

Challenges of Deaf and Hard-of-Hearing Students in English Learning in Higher Education

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Abstract: Following the trend of inclusive education in China during the past decade, a growing number of deaf and hard-of-hearing (DHH) students have entered inclusive higher education institutions. Learning English as an additional language presents challenges to these DHH students, and relevant research is underdeveloped. To explore the English learning experience of DHH students in inclusive higher education in China, this research conducted a qualitative case study of three DHH students currently enrolled in inclusive tertiary education. The research findings show that DHH students face multiple difficulties in English learning, including inappropriate instruction and assessment methods, insufficient accommodations and support, and a non-supportive physical learning environment. These factors contribute to a low level of inclusion in the higher education system in China. The insights from this research contribute to the ongoing global conversation on inclusive education. It offers a comparative view for Western language educators in developing English education for DHH students with higher comprehensiveness.

Keywords: Deaf-and-hard-of-hearing university students; English learning; Countermeasures; Inclusive education

Introduction

Following the trend of inclusive education in China, the past decades have witnessed an increasing number of deaf and hard-of-hearing (DHH) students entering inclusive higher education rather than specialized higher education institutions designed specifically for people with disabilities (China Disabled Persons' Federation, 2024; Fan et al., 2022). As the number of DHH students receiving inclusive higher education gradually increases, concerns about education quality and equity are rising.

DHH individuals refer to those with varying levels of hearing loss, impacting their ability to process auditory linguistic information (International Federation of Hard of Hearing People, n.d.). As the performance of assistive devices such as hearing aids and cochlear implants continues to improve, DHH individuals could benefit greatly from technological hearing enhancement (Cheng & Shi, 2022). For DHH students, assistive devices allow them to receive education together with their hearing peers in mainstream higher education institutions, rather than being restricted to special education (Li, 2021). Within this context, this research focused on DHH students with severe to profound hearing loss receiving inclusive higher education in China.

Although a growing number of DHH students have been admitted into inclusive higher education, educational institutions in China may be underprepared to meet their special education needs (Zhao & Chen, 2020). English, with its disciplinary significance as an integral part of higher education in China (Crystal, 2003), poses challenges to DHH students (Csizér & Kontra, 2020). Despite their enhanced hearing due to the use of assistive devices, DHH students still experience hearing and speaking-related difficulties and have different English learning needs, characteristics, and preferences from their hearing peers (Csizér & Kontra, 2020; Zhao & Xie, 2021).

Teaching English to DHH students is a relatively nascent discipline in China (Csizér & Kontra, 2020). There is limited methodological and pedagogical guidance in directing English education for DHH students (Liu, 2019). Institutional assistance for DHH students and their English teachers is limited and insufficient (Sun, 2019). The needs of DHH English learners in higher education have long rested on the margins of research in foreign language education due to their complicated nature and limited social or academic relevance compared to other mainstream educational focuses (Csizér & Kontra, 2020). English teachers in inclusive tertiary education in China may find it challenging to deliver quality and inclusive English education to DHH students (Chen & Shi, 2022). They may lack adequate knowledge of DHH students' learning characteristics and appropriate pedagogical and assessment strategies, which contributes to inappropriate and non-inclusive educational practices.

To better understand DHH students' English learning in inclusive higher education institutions, the purpose of this qualitative case study was to investigate the classroom learning experiences, teachers'

instruction and assessment methods, and institutional support for DHH students in inclusive higher education in China. The findings aimed to provide a better understanding of DHH students' experiences, perspectives, challenges, and needs in English learning in fostering an inclusive education environment. This research on DHH students' English learning experiences in China offers valuable insights into Canadian educational contexts where instructors similarly navigate linguistic diversity and accessibility challenges in higher education (Malec, 2016). Canadian institutions, with their commitment to inclusive education and growing populations of linguistically diverse DHH students, may benefit from understanding students' learning experiences and pedagogical approaches that proved effective in supporting English acquisition among DHH learners in this study.

