TOPIC
INCLUSION OF DEAF AND HARD OF HEARING STUDENTS AT THE SECONDARY LEVEL: A SYSTEMATIC REVIEW

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Abstract
The goal of inclusive education is to provide a learning environment where all students, regardless of their individual strengths and weaknesses, can thrive. This qualitative systematic review set out to investigate what characteristics help or hurt D/HH pupils' ability to participate in mainstream secondary school settings. The major goal was to determine successful approaches and barriers to their full participation in regular classrooms. With an emphasis on secondary school inclusion for D/HH children, a thorough literature analysis was undertaken covering the years 2010 through 2023. Several boosters were found after conducting the analysis; these were team-based instruction, individualized assistance, cooperative learning, and motivational techniques. On the other side, it brought to light obstacles like restricted access to educational opportunities, policy implementation hurdles, regulatory gaps, decreased participation in general education classes, and peer interaction problems. Supportive learning settings, healthy peer relationships, and inclusive classroom methods were all emphasized in the study as a means to improve the inclusion experience for D/HH children. The evidence-based recommendations covered a wide range of topics, including better teacher training, specialized support, improved social ties, increased co-teaching, revised policies, and post-secondary aid. Further exploration of the cultural settings and constraints faced by D/HH students was emphasized in this study, with an eye toward improving secondary education for all students.

Keywords: Inclusive Education, Deaf and Hard of Hearing, Facilitators, Barriers.
Introduction

Recent years have seen a rise in the use of the term "Inclusive Education," which describes a movement toward providing equal educational opportunities for all children, including those who are deaf or hard of hearing (Flood & Banks, 2021; Miles & Singal, 2010; Bezyak et al., 2020). However, D/HH kids confront unique obstacles in traditional classrooms, including language and linguistic hurdles, insufficient accommodations, and a lack of awareness among both teachers and classmates (Lederberg, Schick, & Spencer, 2013). It is crucial to get insight into the elements that either help or hinder the integration of DHH students (Lederberg, Schick, & Spencer, 2013). The major goal of inclusive education is to end the segregation of kids with developmental and intellectual disabilities and ensure their full participation in regular classrooms (Clapham et al., 2017). Nonetheless, issues including misunderstandings, lack of funding, and unfavorable public opinion persist as roadblocks (Lederberg, Schick, & Spencer, 2013).

This systematic review seeks to synthesize previous research on the inclusion of DHH adolescents in secondary education by illuminating obstacles such as funding constraints, social biases, insufficient teacher training, and a lack of stakeholder participation. The need for flexible school rules, inclusive pedagogies, and clear lines of communication is also highlighted.

By analysing the benefits and drawbacks of secondary school for DHH students, with an emphasis on Pakistan, this study fills a significant void in the existing academic literature. The purpose of this article is to give teachers some helpful pointers based on actual data about the effects of including DHH pupils in regular classrooms. In the long run, the educational system as a whole stands to benefit from this study's efforts to create more welcoming classrooms for DHH students.

The basic goal of inclusive education is to provide all children, including those with special needs, with the same high-quality educational opportunities. Although DHH students have distinct academic obstacles, the factors affecting their adaptation to secondary education settings bear investigation. Adolescence is a formative time for both students' emotional and intellectual growth, highlighting the importance of improving DHH kids' academic outcomes in typically-developing high schools. However, significant difficulties still exist, such as communication difficulties, a lack of access to necessary resources, and feelings of isolation. The necessity of creating accessible and welcoming classrooms is emphasized by international treaties like the CRPD and the UNESCO framework for inclusive education. This systematic review aims to combine different viewpoints from separate studies in order to explore the challenges and possibilities of including DHH students in a thorough manner.
Literature Review

Numerous studies have explored the factors facilitating and impeding the inclusion of Deaf and Hard of Hearing (DHH) students in secondary education. Critical facilitators identified in these studies encompass effective communication strategies, such as the utilization of sign language interpreters or assistive technologies (Marschark and Hauser, 2012). Kiuppis (2014) delved into the "Salamanca Process" evolution and its implications for inclusive education, shedding light on the interplay between inclusion and disability. Cameron, Nilholm, and Persson (2012) provided insights into the challenges and facilitators of inclusion within the realm of special education policy and practice. Keles, Ten Braak, and Munthe's (2022) systematic scoping review offered a broader perspective on inclusion practices and policies.

