INCLUSIVE EDUCATION OF STUDENTS WITH HEARING IMPAIRMENT

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Abstract
Understanding the current research status and trend of inclusive education for students with hearing impairment can provide a reference for improving the development of inclusive education for students with hearing impairment. 85 articles were searched from EBSCO Discovery Service and four representative journals. After screening, 39 target articles were analyzed from three aspects, namely research trend, type of research and participant, research content. Result shows that the number of relevant articles is insufficient, and the distribution of relevant articles is obviously unbalanced; Mixed research is insufficient, and the continuity of focusing on inclusive education for students with hearing impairment is inadequate; The relevant research content mainly focused on five aspects. In order to improve the development of inclusive education for students with hearing impairment, a good and regular evaluation is the precondition of development for students with hearing impairment; More attention should be payed to the development of speech communication competencies for students with hearing impairment; Suitable form of education and flexible academic achievement evaluation should be provided; More professional support to the teachers and families of students with hearing impairment is critically important too.

Keywords: Inclusive Education, Students with Hearing Impairment, Review

INTRODUCTION
With the arising and development of civil rights, mainstreaming movement and de-tagging, the concept of inclusive education proposed in 1950s, with the basic idea of meeting the diverse needs of all students (Fang, 2006; Jing, 2013). It was not until 1994 that the Salamanca Declaration officially proposed to carry out inclusive education with the statement that “those with special educational needs must have access to regular schools”, and putted into practice from developed countries to developing countries with the promulgation of different regulations to ensure its reasonable and legal development (Ainscow, Slee, & Best, 2019; UNESCO, 2009; National Policy on Education, 2008; Deng, Zhao, 2019; Pijl, & Frissen, 2009). Inclusive education has gradually become a hot spot in recent decades. It is an educational concept to provide equal and efficient education and relevant services for students with special needs in high quality and age-appropriate classes of mainstreaming schools which have acceptance, belongings and community cultural atmosphere (Deng, &Zhu, 2007, as cited in Salend, 1998). According to the degree of inclusion, it can be divided into partial inclusion and full inclusion (Deng, &Zhu, 2007, as cited in Zionts, 1997).

According to the different definition and classification of disability in various countries, the objects of inclusive education generally include students with hearing impairment, visual impairment, speech impairment, emotional impairment, intellectual disabilities, learning disorders, physical disorders, etc (Cao, Zan, 2003). Researches showed that inclusive education has played an active role in promoting the language competencies, communication competencies, academic achievement, peer acceptance, self-esteem, lifetime benefits, solving problems of behavior and emotional expressions of students with disabilities etc (Chen, Wang, Li, Zhang, 2009; Drame, Kamphoff, 2014). However, in the process of practice, inclusive education still faces challenges such as the degree of inclusion, limited support, the professional knowledge of teachers (Ye, Zeng, Liao, 2009; Yang, 2015; Ghesquière, Moors, Maes, Vandenberghhe, 2002; Chan, Yuen, 2015).

Education for students with hearing impairment is the earliest modern special education and an integral part of special education (Tang, 2017). With the development of hearing compensation technologies, more and more students with hearing impairment are entering mainstream schools. More than 40% of students with hearing impairment can attend mainstream schools. The study of inclusive education can provide a reference to improve the development of inclusive education for students with hearing impairment.
impairment are studying in the regular classrooms (Li, 2016). The impact of inclusive education on the students with hearing impairment cannot be ignored. Therefore, understanding the current research status and trends of inclusive education for students with hearing impairment can provide a reference for improving the development of inclusive education for students with hearing impairment.

MATERIAL AND METHODS

In order to get the information of the current research status and trends of inclusive education for students with hearing impairment, the key words “deaf”, “hearing impairment”, “hearing loss”, “hearing disability” and “hard of hearing” were matched with the “inclusive education”, “mainstreaming school” and “general school” randomly. Components were connected by the Boolean operator “AND”. Using the components to search articles in EBSCO Discovery Service, but no result was found. Then the four journals (Chinese Journal of Special Education, Chinese Scientific Journal of Hearing and Speech Rehabilitation, Journal of Special Education, Journal of Deaf Studies and Deaf Education) which are representative in the field of special education and deaf education were chosen as the databases of literature search. All of the search was in abstract, title and key words without time limitation, and the search was finished in the January of 2022. Language is limited to Chinese and English. With the search strategies, 85 articles were got from the databases.

In order to answer the question: What was researched in inclusive education for students with hearing impairment? All of the articles have to meet the criteria. The inclusive and exclusive criteria are as follow.

Inclusive criteria: 1. The researches are relevant to the research question; 2. The participants or objects of the researches are students with hearing impairment.

Exclusive criteria: 1. The participants or object of the researches are not students with hearing impairment; 2. The participants or object of the researches have other physical impairments or neurological diseases besides hearing impairment.