Literature Review

Inclusive Higher Education for Students with Disabilities in China

Students with disabilities (SWD) in China receive higher education through two major channels: inclusive higher education programs and specialized education programs for SWD (Li et al., 2021). Inclusive higher education programs place SWD together with their peers without disabilities in universities while the latter segregates SWD from mainstream higher education institutions into specialized education institutions (Ma, 2014). In recent years, the Chinese government has been promoting the educational rights of SWD and the trend of inclusive education through a series of governmental initiatives such as Administrative Provisions for Students with Disabilities' Participation in the National Unified Examination for Admissions to General Universities and Colleges that aims at offering reasonable accommodations for SWD to ensure their equal participation in exams (Ministry of Education of China, 2015). This gives SWD greater opportunities to attend inclusive higher education. From 2009 to 2019, the number of SWD attending inclusive higher education programs rose from 6,686 to 12,362. Inclusive higher education has become the dominant channel through which SWD receive their postsecondary education and professional preparation and this number is expected to rise (Ministry of Education of China, 2015).

Despite the growing enrollment number, inclusive higher education in China still requires development to adequately support SWD, partly due to its relatively recent implementation compared with the more established systems in Western countries (Liu et al., 2018). In China, SWD's access to higher education was granted in the 1980s (Zhang et al., 2018). The localization and implementation of inclusive education commenced in 1993, gradually evolving from emulating the inclusive education paradigms from Western countries to the localized re-generation based on China's national conditions (Deng & Su, 2012). Although inclusive higher education has gained growing attention in China in the past few decades, it still lacks systematic comprehensiveness (Ma, 2014). Faculty members outside of the specialized higher education institutions for SWD tend to lack the knowledge and expertise to deliver effective education to this student group (Zhang et al., 2018). Higher institutions may be under-resourced to accommodate SWD's special learning needs (Li et al., 2021). These contribute to SWD experiencing exclusion and undermined learning opportunities (Zhang et al., 2018). Previous research has focused on the learning experiences of SWD in specialized education institutions (e.g., Liu, 2019; Zhang et al., 2018), while relatively fewer studies have investigated the educational experiences of this student group in inclusive education. Given the rising number of SWD in inclusive higher education in China and the inadequacy of inclusive strategies ensuring learning, their educational experience warrants further scholarly attention.

English Teaching and Learning for DHH Students in Higher Education in China

DHH students gained access to higher education in the late 1980s in China (Zhang et al., 2018). The University of Changchun was among the first to receive DHH students in 1987 (Wang, 2014). In 2017, there were 9 higher education institutions in China accepting DHH students (Liu et al., 2018). In 2019, the number rose to over 20 (Zhang & Huang, 2019). The growth of DHH students in institutions that originally only served students without disabilities leads to greater instructional challenges—one area is learning English as an additional language (EAL) (Sun, 2019).

EAL for DHH students is a niche field in China (Ma, 2014). Several research outlined the challenges faced by teachers and inclusive higher education institutions, including limited teaching resources,

inadequate training on special education for DHH students, ambiguity in teaching objectives, difficulty in selecting appropriate teaching materials, DHH students' varied English skills, and overly generalized assessment criteria (Hua, 2010; Zhao & Xie, 2021; Sun, 2019; Zhao & Chen, 2020). Min and Han (2019) pointed out that Chinese education's traditional focus on listening and speaking in English teaching naturally puts DHH learners at a disadvantage, as tests and teaching methods often do not accommodate their unique learning needs. The problem gets worse at the university level, where English courses are often designed assuming students have previous experience with hearing and speaking English, which many DHH students have limited experience with in their earlier education (Cui, 2016). Liu (2019) showed that many DHH students start higher education with much lower English skills than their hearing classmates, creating immediate academic difficulties in courses where English proficiency is expected. Additionally, Ma (2014) highlighted that universities often lack proper cooperation between disability support offices, language departments, and academic faculties to create complete support systems. This disconnection leads to inconsistent accommodations across different courses within the same university.

Although instructional strategies aligning with the language acquisition characteristics of DHH students have been suggested, including leveraging educational technologies and visualization (Liu, 2019), EAL remains challenging for DHH students in inclusive higher education (Ma, 2014). This necessitates further investigation to better understand the learning experiences of this student population to facilitate the development of more effective pedagogical strategies and an inclusive learning environment.

