REVIEW ARTICLE

Involvement of Allied Health Professionals in Primary Schools: A Scoping Review

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ABSTRACT

Background. This study examines the role of occupational therapists (OTs), physical therapists (PTs), and speech-language pathologists (SLPs) in supporting primary school-age children within school settings. Therapy services are identified as an essential addition to the educational setting to ensure inclusion of all students, regardless of abilities. With an increasing demand for therapy services in educational environments, understanding the specific contributions of each profession is essential for improving interdisciplinary collaboration and enhancing student outcomes.

Objective. The study aimed to answer the question, "What is known from the literature about the nature and extent of involvement of allied health professionals in primary schools (K-6)?"

Methods. A scoping review methodology was employed to explore the extent, range, and nature of research on the involvement of OTs, PTs, and SLPs in schools. The review followed the Joanna Briggs Institute (JBI) Framework for scoping reviews, incorporating a comprehensive literature search across multiple databases. Inclusion criteria focused on studies that examined therapy services provided within primary school settings. Data were charted and thematically analyzed to identify common trends and variations in service provision.

Results. The findings highlight that OTs primarily address fine motor skills, sensory processing, and self-care tasks to promote functional participation in classroom activities. PTs focus on gross motor development, postural control, and mobility, ensuring that students can navigate school environments effectively. SLPs play a critical role in language development, communication strategies, and social interaction skills. The review also identifies various models of service delivery, including direct interventions, consultation with teachers, and collaborative classroom-based approaches. Additionally, barriers such as limited resources, inconsistent policies, and challenges in interdisciplinary communication were noted as factors affecting service implementation.

Conclusion. This study underscores the vital contributions of OTs, PTs, and SLPs in fostering inclusive education for primary school-age children. While their roles are distinct, effective collaboration among these professionals is crucial for maximizing student engagement and participation. Addressing systemic barriers and promoting integrated service models can enhance the impact of therapy services on student outcomes. Future research should explore best practices for interdisciplinary teamwork and policy development to support equitable access to therapy services in education.

Keywords: allied health professional, primary school, school health services, diversity, equity, inclusion, mainstreaming, education

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INTRODUCTION

The Salamanca Statement reaffirms the right to education of every individual as stated in the 1948 Universal Declaration of Human Rights.[1] The document asserts that every learner is unique and that education systems must be able to respond to learner diversity. It recognizes that the educational needs of all children cannot be met by the education sector alone and that embedding multi-sectoral action through supportive partnerships between teachers, families, allied health professionals, communities, and the public can positively influence the lived context of individuals. This multi-sectoral approach towards inclusive education has been gaining momentum in the Philippines. Republic Act No. 11650, or the "Instituting a Policy of Inclusion and Services for Learners with Disabilities in Support of Inclusive Education Act" aims to provide learners with disabilities free and appropriate basic education and related services.[2] A strategy to achieve this is the proposed establishment of Inclusive Learning Resource Centers (ILRC) for all learners, regardless of their abilities, to support their inclusion in the general education system. The ILRC endeavors to provide related services to enhance teaching and learning. These related services are to be conducted by the "multidisciplinary team," which includes, but is not limited to, speech and language, occupational, and physical therapists. The multidisciplinary team is expected to assess, diagnose, monitor, and implement Individual Education Programs (IEPs) and ensure that learners with disabilities are included within the general education system.[2]

This research will use the term "allied health professionals" (AHPs) when describing occupational therapy (OT), speech pathology (SP) or speech-language pathology (SLP), and physical therapy (PT) professionals based on the Institute of Medicine's report, which included OT, SLP, and PT among a diverse range of professions as part of what is known as "allied health services."[3] The term "therapy services" conducted by AHPs may include rehabilitation services, which the World Health Organization (WHO) defines as interventions that "optimize functioning and reduce disability" of individuals as they interact with their environment.[4] The research team also defined primary schools to follow the Department of Education's definition of the primary (elementary) level of education, which covers the education of students until the sixth grade.[5]

As previously mentioned, therapy services are identified as an essential addition to the educational setting to ensure inclusion of learners with disabilities. Thus, this proposition necessitates the education and health sectors to collaborate toward effective learning opportunities for students.[6] Various international and prominent national organizations of AHPs have given position statements highlighting what they can contribute to inclusive education. The World Federation of Occupational Therapists (WFOT) discussed that school-based occupational therapy services are educationally relevant, as OTs play a significant part in providing a continuum of support across all levels of education to address activity limitations and participation restrictions.[7] According to the American Physical Therapy Association (APTA), school-based physical therapists have various roles such as providing support to a student's IEP, working collaboratively with a student's IEP team, and participating in screening, evaluation, program planning, and intervention.[8] Moreover, the American Speech-Language-Hearing Association (ASHA) also released a position statement in 1996 asserting that there should be available speech, language, and hearing services in educational settings to support children and youths with communication disorders.[9] They recognize that speech, language, and hearing services provision in educational settings is a move towards service-delivery models that integrate intervention with general educational programming, which is often termed inclusion.[9]

AHP's inclusion in school-based health centers allows those in vulnerable situations to receive needed health care services, overcoming barriers usually hindering their participation such as transportation and time.[10] The way these AHPs can deliver these health care services can vary in several different ways and through various models of practice, as illustrated in the following examples. Physical therapists provide interventions to address student needs in the areas of mobility, motor learning, physical education and recreation, and positioning, to name a few.[11] Occupational therapy interventions seek to improve student engagement and participation in the context of classroom and school settings, which can include sensory interventions and fine motor skill development.[12] White and Spencer report that for speech and language therapists, direct interventions to address vocabulary, grammar, and narrative targets can be administered using a school-commissioned service delivery approach.[13]

However, despite AHP role distinctions, global disparities persist in the legislative frameworks that inform the extent and nature of AHP involvement in schools. Among the 193 countries examined, only around 65–67% have national legislation that combines integration in mainstream schools with individualized supports and reasonable accommodations for students with disabilities across primary and secondary education.[14] Less than half of low-income countries (42%) surveyed provide this combination, which is significantly lower compared to the 65% of middle-income countries and 78% of high-income countries that do. These data indicate that while countries across income levels have established legal frameworks for inclusive education, the depth of their implementation varies widely.