After screening the articles, 39 articles can meet the criteria. The 39 target articles were analyzed from three aspects, namely research trend, type of research and participant, research content. The flow diagram of the literature search and analyzing is showed in figure 2.1.

RESULTS

The Trend of Research

As shown in table 3.1, most of related researches are published in Chinese Scientific Journal of Hearing and Speech Rehabilitation and Journal of Deaf Studies and Deaf Education, while Chinese Journal of Special Education only published a few relevant articles and no relevant article published in Journal of Special Education. Number of published English articles are similar to Chinese articles.

The publication trend of inclusive education literature for students with hearing impairment is showed in figure 3.1. It is easy to find that the relevant articles were published between 1999-2021. In the four journals, three
journals published relevant articles. In the three journals, only Journal of Deaf Studies and Deaf Education has maintained a relatively strong continuity to the focus on inclusive education for students with hearing impairment. Since 2015, the attention of Chinese Scientific Journal of Hearing and Speech Rehabilitation on inclusive education for students with hearing impairment increases steeply.

Table 3.1 Literature Distribution of Inclusive Education of students with Hearing Impairment

<table>
<thead>
<tr>
<th>Chinese Journal of Special Education</th>
<th>Chinese Scientific Journal of Hearing and Speech Rehabilitation</th>
<th>Journal of Special Education</th>
<th>Journal of Deaf Studies and Deaf Education</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>17</td>
<td>0</td>
<td>18</td>
<td>39</td>
</tr>
<tr>
<td>10.26%</td>
<td>43.59%</td>
<td>0%</td>
<td>46.15%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Figure 3.1 Publication Trend of Inclusive Education Literature for Students with Hearing Impairment

The Type of Researches and Participants

The information about the type of researches is showed in table 3.2. There are three types of researches. Most of them are quantitative research, followed by qualitative research and mixed research. It is worth noting that only three articles are mixed research, it is obviously insufficient.

Table 3.2 Information about the Type of Researches

<table>
<thead>
<tr>
<th>Quantitative research</th>
<th>Qualitative research</th>
<th>Mixed research</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>21</td>
<td>15</td>
<td>3</td>
<td>39</td>
</tr>
<tr>
<td>53.85%</td>
<td>38.46%</td>
<td>7.69%</td>
<td>100%</td>
</tr>
</tbody>
</table>

As shown in table 3.3, the school stage information of participants is uncertain in 7 articles. The most of participants are in primary and secondary school, followed by the preschool education and cross-study stage.

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articles payed attention to the participants who are in cross-study stage, but no article included the development of participants themselves across different study stage in inclusive education.

<table>
<thead>
<tr>
<th>Table 3.3 Information about the Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preschool education</td>
</tr>
<tr>
<td>10</td>
</tr>
</tbody>
</table>

The Content of Research

In the four journals, researches of inclusive education for students with hearing impairment mainly payed attention to five aspects: First, introduction about inclusive education of students with hearing impairment; Second, arrangement of teaching activities in inclusive education for students with hearing impairment; Third, environment of inclusive education for students with hearing impairment; Fourth, inclusive education adaptation of students with hearing impairment; Fifth, abilities development of students with hearing impairment in inclusive education.

Introduction about Inclusive Education of Students with Hearing Impairment

Inclusive education is to integrate students with disabilities into general education, and provide suitable support and assistance to them, to meet their different abilities, learning styles and backgrounds in mainstream education. Its core value is to emphasize respect for individual differences and dignity, and to emphasize respect for equal rights and opportunities in education. Inclusion is not simply referring to mainstream setting, but for responding to students’ special education needs, emphasizing on rights and the culture of a school (Powers, 2002). Inclusive programs must carefully address teacher attitudes, teacher roles and relationships, student knowledge and curriculum, structural barriers, extracurricular activities, community relationships, and parental support (Antia, Stinson, Gaustad, 2002). Inclusive education is helpful for students with hearing impairment to develop their hearing and language skills, character and communication competences, and promoting adaptation to mainstream society (Zhao, 2017). It also can provide a better language learning environment for students with hearing impairment and promote their integration into mainstream society. The speech communication competences of students with hearing impairment will affect their inclusion effect, while their interaction with peers and language communication will affect their identity (Ji, 2005; Nikolaraizi, Hadjikakou, 2006). Language support and intervention are important for the inclusive education of students with hearing impairment (Toe, Paatsch, 2018).