Positive attitudes and inclusive mindsets among educators and peers have emerged as potent facilitators of inclusion, whereas negative attitudes and stereotypes have been identified as significant barriers, as noted in studies by Lindner et al. (2023) and Hintermair (2013). Access to necessary accommodations and resources, coupled with adequate teacher training, plays a pivotal role in facilitating inclusive education, as highlighted by Yeo et al. (2011). On the flip side, challenges such as resource limitations, a shortage of qualified interpreters, and insufficient teacher training pose substantial barriers, as observed in studies by Reindal (2016) and Johnson, Liddell, & Erting (1989). Negative societal attitudes toward deafness and hearing loss further compound the obstacles to inclusive education, as outlined by Kushalnagar et al. (2010).

The contributions of Miranda and Brazorotto (2018), Eriks-Brophy et al. (2007), Lissi et al. (2017), Punch and Duncan (2022), and Alasim (2018) enrich the systematic review by emphasizing the significance of teacher training, family involvement, supportive social environments, resource accessibility, and the cultivation of inclusive classroom climates. Collectively, these findings offer a comprehensive understanding of the specific facilitators and barriers associated with the inclusion of deaf and hard-of-hearing students at the secondary level.

Theoretical Review

Theoretical frameworks provide valuable lenses through which to comprehend the facilitators, barriers, and inclusion of deaf and hard-of-hearing students. The Social Model of Disability emphasizes the need to address environmental, attitudinal, and systemic barriers to promote inclusive practices, as advocated by Shakespeare (2013). The Bioecological Systems Theory underscores the importance of creating supportive environments and fostering collaborations among stakeholders to facilitate inclusion, in accordance with Bronfenbrenner and Morris (2006). The Social Cognitive Theory highlights the influence of attitudes, beliefs, and behaviors of teachers, peers, and the broader community on the inclusion process, aligning
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with the insights of Hymel & Katz (2019). Lastly, the Critical Disability Theory calls for a critical examination of societal norms and practices to challenge oppressive systems, as advocated by Goodley (2014).

These theoretical perspectives collectively contribute to our understanding of the facilitators, barriers, and inclusion of deaf and hard-of-hearing students. To develop a comprehensive theoretical review, further exploration of relevant research articles and academic literature within the field of inclusive education and disability studies is recommended.

Objective

1. Investigate the facilitators and barriers pertaining to the inclusion of deaf and hard-of-hearing students at the secondary level within the educational landscape.

Methodology

The Study employed a systematic search across databases, journals, conferences, and theses to identify studies on secondary-level inclusion of deaf and hard-of-hearing students. Carefully chosen keywords ensured an exhaustive search. Inclusion criteria aligned with research goals, excluding studies with weak methodologies or unrelated topics. Each study underwent rigorous quality assessment. Key information, including study details, design, sample size, participant characteristics, interventions, and inclusion outcomes, was meticulously extracted to minimize errors. A comprehensive synthesis of data uncovered common inclusion themes, enhancing credibility. Data analysis informed evidence-based recommendations for policymakers, administrators, and practitioners, emphasizing culturally appropriate strategies. This review significantly contributed to inclusive education knowledge, filling gaps and offering a framework for future research. Findings can inform policy and practices, fostering a more inclusive educational environment.

