



Teachers' Perspectives on the Needs for Including Deaf Students in Mainstream Classrooms in Saudi Arabia

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ABSTRACT

Purpose. This study explored teachers' perspectives on the needs for including deaf students in mainstream classrooms in Saudi Arabia. **Methodology.** Qualitative data were collected through semi-structured interviews with eight regular teachers working in mainstream schools that serve deaf students. **Findings** The findings revealed generally positive attitudes toward inclusion, alongside a clear recognition of essential needs that must be addressed to ensure its effectiveness. These needs included training and knowledge development, improvements to the school environment and support services, and revisions to relevant regulations and legislation. **Implications for research and practice.** The study highlights the importance of establishing comprehensive pre-service and in-service training, adapting educational environments to meet the needs of teachers working with deaf learners, and strengthening the implementation of inclusive education policies.

Increasing teachers' awareness of the goals and benefits of inclusion, and how it differs from integration or mainstreaming, is also crucial for successful practice.

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Introduction

Inclusion is a response to the needs of all students through reducing exclusion and increasing participation in inclusive schools. It means that all students are educated together in a regular classroom, which involves structural changes that respond to the needs of all heterogeneous students (Hankebo, 2018). It also means using regular classrooms and curricula experienced by hearing or typical age peers within neighbourhood schools as much as possible (Andrei et al., 2024). The practice of inclusive education respects differences between learners, whatever these may be – ethnicity, race, language, gender, or disability (Molapisi & Phasha, 2024). Globally, inclusion has been

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accepted as the best approach for education (Skrebneva & Fordham, 2024). Therefore, most countries have developed educational policies that promote inclusion to ensure equal education for students with disabilities (Aseery & Alasmari, 2023). It will be argued that useful inclusion requires a continuous process involving a variety of educators and learners. Moreover, the case reported here illustrates that teachers are responsible for all students in their general or inclusive classrooms, including those with disabilities and deafness.

With respect to both international context of inclusive education and the Saudi educational context, this study sought to address existing gaps in the literature by identifying the needs of regular teachers to include deaf students in inclusive classrooms under their responsibility. The goal is to create effective inclusive approaches appropriate to Saudi contextual features, particularly for deaf students, and to determine how these needs may best be met. This study aimed to identify the specific needs required by regular teachers in the field of teaching deaf students in regular or inclusive classrooms. In this context, we are referring to the specific set of needs, skills, and resources that would be required to teach deaf students effectively. While regular teachers often specialize in teaching a specific subject in regular classrooms, inclusive education requires teachers to teach all students under their responsibility. Research to date has tended to focus on teachers' attitudes rather than their needs. Published studies on the impact of these needs in the Saudi context are limited and tend to focus more on barriers rather than solutions. Therefore, this study focused on the needs of inclusive teachers to include and teach deaf students in their inclusive classrooms in Saudi primary education.

In the capital city of Saudi Arabia, deaf students can attend two integration programs in primary mainstream schools. Regular teachers in these schools have experienced this form of deaf mainstreaming firsthand, observing daily and interacting directly or indirectly with this learning environment. This study seeks to explore the perspectives of regular teachers in these two schools regarding their needs to include deaf students effectively.

Literature Review

Deafness refers to a hearing loss that can affect an individual's performance in several areas, including communication, social skills, academic achievement, language development, and overall quality of life. More specifically, it refers to a profound hearing loss, typically involving a hearing threshold greater than 80 dB in one or both ears (World Health Organization, n.d.). In the literature, "Deaf" (with a capital 'D') refers to individuals with profound hearing loss who belong culturally to the Deaf community and use sign language as their primary language. In contrast, "deaf" (with a lowercase 'd') refers to individuals who are audiologically deaf but use the spoken language of the broader community to which they belong (Holcomb et al., 2024). However, this distinction between uppercase and lowercase 'd' does not exist in the Arabic language or the Saudi context. Throughout this paper, the term "deaf" will be used to refer to students with profound and severe hearing loss, regardless of the language they use or their socio-cultural background.

Inclusive education has increasingly been implemented for deaf students in public schools, where they spend most of their day in regular or inclusive classrooms to promote successful engagement in an increasingly diverse world (Guynes & Wood, 2024). The traditional approach of segregating deaf students has been widely replaced by meaningful

inclusive participation through differentiated instruction and collaborative teaching (Alsaalem & Alzahrani, 2023). Research has shown that deaf inclusion has the potential to enhance diverse skills and abilities in communication and social interactions (Scott et al., 2025). Indeed, inclusive practices with deaf students can foster many aspects of their social and emotional development, as well as academic and cognitive growth. Abosi et al. (2022) argued that the recognition of deaf students' rights to inclusion has encouraged the creation of practices aimed at delivering conducive and inclusive environments for their success and growth. Overall, these cases support the view that inclusive education provides opportunities for deaf learners to engage with students of diverse experiences and skills in reciprocal learning that exceeds what was traditionally limited in social life and purposefully increases learners' abilities and broadens their backgrounds (Melro, 2023). It could be argued that among the population of students with SEN, deaf learners constitute a unique group with linguistic and learning needs who stand to benefit most from inclusion. Therefore, more attention needs to be paid in research to finding solutions for how they can be successfully included in inclusive classrooms.

