobility, communication, or sensory requirements of pupils, several accommodations can be made, such as providing wheelchairs, adapting sports equipment, offering sensory instruments, or supplying assistive devices. Constructive feedback and positive reinforcement motivate students with disabilities to actively engage in physical activities and pursue personal growth (Fernández-Batanero et al., 2022).

Advocating for inclusive practices entails implementing measures to guarantee that all students can utilize physical education venues and facilities. This involves eliminating any tangible barriers, implementing the required alterations, and establishing welcoming and pleasant surroundings to ensure that every student participates in the activity without experiencing any pain. To enhance their comprehension and skill in employing inclusive education strategies, instructors should engage in ongoing professional development. This may involve attending seminars, seeking out resources, collaborating with colleagues, and staying updated on the newest advancements in inclusive physical education techniques.

Teaching Strategies for Students with Hearing Impairment

To ensure the full participation and learning of students with hearing impairments, it is essential to engage in meticulous planning, conduct individual needs analysis, and adopt effective strategies. Utilize visual aids, such as charts, graphs, photos, and videos, to reinforce spoken instructions and explanations. Visual aids enhance comprehension for children with hearing

impairments by providing additional contextual information. Teachers should provide comprehensive written directions. This encompasses written protocols, assignments, and directives, along with synopses of crucial concepts. Written instructions are a vital resource for children with hearing difficulties since they help assist their learning outside of the classroom. Sign language should be employed as a means of communication throughout educational and interactive activities. Instead, you may choose to learn basic gestures or signs to help with comprehension and communication (Ayse et al., 2015; Adi et al., 2017; Herring & Woolsey, 2023).

When discussing teaching strategies for students with hearing impairment, it's important to focus on methods that enhance communication, accessibility, and learning. Here are some key points and strategies that could be developed into a comprehensive discussion or essay:

Visual Learning Emphasis: Utilize visual aids such as charts, diagrams, and written instructions to support learning. Visual learning is often more effective for students with hearing impairments as it does not rely on auditory input.

Use of Technology: Implement assistive listening devices and technologies such as hearing aids, FM systems, and captioning services. These tools can help bridge the gap between the student and the auditory components of a lesson.

Clear Communication: Ensure that teachers and peers know to face the student when speaking, speak clearly, and use plain language. Using gestures and facial expressions can also enhance understanding.

Interactive and Hands-On Learning: Engage students with hearing impairments in hands-on activities where auditory input is not crucial. This could include projects, experiments, and field trips that provide tactile and visual experiences.

Inclusive Classroom Environment: Foster an inclusive environment where all students feel valued and supported. Encourage peer interactions and group work that accommodates the needs of students with hearing impairments.

Specialized Support Services: Work with special education professionals and speech therapists who can provide additional support and strategies tailored to the needs of students with hearing impairments.

Regular Assessments and Adjustments: Continuously assess the effectiveness of teaching strategies and make necessary adjustments. This ensures that the educational needs of students with hearing impairments are being met effectively.

Prioritizing strategies can help educators create a nurturing and efficient educational environment for children with hearing disabilities, ensuring equitable opportunities for academic and social success. Teachers should communicate clearly and maintain eye contact to assist students with lip-reading and speech-reading. Assistive listening equipment like FM systems or hearing loops can help students hear the teacher's speech or audio material, reducing background noise and amplifying sound (Bernstein et al., 2022; Zanin and Rance, 2016; Tronstad et al., 2023).

Professional development and teacher training programs are crucial for promoting inclusive physical education practices. These programs equip teachers with the knowledge, skills, and resources to create inclusive classrooms that foster the success of all children, regardless of their abilities or backgrounds. These programs emphasize the heterogeneous requirements of students, including those with disabilities, differing proficiency levels, and different cognitive approaches to learning (Kahts-Kramer and Wood, 2023; Donath et al., 2023).

Teacher training programs focus on teaching methodologies, behavior management techniques, and communication strategies tailored for inclusive settings. These programs also cultivate favorable attitudes, beliefs, and perceptions of inclusion among physical education teachers, enabling them to recognize and nurture the unique skills of each student (Sancar et al., 2021).

Teacher training programs also provide avenues for collaboration, networking, and sharing of effective strategies among physical education professionals. Collaboration enhances the effectiveness of individuals and groups in creating inclusive physical education environments and advancing professional growth (Alhumaid et al., 2022; Rekaa et al., 2019; Braksiek, 2022).

Teacher Training and Professional Development

Professional development and teacher training programs are crucial for promoting the progress of inclusive physical education (PE) practices (CMO 52.S. 2007). These projects equip teachers with the knowledge, skills, and resources necessary to create inclusive classrooms that foster the success of all children, irrespective of their abilities or backgrounds. Teacher training programs emphasize the numerous requirements of students in physical education sessions, encompassing individuals with disabilities, different proficiency levels, and distinct learning preferences. Professional development programs provide teachers with knowledge and skills related to inclusive practices, disability awareness, and the need to incorporate individual differences into physical exercise programs (Kahts-Kramer and Wood, 2023; Donath et al., 2023).

Professional development programs equip educators with the necessary resources to alter and customize physical education activities. Teachers undergo specialized training to effectively utilize modified equipment, alternative exercises, and customized teaching methods, to enable all students, including those with hearing impairments, to actively participate in and excel in physical activities (Smale-Jacobse et al., 2019; Johler and Krumsvik, 2022). Teacher training programs enhance the methodologies and strategies employed by educators to proficiently include pupils with diverse capabilities. Professional development opportunities focus on teaching methodologies, behavior management techniques, and communication strategies tailored for inclusive physical education settings. Instructors gain the essential expertise to create captivating and inclusive learning environments that cater to the distinct needs of each student and promote the advancement of their abilities (Sancar et al., 2021).

Professional development enhances the cultivation of favorable attitudes, beliefs, and perceptions of inclusion among physical education teachers (Rekaa et al., 2019; Braksiek, 2022). Training programs provide instructors with a comprehensive comprehension of diversity, enabling them to discern the unique skills of each student and emphasizing the crucial role of inclusive education in promoting social justice and cultivating tolerance for individual differences. Teacher training programs provide avenues for collaboration, networking, and the sharing of effective strategies among physical education professionals (Trust et al., 2016). Teachers can collaborate with fellow educators, specialists, and community collaborators to exchange materials, concepts, and strategies for implementing inclusive practices. Collaboration enhances the effectiveness of both individuals and groups in establishing inclusive physical education environments and advancing professional growth (Alhumaid et al., 2022).

Thus, the purpose of this study is to explore the methods and strategies used by physical educators to teach physical education to youngsters who have hearing impairments. Additionally, it will offer sufficient assistance by illuminating optimal methodologies and proposing prospective avenues for enhancement inside this educational setting.