Methodology

Research Questions

To understand DHH students' experiences and perceptions of English learning in inclusive tertiary education, this study aimed to address the question:

How do DHH students perceive their experience of English learning in inclusive higher education in China?

Research Design

This research utilized a qualitative case study design to investigate the EAL learning experiences of three DHH students in inclusive higher education in China. This approach was selected for its capacity to explore complex educational phenomena through rich, contextual data from individual perspectives (Yin, 2009). The case study design allowed for an in-depth examination of participants' lived experiences within their specific educational contexts, providing insights that quantitative approaches might not capture. Ethics approval for this research was granted before recruitment.

The participants were recruited from three universities with different majors (Table 1). The recruitment process involved sending invitational posts with detailed project information on the Chinese social media platform RED. The following selection criteria were applied: 1) students who are deaf or hard-of-hearing; 2) competent in oral communication; 3) using hearing devices; 4) currently enrolled in inclusive higher education; 5) attended non-specialized K-12 education together with hearing peers; and 6) currently receiving English as a second language education. These criteria were to ensure recruiting target DHH students who are capable of verbal communication assisted by hearing devices and are linguistically able to learn new languages. A total of three DHH students satisfying the criteria contacted the researcher and consented to participate. The participants had severe to profound hearing loss and were using hearing aids or cochlear implants to assist with communication. They remained in the inclusive education system from primary school to higher education.

As the researcher, I approached this study with awareness of my positionality as a hearing individual investigating deaf experiences. I acknowledged both the insights and limitations this background provided. I maintained a reflective journal throughout the research process to document potential biases and their influence on data interpretation.

One-on-one semi-structured online interviews were conducted for data collection (Cohen et al., 2018). Before the interview, the participants were fully informed about the potential risks and benefits and provided consent to participate. Each interview lasted approximately 60-90 minutes and followed a protocol addressing educational background, English learning experiences, challenges encountered, and coping strategies. The interviews were conducted in the participants' preferred communication mode, with accommodations such as real-time captioning available as needed.

The interviews were recorded and transcribed for analysis (Cohen et al., 2018). Data analysis employed thematic coding procedures (Braun & Clarke, 2022). It begins with open coding to identify significant statements, followed by axial coding to group related concepts, and finally developing overarching themes that capture participants' shared experiences. Member checking was implemented by sharing preliminary findings with participants to ensure an accurate representation of their experiences. Issues related to confidentiality, anonymity, and non-traceability were addressed throughout data collection and analysis (Cohen et al., 2018).

Table 1: Basic Information of Participants

	<i>Pseudonym</i>	<i>Hearing Loss</i>	<i>Assistive Device</i>	<i>Level of Study</i>	<i>Majors</i>
<i>Participant 1</i>	<i>Amy</i>	<i>Severe</i>	<i>Hearing aid</i>	<i>Graduate</i>	<i>Sociology</i>
<i>Participant 2</i>	<i>Dake</i>	<i>Severe</i>	<i>Hearing aid</i>	<i>Undergraduate</i>	<i>Computer Science</i>
<i>Participant 3</i>	<i>Julie</i>	<i>Profound</i>	<i>Hearing aid and Cochlear implant</i>	<i>Undergraduate</i>	<i>Accounting</i>

Findings

The research indicated that DHH students in English classes in higher education experienced multiple challenges with a low level of inclusion. There was a lack of in-class support and accommodations provided to DHH students. Participants reported multimedia tools and visualization as useful strategies to ensure information accessibility.

Issues with Instruction and Assessment Methods

Teachers' instructional methods were sometimes considered to be unsuitable for DHH students. Amy and Dake expressed difficulty following their English teacher's rapid pace of lecturing, with both mentioning that the teacher would often move on to the next topic without ensuring they understood the current one. Julie shared a more positive experience, noting that her teacher employed strategies to aid her understanding, such as exaggerated gestures to signal topic changes and repeated verbal emphasis on key points. Additionally, Julie's teacher adjusted the microphone position to facilitate lip-reading, making the content more accessible for her.