Another important aspect of deaf inclusion involves the teachers in inclusive classrooms. Regular classroom teachers play a vital role in making inclusive education work effectively. In truly inclusive settings, all students – including those who are deaf – are their responsibility. This means these teachers need to focus on meeting the needs of every student in their care. According to Bendová and Fialová (2015), this requires teaching for all students, embracing whole-school change, focusing on the group dynamics, and applying comprehensive teaching strategies. In this model, special education teachers shift into more of an advisory role within inclusive schools (Jahnukainen, 2014). This contrasts with integration models, where deaf students remain primarily under the care of special education teachers (Rodriguez & Garro-Gil, 2015). Essentially, an inclusive teacher is a regular education teacher who has received appropriate training, whether before entering the profession or through ongoing professional development, and possesses the knowledge and skills needed to teach all students effectively, regardless of whether they have SEN. In other words, they become teachers for all students (Andrei et al., 2024).

This is exemplified in the work undertaken by Radojlovic et al. (2022), who found that inclusive teachers need to be aware of the specific skills and practices involved in making extra adaptations and contributions for students with Special Educational Needs (SEN), whether in curricular or extracurricular activities inside or outside the inclusive classroom. They also emphasized that teachers should understand the broader concept of inclusion itself, as this understanding helps them develop a constructive attitude toward its effective implementation. Clearly, teachers in inclusive classrooms need to encourage a spirit of partnership and collaboration among all students, regardless of their different abilities and challenges, by actively involving them in school and classroom activities. They should develop all the skills and competencies related to successful inclusion, work collaboratively with other educators and service providers, reflect on their practices, and respect and treat all learners as individuals (Hankebo, 2018).

This is certainly true when it comes to preparing teachers. Pre-service education should provide them with an awareness of cultural and background diversity in communities, families, and schools so they can work successfully in culturally diverse societies (Baglieri, 2022). Overall, the evidence supports the view that teacher pre-service education requires additional courses and expanded knowledge related to students with SEN and their

characteristics. For example, Akalin et al. (2014) reported that regular teachers seeking to become inclusive educators need training that provides sufficient knowledge about inclusion practices and competencies, as well as supplementary materials and learning resources for inclusive classes with SEN students. They also emphasized that meeting the requirements of inclusion involves gaining experiences in how to make comprehensive program adaptations, receiving support from special education teachers, and engaging SEN students in daily school routines.

Dutta et al. (2024) found clear differences between the inclusion of deaf students and those with other types of SEN. They argued that inclusive classrooms which include deaf students require teachers who possess the practices and skills to utilize appropriate visual and hearing technology, supportive tools, facilities, and interpretation and translation services for sign language; all of which can significantly affect the effectiveness of deaf inclusion. Similarly, teachers should have the necessary skills to create and implement an effective Individualized Program (IP) for deaf students that contains all needed services, including audiological intervention, transitional services, and prevention strategies that promote independence for deaf students (Pérez-Jorge et al., 2021). Therefore, it is essential to understand the needs of regular teachers before implementing inclusive education for deaf students in mainstream schools within the Saudi educational context.

However, the application of inclusive education for deaf students has long been met with challenges and concerns. Deaf students attending mainstream schools may face difficulties engaging successfully in regular or inclusive classrooms, particularly in communicating with hearing peers and teachers, and in learning environments that are designed more for hearing learners than for those with hearing loss. It is also evident that most barriers were related to communication with deaf students and the limited proficiency of regular teachers in sign language along with other communication strategies. This often leads to deaf students spending more time outside regular classrooms than their hearing peers in order to obtain help from specialized teachers, service providers, and translators. Similarly, Nara and Ikeda (2024) indicated that many schools lack suitable environments for deaf students in terms of noise reduction, specialized resources, and support services that would promote their success in inclusive settings. Furthermore, several schools lack understanding of effective inclusive practices, sociocultural factors, goals, required attitudes, and concepts that align with the necessary skills for working with deaf students (Scott et al., 2025). A possible explanation for this might be that while several factors affect deaf inclusion and are essential to the successful placement of deaf students in inclusive classrooms, a major influence appears to be the role of inclusive classroom teachers.

Teaching deaf students in inclusive classrooms requires additional and particular tasks, needs, and considerations for teachers, such as different communication styles and effective interaction strategies (Hankebo, 2018). In the same vein, Ariani et al. (2025) noted that the presence of deaf students requires higher levels of coordination, collaboration, and awareness from teachers. Moreover, more attention should be given to facilitating guidance and classroom management, both inside and outside the classroom, as well as supporting both individual and collaborative teaching and learning (Todorov et al., 2021). Therefore, to align with the needs of regular teachers in including deaf students, it is essential to identify which needs they consider most important from their own perspectives.