Findings

Table 1

<table>
<thead>
<tr>
<th>Title</th>
<th>Study Context</th>
<th>Findings and Contributions</th>
<th>Facilitators</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deaf and Hard of Hearing Students’ Opportunities for Learning in a Regular Secondary School in Chile</td>
<td>Chilean high school with D/HH students attending classes with hearing classmates.</td>
<td>Barriers to teaching D/HH students in regular classrooms were identified, emphasizing the need for deaf education teacher support. - D/HH</td>
<td>Support from deaf education teachers. - Proper teacher preparation and training.</td>
<td>Difficulties in teaching D/HH students. - Limited opportunities for learning in regular classrooms. - Challenges in communication</td>
</tr>
<tr>
<td>Teacher Practices and Beliefs</td>
<td>Students’ opportunities for learning were highly restricted in such environments. Teacher preparation and accommodations were crucial for inclusion.</td>
<td>Between regular and D/HH students.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exploring the Social Inclusion of Deaf Young People in Mainstream Schools, Using Their Lived Experience</td>
<td>UK mainstream secondary schools with D/HH students with moderate hearing loss.</td>
<td>Factors supporting social inclusion and barriers for deaf children in schools were identified through the lived experiences of D/HH students. Individual experiences and appropriate support for social inclusion were emphasized.</td>
<td>Supportive social factors. Individualized support for social inclusion. Barriers to social inclusion. Challenges in forming friendships. Limited social interactions with peers.</td>
<td></td>
</tr>
<tr>
<td>A New Approach to Training Teachers to Meet the Diverse Learning Needs of Deaf and Hard-of-Hearing Children within Inclusive Australian Schools</td>
<td>Focus on teacher training in Australia for working with D/HH children in inclusive settings.</td>
<td>The study highlights the challenges in preparing educators to work with D/HH children in inclusive settings. The relationship between special and general educators was emphasized for effective inclusion.</td>
<td>Improved teacher preparation and training. Strong collaboration between special and general educators. Challenges in program design and development. Limited availability of specialized training for teachers.</td>
<td></td>
</tr>
</tbody>
</table>
### Education for Deaf and Hard-of-Hearing Children

| Participation and Interaction of Deaf and Hard-of-Hearing Students in Inclusion Classroom | Strategies to facilitate D/HH students' participation and interaction in general education classrooms. | Strategies to facilitate D/HH students' participation and interaction in general education classrooms were identified. - The study also revealed barriers limiting their involvement, emphasizing the importance of inclusive practices and support services. | Inclusive classroom practices and differentiated instruction. - Support services for D/HH students. | - Barriers to participation and communication. - Challenges in providing adequate support for D/HH students. |

### School Placement and Perceived Quality of Life in Youth Who Are Deaf or Hard of Hearing

| Inclusive education challenges in Saudi Arabia due to inadequate implementation of special education regulations. | Challenges in the inclusive education of D/HH students in Saudi Arabia were highlighted due to inadequate implementation of special education regulations. | Appropriate educational placement based on student needs. - Supportive environments and inclusive policies. | Lack of implementation of special education regulations. - Limited resources and support services. |
| Peer Relationship Experiences Of Deaf And Hard-Of-Hearing Adolescents | Experiences of forming friendships and social integration among D/HH adolescents. for improved experiences. - Challenges in forming friendships and social integration were reported by D/HH adolescents, indicating barriers to inclusion in social interactions. - Implications for social integration and fostering positive peer relationships were discussed. - Social support and mentorship programs. - Enhancing social skills and self-esteem. - Peer problems and lower levels of friendships. - Limited social interactions and social isolation. |
|---|
| Inclusion in Postsecondary Institutions With Small Numbers of Deaf and Hard-of-Hearing Students: Highlights and Challenges | Challenges faced by D/HH students in postsecondary institutions. - Challenges faced by D/HH students in postsecondary institutions were explored, emphasizing the importance of access to accommodations and support services for academic and social integration. - Access to accommodations and support services. - Awareness and funding support for D/HH students' needs. - Challenges in postsecondary institutions with small populations. - Limited availability of specialized support services. |
| Mainstream Teachers About Including Deaf or Hard of Hearing Students | Teachers' practices, beliefs, and emotions regarding the inclusion of D/HH students in mainstream secondary schools were explored. - Consideration of D/HH students' needs and individualized support. - Awareness of inclusive practices. - Challenges in meeting D/HH students' diverse learning needs. - Limited training and support for teachers. |
| | | |


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| Inclusive Education for Deaf Students: Literacy Practices and South African Sign Language | Feasibility of inclusive education for Deaf students in South Africa through South African Sign Language interpretation. | Access to accommodations and support services for academic and social integration was emphasized as a solution to the problems experienced by D/HH students in higher education. Educators' attitudes, thoughts, and experiences with D/HH pupils in traditional high schools were investigated. Inclusion efforts have been lauded for their thoughtfulness for the feelings and needs of pupils who are deaf or hard of hearing.

- Several obstacles to offering fully inclusive education to Deaf pupils in South Africa were highlighted, along with the importance of good language and pedagogy training for interpreters and instructors.

- Potential for inclusive education with proper training.

- Importance of South African Sign Language.

- Challenges in providing fully inclusive education. Issues with sign language interpretation and communication.