Assessment accommodations were not provided to students. All three participants were exempted from the listening and speaking tests despite their willingness to attend, resulting in a "frustrating experience of exclusion", as stated by Julie. The participants also indicated that the assessment criteria were deliberately lowered for them without any reason given. The assessment arrangement and reduced expectations of DHH students' learning performance were exclusionary and did not meet students' educational needs.

The Use of Multimedia Tools and Visualization

Multimedia tools were widely used in the classroom. All participants noted the frequent use of PowerPoint presentations and bilingually captioned videos as learning materials which provided visualization of the content. Dake also mentioned the visualization strategy of displaying information in multiple written forms including distributing printed handouts before class, writing on the chalkboard, and displaying information on the overhead projector or interactive whiteboard. All students reported positive outcomes from these

instructional approaches, as Dake described them as “essential bridges that made English concepts accessible to me”.

Despite the benefits, all three participants acknowledged that the intensive use of multimedia could lead to visual information overload. They reported feeling pressure and frustration when they missed key information or struggled to keep up with the pace of instruction.

Issues Related to Physical Classroom Environment

The classroom environment presented additional challenges. All participants noted poor acoustics, with issues such as reverberation, muffled sound, and interference from background noise in large lecture halls. Since the students’ hearing aids and cochlear implants could pick up and amplify all the surrounding sounds, it was extremely difficult for them to discern the speech of the interlocutors or comprehend audio materials used during listening practices. Overwhelming noise also posed a source of distraction and a huge drain on the attention span of DHH students. Moreover, inappropriate classroom setup hindered the visual information DHH students could obtain.

All interviewees mentioned that the current seating arrangement in English class made it extra difficult for them to lip-read or interact with hearing peers as they were all facing their teachers instead of each other.

Lack of Institutional Support and Sense of Exclusion

None of the participants reported the existence of disability support staff or specific training for faculty and students on how to better support DHH students “Professors were willing to help, but they simply did not know how to accommodate my needs effectively. There was no system in place, so I had to constantly advocate for myself and educate others about what would help me learn.”, as stated by Amy.

The participants’ self-perception related to their hearing loss revealed a strong sense of exclusion and frustration. All interviewees shared feelings of loneliness and difficulty participating in group discussions and online meetings. For DHH students, the challenge of identifying speakers and following conversations in group settings could be exhausting. Dake, who attended smaller classes, found it easier to interact with classmates and seek help from the teacher, which supported his participation. In contrast, Julie, who attended English classes with over 80 students, struggled significantly with collaboration and social interaction due to the large class size.

When asked about relationships with their classmates, all participants reported positive and cordial interactions with hearing students. However, despite the supportive social environment, the lack of targeted support for DHH students was reported to be a significant challenge.

Discussion

To answer the research question of how DHH students perceive their experience of English learning in higher education, this research explored the learning experience of three DHH students in different higher education institutions in China. It shows that although some accommodative instructional strategies have been utilized to alleviate EAL learning difficulties, the participants faced many challenges and obstacles that prevented them from being fully included in English learning in higher education. The instruction and assessment methods were generally ill-suited and non-inclusive for DHH students. Accommodations and support were limited. Technologies and multimedia tools prove to be useful, although with certain drawbacks.

EAL instructors in China have paid less attention to the instruction strategies for English listening and speaking skills of DHH students, as these two areas are automatically rendered highly challenging due to the auditory deficiency of students with hearing impairments (Zhang & Liu, 2015). This contributes to the exclusion of DHH students from learning these two skills. This is reflected in the findings of this study where participants were excluded from the listening and speaking assessment. In recent decades, technological advancements in hearing devices have enabled many DHH students to develop speaking competence in their

native language with relatively high speech intelligibility. (Domagała-Zyśk et al., 2021). This change is evident in this study as all three participants were competent in communicating orally in their first language and exhibited interest in language learning. The findings of this study highlight the importance of a timely reconceptualization of EAL listening and speaking learning for DHH students and the imperative need for improved pedagogical approaches to ensure educational inclusivity.