In the Saudi educational context, the Law of Persons with Disabilities, Resolution No. 62/119, and the Document of Organizing Special Education promote the rights of students with SEN (Alharbi & Madhesh, 2018). The Regulations for Special Education Institutions and Programs, issued by the Saudi Ministry of Education (MoE) in 2016, have organized various functions related to schools and services for SEN students, including appropriate educational provisions and rights (Alsalem & Alzahrani, 2023). The MoE in Saudi Arabia oversees all guidelines and supportive services in schools across the kingdom (Alnahdi, 2019).

Because of supportive Saudi legislation, inclusive school programs have expanded, offering mainstream settings for students with SEN (Almalky & Alwahbi, 2023). The official website of the MoE indicated that 78% of students with hearing loss have transitioned from special schools to mainstream settings, while 22% still attend special schools (Aseery & Alasmari, 2023). However, Alasim (2019) argued that this mainstreaming is generally practiced as integration rather than true inclusion, with special classrooms still being used. Moreover, the percentage of hard of hearing students exceeds the percentage of deaf students attending these mainstream programs. Additionally, specialist teachers in deaf and special education work with these students daily in these programs, which limits the responsibility of regular or inclusive teachers and has had little influence on this mainstreaming approach. Nevertheless, some inclusive practices have emerged in a limited way for hearing students with minor speech and language disorders (Alasim, 2019). However, deaf students continue to be taught in integration or special classrooms for most of their school time. Historically, within Saudi society, perspectives on special educational needs represent a blend of traditional cultural attitudes and Islamic principles. While Islam explicitly prohibits discrimination against individuals with disabilities, historical social stigmas persist as remnants of pre-Islamic customs. This duality shapes the Saudi understanding of equality for people with SEN, leading to recognition that these individuals often encounter persistent obstacles in their daily lives (Alharbi & Madhesh, 2018).

Currently, true inclusion for students with SEN in Saudi Arabia remains limited, as they are often separated into integrative or special schools based on the classification and severity of their disability (Alnahdi, 2019). Alsalem and Alzahrani (2023) stated that the reason for this limited inclusion in the Saudi educational context is that expansion requires ministerial approval and specific theoretical frameworks grounded in local sociocultural factors. Moreover, Saudi laws offer little explanation about inclusion and its practices, as they are primarily concerned with "mainstreaming" rather than a genuine inclusion (Asiri, 2020).

It could be argued that aligning with international developments in inclusive practices could improve deaf inclusion in the Saudi educational context. Hassanein (2015) indicated that numerous aspects of social and cultural life in Saudi Arabia are shaped by Islamic traditions and customs, which may differ from Western educational communities in several ways. For instance, Saudi schools maintain separate branches for male and female students.

Internationally, attempts to obtain a uniform definition of inclusive education or any social phenomenon remain challenging due to sociocultural differences between countries. However, considering the sociocultural factors of each community enhances the understanding of inclusion (Hassanein, 2015). In Saudi Arabia, Islamic values and principles do not contradict the objectives of inclusion (Alasim, 2019). Furthermore, there are numerous ongoing projects and plans to implement successful inclusive education aligned with the Saudi Islamic context (Aseery & Alasmari, 2023). Recognizing these

contextual differences could help in understanding and adapting Western-style inclusion frameworks to the Saudi educational system. This is particularly relevant as Saudi Vision 2030 seeks to develop the educational system as a whole for all learners by enhancing inclusive education in mainstream schools in a way that aligns with Saudi sociocultural features and the needs of deaf students (Asiri, 2020). There is also a need to consider other important factors that make mainstream classrooms more inclusive for deaf students, particularly regarding the responsibilities of regular teachers in becoming successful inclusive educators (Radojlovic et al., 2022).

Aseery and Alasmari (2023) conducted a study examining teachers' perceptions of including deaf students in mainstream classrooms in Saudi Arabia. They also investigated how teachers' perceptions of this inclusion were influenced by their professional position. General and special education teachers responded to an online questionnaire that partially contained open-ended questions. The findings revealed that teachers generally held somewhat negative perceptions toward teaching deaf students in mainstream classrooms. However, their professional position did not appear to influence their perceptions. Alsalem and Alzahrani (2023) conducted a critical analysis of the role of institutional practices in promoting inclusive education for deaf students in Saudi schools. This study employed rigorous qualitative analysis with a focus group comprising eleven participants, including teachers of deaf students, general education teachers, school principals, supervisors, and parents of deaf students. The findings revealed several needs for providing an appropriate inclusive educational environment, including support services, individualized educational programs, trained general education teachers, and parental involvement. The results also emphasized the role of legislative regulations and policies in expanding the scope of inclusive education policies and practices in Saudi Arabia.

These studies recommended conducting future research and making efforts to address certain needs to reduce negative perceptions of inclusion as an educational practice in Saudi Arabia, such as providing adequate teacher training and raising awareness about the benefits of inclusion and how it differs from traditional general education.

Methodology

Research Design

This study sought to identify the needs of regular teachers for including deaf students in inclusive classrooms. For this purpose, a qualitative case study approach was applied. The qualitative research design investigates participants' thoughts in a descriptive way to gain a better understanding of their lived experiences (Creswell & Poth, 2017). Qualitative research design employs methods that gather data on naturally occurring phenomena. In this study, data were generated using semi-structured interviews and analyzed using inductive analysis.