In addition, therapists in many countries are still not directly providing services in schools, resulting in poorly established school-based practices. This is despite the promising outcomes from pioneering programs as well as global policies and frameworks' continued call for the integration of AHPs in the education setting.[12] While countries across

the globe have signed the Salamanca Statement to signify their commitment to inclusive education, the practices in every country are still varied, and the extent of progress towards integrating services within the education setting is still uncertain. Even as O'Donoghue and colleagues affirm the assertion from various global policies and frameworks that health professionals have roles to play in the education sector, they also assert that much less is known about how these programs are developed, implemented, and evaluated.[12] While there are studies that report on specific programs that involve AHPs in primary schools, the scope of these studies may also be limited, as in the single case study reported by Phoenix et al. on the Partnering For Change (P4C) model.[15] A broader look at the nature and extent of school-based service delivery for AHPs is thus warranted. To date, there is no scoping review that maps the current landscape of literature pertaining to the school-based services offered by allied health professionals (i.e., OT, PT, SP) for students in the primary level who require additional support for learning.

The present study therefore seeks to identify and describe the services provided by AHPs in the context of school-based therapy services by answering the following research question: "*What is known from the literature about the nature and extent of involvement of allied health professionals in primary schools (K-6)?*"

METHODS

This study followed the scoping review framework proposed by the Joanna Briggs Institute (JBI), whereas the reporting of the results is guided by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR).[16,17] This study used a scoping review as it is an appropriate approach to examine the extent and nature of available research on the involvement of AHPs in primary school settings to pinpoint gaps, as well as summarize and report relevant findings.[18]

Eligibility Criteria

Articles that met the following criteria were included in the study: (1) explicitly stated involvement of registered occupational, physical, and speech-language therapists in school-based services; (2) described school-based services delivered in primary schools (kindergarten to sixth grade); (3) published from 2014 onwards; (4) in English language; and (5) published in peer-reviewed journals. The following articles are excluded from the study: (1) did not explicitly provide descriptions of services delivered in primary schools when these are delivered to both primary and secondary schools; (2) described services delivered outside the school setting (i.e., clinics, community, telehealth); (3) described involvement of AHPs in special education units or specialist schools; (4) evidence synthesis, protocol studies, non-empirical articles, and grey literature.

Information Sources and Search

An extensive electronic search was conducted in July 2024 on the following databases: CINAHL, EBSCO, ProQuest, PubMed, ERIC. These databases are known for their broad content and education- and allied health-focused articles. The retrieval of evidence conducted for this study utilized database searches only, and handsearching was not implemented. Table 1 presents a sample of the full electronic search strategy for this scoping review, showing the keywords, iterations, and limits used for CINAHL and ERIC databases.

Table 1. Search Strategy

Date	Search	Query	Items Found
CINAHL			
30/7/24	1	"Occupational therap*" OR "OT"	15,126
	2	"speech language patholog*" OR "speech therap*" OR "SLP"	7,449
	3	"physical therap*" OR "physiotherap*" OR "PT"	35,444
	4	"allied health professional" OR "allied health personnel"	2,201
	5	"elementary school" OR "primary school" OR "grade school"	5,716
	6	"involvement" OR "service" OR "intervention" OR "program" OR "engagement" OR "practice"	728,637
	7	S1 OR S2 OR S3 OR S4	56,436
	8	S5 AND S7	119
	9	S6 AND S8	72
Limits used: Peer-reviewed; from 2014 onwards; English language			
ERIC			
29/7/24	1	MAINSUBJECT. EXACT("Occupational Therapy")	402
	2	MAINSUBJECT.EXACT("Speech Language Pathology") OR MAINSUBJECT.EXACT("Speech Therapy")	1319
	3	MAINSUBJECT. EXACT("Physical Therapy") OR noft("physiotherap*")	274
	4	MAINSUBJECT.EXACT("Allied Health Personnel")	1597
	5	MAINSUBJECT. EXACT("Elementary Schools") OR "Primary school" OR "Grade school"	9073
	6	"Involvement" OR "Service" OR "intervention" OR "Program" OR "engagement" OR "practice"	149,136
	7	S1 OR S2 OR S3 OR S4	2763
	8	S5 AND S7	37
	9	S6 AND S8	31
Limits used: Peer-reviewed; from 2014 onwards; English language			

Selection of Sources of Evidence

Selection of relevant studies utilized Covidence for title and abstract screening and full-text screening. Answering 'yes' or 'maybe' in the title and abstract screening allowed the article to proceed to full-text screening. Meanwhile, only articles that satisfied all the inclusion criteria received an 'include' answer on Covidence, which were then included for the review. Pilot-testing of the screening process was done. During the pilot testing, all authors conducted trial screening of a number of articles both at the level of title and abstract screening and full-text screening. After the pilot testing, all articles were divided among the four authors equally. All authors met frequently to discuss disagreements. The final articles included in the review were selected by consensus among the authors.

Data Charting Process

A comprehensive data charting matrix (Table 2) on Google Spreadsheet was used by the authors to extract data from the final list of articles included in the review. Authors 1, 2, and 3 pilot-tested the data charting matrix and then independently reviewed and charted an equal number of articles. Data extraction was an iterative process. Data extracted from the articles were the following: citation information, year of publication, study location, professional discipline, research aim or questions, study design and methods, services provided, service recipients, nature of involvement, factors influencing school involvement, and other pertinent information.

Synthesis of Results

Content analysis was employed for data analysis. Presentation of results included descriptive numerical summaries and generated codes and themes. The content analysis followed an inductive approach.[19]

RESULTS

The data search yielded 990 studies from databases and citation searching. Three hundred three duplicate entries were removed, resulting in 687 articles for screening. Of these, 613 articles were found to be irrelevant after title and abstract screening, while 71 studies were retrieved for full-text screening. After assessing eligibility, a further 61 articles were excluded. A total of 13 full-text articles were included in the scoping review following the full-text screening. A summary of the selection process is illustrated in the PRISMA flowchart (Figure 1).

Study Characteristics

All 13 studies in this scoping review were published between 2014 and 2024. The majority of the studies were conducted in North America (n = 5), followed closely by Australia (n = 4), Europe (n = 3), and Asia (n = 1). More than half of the studies (n = 7) reported the school system within which these educational institutions operate, all of which explicitly mentioned that the program/intervention was conducted in public or government-run institutions. Of these seven studies, one study described conducting the program at both government and independent schools. The remaining six studies only mentioned what level of school (i.e., elementary) the participants were recruited from without indicating whether it is publicly or privately funded.