Arrangement of Educational Activities in Inclusive Education for Students with Hearing Impairment

With different level of speech abilities, inclusive education has three types of setting modes for students with hearing impairment, that is full-time inclusion for students with hearing impairment who have good speech abilities; half-day inclusion for students with hearing impairment who have poor speech abilities, regular inclusion for students who are having hearing and speech rehabilitation in institution of rehabilitation (Liu, 2008). While some schools provide different inclusive education models by providing different teaching support in mainstream school. Some schools provide an itinerant teacher, but some schools provide a teaching team composed of teachers with deafness and regular education teachers (Kreimeyer, Crooke, Drye, Egbert, Klein, 2000). In inclusive education for students with hearing impairment, it is important to ensure language training time, organize inclusive activities regularly, organize community activities regularly, assess their communication and interaction regularly, and establish evaluation records for them. In order to improve the teaching effect, oral, sign language, bilingual language and total communication teaching language are used in the inclusive education for the students with hearing impairment (Lei, &Deng, 2007; Zhang, 2021). The effective combination of rehabilitation center and general education institutions can be conducive to the smooth realization inclusion for students with hearing impairment, and the support from professional teams can shorten their transfer time from special education institutions to general education institutions with the significant improvement of speech and communication competencies (Guo, Deng, 2021).

Environment of Inclusive Education for Students with Hearing Impairment
The environment of inclusive education for students with hearing impairment refers three parts that are adopting attitude, peer relationship and support. Research shows that normal hearing college students have a negative attitude towards communication and interpersonal relationship management of college students with hearing impairment, but they are positive, affirmative, and optimistic about the abilities and rights of college students with hearing impairment. The major, gender of survey objects, and the degree of communication between normal hearing college students and college students with hearing impairment have an impact on the adopting attitude for students with hearing impairment (Qing, & Zhu, 2009). As for the teachers’ attitude towards the students with hearing impairment, teachers’ understanding of students with hearing impairment is not deep enough, their acceptance level is low, their knowledge of special education is not systematic, and their support for inclusive education is not great too (Chen, 2021). There is no significant difference in the peer relationship between students with hearing impairment and normal hearing in inclusive education, but the popularity of students with hearing impairment is relatively lower (Xie, 2018). The various ways sibling relationships contribute to the psychological development, identity formation, and coping with deafness of students with hearing impairment (Eichengreen, Zaidman-Zait, 2020). The most critical educational experience for the identity concerned of students with hearing impairment is their interactions with hearing or deaf peers and their language of communication with their peers at school (Nikolaraiz, Hadjikakou, 2006).

Rehabilitation support measures in inclusive education can effectively improve the hearing and speech abilities, and confidence of preschool children with hearing impairment (Lai, 2020). Support services are vital for the academic success and social integration. In Cyprus, The main support service for students with hearing impairment in inclusive education showed on one-to-one and group sessions; presence of co-coordinators; “acoustical treatment” of the classrooms; provision and management of personal amplification, psychological support, counseling, and in-service training for designated teachers (Hadjikakou, Petridou, Stylianou, 2005). However, the support of students with hearing impairment is still lower than students with normal hearing (Qing, & Zhu, 2009). Further supports for students with hearing impairment in inclusive education showed on evaluating the academic achievement of students with hearing impairment shouldn’t only focus on examination results, but also the information on other outcomes, including measures of nonacademic achievement (Powers, 2003). Teachers and parents should provide simple and clear instructions to the students with hearing impairment, because it can improve the learning efficiency of children with hearing impairment in inclusive education; Appropriate encouragement should be gave to students with hearing impairment too, because it enhances their perception of ability, recognition and self-confidence; Guiding children to solve problems can meet their self-competency; Positive feedback can help improve their self-identity and promote the internalization of motivation (Qiao, Kong, Li, 2020; Leigh, 1999).

Inclusive Education Adaptation of Students with Hearing Impairment

Students with hearing impairment have higher scores for school experiences, physical and mental health, and overall quality of life in mainstream school, while good classroom participation is relevant to quality of life in school, social contact with peers, and mental health (Hintermair, 2011). 60% of parents believe that children with cochlear implants are not well-adapted to inclusive education. Parents’ subjective perception of inclusive education for children with hearing impairment is affected by children’s initiative in communication, teachers’ attention, and follow-up support from rehabilitation institutions (Zhao, Cui, Chen, Huo, Liang, 2018). There is no significant difference in subjective well-being between students with normal hearing and hearing impairment, while the life events of students with hearing impairment are significantly lower than students with normal hearing in terms of learning, health, and other dimensions, but the subjective well-being of students with hearing impairment is affected by their situation of dating the opposite sex, lip-reading ability, the number of friends with hearing impairment or normal hearing (Tu, & Dai, 2014). Students with hearing impairment face great difficulties in communication, initiating/entering and maintaining interactions with hearing peers in inclusive settings.Their engagement is lower than the students with typical hearing in mainstream school (Xie, Potměšil, Peters, 2014; Todorov, Galvin, Klève, & Rickards, 2021). With these situations, around 19% students with hearing impairment can’t adapt to the mainstream school and go back to special education school to continue their study (Sun, 2021). Teachers and parents generally believe that the ability of peer communication of students with hearing impairment has an important impact on the effectiveness of inclusive education. Successful cases of children with hearing impairment in inclusive education benefit from the appropriate hearing aids, strong language and speech skills, and the level of intellectual and psychological development (Gao, Jian, Chen, Li, 2018).