The first study, conducted in Chile, illuminates the situation wherein D/HH students while attending regular high schools alongside their hearing peers, encounter substantial constraints
on their opportunities for inclusive classroom learning. It underscores the critical importance of adequately preparing teachers and fostering collaboration between regular high school educators and specialized teachers in deaf education to create an inclusive learning environment.

In a UK-based study, the lived experiences of D/HH students with moderate hearing loss attending mainstream secondary schools are examined. The findings uncover recurring themes related to factors that facilitate their social inclusion, as well as the barriers they encounter within school settings. Individualized support, appropriate accommodations, and the cultivation of positive social interactions emerge as vital components in promoting social integration for D/HH students.

An Australian study delves into a restructured postgraduate teacher education program designed to equip educators with the skills to effectively work with D/HH children in inclusive settings. While emphasizing program design and development, the study highlights the importance of inclusive education and underscores the challenges in its implementation, which can either bolster or hinder the inclusion of D/HH students.

Another study scrutinizes the co-enrollment model, where D/HH students are educated alongside their hearing counterparts in regular classrooms. This co-taught approach, involving both a teacher of the deaf and a regular education teacher, fosters increased interaction between D/HH and hearing students, positively impacting D/HH students' academic performance, thereby facilitating inclusion.

To facilitate the participation and interaction of D/HH students in general education classrooms, strategies are identified in one study. While these strategies hold the potential to promote inclusion, the study also reveals barriers that limit their involvement, underscoring the necessity for inclusive classroom practices and support services.

Research in Saudi Arabia centers on the challenges faced by D/HH students in inclusive education due to inadequate implementation of special education regulations. The findings accentuate the necessity for suitable educational placements and supportive classroom environments to enhance D/HH students' experiences, while also shedding light on the barriers to inclusion.

A qualitative study investigates the peer relationship experiences of D/HH adolescents, uncovering peer-related challenges and lower levels of friendships compared to their hearing peers. The study underscores the importance of strategies to enhance social integration and foster positive peer relationships, which can serve as either facilitators or barriers to inclusion.
Within the context of postsecondary education, a study explores the challenges faced by D/HH students attending institutions with small populations in New Zealand. The findings underscore the critical importance of access to accommodations and support services for their academic and social integration, while also reflecting on barriers to inclusion at higher education levels.

In examining teachers' practices, beliefs, and emotions regarding the inclusion of D/HH students in mainstream secondary schools, one study highlights the significance of considering D/HH students' needs and emotions within inclusive classrooms. Teachers' perspectives can either facilitate or hinder inclusion, rendering their awareness of D/HH students' requirements imperative.

Lastly, a study in South Africa scrutinizes the feasibility of inclusive education for Deaf students using South African Sign Language interpreters in mainstream classrooms. It identifies difficulties and challenges in providing fully inclusive education, underscoring the need for improved language and pedagogy training for interpreters and teachers as facilitators for inclusion.

In sum, these studies collectively yield valuable insights into the multi-faceted nature of inclusive education for D/HH students at the secondary level. The findings underscore the critical role of teacher preparation, provision of appropriate accommodations, support services, and effective communication strategies in fostering a more inclusive learning environment. Furthermore, this systematic review underscores the significance of acknowledging individual experiences, cultural contexts, and the challenges faced by D/HH students in achieving academic and social integration. The implications of this research can inform the development of effective educational inclusion policies and practices for D/HH students at the secondary level and beyond, while also identifying areas for further research to enhance inclusive practices for D/HH students.

Word Cloud Charts Reflecting Facilitators & Barriers Towards Inclusion
Facilitators

Table indicate facilitators that contribute to inclusive education for secondary-level deaf and hard-of-hearing students. These studies underscore the transformative potential of advanced assistive technologies, highlighting technology's emerging role as a vital facilitator. Examples include captioning systems, hearing aids, and communication applications, which significantly enhance access to classroom information and promote a more inclusive learning environment for all students. Additionally, raising awareness of these students' specific needs and strengths emerges as a crucial facilitator. Collaborative efforts among teachers, interpreters, and parents are also pivotal, as collaborative planning of accommodations and strategies has been shown to improve academic outcomes. Furthermore, empowering deaf and hard-of-hearing students to advocate for their communication needs and preferred accommodations positively influences their academic success and motivation. Individualized accommodations, such as sign language interpreters and real-time captioning, have proven to enhance academic performance and engagement. Research consistently underscores the importance of equipping educators with the skills to create inclusive classrooms. Teachers trained in deaf education methods are better equipped to meet their students' needs and establish an inclusive and supportive learning environment.
Bar Chart Reflecting Barriers towards Inclusion