Allied health professionals feature prominently in each of these studies, with six studies involving OT, four with SLP, and three with PT. The target audience or service recipients for the studies varied. In most studies, AHP provided direct service to students only (n = 9) and to both students and teaching staff (n = 3). Only one of the studies tailored its interventions for teachers (n = 1).

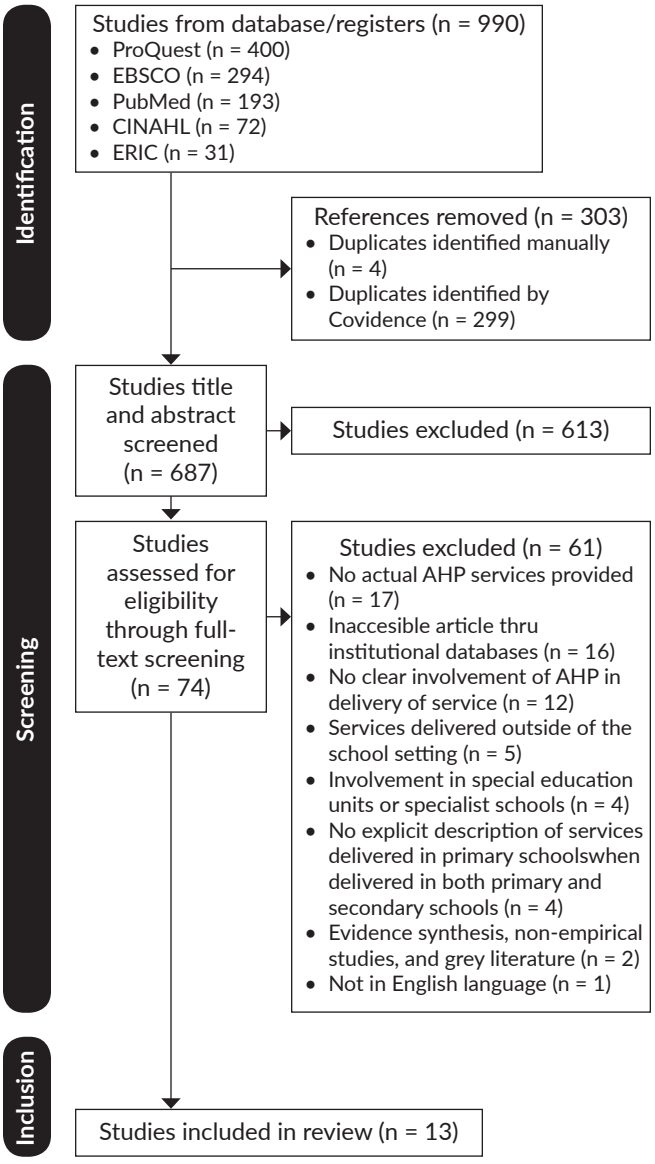

Figure 1. PRISMA-ScR Flow Diagram.

Table 2. Data Extraction Table

Author (Year)	Title	Study Locale	AHPs Involved	Study Design	Scope of Service	Nature of Involvement	Service Recipients	Facilitators and Barriers	Outcomes
Alexandra, Silvia, Katarina, & Libor (2023)[20]	The Effectiveness of Health Exercises in Children During Physical Education Classes in the First Level of Primary Schools	Elementary school in Europe	Physical Therapist	One group Pre-test post-test design	Motor Skills	Direct service provision Teacher Collaboration Push-in	Primary school students	(+) Presence of allied health professionals in school	Effective intervention
Alina-Mihaela & San-Iulian (2018)[21]	Prophylactic Physiotherapy Used to Improve the Coordination in Primary School Children	Elementary school in Europe	Physical Therapist	Experimental design	Motor Skills Cognitive Skills Socio-Emotional Skills	Direct service provision Push-in	Primary school students	None Indicated	Effective intervention
Challita, Chapparo, Hinitt, & Heard (2019)[22]	Effective Occupational Therapy Intervention with Children Demonstrating Reduced Social Competence During Playground Interactions	Elementary school in Australia	Occupational Therapist	Quantitative, experimental, crossover design	Cognitive Skills Socio-Emotional Skills	Direct service provision Teacher Collaboration Push-in	Primary school students Teachers	(-) existing school policies (-) small sample size	Effective intervention
Gillam, Gillan, Maimaraj, Capin, Augenstein, Roberts, & Vaughn (2024)[23]	Contextualized, Multicomponent Language Instruction: From Theory to Randomized Controlled Trial	Elementary school in North America	Speech-Language Pathologists	Randomized controlled trial	Cognitive Skills	Direct service provision Pull out	Primary school students	(+) collaboration with teachers (+) use of lesson plans (-) varied student needs (-) inconsistent implementation	Effective intervention Limited general-izability
Hui, Snider, & Couture (2016)[24]	Self-regulation workshop and Occupational Performance Coaching with teachers: A pilot study	Public school district in North America	Occupational Therapist	Multiple-case replication study design	Cognitive Skills Socio-emotional skills	Capacity building Push-in Teacher Collaboration	Teachers	(-) varied student needs (-) student behaviors (-) participant bias	Effective intervention
Macdonald, Milne, Pope, & Orr (2021)[25]	Evaluation of a 12-Week Classroom-Based Gross Motor Program Designed to Enhance Motor Proficiency, Mathematics and Reading Outcomes of Year 1 School Children: A Pilot Study	Government school in Australia	Physical Therapy	Exploratory study	Motor Skills Cognitive Skills	Direct service provision Teacher Collaboration Push-in	Primary school students	(-) study design	Effective intervention
Wong, Li-Tsang, Siu (2014)[26]	Effect of a Social Emotional Learning Programme for Primary School Students	Elementary school in Asia	Occupational Therapist	Randomized controlled trial	Cognitive Skills	Direct service provision Push-in	Primary school students	(-) small sample size (-) bias from subjective reports	Effective intervention for some subscales
Lennox & Westerveld (2014)[27]	Enhancing emergent literacy performance of Australian students from disadvantaged backgrounds in their first year of school: A preliminary investigation	Government school in Australia	Speech-Language Pathologist	Quasi-experimental design	Cognitive Skills Language and Communication Skills	Capacity building Direct service provision Push-in	Primary school students Teachers Teacher Aides	(-) time constraints (-) lack of measures for teacher engagement (-) undetermined baseline skills	Effective intervention