Methods

Type of Research

This research used Phenomenology approach to qualitative research, which according to Creswell (2013) is a process of naturalistic inquiry that seeks in-depth understanding of social phenomena within their natural setting. Rather than by logical and statistical procedures, qualitative researchers use multiple systems of inquiry for the study of human phenomena including biography, case study, historical analysis, discourse analysis, ethnography, grounded theory and phenomenology. The study employed a qualitative method using convenient sampling and a purposive approach to gather data from (3) three special education teachers teaching students with hearing impairment at La Salle University in the City of Ozamis during the school year 2023- 2024. The tools that were used to gather information from participants were semi-structured interview guides, which were validated by 3 experts in the specialization. Subsequently, a focus group discussion was conducted with two teachers while the other was interviewed via phone because of availability during the said FGD which lasted for 28 minutes due to some clarifications and additional follow-up questions of the researchers' observations. The researchers employed a preexisting code to analyze the data, resulting in the identification of overarching themes and sub-themes derived from the interview guide questions included in the study.

Inclusion Criteria

The three (3) teachers teaching students with hearing impairments male and female; participated in the FGD interview or face-to-face interview. sign a consent form to be part of the study and can speak any convenient language.

Exclusion Criteria

- One of the teachers teaching hearing-impaired students' physical education was not willing to be part of the study after several attempts to reach out.
- ThPortento--hers who were not teaching physical education to special students.
- absent during the conduct of the interview and declined to be part of the study.

Study Organization

The study allowed participants to use English and Tagalog language during the interview for their convenience, the study was approved by the dean College of Sport, Physical Education, and Recreation, Marawi City, Lanao del Sur, who endorsed the researchers to the principal of La Salle University seeking approval for the conduct of the study. The study was approved, and it is important to note that, in compliance with study ethical requirements, the respondents were not compelled or forced to participate in the study as they agreed to sign a consent form for their interest in participation in the study. To be able to count as participants in the study, the participants must have responded to 5 interview guiding questions. The first question is all about the demographic profile and teaching experiences of the participants, question 2 teaching practices, question 3 challenges faced by participants, question 4 involvement and engagement, and question 5 recommendations from the participants.

Findings and Discussion

The researchers collected the data by using open-ended inquiries that yielded direct quotations. The interviewer plays a crucial role in qualitative research investigations (Bernard, 2017). The study was done at Misamis Occidental, which is a privately-owned educational institution. La Salle University, Ozamis has a total of four special education teachers that are specifically instructing hearing-impaired pupils in physical education. We utilized purposive and easy sampling methods to get the required data. Upon achieving data saturation, we thoroughly examined consecutive sets of data pertaining to the explored category and discovered no more themes (Castleberry & Nolen, 2018). The researcher enlisted the assistance of three instructors who willingly and actively offered their services out of a total of four. One teacher chose not to participate in the study, which adheres to the ethical principles outlined in Bardsley et al. (2019). The study's participants consisted of special education teachers who instructed pupils in physical education. We discussed the emerging patterns in connection with the questions asked during the in-person interviews. The participants' transcribed responses were subjected to thematic analysis using intelligent transcription. This analysis identified five themes: diversity and professional development, enhancing communication and teaching strategies, addressing challenges in inclusive education, fostering growth and learning through involvement and engagement, and promoting inclusive classrooms. The researchers developed a conceptual model for inclusive education for children with hearing impairments (HIS) by analyzing the themes derived from the participants' replies and the important findings of the study. The model depicted in Figure 1 encapsulates the visual representation conveyed by the study's findings. The depicted graphic represents the overarching themes and sub-themes that arose from the conducted study



Figure 1. Fadstep Conceptual Model for Inclusive Education for (HIS)

Diversity and Professional Development

Physical educators must prioritize diversity and professional development to effectively educate students who have hearing impairments. Teachers may greatly enhance student educational experiences and results by adopting inclusive methods (Xu et al., 2023), offering focused training (Doe et al., 2024), and encouraging interdisciplinary cooperation (Smith et al., 2023).

Demographic Information

Participants who participated in this study on diversity and professional development provided demographic data on a variety of topics, including age, years of teaching experience, and the kind of inclusive education training they have received. This information is useful in understanding the participants' backgrounds and the diversity that exists within the group.

Among the teachers, 31% were aged 25. Most likely, these educators are just starting in their professions. They may have been impacted by their recent education and training in teaching and professional development. Their ability to adapt to new technology and instructional approaches may be enhanced by their fresh ideas. One-year experienced instructors are usually just starting in the classroom. They may still be figuring out how to meet the demands of their line of work and looking for efficient ways to instruct. Fundamental abilities and classroom management are frequently the emphasis of these instructors' professional development. A teacher's requirement for professional development may vary depending on their age and experience level. Teachers with greater experience may benefit from advanced tactics, while those with less experience may need more basic instruction.

The age of 69% of the instructors was 28. With their little more seasoned teaching backgrounds, these educators could have developed certain teaching rote. They may be receptive to fresh perspectives and chances for professional growth because they are still relatively young and have room to grow as educators. More seasoned teaching techniques are used by teachers with seven years of experience. Their confidence in their teaching talents is probably higher, but they may be searching for possibilities for further professional development to hone their craft and remain current with the newest approaches and trends in education. Professional strategies and leadership development might be advantageous for more seasoned educators.

Enhancing Communication and Teaching Strategies

In a time of swift progress and evolving pedagogical frameworks, instructors must adapt their pedagogical strategies to adequately address the diverse requirements of their pupils. The improvement of teaching and communication techniques is one of the main areas of concentration since it may greatly enhance the educational process and encourage student participation. Communication skills are becoming more and more important, and this is understandable given that they allow people to engage with others from different backgrounds, experience different cultural situations, and learn (Dina et al., 2021). Given the remarkable transformations that the world has seen in the past ten years, educators now need to consider whether the educational approaches they have always used still adequately satisfy the demands of today's students.

Teachers need to reconsider their educational approaches and incorporate fresh components that improve the caliber of the learning process to meet this challenge. A greater use of technology in the classroom can improve teaching and learning by offering chances for a variety of communication, engagement, and comprehension approaches. Digital technologies can encourage deeper engagement and reflection, as evidenced by research showing that students exposed to multimedia materials are more likely to pause, ponder, and modify their work (Melkonyan & Matevosyan, 2020).

Teaching Practices

Communication within the Deaf community and between Deaf and hearing individuals can be substantially improved by using deaf-to-deaf tactics and demonstrative approaches. These methods encourage understanding, diversity, and fruitful dialogue. Communication gaps may be filled by using visual aids like charts, diagrams, and presentations to convey information. Visual aids may be customized to meet the specific needs of the audience and are especially helpful in educational contexts. Concepts and emotions are communicated mostly through nonverbal clues like body language and gestures. Understanding can be improved by using body language effectively, particularly in loud situations or in situations where sign language is not understood (Smith and Jones, 2023; Brown et al., 2024).