Consistent with existing literature, this study has identified several effective strategies aligning with DHH students' learning characteristics. Visualization was reported to be useful in facilitating the accessibility of learning content. This is consistent with Gulati (2016) and Zou et al. (2016). For example, Gulati (2016) expounded on the use of visualization in teaching vocabulary, designing reading and writing comprehensive tasks, and speaking practice for her DHH students with sign languages, pictures, video clips, mind maps, and so on. Similarly, Zou et al. (2016) stated that pictures or animations of phoneme pronunciation effectively demonstrate how sounds are produced by visualizing the position of the tongue, the flow of air, and the shape of the lips accompanied by elucidation from the teacher. Multimedia resources were used to support information access through the visual channel of DHH students, allowing for greater interactivity, inclusivity, and flexibility in designing learning and related tasks (Domagała-Zyśk et al., 2021).

Participants generally reported exclusionary experiences concerning assessment and the lack of supportive approaches. Several strategies from the existing literature may serve as potential remedies to this issue. For possible modification to listening assessment, teachers could choose listening content accompanied by videos showing someone reading the scripts out facing the camera, allowing DHH students to access auditory information augmented by visual input such as lip reading (Domagała-Zyśk et al., 2021). Alternatively, teachers could read the listening scripts out in front of the DHH students for them to lip-read (Csizér & Kontra, 2020). One concern is that DHH students may not be able to capture the contextual clues, such as the emotions and tones of the speakers, which could convey hidden messages essential to the understanding of the material (Domagała-Zyśk et al., 2021). The solution is that teachers could enhance specific parts with slightly exaggerated facial expressions or body language (Csizér & Kontra, 2020).

The problem of environmental barriers was repeatedly noted during the interview, mostly about the poor acoustics and obstructed access to visual information due to an unsuitable seating configuration. Poorly directed interaction in EFL classes could lead to DHH students experiencing difficulties with processing auditory and visual information, resulting in feelings of isolation and discouragement in English learning (Sedláčková, 2016).

To prevent these issues, teachers should make sure that the environmental situations are properly managed (Domagała-Zyśk & Kontra, 2016). The classroom should be quiet and well-lit, and DHH students need to be positioned close to the teacher so that they can make the most of their residual hearing or lip-reading. The poor acoustics caused by reverberation can be reduced by putting polystyrene foam sheets on the wall or using cork wallpaper (Sedláčková, 2016). Seats are suggested to be arranged in a U-shape to enable constant visual contact with teachers and classmates; to facilitate DHH students' comprehension of class situations, teachers could briefly repeat the interactive communication when hearing students respond to teachers' questions (Domagała-Zyśk & Kontra, 2016).

In boosting DHH students' overall learning experiences, teachers need to have a good understanding of DHH students' basic information and background (Malec, 2016). Gulati (2016) emphasizes the importance of gaining orienting data from DHH students such as family background, educational background, and the student's English language background before the course. Based on these data, teachers could design a more suitable curriculum with level-appropriate content, proper modes of delivery, and individualized plans for students who need extra assistance.

Conclusion

This research explored the English learning experience of three DHH students in higher education in China. The findings indicate that these students' English learning is still fraught with obstacles and exclusion. Although inclusive education and the commitment to the education rights of people with disabilities in China have made progress in recent years, its implementation remains inconsistent and limited. DHH students continue to face challenges such as insufficient in-class support, inadequate accommodations, and a lack of

inclusive pedagogies among the faculty. It may be that DHH students who are admitted into inclusive higher education are implicitly excluded from the class, frustrated by English learning, and mentally burdened by their physical differences with other students and their sense of incompatibility with the education system. Through revealing the multiple difficulties related to English learning experienced by DHH students, this research highlights the need for more research into English education for DHH students in China to foster an inclusive and supportive educational environment.

This study has its limitations, including limited sample size, a single source of data, and a narrow focus on DHH students who only rely on the oral mode of communication assisted by hearing devices. DHH students in China represent a sizeable and diversified community. Their language learning needs and rights to inclusive higher education necessitate greater research endeavors. Despite these limitations, this research contributes to the field of EAL for DHH students by providing insights into their EAL learning experiences in inclusive higher education. Further research may draw on the findings of this study for developing large-scale investigations with more diversified participant profiles and formulations of targeted instructional interventions to address the identified learning issues.

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