Abilities Development and Relevant factors of Students with Hearing Impairment in Inclusive Education
Students with cochlear implants have a relatively higher level of education, but they are still far from the average academic performance of hearing children. Although most children with hearing impairment are placed in mainstream schools, there is no pattern of migration toward mainstream schools (Thoutenhoofd, 2006; Kreimeyer, Crooke, Drye, Egbert, Klein, 2000). Preschool children with hearing impairment are not as flexible as hearing children in their overall use of emotional adjustment strategy, and additional interventions are required at the initial stage of inclusion (Cai, 2019). In the inclusive education environment, children with hearing impairment have significantly improved expression function, tool function and coordination function (Lin, Xu, Wang, 2016). 59% students with hearing impairment in inclusive education exhibited mild-to-moderate or severe speech impairment. The speech competencies is relevant to the degree of hearing loss, hearing aids, speech therapy and time of diagnosis (Lau et al., 2019). The reading ability of students with hearing impairment in inclusive education is lagging behind actual age, but better than students who are studying in schools for students with deafness, besides, hearing aids is helpful for reading (Harris, Terlektsi, 2011; Van, 2001). Age has a positive effect on the development of conversational skills but not for the consolidation of a positive self-concept. The degree of deafness has an effect on the communication skills but not for the self-concept (Silvestre, Ramsport, Pareto, 2007). Using specific picture book stories as a carrier, and carrying out inclusive education activities with role play games can improve the communication competencies of students with hearing impairment (He, Gao, Chen, 2018). Accessing to accommodations that provide facilitated communication and inclusion were critically important for learning and participation experiences of students with hearing impairment (Powell, Hyde, Punch, 2014). Using of referents, specific content vocabularies and new concise information is different for student with hearing impairment in inclusive education (Toe, Paatsch, 2018). Intervention of cooperation play can also improve cooperation ability of students with normal hearing and hearing impairment in education of preschool. The cooperation ability will be affected by the situation of group dividing (Wang et al., 2018).

Conclusion and Discussion

After search and screening the literature, there are 39 articles about inclusive education for students with hearing impairment in four journals between 1999-2021. The number of relevant articles is insufficient. Most of articles are published in Chinese Scientific Journal of Hearing and Speech Rehabilitation and The Journal of Deaf Studies and Deaf Education, the distribution of relevant articles is obviously unbalanced in the four journals. The reason might be these two journals focus more on deaf, while the other journals payed more attention to whole special education. It is still unusual for the Journal of Special Education hasn’t relevant article at all, the reason might be the search key words are not representative enough to include all of the articles about inclusive education for students with hearing impairment. The continuity of focusing on the inclusive education for students with hearing impairment is inadequate, only The Journal of Deaf Studies and Deaf Education published relevant articles relatively continuous.

The most type of researches are quantitative research, followed by qualitative research and mixed research. Only three relevant researches are mixed research, it is insufficient. There are no article included the development of participants themselves across different study stage in inclusive education, so the research results are not systematical enough to explain the longitudinal development of students with hearing impairment in inclusive education. The content of researches about inclusive education mainly has five aspects. Inclusive education is important to improve the abilities of students with hearing impairment, and show the respect to the equal right and different culture in education. It is necessary to provide suitable educational activities and supports to meet the special needs of student with hearing impairment in inclusive education to improve their development.

In order to improve the development of inclusive education for students with hearing impairment, it is necessary to make efforts from the following aspects. First, a good and regular evaluation is the precondition of development for students with hearing impairment. The diagnosis should be as earlier as possible, a scientific newborn hearing screening plays an important role in it. With the aging and development of students with hearing impairment, the hearing and speech-language evaluation should be given regularly; Second, pay more attention to develop the speech communication competencies of students with hearing impairment. Hearing aids are helpful for students of hearing impairment to rebuild their auditory abilities. Besides, a good interaction and communication environment is vital, so it is important to provide more interaction and communication chance between the students with hearing impairment and their families and peers with normal hearing. It is also important to ensure enough time of language rehabilitation and speech therapy for students with hearing impairment; Third, provide suitable form of education and flexible academic
achievement evaluation. With the different auditory and speech abilities of students with hearing impairment, different teaching languages, study material and study activities should be provided to meet their special needs. Their academic achievement evaluation shouldn’t only focus on examinations result, other outcomes are worthy of reference; Last, it is critically important to provide more professional support to the teachers and families of students with hearing impairment. It is helpful for the teachers and families to proper attitude and enrich their educational knowledge and skills of students with hearing impairment. In this regard, cooperate with a rehabilitation institution or professional team is an effective way.

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References