Table 2. Data Extraction Table *(continued)*

Author (Year)	Title	Study Locale	AHPs Involved	Study Design	Scope of Service	Nature of Involvement	Service Recipients	Facilitators and Barriers	Outcomes
Rehfelda & Sulaka (2021)[28]	Service Delivery Schedule Effects on Speech Sound Production Outcomes	Elementary school in North America	Speech-Language Pathologist	Experimental design	Cognitive Skills Language and Communication Skills	Direct service provision Pull-out	Primary school students	(-) small sample size (-) non-homogenous sample (-) ceiling effect (-) incomplete session (-) non-standardized measures	Effective intervention
Romero-Ayuso, Espinosa-García, Gómez-Marín, Gómez-Jara, Cuevas-Delgado, Álvarez-Benítez, & Triviño-Juárez (2022)[29]	A Pilot Study of Improving Self-Regulation and Social Interaction with Peers: An "Exciting School"	Government school in Europe	Occupational Therapist	One group Pre-test post-test design	Cognitive Skills Socio-emotional Skills	Direct service provision Pull-out	Primary school students	(-) small sample size (-) generic strategies (-) varied student needs (-) participant attrition (-) limited formal analysis (-) lacking demographic data (+) positive affective relationships	Mixed results
Skelton & Richard (2016)[30]	Application of a Motor Learning Treatment for Speech Sound Disorders in Small Groups	Government school in North America	Speech-Language Pathologist	Experimental design	Cognitive Skills Language and Communication Skills	Direct service provision Pull-out	Primary school students	None mentioned	Effective intervention for small groups
Wagner, Latimer, Adams, Olson, Symons, Mazzucchelli, Jirikowic, Watkins, Cross, Carapetis, Boulton, Wright, McRae, Carter, & Fitzpatrick (2020)[31]	School-based intervention to address self-regulation and executive functioning in children attending primary schools in remote Australian Aboriginal communities	Government and Independent Schools in Australia	Occupational Therapist	Randomized Controlled Trial	Cognitive Skills Socio-emotional Skills	Push-in	Primary school students Teachers School administrators Parents	(-) study design (-) small sample size (-) lack of diagnosis	No effect
Whiting, Schoen, & Niemeyer (2023)[32]	A Sensory Integration Intervention in the School Setting to Support Performance and Participation: A Multiple-Baseline Study	Government school in North America	Occupational Therapist	Concurrent, multiple-baseline, single-subject design	Cognitive Skills Socio-emotional Skills	Direct service provision Pull-out	Primary school students	(-) study design (-) small sample size (-) non-standardized measures (-) bias due to lack of blinding	Effective intervention

The studies also showed a variety of services provided by AHPs. Most of the studies targeted more than one developmental domain in their services. Twelve out of 13 studies targeted the cognitive skill domain, followed by socio-emotional skills (n = 6), motor skills (n = 6), and language and communication skills (n = 3) through the AHP services.

Regarding the studies' methodologies, most (n = 5) were experimental studies. Among these experimental studies, single-subject experimental design (n = 2) and unspecified experimental design (n = 2) were the most common, followed by crossover experimental design (n = 1). In addition to experimental designs, a few studies used quasi-experimental designs (n = 3), exploratory design (n = 1), and randomized controlled trials (n = 3). The remaining study is a qualitative multiple-case replication study.

Apart from the few high levels of evidence in the literature, some studies have also identified their study design and sample size as barriers, citing difficulty in conducting a formal analysis and generalizing findings in children who have received the services provided by AHPs, respectively. Furthermore, challenges in participant selection were also reported, with two studies correspondingly mentioned having a non-homogenous sample size and ceiling effect phenomenon. One study also noted a possible participant bias, as the participants were volunteers for the intervention, which may have created a positive tendency towards change.

With respect to specific methodologies, measures such as subjective reports and non-standardized assessment tools in some studies and survey attrition were mentioned to have affected the rigor of the analysis of treatment effects. Additionally, one study stated that due to the nature of their chosen intervention protocol, the effects of individual treatment components on each other have not been thoroughly investigated.

Involvement of Allied Health Professionals in Primary Schools

Nature of AHP Involvement

A closer look at the nature of the services provided in school settings showed AHP involvement across the continuum of care from assessment to intervention. Comprehensive assessments utilizing standardized measures (e.g., Miller Function and Participation Skills, Sensory Processing Measure - Second Edition, Social Skills Rating System) and classroom observations are employed by AHPs to determine baseline functional skills and monitor the effectiveness of therapeutic interventions. Progress monitoring tools (e.g., Monitoring Indicators of Scholarly Language, Goal Attainment Scale) track patient response to therapeutic interventions delivered in school settings. These outcome measures and monitoring tools were limited to the student performance outcomes being addressed by the interventions or programs.

AHPs delivered whole-class, small-group, or individualized therapy sessions targeting specific deficits in language, sensory processing, motor skills, speech, and self-regulation. These sessions often incorporate evidence-based techniques tailored to the child's needs and diagnosis, with some studies describing the use of specific intervention protocols or programs (e.g., Alert Program, Supporting Knowledge in Language and Literacy Program).

Models used in service delivery also varied, with a number of studies (n = 8) applying a push-in model, whereby AHPs integrate the interventions into existing school activities and curricula. The five remaining studies were consistent with the pull-out model in which a more individualized form of intervention was provided outside the typical classroom activities.

Indirect service provision is also featured in two studies in addition to more direct approaches. Instead of direct contact with students, these programs described training and capacity-building activities conducted by AHPs for teachers and school staff who would then apply interventions and strategies that are embedded into existing classroom activities.

Intervention Goals/Outcomes

The programs discussed in the articles address different student needs at different levels: environment and context, specific skills and body functions, as well as participation in relevant school activities.