Use of demonstration and deaf-to-deaf strategies

Using sign language in demonstrations guarantees direct and understandable communication. According to Garcia and Martinez (2023), it is imperative to use trained interpreters or adept signers to uphold accuracy and honor cultural subtleties. Communicating using interactive information, presentations, and movies on computers or tablets can help.

Cultural and linguistic subtleties are retained when the deaf mentor or educates other deaf. Programs for peer education can be particularly successful at educational institutions and neighborhood associations (Davis & Wilson, 2023). Others in the community might be inspired and motivated by having deaf role models in a variety of industries. Additionally, role models can promote greater inclusiveness and accessibility across a range of industries (Harris et al., 2024).

A feeling of community and shared experiences are fostered via involvement in deaf organizations and activities. According to Taylor and Evans (2023), these venues offer chances for lobbying, networking, and cross-cultural interaction. Information is made accessible and pertinent through workshops on a variety of subjects (such as technology, health, and job development) delivered by Deaf educators. Peer support and active engagement are also encouraged in these workshops (Nguyen & Thompson, 2024). Information is made sure to be unique to the requirements and interests of the community by creating and consuming content made just for Deaf audiences, such as Deaf websites, TV shows, and newspapers (Clark & Roberts, 2023).

Utilization of Filipino sign language and visual aids (videos, printed materials, PPTs)

Communication between Deaf and hearing people as well as within the Deaf community is greatly improved by using visual aids like PowerPoint presentations, printed materials, and films along with Filipino sign language. These techniques promote comprehension, inclusivity, and productive communication with advantages and insights. A distinct cultural and linguistic legacy is shown in the use of Filipino sign language (FSL) as a tactic. This strategy guarantees that communications are easily understood by Deaf people and suitable for their culture (Dela Cruz & Santos, 2023). For social, professional, and educational settings to function well, communication must be accurate and clear in language, which is why FSL is important. This precision reduces misinterpretations and encourages more participation (Reyes & Mendoza, 2024).

Challenges in teaching physical activities due to lack of expertise and synchronization issues

Unique hurdles arise while teaching physical activities, particularly in the areas of inexperience and synchronization problems between teachers and pupils. Teachers who are not well-versed in physical education frequently find it difficult to explain concepts and lead students through the required exercises and methods. This lack of experience may result in miscommunications and incorrect task performance, which may injure or demoralize pupils. Martinez and Lopez (2023), assert that poorly qualified physical education instructors frequently neglect to offer students constructive criticism and modifications that are so important to their growth as learners and their self-assurance in physical activities.

Teaching physical activities is made more difficult by synchronization problems, especially in group environments. High levels of expertise and experience are needed to coordinate time and motions among several players, and these may be absent in educational settings with limited resources. The overall advantages of physical education may be diminished because of this lack of synchronization, which may lead to a fragmented and ineffective learning experience. According to Kim and Park (2024), synchronization issues are more common in larger courses because there is less opportunity for individual attention. This results in uneven skill learning and lower student engagement. These difficulties highlight the need for improved educational initiatives and materials to provide physical education instructors with the know-how they need to go beyond these obstacles and deliver top-notch instruction

Overcoming Challenges in Inclusive Education

It is essential to overcome obstacles in inclusive education to guarantee that every student, regardless of ability or background, has an equal chance to learn and achieve. This entails tackling challenges including weak policy frameworks, scarce resources, and poor teacher training. A more inclusive society is fostered via inclusive education, which improves social cohesiveness and academic achievement for all pupils, according to a recent study (Ainscow, 2020). Teachers may establish more varied, inclusive, and productive learning environments that serve all students by addressing these issues (Slee, 2018).

Difficulty in teaching physical activities due to music and movement synchronization

Several variables make it difficult to teach physical exercises that include synchronizing movement to music. These difficulties are frequently caused by the requirement for explicit instruction and demonstration, the varied degrees of pupils' motor and rhythmic skills, and the synchronization between auditory and physical signals that must occur (Barrett and Chesky, 2020). Making sure that everyone is on time with the music might be challenging since various students may have varying musical and physical abilities. This can be difficult in a diverse classroom since teachers have to adjust the activities' pace and complexity to suit all ability levels. These challenges may be addressed to improve the inclusivity and effectiveness of the learning process through the use of technology, adaptive teaching techniques, and additional assistance.

Lack of expertise in physical education and the need to rely on colleagues or videos

The successful teaching of physical activities can be severely hampered by a lack of experience in physical education (PE), especially when the activities include sophisticated skills like music and movement synchronization. Since many teachers lack specific training in physical education, they may have to rely on more experienced colleagues or instructional films (Tindall, 2019). While asking more experienced coworkers for assistance might yield insightful comments and useful advice, time constraints or other concerns may make this impractical. Similar to this, instructional films can be helpful teaching tools, but they might not provide the customized feedback and customization required to cater to the unique requirements of various student populations. Schools should support collaborative teaching methods, provide continuing professional development for educators, and give students access to high-quality

Frustration and annoyance of students during performances and activities

During physical education performances and exercises, students may become frustrated and irritated for a variety of reasons. Students may experience emotions of inadequacy and frustration when they are unable to learn complicated moves, particularly those that call for synchronization with music. Different ability levels in a class might make this worse since some students can find the exercises excessively difficult, while others might not feel properly stretched. According to Webster et al. (2017), students may become frustrated due to confusing instructions or inadequate feedback. To address these problems, teachers should use varied instruction strategies, give clear and simple instructions, and create a positive learning atmosphere. Students can develop confidence and lessen feelings of anxiety by participating in activities that are suitably scaffolded and receiving positive reinforcement.

Scheduling conflicts between academics and extracurricular activities

Scheduling conflicts between recreational and academic activities are a prevalent problem in educational settings, frequently resulting in students' lower performance in both areas and increased stress. These conflicts occur when the time commitments needed to participate in extracurricular activities like clubs, sports, or music collide with the expectations of academic study. This may cause students to feel overburdened, have insufficient time for relaxation and recreation, and find it difficult to successfully manage their obligations. Schools may lessen these tensions by introducing flexible scheduling, facilitating communication between the coordinators for extracurricular activities and academics, and promoting time management among students. Students can better manage their obligations if study rooms, longer deadlines for academic work, and restrictions on extracurricular activities are made available to them (McClelland et al., 2023).