Sampling and Participants

The purposive sampling method was used to recruit participants. Interviews were conducted with eight regular teachers working in male primary mainstream schools that include integration programs for deaf students in the capital city of Saudi Arabia. As the researcher is male, only male schools were accessible for this study. Prior to participation,

verbal informed consent was obtained from all individuals, their roles were clearly communicated, and they were provided with assurances regarding confidentiality and anonymity. Four participants were selected from each school. The participants ranged in age from 38 to 52 years and had worked in these schools as regular teachers for between 9 and 21 years. All participants had studied different disciplines in teacher education and were employed as regular teachers in general classrooms without previous coursework or practical experience related to deafness and its characteristics. However, the participants had ongoing contact with special education teachers and their deaf students, as special classrooms for deaf students are housed within their mainstream schools. The Saudi educational system is unified, and accordingly, the educational contexts for deaf students across integration programs do not vary significantly (Asiri, 2020). A summary of characteristics of the participants is supplied in Table 1.

Table 1

Participant demographics

code	Age	Disciplines	Years of experience working in deaf mainstream schools
RT1	42	English	12
RT 2	49	Arts	19
RT 3	40	Life Skills	10
RT 4	52	Mathematics	21
RT 5	45	Islamic Religion	16
RT 6	38	Computer Science	9
RT 7	46	Arabic	15
RT 8	44	Sciences	13

Furthermore, each participant assisted with the snowball sampling approach to identify colleagues who had extensive experience in mainstream schools that included deaf students. These teachers were considered belonging to a particular community of practice because all were directly involved in the daily experiences and practices of mainstream schools attended by deaf students. The ontological position and theoretical perspective of the present study was grounded in Communities of Practice theory (CoP). This community encompasses all teacher groups practicing their professional functions in mainstream schools that include deaf students, characterized by social relations and shared experiences among members (Patel, 2018). The epistemological stance involves understanding facts and meaningful reality within the interpretive paradigm (Crotty, 2020). This interpretive approach enabled the study to capture the nuanced perspectives and contextual understandings that emerge from teachers' ongoing engagement with inclusive practices for deaf students.

In summary, the study was underpinned by the epistemological assumption that teachers working in male primary mainstream schools that include integration programs for deaf students construct knowledge and reality through their experiences and perceptions. It was also recognized that the findings may not have widespread generalizability. Nevertheless, they may be applicable, to some extent, to related contexts with similar participants (Creswell & Poth, 2017).

Data Collection

Semi-structured interviews were utilized with open-ended questions allowing participants to frankly express their sights regarding the needs. The current literature was reviewed as well as two experts in qualitative research were consulted to prepare the interviews sub-questions. Then, interview forms were generated which include six sub-questions related to the research's objectives. The validity of sub-questions was first examined by experts' feedback and, then, the final shape of forms was taken after the pilot application was completed. The semi-structured interviews were conducted with respondents in person using a voice-recorder and were completed in two weeks during the first semester of the 2025–2026 academic year. The mandatory question for respondents to answer was 'What are your needs to include and teach deaf students in your classroom?'. The participants were interviewed in 8 meetings, and each interview lasted between 30 -50 minutes.

Data Analysis

The data were transcribed immediately in their original language, Arabic. The audio recordings were first reviewed and decoded, after which the transcribed and annotated data were transferred into a computer program called Word, and subsequently organized using NVivo software. Thematic analysis was employed to analyse all recorded interviews, a methodology that involves classifying data into themes, sub-themes, and key issues that serve as distinct analytical categories (Crotty, 2020). The coding and data reduction process followed the phases outlined by Elliott (2018). Initially, preliminary codes were developed based on themes identified in the literature review. This was followed by extracting patterns from the coding and refining the coding notes. Finally, similarities, variations, and consistencies in the data were examined to construct a coherent model of teacher perspectives. The coded data were then organized under appropriate themes aligned with the research objectives.

Validity and Reliability

Several precautions were taken to ensure the objectivity, consistency, and validity of the research findings. Content validity was established through expert consultation, as noted above. The interview forms were finalized only after thorough expert review and approval. Furthermore, the participants' characteristics were clearly defined, and they were provided with detailed information regarding data collection and analysis procedures to ensure validity and reliability, as recommended by Creswell and Poth (2017). Additionally, to enhance reliability, the participants' views were directly quoted throughout the findings to preserve the authenticity of their perspectives.

Research Ethics

Ethics approval was granted by (Jouf University) the Human Research Ethics Committee (HAPO-13-S-001-11515). Likewise, informed consent for participations in the study has been verbally obtained and the roles of participants were informed while assuring them of complete confidentiality and anonymity. Verbal consent aligns with Saudi Arabian academic conventions and builds rapport with participants. The verbal consent protocol was approved by the ethics committee, and consent to publish the participants' quotes was obtained from the participants of the study. Additionally, this approach minimized administrative obstacles

while ensuring complete ethical transparency about the study's objectives, voluntary nature of participation, and data management procedures, particularly when presenting direct participant quotations in the findings.