The majority of the included studies described services and programs that target skill deficits among students in the developmental domains of motor/physical development (n = 3), cognitive development (n = 9), language and communication development (n = 5), and socio-emotional development (n = 6). Notably, several programs address multiple domains in the intervention. For example, the study by Alina-Mihaela and Dan-Iulian addressed physical, cognitive, and socio-emotional outcomes through physical activities and exercises that were intended to improve coordination in students.[21]

Several studies (n = 8) also addressed the environment in terms of the systems in place that cause difficulties for students with learning needs, as well as the social environment that contributes to successful student performance. Out of these studies, four studies described the process of co-developing programs that were then implemented and integrated into the curriculum. One such study by Lennox and Westerveld looked into adapting existing intervention strategies to address more complex student needs by introducing additional services or sessions.[27] On the other hand, the study by Hui, Snider, and Couture was among the other four articles that described interventions that aimed to capacitate the social environment – that is, the teaching staff – in facilitating student outcomes through effective classroom management strategies and teacher-led classroom activities aligned with the intervention.[24]

Student participation in different aspects of the learning environment was also addressed by AHPs. Several studies described how the programs and interventions facilitated school participation of students as an outcome. Whiting, Schoen, and Niemeyer's study on sensory integration underscored the positive effects of OT sensory interventions to promote active participation in school activities for students who experience sensory processing difficulties.[32] AHP interventions were also linked to improving student academic outcomes like literacy, reading, and mathematics.[25,27] Similarly, social participation in the context of day-to-day interactions with teachers and peers was also addressed by a number of studies, including that of Challita, Chapparo, Hinitt, and Hear, which aimed to develop social competence in the context of playground interactions in school.[22]

The interventions reported in this scoping review were generally found to have positive outcomes on their intended population, with 11 studies reporting on the effectiveness of the interventions. Two studies reported mixed results. The study by Romero-Ayuso et al. showed limited generalizability of the interventions depending on the participant's diagnosis; it was effective for neurotypical students but not for learners with special needs.[29] Limited skill generalization was also reported by Gillam et al., for specific outcomes investigated depending on the age of the participants.[23]

Strategies Used in School-based Service Delivery

To achieve these outcomes, AHPs employed a variety of strategies to be carried out in the delivery of the intervention. A number of studies (n = 8) included the use of teaching-learning strategies such as direct instruction, role-playing, prompts and cues, giving feedback, scaffolding, distributed practice, small group discussions, and the therapeutic use of self. Many of the studies (n = 7) also favored the use of varying modalities in facilitating intervention outcomes. Technology, sensorimotor tools and activities, and story books were among the modalities utilized in the course of the programs.[20,24,26,27,29,31,32] Client-centered practice was also reported regardless of the target participants, emphasizing the need for individualized goals and providing opportunities for child-directedness in the activities provided.[24,32] Skills practice was also mentioned as a strategy used by AHPs in school-based service delivery, which involved repetitive and guided demonstrations and return demonstrations of performance for skills like positive thinking, relaxation, storytelling, and problem solving.[23,24,26]

Three studies highlighted the enjoyable nature of the programs, describing the activities as "fun" through the use of interactive games and other play activities in delivering interventions.[21,29,32]

Factors Affecting Service Delivery

Several factors were found to contribute to the quality of the service delivery. The studies included in the review reported factors that contributed to the effectiveness of the interventions. Foremost is the availability of allied health professionals within the school setting. The presence of AHPs within school settings also allowed for the use of standardized tools in measuring student outcomes, as many of these tools can only be administered by trained AHPs.[20,32] While not present in all the studies, Whiting et al. highlighted the advantage of having sensory facilities in the school in addressing the sensory needs of learners with disabilities.[32]

The qualities demonstrated by the AHPs providing the services were also identified as a facilitator. AHPs who actively engaged in collaborative activities with teachers and other school staff, promoted positive affective relationships with members of the intervention team, and demonstrated evidence-based practice were found to contribute to the successful implementation of school-based programs.[23,29,32]

Barriers to effective service delivery included difficulties in providing appropriate health services for students with specialized learning needs due to identified gaps in student data. Data-informed decision-making is necessary to determine the applicability of the intervention to the unique needs of each student, such as socioeconomic status, information on the home context, and clearly established baseline skills.[27,29] Because of the lack of such information, the programs defaulted to using generic strategies, which led to challenges in the implementation of sessions.

Other factors that contributed to implementation challenges include the lack of outcome measures for teacher engagement in school-based programs, especially considering that school-based AHP service delivery featured close collaboration with teachers.[27] Issues with treatment fidelity, such as inconsistent or incomplete sessions, were also reported.[23,27,28] Difficult student behaviors and the wide variety of student learning needs also presented challenges in the effective implementation of school-based programs.[24,29]

Some studies also mentioned how school-based delivery of AHP services was resource-intensive, requiring resources that are not typically available in school settings outside the therapy interventions.[31] In studies that followed a pull-out model of service delivery, constraints regarding scheduling and conflicting school policies also presented challenges in the implementation of the programs.[22,27]

DISCUSSION

School-based practice among allied health professionals has progressed over the years since the publication of the Salamanca Statement in 1994, which stressed the importance of inclusive education for all children, even those with specific learning challenges.[1] Analysis of the articles included in this review shows a variety of programs delivered and implemented by allied health professionals, including occupational therapists, physical therapists, and speech-language pathologists in school settings. The nature and extent of the services provided also varied from direct service provision to learners with diverse learning needs

to collaborative activities aimed at capacitating educators and school staff. The review also identified facilitators and barriers to the effective implementation of school-based AHP services.

Multi-tiered Systems of Support

The practice has shifted from traditional direct service models to more inclusive, collaborative, tiered service models. Evidence indicates a growing global phenomenon towards the adoption of multi-tiered systems of service delivery to address the needs of different students and assist the whole educational system.[33,34]

The most common multi-tiered model involves three interdependent levels of support. Tier 1 is the Universal Design for Learning principles implemented through whole-school or whole-class approaches where therapists work with educators to develop capacity and awareness. Tier 2 offers differentiated instruction in the form of modified teaching strategies for students at risk, typically in the form of small-group intervention based on multisensory methodology. Tier 3 offers personalized accommodations for diagnosed students, altering environments or activities to facilitate engagement. A number of structured programs illustrate this, with Canada's Partnering for Change (P4C) model being shown to be especially well-established, with benefits including waitlist elimination and earlier recognition of underperforming students.[35]

The studies included in this review demonstrate the application of these three tiers. The study conducted by Hui and colleagues illustrates a Tier 1 intervention which involved the capacity building of teachers to develop classroom management strategies to facilitate self-regulation among students.[24] Embedding therapy interventions in whole-class activities was also seen as a Tier 1 level of support in the studies conducted by Alexandra et al. and Macdonald et al., wherein physical exercise was integrated into typical classroom activities.[20,25]

Some studies also demonstrated Tier 2 support in service delivery. For example, Whiting et al. provided more targeted interventions for learners whose difficulties were not addressed by integrated support within the class.[32]

Aside from these, the majority of the articles included in this review describe interventions that are consistent with the third tier of support, in which supplementary interventions or therapy sessions were administered outside the usual class hours.[23]

Notably, Lennox and Westerveld's study exemplified the provision of multiple tiers of support for learners within the program.[27] While the study describes the provision of whole-class interventions done through integrating strategies into the literacy curriculum, additional targeted interventions were provided for students with more complex therapy needs through supplementary small group sessions outside the regular class session.