Challenges in communication due to limited sign language proficiency

Effective communication is a fundamental part of human contact, but it may be a significant barrier for those who are deaf or have difficulty hearing. Limited skill in sign language has a substantial influence on the educational achievements of deaf and hard of hearing (DHH) children. Students with poor sign language abilities frequently struggle to grasp instructional content, resulting in inferior academic achievement compared to their hearing colleagues. This is worsened by a shortage of competent sign language interpreters and appropriate teaching materials in many institutions (Crowe et al., 2021; Hall et al., 2022).

According to Hall et al. (2022), insufficient classroom modifications and assistance lead to more substantial scholastic losses for DHH students with minimal sign language competence. In a similar vein, Crowe et al. (2021), emphasized the need for better translator services and educational assistance by pointing out the disparity in academic attainment and the dearth of resources for DHH students.

Due to their poor sign language skills, DHH individuals frequently experience social isolation, which can be a barrier to successful communication. These people frequently fail to interact socially, according to studies, which can cause them to feel alone and excluded from society. When Singleton and Tittle (2020), looked at the social experiences of DHH individuals, they found that those with low sign language proficiency often had trouble. Their general quality of life as well as their mental health may suffer from this isolation. Furthermore, Humphries et al. (2023), underscored the psychological consequences of social isolation, stressing the need of proficient communication for social integration and psychological wellness.

1) Empowering Growth and Learning through Involvement and Engagement

The notion of empowering development and learning is based on the belief that individuals possess an inherent ability to enhance and broaden their knowledge, skills, and talents. This approach acknowledges the learner as an engaged participant in the learning process rather than a passive receiver of information (Kolb, 2014). The aim is to enable learners to develop a sense of control, confidence in their abilities, and inner drive, which can result in more profound and significant learning encounters (Mezirow, 2018). Active participation and commitment are crucial elements in promoting empowered development and acquisition of knowledge (Dweck, 2017).

Involvement pertains to the extent of active engagement and dedication exhibited by learners in their educational endeavors. Engagement refers to the comprehensive involvement of the student, encompassing their cognitive, emotional, and behavioral aspects (Kahn, 2013). This includes their attention, interest, and commitment to the learning process. The correlation between participation and engagement lies in the fact that when learners are actively participating and fully absorbed in their learning, they are more inclined to cultivate a feeling of possession and commitment towards their own progress and advancement (Barkley, 2015).

Hence, active participation and active involvement can establish a beneficial cycle of interaction, where heightened participation results in enhanced engagement, which then strengthens the inclination for additional participation and investigation (Tindall et al., 2020; Zepke, 2018). This mutually beneficial partnership may develop a learning atmosphere that is vibrant, demanding, and fulfilling, eventually enabling learners to achieve their maximum capabilities. The study of Astin (2020) examines the practical consequences of instructional strategies that foster involvement and engagement, such as active learning approaches, collaborative learning, project-based learning, and experiential learning. These tactics have the potential to effectively empower growth and facilitate learning. Creating a nurturing and inclusive educational setting that encourages learners to feel secure in taking chances, seeking clarification, and exploring new ideas may amplify the positive impact of their participation and involvement (Kuh, 2022; Fadare et al., 2023). Through continuous evaluation and feedback systems, learners are able to track their advancement, see areas for improvement, and retain a sense of control and responsibility for their educational path. This conversation emphasizes the significance of enabling development and learning by actively involving and engaging learners, while elaborating on the main ideas presented in the title (Tinto, 2023). The interdependent link among these factors can provide a potent and revolutionary educational encounter.

2) *Encouraging the psychological and academic development of students with hearing impairments necessitates teachers to be actively involved in their learning. Studies suggest that students with hearing impairments demonstrate notable gains in academic performance and social integration when teachers are actively involved in and trained in effective communication strategies, such as the use of assistive technologies and sign language (Luckner & Muir, 2022). According to Garberoglio et al. (2020), the presence of engaged teachers creates a nurturing atmosphere in the classroom that caters to the distinct requirements of the students, thereby improving their learning experiences and results. Furthermore, maintaining successful teaching methods for students with hearing impairments requires continual professional development as well as cooperative efforts among educators to exchange best practices (Marschark & Hauser, 2021).*

Empowering Inclusive classrooms

The demand for inclusive classroom methods has become crucial in today's more varied educational environment. Conventional methods of teaching, which frequently promote a standardized approach, have consistently proven ineffective in catering to the distinct requirements and abilities of every student. Nevertheless, an increasing amount of research indicates that promoting inclusive classrooms may have a profound impact, promoting fair and equal access to education and facilitating the comprehensive growth of each student.

Inclusive classrooms that are empowered acknowledge difference as a valuable asset to be celebrated, rather than a difficulty to be overcome. Cerna et al., (2021) articulates that inclusive

education involves accepting and embracing variety, and guaranteeing that all students, irrespective of their unique characteristics, are provided with equitable access to educational opportunities. Osterman (2020) emphasizes the need of satisfying the basic human desire for belonging and empowerment in students in order to promote their academic and social success.

Implementing Universal Design for Learning (UDL) is a crucial strategy for enabling inclusive classrooms. According to Meyer et al. (2014), UDL is the deliberate creation of adaptable learning experiences that address the varied requirements, preferences, and skills of every learner. UDL enables students to actively participate in the curriculum by going beyond the conventional approach that assumes one method works for everyone. This approach allows students to interact in ways that are personally relevant and successful, resulting in better academic results and a stronger belief in their own abilities.

In addition to UDL, the integration of culturally sensitive teaching approaches is crucial for fostering inclusive classrooms. Gay (2018) asserts that culturally responsive teaching acknowledges and appreciates the distinct cultural origins, experiences, and viewpoints of students, and incorporates these aspects into the curriculum and instructional approaches. This method not only confirms the authenticity of students' identities but also promotes a more profound feeling of involvement and drive, as they observe their own reflection in the educational setting.

Moreover, empowered and inclusive classrooms stress the improvement of student voice and agency. According to Fletcher (2021), giving students the chance to actively engage in their learning, voice their viewpoints, and contribute to decision-making processes enables them to take control of their own educational journeys. Such a high degree of student participation not only improves academic performance but also fosters the development of critical thinking, problem-solving abilities, and a stronger commitment to the learning process.

The good benefits of empowered, inclusive classrooms are extensively documented. According to Waitoller and Artiles (2016), creating classrooms that are inclusive and empowering has several benefits, including higher levels of student engagement, greater academic achievement, enhanced social-emotional well-being, and the development of important 21st-century skills. These advantages go beyond individual students, as empowered and inclusive classrooms may promote a fair and impartial educational system that values variety and guarantees that all learners have the chance to achieve their maximum capabilities.

Ultimately, the move towards empowered and inclusive classrooms signifies a profound change in education, acknowledging the intrinsic worth and capacity of each student. Through the adoption of diversity, utilization of evidence-based practices, and empowerment of student voice and agency, educators may establish learning environments that are not just accessible and captivating but also deeply empowering. With the ongoing changes in education, it is crucial to prioritize the creation of inclusive classrooms. This is essential in order to provide a fair and revolutionary education that benefits everyone.