Results

The findings reveal participant perspectives on the needs of regular teachers for including deaf students in inclusive classrooms, based on their experiences in mainstream schools with special classrooms for deaf students within Saudi Arabia's unique sociocultural context. Regular teachers were coded as (RT) with numbers from 1 to 8 to differentiate between participants. Issues related to the needs for including deaf students in regular classrooms were particularly prominent in the interview data. Illustrative quotations are used below to capture participant accounts. The interpretations should be considered tentative given the relatively small sample size. The eight regular teachers varied in their perspectives on the identified needs. Participant codes appear frequently across different themes and are often associated with different issues because their responses addressed multiple types of needs and occasionally provided multiple viewpoints within a single response. Three key themes emerged from the interview data analysis: training and knowledge needs, needs related to the school environment and support services, and needs related to regulations and legislation. A summary of the themes and codes of the results is supplied in [Table 2](#).

Table 2

Themes and Codes of the needs

Themes	Sub-themes	Occurrences	Coding label
Training and Cognitive Needs	Communication	8	EX1.1
	Characteristics	7	EX1.2
	Teaching and Learning Process	5	EX1.3
	Social Interaction and Behavioural Control	3	EX1.4
	Factors Related to the Training	2	EX1.5
Needs Related to School Environment and Services	Instructional Materials	7	EX2.1
	Auditory and Visual Reinforcements	6	EX2.2
	Classroom Accommodations and School Facilities	5	EX2.3
	Supportive Services and Specialists	3	EX2.4
Needs Related to Regulation and Legislation	Restructuring Lessons and Curriculum	6	EX3.1
	Responsibilities and Consultation	4	EX3.2
	Supervisory and Administrative Regulation	3	EX3.3

Training and cognitive needs

Training and knowledge development emerged as the most common needs for inclusive settings with deaf students, identified by all eight participants as essential based on their experiences. Five key areas emerged from the analysis of this theme: communication skills, understanding deaf student characteristics, teaching and learning

processes, social interaction and behavioural control, and factors related to training delivery and implementation.

Communication skills

The most frequently mentioned training need was communication with deaf students. Participants emphasized the importance of training in all communication methods and styles. As RT4 explained, *"all communication styles with deaf students are needed because a deaf student may prefer one method over another, and depending on the lesson type, some lessons require oral and verbal methods, such as Quran and Arabic lessons, while others need signing methods such as mathematics and other sciences"*. Communication strategies and philosophies were also highlighted in these training needs. RT2 noted that *"our teacher colleagues who specialize in deaf education frequently discuss the commonly used communication styles in deaf schools, which depend on switching between oral and gestural methods"*. A common view among participants was the importance of sign language skills as a need for direct interaction with deaf students. RT8 stated, *"for deaf students, it is necessary to receive training in sign language and all other descriptive signs including finger spelling for letters"*, RT5 added, *"I would master sign language by myself because I want my relationship with my deaf student to be direct without a mediator or translator"*.

Understanding Deaf Student Characteristics

Most regular teachers emphasized the importance of understanding the characteristics of students with profound hearing loss in their training needs. Several teachers identified specific areas requiring deeper knowledge. Regarding linguistic characteristics, RT7 stated, *"it is necessary to understand the impact of hearing loss on language development and vocabulary. Do deaf students grasp all concepts and meanings whether they use sign language or spoken language?"*. Another training need focused on the intellectual and cognitive characteristics of deaf students. RT1 explained, *"most lessons depend on high-level critical thinking, inference, deduction, reasoning, and drawing conclusions. I would like to learn more about their intelligence levels and thinking processes"*. Some teachers noted a gap between common perceptions and their actual observations regarding the behavioural and social characteristics of deaf students. RT6 remarked, *"I heard that deaf students prefer isolation and interact exclusively with deaf peers, but I have actually seen them interact and play effectively with everyone in our school, and they are not aggressive"*. RT3 added, *"I think there are many previous experiences in dealing with deaf students behaviourally and socially that we can benefit from, especially since we work in inclusive schools with diverse students and social backgrounds"*.

Teaching and learning process

As expected, a majority of regular teachers identified the teaching and learning process as an essential aspect of their training needs. Three main educational issues emerged from participant responses regarding these processes with deaf students. First, teachers highlighted the need for curriculum and assessment adaptation skills. RT4 explained, *"General education curricula and assessments depend heavily on verbal and language-based skills, but modifying them to meet the needs of deaf students requires targeted training and practice"*. Second, participants recognized that deaf students benefit from specially designed teaching methods that could enhance collaborative learning opportunities. RT3 commented, *"While teaching methods vary and we have experience implementing them with*

students of low academic achievement, receiving training in methods specifically designed for deaf students would be advantageous for both educators and learners". Third, teachers emphasized the importance of understanding effective learning approaches for deaf students. RT8 noted, "I think that educating deaf students frequently involves individualized learning, while there are also particular strategies designed to support group and collaborative learning when a deaf student is part of the classroom".