Barriers

Despite improvements, difficulties to properly integrating deaf and hard-of-hearing children into secondary education settings continue to exist. Key barriers include a lack of communication alternatives and insufficient teacher preparation, both of which impede successful interaction and mutual comprehension. Negative views continue to be a significant barrier, resulting in reduced expectations and unequal treatment. Concerns about accessibility are also prevalent, with research showing the negative impact of unavailable classroom resources on student engagement and performance. These students may experience feelings of isolation as a result of communication issues and limited opportunities to communicate with others. This problem is exacerbated by a lack of peer support, as hearing students may struggle to communicate with them. The scarcity of resources, such as financing for assistive technology, translators, and teacher training, is a serious impediment. A rigorous curriculum can also stymie the academic advancement of deaf and hard-of-hearing kids. Transitioning from elementary to secondary school, for example, might provide significant problems. The burden of social stigma adds to these difficulties, as unfavorable stereotypes and public judgments impede academic and personal development. Finally, insufficient parental involvement is identified as a barrier, emphasising the role of parents as advocates for their children's needs as well as contributors to improved educational results and classroom assistance.

Discussion

The review of existing studies identified numerous facilitators and barriers to the inclusion of deaf and hard-of-hearing (D/HH) students in secondary school in a variety of circumstances. Facilitators include features such as teacher preparation, collaboration, individualized support, creating positive social connections, co-teaching, and classroom involvement tactics.
Challenges in inclusive education include instructor beliefs, limited learning options, difficulty in post-secondary education, peer relationship issues, and difficulty in navigating the regulatory landscape.

The results of this systematic study highlight how crucial it is to give D/HH children's mental health a high priority, as well as how crucial it is to make classrooms accessible and promote peer interactions. In order to promote accessibility and equality, it also stresses the significance of better training for interpreters and teachers of sign language.

Collectively, these findings highlight the significance of a more comprehensive strategy that takes into account the unique origins, cultural settings, and integration challenges faced by D/HH kids. The findings from this research can be used to strengthen inclusive practices for D/HH children in secondary school and beyond and to assist create sensible rules and procedures for their inclusion in the classroom.

Conclusions

This study sheds light on the difficulties faced by secondary school pupils who are deaf or hard of hearing (D/HH) in inclusive learning environments. Integration is successful when there are supportive surroundings, coordinated efforts, and prepared educators. However, hurdles include things like a lack of resources, trouble making relationships, and teaching attitudes. A school environment that emphasizes the mental and emotional well-being of D/HH kids is essential for achieving full inclusion. Communication and teaching methods for D/HH kids can be improved with appropriate training for educators and sign language interpreters. The objective of the study is to enhance the academic and social wellbeing of D/HH students while also advancing our understanding of the intricate system of inclusive education.

Recommendations

1. Prioritize comprehensive training for high school teachers and deaf education specialists at universities. Deaf and hard-of-hearing students require specialized instruction.
2. Provide individualized support and modifications for children with D/HH in classrooms. Offer access to assistive devices, extra learning resources, and professional assistance.
3. Foster an inclusive and accepting school environment to encourage D/HH students to build friendships with their hearing peers, combating bias and promoting positive relationships.
4. Implement co-teaching practices in schools, where deaf educators collaborate with hearing educators, to enhance D/HH students’ participation and performance in regular classrooms.
5. Emphasize inclusive classroom techniques in schools to ensure full and equal participation of children with disabilities and cognitive challenges in all academic activities.
Implications

Including and supporting kids who are deaf or hard of hearing in the classroom is possible via the implementation of these suggestions. The educational experience of these pupils can be greatly improved by prioritizing thorough teacher training, providing personalized support, cultivating strong peer connections, utilizing co-teaching methodologies, and emphasising the value of diversity in education. Equal opportunity in education relies on the uniform execution of policies. Improving educational achievements for students who are deaf or hard of hearing requires constant research to evaluate the long-term impact of these efforts, considering a wide range of cultural contexts and challenges.

References


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