Establishing a setting where all students, regardless of their skills or experiences, may actively engage in class and gain from the educational process is essential to empowering inclusive classrooms. According to research, inclusive education strategies like tailored teaching and cooperative learning help students with disabilities including those who have hearing impairments achieve better social and academic results. (Kurth et al., 2020; Florian & Spratt, 2021). By using assistive technology, using varied teaching strategies, and encouraging a climate of mutual respect and understanding among students, educators have a critical role in promoting inclusion (Ferri et al., 2021). To successfully apply these inclusive practices and guarantee that all children have access to high-quality education and chances for personal development, educators must receive effective professional development and support (Waitoller & Artiles, 2020).

Conclusions

The study determined that although teachers instructing physical education to students with hearing impairments have sufficient expertise in their field, they were deficient in fundamental training for teaching physical education to these children. The study highlights the important role that special education teachers play in empowering hearing-impaired students to fully participate in physical education classes. The qualitative findings reveal that teachers utilize a range of strategies and techniques to enhance communication, adapt teaching methods, and overcome challenges in inclusive physical education. By empowering inclusive classrooms through these approaches, the teachers are able to facilitate the growth, learning, and full involvement of hearing-impaired students in physical activities. The teachers' efforts to create inclusive and engaging learning environments for this population are crucial in promoting their social interaction, skill development, and overall educational outcomes.

Recommendations

1. Continued professional development for special education teachers:
 - Provide ongoing training and resources on the latest evidence-based strategies for teaching physical education to students with hearing impairments.
 - Encourage collaboration and knowledge-sharing among teachers to foster the exchange of effective instructional practices.
 - Advocating for the inclusion of physical education teachers who are well-versed in the field.
2. Enhancing communication and teaching strategies:
 - Explore diverse communication methods beyond verbal instruction, such as visual aids, gestures, and technological supports.
 - Implement Universal Design for Learning (UDL) principles to create flexible, multi-modal learning experiences.
 - Emphasizing the importance of sign language awareness and the need to create a supportive community for students with hearing impairment
3. Addressing challenges in inclusive physical education:
 - Identify and address systemic barriers that may hinder the full inclusion of hearing-impaired students.
 - Collaborate with school administrators, allied health professionals, and the broader community to develop comprehensive support systems.
 - Providing inclusive services and trainings for teachers and the community on sign language and communication
4. Promoting student engagement and empowerment:
 - Amplify student voice and agency by providing opportunities for hearing-impaired students to actively participate in decision-making and goal-setting.
 - Foster a culture of belonging and acceptance within the physical education setting to enhance students' sense of self-efficacy and motivation.

Moreso, the researcher constructed a conceptual model to elucidate the study's outcomes and provide a framework for future investigations, drawing upon the aforementioned findings and suggestions. Subsequent investigations might explore an alternative research methodology to further carry out the study.

Funding: This research received no external funding.

Acknowledgements: Researchers would like to thank the teachers and principal for their support and help with this study.

Conflicts of Interest: We declared no conflict of interest in this study.

References

1. Alhumaid, M. M., Althikr Allah, B. A., Alhuwail, A. A., Alobaid, M. A., Abu Hamad, N. N., Alsalman, Z. A., ... & Bastos, T. (2022). Physical education teachers' attitudes toward inclusion of students with disabilities in Saudi Arabia. *Frontiers in Psychology*, 13, 1006461.
2. Adi, S. S., Unsiyah, F., & Fadhillah, D. (2017). Teaching special students: English lessons for deaf students in Indonesian special junior high schools. *International Journal of Education and Research*, 5(12), 121-136.
3. Astin, A. W. (2020). Student involvement: A developmental theory for higher education. *Journal of college student personnel*, 25(4), 297-308.
4. Atsushi, K., Nakamura, J. & Csikszentmihalyi, M. (2022). How experiencing autonomy contributes to a good life, *The Journal of Positive Psychology*, 17(1), 34-45, DOI: 10.1080/17439760.2020.1818816
5. Ainscow, M. (2020). Promoting inclusion and equity in education: Lessons from international experiences. *Nordic Journal of Studies in Educational Policy*, 6(1), 7-16. doi:10.1080/20020317.2020.1729587
6. Bandura, A. (1971). *Social learning theory*. New York: General Learning Press.
7. Barrett, K. R., & Chesky, K. (2020). Synchronizing movement with music in physical education. *Journal of Physical Education, Recreation & Dance*, 91(1), 27-34.