Despite criticism, the traditional pull-out approach—which involves removing students from the classroom for individual therapy—remains in use. Despite the fact that some educators and therapists believe that this approach saves time, research shows that it has a significant disadvantage: it removes learners from their natural learning environment, which may interfere with curriculum access and not directly promote classroom inclusion.[12]

Conversely, inclusion models use cooperative learning techniques to deliver therapy in the classroom. According to research, this model outperforms pull-out services by facilitating more cooperative interventions that cause less disruption to teachers.[12] Inclusion models facilitate greater knowledge translation by offering therapy in naturalistic settings, where teachers and therapists collaborate to develop strategies that support students' success in school.[34,36]

Implementation of a multi-tiered approach calls for systematic changes in practice. Therapists need to become more equipped in applying tiered interventions, prioritize building relationships with other members of the service delivery team – which now includes educators – and immerse themselves on a regular basis in classroom environments. Lynch and colleagues underscore this in their study, stating, "the most common ingredients for success included embedding therapists in schools and classrooms on a regular and ongoing basis, which was typically every week, and interprofessional collaborative consultation to facilitate relationship building and mutual understanding of roles."[34]

Though more traditional direct interventions remain common, the latest evidence found in this review firmly endorses collaborative, classroom-focused models to enhance student engagement, access to the curriculum, and supportive learning environments.[24,25,27] These practices prioritize capacity building within the school setting and ensure therapy interventions are educationally meaningful in the child's natural learning environment. However, successful use demands sufficient collaboration time, clear role understanding, and persistent professional growth.[12]

School-based therapy services are evolving to mirror a larger paradigm shift at the intersection of health and education.[10] Allied health practitioners, including occupational therapists, physical therapists, and speech-language pathologists, are central to inclusive service delivery that addresses the needs of diverse students. By using multi-tiered, collaborative methods, therapists can most effectively use their skills, serving individual students but also the entire educational system in promoting participation and achievement for all children.

Multidimensional Intervention Goals and Outcomes

This review showed that there is still room for improving how inclusive education is implemented in primary schools. Booth and Ainscow present an index for developing an inclusive design program in different contexts.[37] In the index,

they present that inherent in the definition of inclusion in education is the removal of barriers surrounding the learning environment of all learners, and not just those with learning difficulties. This scoping review found, however, that the implemented inclusive education practices still have a focus on targeting the learner as an individual. All 13 of the studies were noted to target the developmental domains of the learner in one form or another. And while a majority of them also targeted the environment, only some were noted to have targeted the participation or the involvement of the student in the classroom. This highlights that while efforts are made in targeting the environment surrounding the individual, the current landscape of school-based AHP practice still has a focus on targeting the individual, which is different from how inclusive education is in theories and in models.

An important goal common among the studies found was the collaboration and capacity building of the teachers. Improving the capabilities of the teachers in managing the classroom and improving the teaching strategies used is a goal rooted in inclusive education principles. This is congruent with the article by Dewsbury and Brame, where they discuss how teachers should develop their self-awareness and empathy in an effort to build an inclusive classroom climate.[38] Along with the knowledge of these inclusive strategies, it is also important that the teachers are capacitated in knowing when the strategies should be implemented. From the same article by Dewsbury and Brame, they note that the pedagogical choices that teachers have to make in inclusive classrooms should always be guided by the setting in which they are to be implemented.[38]

Barriers and Facilitators Identified

Several challenges and opportunities to service delivery due to the nature of school settings were identified in this review. These aspects can provide insights into creating a standard of practice for AHPs in school settings. Firstly, as there is a wide range of learners' needs in a single classroom compared to the typical therapy session in clinical settings, AHPs must adapt generic strategies to match various student characteristics. These strategies may involve additional individualized support to address behavioral challenges and learner needs.

Secondly, the school academic calendar and policies also serve as a major consideration in the implementation of some services, as AHPs need to adapt their models of service delivery to abide by the institution's guidelines. Harmonizing AHP programs with the school's academic schedule, policies, and curriculum yields a more productive service-delivery model where interventions are integrated into classes, reflecting the goal of inclusive education.

Thirdly, it has been noted that insufficient resources in the workforce and inadequate facilities in the school settings also affect the delivery of AHP services. Professional policies for this area of practice may then prioritize workforce planning and preparation and budget allocation for proper infrastructure. In relation to workforce planning, it is deemed vital to prepare undergraduate allied health students by embedding school-based therapy practice content in their curriculum and providing opportunities for professional development for school-based AHPs to improve quality of service, achievement of outcomes, and collaboration with stakeholders.

Implications of this Study

This study shows how the system and the context that surrounds the school shape the delivery of school-based services. There needs to be a system in place that allows for the integration of AHP services within the school setting. While in the Philippines the Inclusive Education Act exists, it still lacks Implementing Rules and Regulations that dictate how the law should be implemented. Internationally, there are also differences in the laws, regulations, and culture that dictate how AHPs are able to integrate into school settings. This highlights that there needs to be further studies done in evaluating the differences in each of these settings and creating a more unified framework for inclusive education that will be applicable in different contexts.

The findings on the implementation of school-based services may serve as a guide for policymakers in the Philippines in the creation of the Implementing Rules and Regulations of the Inclusive Education Act. Barriers such as the lack of resources highlight the need for provisions in the ILRCs to employ regular AHPs in the team to deliver the school-based interventions. The provision of these regular items may also serve as pathways for Filipino AHPs to explore the emerging practice setting.