Social interaction and behavioural control

Another identified training need concerned the social and behavioural aspects of deaf students in mainstream schools. RT6 observed that deaf students often have fewer social initiations with hearing peers. He explained, "deaf students may not often take the initiative to start interactions with their classmates at school, and I believe that their social skills need to be better understood". Behavioural management strategies for deaf students in classrooms and schools were also emphasized by RT1 as highly important: "while understanding the behavioural characteristics of deaf individuals is important, it is also essential for teachers to receive training in effective, deaf specific behaviour management skills".

Factors related to training delivery and intervention

Another important finding relates to specific preferences regarding the type and delivery of training. RT5 emphasized the importance of structured, formal training, stating, "while I am curious about the nature and level of the training, my preference is for it to be offered as a structured, classroom-based course facilitated by specialists with advanced graduate degrees from recognized universities". However, RT7 criticized an overreliance on theoretical training and advocated for practical, experience-based approaches. He commented, "it is important to benefit from the prior experiences of teachers who have taught deaf students in Saudi Arabia. Likewise, if the matter relates to inclusive education, it may also be useful to invite practicing teachers from abroad who have implemented such experiences and allow them to transfer this knowledge to us in Saudi Arabia".

Needs Related to School Environment and Services

A significant number of needs identified by regular teachers for including deaf students in inclusive classrooms related to the school environment and support services. This theme encompassed four main areas: instructional materials, auditory and visual reinforcements, classroom accommodations and school facilities, and specialized services and specialists.

Instructional Materials

A majority of participants identified teaching aids as a highly important need. While special classrooms for deaf students were well-equipped with these materials, participants emphasized that instructional resources were needed even more significantly in inclusive classrooms. RT2 explained, "in regular classes, we cannot enter the classroom without lesson-specific teaching aids, so imagine the need when there is also a deaf student". Participants also highlighted the need for centralized access to learning resources. RT8 stated, "I need a single place where I can find all learning resources for deaf students, including books, applications, and educational websites". When discussing educational technology and AI, RT7 noted, "who among us hasn't noticed the recent advancements in educational media development and the

increasing use of artificial intelligence in education? I believe that, especially for deaf learners, there are specialized resources that can be highly beneficial".

Auditory and Visual Reinforcements

This need relates specifically to the sensory requirements of deaf learners for hearing and vision support to ensure their success. Participants highlighted several accommodations that should be available in inclusive classrooms and schools. RT1 noted that *"using a range of hearing and visual supports helps maintain longer engagement with deaf students and enhances their existing abilities"*. RT6 emphasized that *"hearing aids help enhance and compensate for hearing loss, especially in theoretical lessons"*, while RT7 added that *"hearing amplifiers and other hearing-enhancing technologies certainly offer valuable benefits that support deaf students"*. RT3 also stressed the importance of *"visual reinforcements, which serve as a fundamental entry point to learning for deaf students"*.

Classroom Accommodations and School Facilities

More than half of the participants identified various needs for adapting classrooms and the broader school environment when including deaf students. Most participants emphasized classroom accommodations, particularly regarding class size, seating arrangements, sound insulation, lighting, and display technology. RT3 stated, *"class sizes are currently high, but they should not exceed 20 students when there are one or two deaf students in the classroom"*. RT2 elaborated on the importance of physical arrangements: *"I noticed that seating arrangements in special classrooms for deaf students are designed to allow clear visibility of the teacher, peers, and the board, so it is important to reduce class sizes and organize classrooms accordingly, in addition to other technologies such as smart boards, computers, projectors, and a proper lighting system"*. RT1 highlighted the importance of acoustic management: *"many schools are located on busy roads, making outside noise a distraction. Effective sound insulation is essential to minimize these disturbances for us"*. Beyond classroom-specific needs, RT5 emphasized the importance of adapting school facilities as a whole: *"schools are primarily designed for hearing students, so certain facilities, classrooms, and service areas require adjustments to support deaf students. This includes adding clear informational and directional signs in both written language and sign language to ensure easy access throughout the school"*.

Supportive Services and Specialists

Supportive services and the specialists who deliver them emerged as vital needs for both deaf students and regular teachers in inclusive schools. Participants identified several essential services. RT8 emphasized the importance of 'sign language interpreting services and speech and language therapy services', while RT7 highlighted 'psychological and counseling services' and stressed the need for their consistent availability in inclusive schools. RT2 raised concerns about coordination among specialists and their accessibility, stating, *"I need specialists to be consistently available at the school and for their services to be easily accessible. Additionally, the special education teacher, as an expert, is also indispensable for guidance and consultation"*.

Needs Related to Regulation and Legislation

Regarding the needs of regular teachers to include deaf students effectively in their classrooms, participants identified several regulatory and legislative requirements. Their comments addressed legal and organizational dimensions, which were classified into three sub-themes: restructuring lessons and curriculum, clarifying responsibilities and consultation processes, and establishing appropriate supervisory and administrative regulations.