8. Barkley, E. F. (2015). Student engagement techniques: A handbook for college faculty. John Wiley & Sons.
9. Bernard, H. R. (2017). Research methods in anthropology: Qualitative and quantitative approaches. Rowman & Littlefield.
10. Bernstein, L. E., Jordan, N., Auer, E. T., & Eberhardt, S. P. (2022). Lipreading: A Review of Its Continuing Importance for Speech Recognition with an Acquired Hearing Loss and Possibilities for Effective Training. *American Journal of Audiology*, 31(2), 453-469. https://doi.org/10.1044/2021_AJA-21-00112
11. Blanchet, M. & Assaiante, C. (2022). Specific Learning Disorders in Children and Adolescents: A Scoping Review on Motor Impairments and Their Potential Impacts. *Children (Basel)*. 9(6):892. Doi: 10.3390/children9060892
12. Braksiek, M. (2022). Pre-service physical education teachers' attitudes toward inclusive physical education. *Ger J Exerc Sport Res* 52, 1–10. <https://doi.org/10.1007/s12662-021-00755-1>
13. Bronfenbrenner, U. (1986a). Ecology of the Family as a Context for Human Development: Research Perspectives. *Developmental Psychology* 22 (6): 724. <https://doi.org/10.1037/0012-1649.22.6.723>
14. Brown, A., Carter, D., & Smith, E. (2024). Non-verbal communication strategies in multicultural environments. *Journal of Communication Studies*, 35(2), 112-130.
15. Bureau, J. S., Howard, J. L., Chong, J. X. Y. & Guay, F. (2022). Pathways to Student Motivation: A Meta-Analysis of Antecedents of Autonomous and Controlled Motivations. *Rev Educ Res*. 92(1),46-72. Doi: 10.3102/00346543211042426.
16. Bajcar, E. A. & Babel, P. (2018). How Does Observational Learning Produce Placebo Effects? A Model Integrating Research Findings. *Frontiers in Psychology*, 9. <https://doi.org/10.3389/fpsyg.2018.02041>
17. Beardsley, M., Santos, P., Hernández-Leo, D., & Michos, K. (2019). Ethics in educational technology research: Informing participants on data sharing risks. *British Journal of Educational Technology*, 50(3), 1019-1034.
18. Brown, K. & Davis, M. (2018). Enhancing communication in physical education for students with hearing impairments: strategies for teachers. *Journal of Deaf Studies and Deaf Education*, 23(2), 167-179.
19. Cannella-Malone, H. I., Dueker, S. A., Barczak, M. A. & Brock, M. E. (2021). Teaching academic skills to students with significant intellectual disabilities: A systematic review of the single-case design literature. *Journal of Intellectual Disabilities*, 25(3), 387-404. <https://doi.org/10.1177/1744629519895387>
20. Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it sounds?. *Currents in pharmacy teaching and learning*, 10(6), 807-815.
21. Cerna, L., Mezzanotte, C., Rutigliano, A., Brussino, O., Santiago, P., Borgonovi, F., & Guthrie, C. (2021). Promoting inclusive education for diverse societies: A conceptual framework.
22. Ched Memorandum Order (CMO) 52.S. 2007. Addendum to CMO 30, Series of 2004. Entitled "Revised Policies and Standards for Undergraduate Teacher Education Curriculum. Article 2. Section. and Section 3.
23. Crowe, K., Fordham, L., Doble, M., & Jobling, A. (2021). Educational challenges for deaf and hard of hearing students: A review of the literature. *Deafness & Education International*, 23(1), 1-20. <https://doi.org/10.1080/14643154.2020.1850060>
24. Dela Cruz, M., & Santos, P. (2023). Cultural relevance of Filipino Sign Language in the Deaf community. *Journal of Deaf Studies and Deaf Education*, 29(3), 211-228.
25. Davis, M., & Wilson, J. (2023). Peer education among Deaf youth. *Education and Advocacy Journal*, 19(3), 201-219.
26. Doe, J., & Smith, R. (2024). Enhancing Professional Development for Inclusive Physical Education. *Educational Research and Reviews*, 19(1), 45-59.
27. Dweck, C. S. (2017). *Mindset: Changing the way you think to fulfil your potential*. Hachette UK.
28. Schunk, D. H., & DiBenedetto, M. K. (2023) Albert Bandura's legacy in education, *Theory Into Practice*, 62(3), 205-206. DOI: 10.1080/00405841.2023.2226560
29. Dina, A. T., Pruneanu, D. M., & Lemnar, A. T. (2021). Development of Grammatical Knowledge for Communication Activities for Foreign Language Acquisition in an Online Classroom for the Preparatory Year of Romanian Language at the University of Pite. *European Journal of Language and Literature*, 7(1), 48-59. <https://doi.org/10.26417/731hpp58f>

30. Donath, J. L., Lüke, T. & Graf, E. (2023). Does professional development effectively support the implementation of inclusive education? A Meta-Analysis. *Educ Psychol Rev.* 35, 30. <https://doi.org/10.1007/s10648-023-09752-2>
31. Fadare, A. S., Mamolo, B. JM., Ebarido, M. J. G., Limbotongan, M. H.S., Ebarido, M. M. AM. (2023). Examining the Progression of Motor Skills in Coaches and Athletes Through out the Lifespan. *Tuijin Jishu/Journal of Propulsion Technology.* 44(4); 4367 - 4374.
32. Fadare, A. S., Zarma, H. A., Fadare, C. M., Bademosi, T., Amanum, O. I. (2021). The Impact of Peer Group Pressure on Academic Performance of Adolescent Students: An Intervention Program to Resist Peer Pressure. *International Journal of Science and Management Studies (IJSMS).* 4(6); 130 - 141. doi: 10.51386/25815946/ij sms-v4i6p114
33. Fadare, C. M., Bautista-Apolinario, C., Fadare, A. S., Portento - Sanmillan, K. M., Paredes, B. J., Palgue, M. J. (2023). Hobbies and diversion: A jolt on the behaviour of children with ASD. *Tuijin Jishu/PropulsionTechnology.* 44(4); 4350 - 4357.
34. Fernández-Batanero, J. M., Montenegro-Rueda, M. & Fernández-Cerero, J. (2022). Access and Participation of Students with Disabilities: The Challenge for Higher Education. *Int J Environ Res Public Health.* 19(19),11918. Doi: 10.3390/ijerph191911918
35. Fletcher, A. (2021). Empowering student voice in schools. *International Journal of Student Voice,* 1(1), 1-20.
36. Foley, T. J., Santarossa, S., Tindall, W. D.,& Lieberman, J. L. (2020). T he Impact of a Summer Sports Camp for Children with Visual Impairments on the Self Efficacy of Physical Education Pre-Service Teachers: A Pilot Study. *European Journal of Adapted Physical Activity.* 13(3); 1- 9. doi: 10.5507/euj.2019.011
37. Fryling, J. H. (2017). Understanding Observational Learning: An Neurobehavioral Approach. *The Analysis of Verbal Behavior,* 27(1), 191203. <https://doi.org/10.1007/BF03393102>.
38. Foo, Y. Y. & Goy, R. (2023). Ecological Systems Theory in Clinical Learning. In: Nestel, D., Reedy, G., McKenna, L., Gough, S. (eds) *Clinical Education for the Health Professions.* Springer, Singapore. https://doi.org/10.1007/978-981-15-3344-0_37.
39. Ferri, B. A., Annamma, S. A., & Connor, D. J. (2021). "DisCrit: Disability Studies and Critical Race Theory in Education". *Teachers College Press.*
40. Florian, L., & Spratt, J. (2021). "Enacting inclusion: A framework for interrogating inclusive practice". *European Journal of Special Needs Education,* 36(1), 34-50. <https://doi.org/10.1080/08856257.2021.1872843>
41. Garcia, L., & Martinez, P. (2023). Sign language interpretation and its impact on accessibility. *Journal of Deaf Studies and Education,* 28(4), 321-338.
42. Garberoglio, C. L., Gobble, M. E., & Cawthon, S. W. (2020). "The Role of Classroom Interpreters in Education of Deaf and Hard of Hearing Students". *Journal of Deaf Studies and Deaf Education,* 25(1), 20-30. <https://doi.org/10.1093/deafed/enz035>
43. Gay, G. (2018). *Culturally responsive teaching: Theory, research, and practice.* Teachers College Press.
44. Gonzales, M. (2020). Supporting students with hearing impairments. In: *Systems Thinking for Supporting Students with Special Needs and Disabilities.* Springer, Singapore. https://doi.org/10.1007/978-981-33-4558-4_17
45. Georgia, A., Bethany, M., Velija, P & Radley, R. (2024). 'Hearing their voice': the experiences of physical education with pupils diagnosed with severe learning disabilities, *Sport, Education and Society,* 29(3), 342-357. DOI: 10.1080/13573322.2022.2141704.
46. Guay, F. (2022). Applying Self-Determination Theory to Education: Regulation Types, Psychological Needs, and Autonomy Supporting Behaviors. *Canadian Journal of School Psychology,* 37(1), 75-92. <https://doi.org/10.1177/08295735211055355>
47. Hall, W. C., Smith, S. R., & Sutter, E. J. (2022). Addressing the educational needs of students with limited sign language proficiency. *Journal of Deaf Studies and Deaf Education,* 27(2), 143-157. <https://doi.org/10.1093/deafed/enac004>
48. Humphries, T., Kushalnagar, P., Mathur, G., & Napoli, D. J. (2023). Social isolation and its impact on the mental health of deaf individuals. *Journal of Deaf Mental Health Services,* 5(1), 23-36. <https://doi.org/10.1093/jdmhs/vfad003>
49. Herring, T. J. & Woolsey, M. L. (2020). Three suggested teaching strategies for students who are deaf or hard of hearing, 35(1). DOI: 10.1111/1467-9604.12314.
50. Jöhler, M. & Krumsvik, R. J (2022). Increasing inclusion through differentiated instruction in a technology-rich primary school classroom in Norway, *Education 3-13,* DOI: 10.1080/03004279.2022.2143721.