Breadth and Depth of Extant Literature

This scoping review provided a general picture of AHP involvement in primary school settings, and the characteristics of the studies screened, included, and, ultimately, reviewed strongly suggest the predominance of evidence generated from programs conducted in Western, high-income contexts. And while the literature provides evidence for the valuable role that AHPs have in school settings, the extent to which these programs can be replicated may be limited due to the vast differences in the social, cultural, and economic contexts surrounding educational systems. While there is no significant difference in the support or recognition for inclusive education across countries, studies have shown that developed countries have clearer frameworks or guidelines to implement inclusive education practices compared to developing countries.[39] Furthermore, legal frameworks and policy guidelines for inclusive education, usually present in Western and/or high-income contexts and conversely lacking in developing countries like the Philippines, can serve as a driving force towards the development of inclusive education programs that aim to integrate AHP services in schools.[14]

Limitations of the Study

This scoping review looked at what is available in the literature that describes the nature and extent of involvement of allied health professionals in primary schools. The number of articles included in this review presents a main limitation to the study and may reflect the specificity of the inclusion criteria and the limited reporting of system- and context-level evidence in school-based allied health programs. The intentional exclusion of evidence synthesis studies may have limited the breadth of literature included, particularly in regions where primary studies are sparse. However, this decision was necessary to preserve focus on primary data and avoid duplication. Additionally, this study was limited to those that were published in English, which may exclude important insights from those published in different languages. This study was also limited to the articles that were available to the researchers through their institutional access. Articles that were unavailable to the researchers during the full-text screening were excluded, which may have included both supplementary and contradicting information to those that were included in the study. Lastly, the research team is composed of occupational therapists alone. While much attention was given to the screening process, the lack of PT and SLP perspectives may have had an effect on decisions to include or exclude potential sources of evidence.

Recommendations

To build on the findings of this scoping review, it is suggested that further research be done on school-based therapy practices, particularly on their effectiveness and their impact on both student performance and participation. Standardized outcome measures can be developed to examine contexts and explore the perceptions of teachers and parents involved in the school-based therapy system regarding their collaboration and the effectiveness of the AHP-led trainings and interventions delivered. The use of more formal and standardized outcome measures and procedures may further emphasize the importance of allied health professionals in school-based settings.

CONCLUSION

Allied health professionals—including occupational therapists, physical therapists, and speech-language pathologists—provide essential services supporting students with diverse learning needs. This scoping review sheds light on significant changes in AHP service delivery, showing how some practice settings are beginning to move away from traditional clinical approaches toward integrated frameworks aligned with inclusive education principles. Evidence demonstrates a shift from center-based outpatient clinical services toward multi-tiered systems of support benefiting entire educational communities.

Successful integration of AHPs in primary school settings requires intentional collaboration with educators and school administrators. Preparing professionals for school-based practice should focus on equipping AHPs with collaborative consultation skills as they work more closely with other members of the service delivery teams, more knowledge of educational settings and how therapy services can support students' school participation, and the application of evidence-based practice anchored on inclusive education frameworks.

By embracing this collaborative, system-focused approach, AHPs can begin to recognize their role in supporting students' learning needs, ultimately benefiting the student and creating environments where every child can thrive. Such a transition reveals the growing intersection between health and education, a move that signifies the equally invaluable contribution made by these professionals toward the building of truly inclusive learning communities.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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REFERENCES

1. UNESCO. The Salamanca Statement and Framework for Action on Special Needs Education. In: World Conference on Special Needs Education: Access and Quality, Salamanca, Spain, 1994. UNESCO; 1994.
2. Republic of the Philippines, Republic Act No. 11650: an act instituting a policy of inclusion and services for learners with disabilities in support of inclusive education [Internet]. 2022 [cited 2025 Sep]. Available from: https://www.officialgazette.gov.ph/2022/03/11/republic-act-no-11650/.
3. Institute of Medicine. Allied health services: avoiding crises. Washington (DC): National Academies Press; 1989. doi: 10.17226/769.
4. World Health Organization, Rehabilitation [Internet]. 2024 [cited 2025 Sep]. Available from: https://www.who.int/news-room/fact-sheets/detail/rehabilitation.
5. Department of Education, DepEd Order No. 21, s. 2019: policy guidelines on the K to 12 basic education program [Internet]. 2019 [cited 2025 Sep]. Available from: https://www.deped.gov.ph/2019/08/22/august-22-2019-do-021-s-2019-policy-guidelines-on-the-k-to-12-basic-education-program/.
6. Vaughan-Jones S, Penman M. Establishing a place: occupational therapy involvement within special education in New Zealand. N Z J Occup Ther. 2004 Sep;51(2):11-16.
7. World Federation of Occupational Therapists, WFOT position statement: occupational therapy services in school-based practice for children and youth [Internet]. 2021 [cited 2025 Sep]. Available from: https://www.wfot.org/resources/occupational-therapy-services-in-school-based-practice-for-children-and-youth.
8. American Physical Therapy Association, Providing physical therapy in schools under IDEA 2004 [Internet]. 2009 [cited 2025 Sep]. Available from: https://pediatricapta.org/pdfs/IDEA%20Schools.pdf.