Restructuring Lessons and Curriculum

More than half of the participants emphasized the need to reorganize lesson time, weekly class schedules, and curriculum content when including deaf students. Those who raised this issue called for extending class periods and reducing curriculum load to ensure sufficient time for all students with diverse needs. RT4 explained, "class time is currently short, and we always need extra time even with students without special needs to cover the full curriculum content". Similarly, RT1 suggested that "it would be sufficient if lesson time were increased by 10 to 15 minutes when deaf students are included". However, extending class periods would necessarily affect the number of daily classes and curriculum coverage, requiring adjustments to either the school day schedule or the number of weekly lessons per subject. RT6 therefore proposed "reducing the number of weekly lessons and shortening the curriculum content to suit the inclusive setting".

Responsibilities and Consultation

When asked about their needs regarding work responsibilities in inclusive schools, a majority of participants emphasized the importance of clear regulations. They noted that schools serving deaf students employ numerous staff members with diverse specializations, including teachers and support service providers, making it essential to establish clear guidelines that define responsibilities and outline procedures for accessing consultations. RT2 explained the ambiguity they currently face: "I fully understand that students in the regular classroom fall under my direct responsibility, but with the presence of a deaf student, there are many staff members and service providers whose roles we do not know how to activate. Are they directly responsible for the student, or is their role purely consultative?". RT5 emphasized the need for formal guidance, stating, "I believe that inclusive education requires a ministerial decision for proper implementation, and it also requires the Ministry of Education to provide clear and detailed regulations outlining the system, roles, responsibilities, and nature of work for all staff members in the school".

Supervisory and Administrative Regulation

Within the theme of regulatory and legislative needs, participants emphasized the necessity for a revised supervisory and administrative framework to support inclusive education. Teachers expressed concerns about instructional supervision, performance evaluation, incentives, and the qualifications of supervisors overseeing these processes. RT8 highlighted the importance of aligning supervision with inclusive education goals, stating, "teachers seek high evaluations, promotions, and related incentives, and therefore require educational supervisors who understand the aims of inclusive education and operate within regulations that support and motivate high-quality performance". Participants also stressed the need to reorganize administrative processes at both the school and educational directorate

levels to better support inclusive education implementation. RT3 explained the current disconnect, noting, "currently, administrative procedures differ between special and general education, but a unified system is needed to clarify how the new inclusive education process is managed and how educational administration is organized".

Discussion

This research explored teachers' perspectives on the needs for effectively including deaf students in inclusive classrooms within the context of Saudi inclusion policies and practices. Data were gathered through interviews with regular teachers who had prior experience working in mainstream schools that include deaf students. The findings revealed several critical needs that must be addressed to support effective inclusion of deaf students in Saudi schools. Teachers identified three primary areas requiring attention: training and knowledge development, improvements to the school environment and support services, and revisions to regulatory and legislative frameworks. These perspectives aligned closely with the needs outlined in the introduction and provide important insights into the practical requirements for implementing inclusive education for deaf students. The convergence between teachers' expressed needs and established theoretical frameworks suggests that addressing these areas could significantly enhance the quality and effectiveness of inclusive practices for deaf students in the Saudi educational context.

While these needs have been largely addressed for teachers working in special education and integrated classrooms within the Saudi education system (Aseery & Alasmari, 2023), regulatory and legislative frameworks for inclusive schools remain underdeveloped. The findings highlighted specific concerns regarding teacher training, school environment modifications, and support services within inclusive settings for deaf students. These elements represent critical factors that directly influence the quality of educational outcomes for deaf learners in both special and inclusive contexts (Baglieri, 2022). The results underscore that deaf inclusion is inherently complex, shaped by multiple interconnected factors within the Saudi educational and sociocultural context, and therefore requires careful interpretation and comprehensive planning.

Teachers identified specialized training as a critical knowledge-related need for effectively including deaf students in inclusive classrooms. This perspective likely emerges from teachers' position within professional communities in schools practicing deaf mainstreaming, where they observe specialized teachers and seek to draw on their expertise. This emphasis reflects the central role teachers play in successful inclusion and the necessity of understanding deaf learners across social, psychological, behavioral, and educational dimensions (Guynes & Wood, 2024; Hankebo, 2018). Teachers require targeted professional development that addresses deaf student characteristics, communication strategies, and appropriate instructional and behavioral management approaches. Similar findings by Todorov et al. (2021) indicated that limited communication experience and insufficient knowledge about deaf students among general education teachers can significantly hinder effective inclusion. It could be suggested that this requirement stems from the traditional focus of Saudi teacher education programs on mainstream educational approaches for hearing students, which leaves regular teachers inadequately prepared to meet deaf educational needs in inclusive classroom environments. The need for specialized training in Saudi Arabia therefore reflects a clear gap between the demands of inclusive

education for deaf students and the current competencies of general education teachers. This gap reveals shortcomings in both pre-service teacher preparation and the limited availability of specialized in-service professional development (Alsalem & Alzahrani, 2023). These findings suggest that investing in specialized training that extends beyond theoretical knowledge to provide practical, experience-based learning is essential for improving the quality of inclusive education for deaf students.