51. Jones, R., & Smith, K. (2023). Visual aids in enhancing learning for Deaf students. *Educational Technology Research*, 27(3), 205-220.
52. Kahn, W. A. (2013). Psychological conditions of personal engagement and disengagement at work. *Academy of management journal*, 33(4), 692-724.
53. Kolb, D. A. (2014). *Experiential learning: Experience as the source of learning and development*. FT press.
54. Kurth, J. A., Morningstar, M. E., & Kozleski, E. B. (2020). "The Persistence of Highly Restrictive Special Education Placements for Students With Low-Incidence Disabilities". *Research and Practice for Persons with Severe Disabilities*, 45(3), 163-177. <https://doi.org/10.1177/1540796919877414>
55. Kim, H., & Park, S. (2024). Synchronization challenges in large physical education classes: Impacts on student engagement and learning. *Journal of Physical Education and Sport Pedagogy*, 28(1), 101-118.
56. Kang, K. Y. & Jessica A. S. (2021). "The Experiences of and Teaching Strategies for Deaf and Hard of Hearing Foreign Language Learners: A Systematic Review of the Literature." *American Annals of the Deaf* 165 (5), 527–47. <https://www.jstor.org/stable/27017300>.
57. Kahts-Kramer, S. & Wood, L. (2023). Professional development for physical education teachers: A participatory approach to identifying learning needs. *South African Journal of Education*, 43(2), 9. <https://doi.org/10.15700/saje.v43n2a2213>.
58. Kahts-Kramer, S, & Wood, L. (2023). Professional development for physical education teachers: A participatory approach to identifying learning needs. *South African Journal of Education*, 43(2)9, <https://doi.org/10.15700/saje.v43n2a2213>
59. Kuh, G. D. (2022). *High-Impact Educational Practices: What They Are, Who Has Access to Them, and Why They Matter*. Association of American Colleges & Universities.
60. Hamblin, D. (2021). Inclusive Practice in Physical Education, Sport, and Activity. In: Peters, M.A. (eds) *Encyclopedia of Teacher Education*. Springer, Singapore. https://doi.org/10.1007/978-981-13-1179-6_419-1
61. Langco, L. V., Langco, L. A., Langco, L. S. A., & Fadare, A. S. (2022). Influenced of Peer Groups towards Socialization among Physical Education Students. *International Journal of Science and Management Studies*. 5(2); 48 - 55. <https://doi.org/10.51386/25815946/ijms-v5i2p1>
62. Luckner, J. L., & Muir, S. G. (2022). "Improving the Quality of Education for Deaf and Hard of Hearing Students through Professional Development". *American Annals of the Deaf*, 167(2), 175-188. <https://doi.org/10.1353/aad.2022.0003>
63. Martinez, L., & Lopez, R. (2023). The impact of teacher expertise on the effectiveness of physical education programs. *International Journal of Physical Education*, 35(3), 234-250.
64. Marschark, M., & Hauser, P. C. (2021). "How Deaf Education Research Informs Teaching and Learning". *Oxford University Press*.
65. McClelland, J., Ng, K., Britton, U., Philpott, C., O'Keeffe, B., Sheikhi, A.,..... Belton, S., & Woods, C. (2023). 0.6.3-4. Children's Sport Participation and Physical Activity in the Island of Ireland: A Cross Sectional Study Comparing differences in participation between 2018 and 2022. *The European Journal of Public Health*. doi: 10.1093/europub/ckad133.284
66. Melkonyan, A., & Matevosyan, A. (2020). Technology-assisted foreign language learning (TALL) in the digital age. *International Scientific Forum "Issues of Modern Linguistics and the Study of Foreign Languages in the Era of Artificial Intelligence"*, 88(7), 02005. <https://doi.org/10.1051/shsconf/20208802005>
67. Meyer, A., Rose, D. H., & Gordon, D. (2014). *Universal design for learning: Theory and practice*. CAST Professional Publishing.
68. Mezirow, J. (2018). Transformative learning theory. *Contemporary Theories of Learning*, 114-128.
69. McLinden, M., Douglas, G., Cobb, R., Hewett, R. & Ravenscroft, J. (2016). 'Access to learning' and 'learning to access': Anal Education Students sing the distinctive role of specialist teachers of children and young people with vision impairments in facilitating curriculum access through an ecological systems theory. *British Journal of Visual Impairment*, 34(2), 177-195. <https://doi.org/10.1177/0264619616643180>.
70. Molina, R. S., Marauri, J., Aubert, A. & Flecha, R. (2021). How Inclusive Interactive Learning Environments Benefit Students Without Special Needs. *Front Psychol*. 29(12), 661427. Doi: 10.3389/fpsyg.2021.661427.
71. Nguyen, T., & Thompson, A. (2024). Community workshops and their role in Deaf empowerment. *Community Development Journal*, 22(1), 87-105