9. American Speech-Language-Hearing Association, Inclusive practices for children and youths with communication disorders [Internet]. 1996 [cited 2025 Sep]. Available from: https://www.asha.org/policy/ps1996-00223/.
10. Soleimanpour S. School-based health centers: at the intersection of health and education. J Adolesc Health. 2020 Sep;67(3):317-18. doi: 10.1016/j.jadohealth.2020.05.009. PMID: 32487488; PMCID: PMC7261217.
11. Jeffries LM, McCoy SW, Effgen SK, Chiarello LA, Villasante Tezanos AG. Description of the services, activities, and interventions within school-based physical therapist practices across the United States. Phys Ther. 2019 Jan;99(1):98-108. doi: 10.1093/ptj/pzy123. PMID: 30329119; PMCID: PMC6314330.
12. O'Donoghue C, O'Leary J, Lynch H. Occupational therapy services in school-based practice: a pediatric occupational therapy perspective from Ireland. Occup Ther Int. 2021 Jun;2021:6636478. doi: 10.1155/2021/6636478. PMID: 34220382; PMCID: PMC8221888.
13. White S, Spencer S. A school-commissioned model of speech and language therapy. Child Lang Teach Ther. 2018 Jun;34(2):141-53. doi: 10.1177/0265659018780961.
14. Waisath W, McCormack M, Stek P, Heymann J. Dismantling barriers and advancing disability-inclusive education: an examination of national laws and policies across 193 countries. Int J Incl Educ. 2024 Aug;28(10):2088-103. doi: 10.1080/13603116.2022.2058623.
15. Phoenix M, Dix L, DeCola C, Eisen I, Campbell W. Health professional-educator collaboration in the delivery of school-based tiered support services: a qualitative case study. Child Care Health Dev. 2021 May;47(3):367-76. doi: 10.1111/cch.12849. PMID: 33432659.
16. Peters MDJ, Godfrey C, McInerney P, Khalil H, Larsen P, Marnie C, et al. Best practice guidance and reporting items for the development of scoping review protocols. JBI Evid Synth. 2022 Apr;20(4): 953-68. doi: 10.11124/JBIES-21-00242. PMID: 35102103.
17. Tricco AC, Lillie E, Zarin W, O'Brien KK, Colquhoun H, Levac D, et al. PRISMA extension for scoping reviews (PRISMA-ScR): checklist and explanation. Ann Intern Med. 2018 Oct;169(7):467-73. doi: 10.7326/M18-0850. PMID: 30178033.
18. Munn Z, Peters MDJ, Stern C, Tufanaru C, McArthur A, Aromataris E. Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. BMC Med Res Methodol. 2018 Nov;18(1):143. doi: 10.1186/s12874-018-0611-x. PMID: 30453902; PMCID: PMC6245623.
19. Pollock D, Peters MDJ, Khalil H, McInerney P, Alexander L, Tricco AC, et al. Recommendations for the extraction, analysis, and presentation of results in scoping reviews. JBI Evid Synth. 2023 Mar; 21(3):520-32. doi: 10.11124/JBIES-22-00123. PMID: 36081365.
20. Melišová A, Pilarčíková S, Repová K, Čief L. The effectiveness of health exercises in children during physical education classes in the first level of primary schools. J Phys Educ Sport. 2023 Apr;23(4):990-95. doi: 10.7752/jpes.2023.04124.
21. Cristuță AM, Alexe DI. Prophylactic physiotherapy used to improve the coordination in primary school children. Sci Mov Health. 2018 Jun;18(2):131-36.
22. Challita J, Chapparo C, Hinitt J, Heard R. Effective occupational therapy intervention with children demonstrating reduced social competence during playground interactions. Br J Occup Ther. 2019 Jul;82(7):433-42. doi: 10.1177/0308022619832467.
23. Gillam SL, Gillam RB, Magimairaj BM, Capin P, Israelsen-Augenstein M, Roberts G, et al. Contextualized, multicomponent language instruction: from theory to randomized controlled trial. Lang Speech Hear Serv Sch. 2024 Jul;55(3):661-82. doi: 10.1044/2024_LSHSS-23-00171. PMID: 38640078.
24. Hui C, Snider L, Couture M. Self-regulation workshop and Occupational Performance Coaching with teachers: a pilot study. Can J Occup Ther. 2016 Apr;83(2):115-25. doi: 10.1177/0008417415627665. PMID: 27026722.
25. Macdonald K, Milne N, Pope R, Orr R. Evaluation of a 12-week classroom-based gross motor program designed to enhance motor proficiency, mathematics and reading outcomes of Year 1 school children: a pilot study. Early Child Educ J. 2022 Jun;50(5):811-22. doi: 10.1007/s10643-021-01199-w.
26. Wong ASK, Li-Tsang CWP, Siu AMH. Effect of a social emotional learning programme for primary school students. Hong Kong J Occup Ther. 2014 Dec;24(2):56-63. doi: 10.1016/j.hkjot.2014.11.001.
27. Lennox M, Westerveld M. Enhancing emergent literacy performance of Australian students from disadvantaged backgrounds in their first year of school: a preliminary investigation. J Clin Pract Speech Lang Pathol. 2014 Jan;16(2):58-65.
28. Rehfeld DM, Sulak TN. Service delivery schedule effects on speech sound production outcomes. Lang Speech Hear Serv Sch. 2021 Apr;52(2):728-37. doi: 10.1044/2021_LSHSS-20-00068. PMID: 33822654.
29. Romero-Ayuso D, Espinosa-García B, Gómez-Marín E, Gómez-Jara N, Cuevas-Delgado C, Álvarez-Benítez I, et al. A pilot study of improving self-regulation and social interaction with peers: an "Exciting School". Children (Basel). 2022 Jun;9(6):829. doi: 10.3390/children9060829. PMID: 35740766; PMCID: PMC9222160.
30. Skelton SL, Richard JT. Application of a motor learning treatment for speech sound disorders in small groups. Percept Mot Skills. 2016 Jun;122(3):840-54. doi: 10.1177/0031512516647693. PMID: 27160738.
31. Wagner B, Latimer J, Adams E, Carmichael Olson H, Symons M, Mazzucchelli TG, et al. School-based intervention to address self-regulation and executive functioning in children attending primary schools in remote Australian Aboriginal communities. PLoS One. 2020 Jun;15(6):e0234895. doi: 10.1371/journal.pone.0234895. PMID: 32579567; PMCID: PMC7314028.
32. Whiting CC, Schoen SA, Niemeyer L. A sensory integration intervention in the school setting to support performance and participation: a multiple-baseline study. Am J Occup Ther. 2023 Mar; 77(2):7702205060. doi: 10.5014/ajot.2023.050135. PMID: 37053435.
33. Missiuna C, Pollock N, Campbell W, DeCola C, Hecimovich C, Sahagian Whalen S, et al. Using an innovative model of service delivery to identify children who are struggling in school. Br J Occup Ther. 2017 Mar;80(3):145-54. doi: 10.1177/0308022616679852.
34. Lynch H, Moore A, O'Connor D, Boyle B. Evidence for implementing tiered approaches in school-based occupational therapy in elementary schools: a scoping review. Am J Occup Ther. 2023 Jan;77(1): 7701205110. doi: 10.5014/ajot.2023.050027. PMID: 36706276.
35. Missiuna C, Hecimovich C, Partnering for Change: implementation and evaluation, 2013-2015 [Internet]. 2015 [cited 2025 Sep]. Available from: https://www.partneringforchange.ca/.
36. Bolton T, Plattner L. Occupational therapy role in school-based practice: perspectives from teachers and OTs. J Occup Ther Sch Early Interv. 2020 Apr;13(2):136-46. doi: 10.1080/19411243.2019.1636749.
37. Booth T, Ainscow M, Index for inclusion: developing learning and participation in schools [Internet]. 2002 [cited 2025 Sep]. Available from: https://www.eenet.org.uk/resources/docs/Index%20English.pdf.
38. Dewsbury B, Brame CJ. Inclusive teaching. CBE Life Sci Educ. 2019 Jun;18(2):fe2. doi: 10.1187/cbe.19-01-0021. PMID: 31025917; PMCID: PMC7058128.
39. Arias CR, Calago CNS, Calungsod HFB, Delica MA, Fullo ME, Cabanilla AB Jr. Challenges and implementation of inclusive education in selected Asian countries: a meta-synthesis. Int J Res Educ Sci. 2023 Jun;9(2):512-34. doi: 10.46328/ijres.3089.