Teachers identified improvements to school environments and supportive services as essential for effectively including deaf students in mainstream classrooms. This understanding likely emerges from teachers' daily engagement with deaf education environments in their schools, where they observe specialized classroom preparations and can exchange experiences with colleagues. It could be said, school resources and services are widely recognized as factors strongly associated with successful deaf inclusion. Moreover, the effectiveness of inclusive education for deaf learners depends significantly on a comprehensive school system that addresses their linguistic and sensory needs within appropriately equipped classrooms.

This aligns with Skrebneva and Fordham (2024), who found that inadequately prepared environments, including poor lighting, ineffective seating arrangements, and absent assistive technologies, negatively impact deaf students' participation. Similarly, the lack of specialists such as sign language interpreters, audiologists, and special education professionals restricts inclusive teachers' capabilities (Nara & Ikeda, 2024). Teachers emphasized that support services, including communication assistance, counseling, and auditory intervention, are essential for performing their roles effectively in mainstream settings. This perspective is consistent with research suggesting that successful inclusion requires supportive infrastructure, accessible services, and clearly defined professional roles (Scott et al., 2025). These findings suggest the need for an inclusive model that enhances school environments, provides appropriate educational resources, and ensures active teacher involvement in creating settings where deaf students can successfully participate and learn.

The findings reveal that the current legislative and regulatory framework in Saudi Arabia does not fully support the implementation of inclusive education for deaf students compared with practices in advanced educational systems. This gap reflects a distinction specific to the Saudi context, where educational regulations separate special and general education with no clear system for inclusive education in place.

This is consistent with existing literature indicating that unclear policies obstruct effective inclusion, whether due to the lack of explicit legislative mechanisms or ambiguity regarding the roles of schools, teachers, and specialists (Almalky & Alwahbi, 2023; Alnahdi, 2019). It could be argued, teachers' calls for revised laws and regulations reflect their awareness of persistent gaps between policies and actual practices in the Saudi educational context. This understanding likely stems from their daily experiences directing administrative procedures that differ between special and general education systems, making them acutely aware of the absence of unified guidelines for inclusive practice. The findings also highlight that required policy reforms must extend beyond professional development to address educational structures. This aligns with international perspectives emphasizing that effective inclusive education depends on updated legislation that can

protect the rights of deaf students and ensures schools operate within supportive policy frameworks (Akalm et al., 2014).

The findings reveal that teachers' perspectives on including deaf students in inclusive classrooms represent multidimensional needs extending beyond classroom practice alone. Effective inclusion requires addressing three interconnected areas: developing teachers' professional skills and competencies, establishing specialized support systems within school environments, and restructuring the legislative framework to ensure equitable educational opportunities. The teachers' expressed needs are not merely individual professional requirements but reflect broader institutional and organizational challenges that necessitate comprehensive systemic responses to ensure successful implementation of inclusive practices for deaf students within mainstream classrooms. This multidimensional nature underscores that inclusive education cannot be achieved through isolated interventions targeting only one aspect of the educational system. Rather, it requires coordinated efforts across training programs, school infrastructure, support services, and regulatory policies to create an environment where both teachers and deaf students can succeed in inclusive settings.

Conclusion

This research examined teachers' perceptions of requirements for integrating deaf students into general education classrooms in Saudi Arabia. The results showed that teachers identified critical needs including professional development, modifications to school infrastructure and support services, and updates to relevant policies and legislation. The study underscores the importance of comprehensive pre-service and in-service teacher training alongside adapting instructional environments to support educators working with deaf students.

This study's primary limitation lies in its focus on teachers working in primary mainstream schools including deaf learners within the Saudi educational system, which restricts the broader applicability of its findings. Nevertheless, the results offer important implications for strengthening inclusive provision for deaf learners in Saudi Arabia. International models of effective policy and practice could be adapted to the local context through three key areas: restructuring educational policies, laws, and regulations in accordance with global standards; developing targeted programs to address the specific challenges faced by deaf learners; and establishing formal training initiatives to enhance teachers' skills and awareness.

Implementing such reforms would require coordinated actions and sufficient funding to support pre-service and in-service training, adapt educational environments to meet deaf learners' needs, and ensure effective regulation and enforcement of relevant legislation. These recommendations should inform policymakers and educators as they evaluate the benefits of inclusive education and prepare future inclusive teachers.

Research on inclusive education for deaf students remains limited in Saudi Arabia. Further studies should examine teacher effectiveness and preparation for inclusive classrooms, ideally using larger samples to generate more generalizable results. Although this study focused specifically on deaf students, additional research is needed to examine inclusive practices for other categories of SEN. Studies extending beyond the Saudi context

would also contribute valuable insights into effective models of inclusive education across different sociocultural settings.

Data Availability Statement: Due to the qualitative nature of this study and the use of semi-structured interviews, the raw data cannot be made publicly available to protect participant confidentiality. Anonymized excerpts used to support the findings are available from the corresponding author upon reasonable request and subject to ethical approval.

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