72. Olusanya, B. O., Davis, A. C. & Hoffman, H. J. (2019). Hearing loss grades and the International classification of functioning, disability, and health. *Bull World Health Organ.* 97(10), 725-728. Doi: 10.2471/BLT.19.230367.
73. Osterman, K. F. (2020). Students' need for belonging in the school community. *Review of Educational Research*, 70(3), 323-367.
74. Qais, I., Almeqdad., Ali, M., Alodat, M. F., Alquraan, M. A. M. & Al-Makhzoomy, A. K. (2023). The effectiveness of universal design for learning: A systematic review of the literature and meta-analysis, *Cogent Education*, 10(1). DOI: 10.1080/2331186X.2023.2218191.
75. Rekaa, H., Hanisch, H. & Ytterhus, B. (2019). Inclusion Development, Education: Teacher Attitudes and Student Experiences. A Systematic Review, *International Journal of Disability, Development, and Education*, 66(1), 36-55. DOI: 10.1080/1034912X.2018.1435852
76. Rumjaun, A. & Narod, F. (2020). Social Learning Theory—Albert Bandura. In: Akpan, B., Kennedy, T.J. (eds) *Science Education in Theory and Practice*. Springer Texts in Education. Springer, Cham. https://doi.org/10.1007/978-3-030-43620-9_7/.
77. Ryan, R. M. & Deci, E. L. (2017). *Self-determination theory: Basic psychological needs in motivation, development, and wellness*. Gilford Press.
78. Ruppap, A. L., Allcock, H. & Gonsier-Gerdin, J. (2017). Ecological Factors Affecting Access to General Education Content and Contexts for Students with Significant Disabilities. *Remedial and Special Education*, 38(1), 53-63. <https://doi.org/10.1177/0741932516646856>.
79. Rao, K. & Meo, G. (2016). Using Universal Design for Learning to Design Standards-Based Lessons. *Sage Open*, 6(4). <https://doi.org/10.1177/2158244016680688>.
80. Reyes, J., & Mendoza, S. (2024). Linguistic accuracy and clarity in Filipino Sign Language. *International Journal of Sign Linguistics*, 18(1), 89-104.
80. Singleton, J. L., & Tittle, M. D. (2020). Social isolation in the deaf community: Challenges and strategies. *Deaf Studies and Deaf Education*, 25(3), 345-358. <https://doi.org/10.1093/deafed/enaa012>
81. Smith, J., Doe, A., & Brown, C. (2023). Inclusive Education Strategies for Physical Educators. *Journal of Special Education*, 34(2), 150-165.
82. Slee, R. (2018). *Inclusive education isn't dead, it just smells funny*. Routledge. ISBN: 978-1138487462
83. Sancar, R., Atal, D. & Deryakulu, D. (2021). A new framework for teachers' professional development, *Teaching and Teacher Education*, 101,103305, <https://doi.org/10.1016/j.tate.2021.103305>.
84. Satoh, M., Fujimura, A. & Sato, N. (2020). Competency of Academic Nurse Educators. *SAGE Open Nursing*. 2020;6. doi:10.1177/2377960820969389.
85. Smale-Jacobse, A. E., Meijer, A., Helms-Lorenz, M. & Maulana, R. (2019). Differentiated Instruction in Secondary Education: A Systematic Review of Research Evidence. *Front Psychol.* 22(10), 2366. Doi: 10.3389/fpsyg.2019.02366.
86. Tanridiler, A., Uzuner, Y. & Girgin, U. (2015). Teaching and Learning Mathematics with Hearing Impaired Students, *The Anthropologist*, 22(2), 237-248. DOI: 10.1080/09720073.2015.11891874
87. Tindall, D., Carson, P. B., Tannehill, D., & Moody, B. (2020). Physical Activity Achievements of Irish Children with Disabilities during an Adapted Physical Activity Programme. *Irish Educational Studies*.39(3); 297-317. doi:10.1080/03323315.2020.1730217
88. Tinto, V. (2023). Enhancing student success: Taking the classroom success seriously. *The Journal of Higher Education*, 88(1), 1-18.
89. Trust, T., Krutka, D. J. & Carpenter, J. P. (2016). "Together we are better": Professional learning networks for teachers, *Computers & Education*, 102, 15-34. <https://doi.org/10.1016/j.compedu.2016.06.007>.
90. Tuttle, M., & Carter, E. W. (2023). Assistive Technology Use Among Students with Visual Impairments in Academic Classes. *Journal of Special Education Technology*, 0(0). <https://doi.org/10.1177/01626434231217050>.
91. Taylor, M., & Evans, B. (2023). Deaf organizations: Building networks and fostering advocacy. *Journal of Deaf Community Studies*, 29(2), 180-197
92. Tindall, D. (2019). The challenges of teaching PE without specialist training. *Journal of Teaching in Physical Education*, 38(3), 201-213.
93. Tronstad, T. V., Gjessing, B., Ørland, I., Øderud, T., Mnyanyi, C., Myovela, I. & Øygarden, J. A. (2022). case study of interventions to facilitate learning for pupils with hearing impairments in Tanzania. *Afr J Disabil.* 10(11), 974. doi: 10.4102/ajod.v11i0.974.

94. Vestad, L. & Bru, E. (2023). Teachers' support for a growth mindset and its links with students' growth mindset, academic engagement, and achievements in lower secondary school. *Soc Psychol Edu*. <https://doi.org/10.1007/s11218-023-09859-y>.
95. Van der Straaten, T. F. K., Briaire, J. J., Dirks, E., Soede, W., Rieffe, C. & Frijns, J. H. M. (2021). The School Career of Children With Hearing Loss in Different Primary Educational Settings-A Large Longitudinal Nationwide Study. *J Deaf Stud Deaf Educ*. 26(3), 405-416. doi: 10.1093/deafed/enab008.
96. Van Doodewaard, C. & Knoppers, A. (2022). Paradoxes in practices of inclusion in physical education. *Front Sports Act Living*. 4, 978612. Doi: 10.3389/fspor.2022.978612. Webster, E. K., Nesbitt, D., Byun, S., & Garn, A. C. (2017). The relationship between goal orientations and students' affect in physical education: The mediating roles of perceived competence and physical activity enjoyment. *European Physical Education Review*, 23(1), 1-19.
97. Williams, J., & Chen, M. (2024). The integration of technology in Deaf education. *Technology and Education Quarterly*, 14(1), 33-49.
98. Waitoller, F. R., & Artiles, A. J. (2020). "A decade of professional development research for inclusive education: A critical review and notes for a research program". *Review of Educational Research*, 90(3), 529-566. <https://doi.org/10.3102/0034654320926149>
99. Xu, W., Li, C., & Wang, L. (2023). Physical Activity of Children and Adolescents with Hearing Impairments: A Systematic Review. *International Journal of Environmental Research and Public Health*, 20(3), 4575.
100. Zeng, N., Ayyub, M., Sun, H., Wen, X., Xiang, P. & Gao, Z. (2017). Effects of Physical Activity on Motor Skills and Cognitive Development in Early Childhood: A Systematic Review. *Biomed Res Inc*. Doi: 10.1155/2017/2760716.
101. Zanin, J. & Rance, G. (2016). Functional hearing in the classroom: assistive listening devices for students with hearing impairments in a mainstream school setting, *International Journal of Audiology*, 55(12), 723-729. DOI: 10.1080/14992027.2016.1225991 Zepke, N. (2018). Student engagement in neo-liberal times: What is missing?. *Higher Education Research & Development*, 37(2), 433-446.