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**Peer Relationships of Children with Hearing Impairment
in Regular Classrooms**

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PhD study program - Special Education Studies

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Declaration of Originality

I, XIE Yuhan (Student ID Number 80024897) declare that this dissertation entitled “Peer Relationships of Children with Hearing Impairment in Regular Classrooms” and submitted as partial requirement for Ph.D. post graduate study program of Special Education is my original work and that all the sources in any form (e.g. ideas, figures, texts, tables, etc.) that I have used or quoted have been indicated and acknowledged in the text as well as in the list of reference.

Signature

Date

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Abstract

Inclusive education has been established internationally as the main policy imperative with respect to children with special educational needs (SEN). Increasing children with SEN have been placed into regular classrooms together with typical children to receive education. Social outcomes of inclusive education, especially peer relationships between children with and without SEN, have been particularly concerned by educators and researchers in recent years.

This study adopted mixed methods combined with quantitative and qualitative approaches to examine the peer relationships of Czech and Chinese children with hearing impairment (HI) in inclusive education. Sociometric method was used in the quantitative inquiry to investigate peer acceptance, friendships and peer groups of children with HI in regular classrooms. Semi-structural interviews were used in qualitative inquiry to explore the factors contributing to peer relationships of children with HI from perspectives of children with HI themselves, their hearing classmates and teachers, and professionals in deaf education.

The results of quantitative inquiry indicate that the peer relationships of both Czech and Chinese children with HI are poorer than hearing children. Czech children with HI have fewer friends and memberships of peer groups than hearing classmates in the class, and Chinese children with HI are less accepted by their peers as compared with hearing children. Moreover, the patterns of peer relationships between Czech and Chinese children with HI are different. Although Czech the friends and peer groups of children with HI are fewer than hearing children, their acceptance by peers is similar to hearing classmates; whereas Chinese children with HI have equivalent friendships and peer groups to hearing children but they are less accepted by peers with compared to hearing classmates.

The qualitative inquiry demonstrates that four common major categories of influencing factors on peer relationships of both Czech and Chinese children with HI have been identified from interviews data analysis. They are child with HI factors, hearing peer factors, teacher factors and social situations. However, the sub-categories

within some major categories are different. In Chinese model of influencing factors, child with HI factors are consisted of spoken language ability, personality, self-concept, social skills and academic achievement; Hearing peer factors include attitudes, response, bullying, and prosocial orientation; teacher factors are comprised of attitudes and instructions; and the last one is social situations focusing on one-to-one and group situations. The sub-categories of academic achievement in children with HI and hearing peer' prosocial orientation don not emerge in the Czech model, and the other factors are the same to those in Chinese model.

Through integrating the quantitative and qualitative results, the poorer peer relationships of both Czech and Chinese children with HI in regular classrooms as compared to hearing children, are considered as associated with the risk factors as following: poorer spoken language ability, personal characteristics such as impulsive, easy irritated, self-centered, lower self-concept, deficit in social skills in children with HI, hearing peers' negative attitudes, ineffective responses like ignorance, impatience, or/and misinterpreted, bullying, teachers' negative attitudes and ineffective instructions, and group social situations. The differences in pattern of peer relationships between Czech and Chinese children with HI can be interpreted from the differences in sub-categories of influencing factors between Czech and Chinese model, including the academic achievement of Chinese children with HI and Chinese hearing peers' prosocial orientation, and differences between Czech and Chinese hearing peers' and teachers' attitudes towards children with HI, as well as differences between Czech and Chinese teachers' instructions.

Finally, recommendations for interventions on peer relationships between children with and without HI in regular classrooms have been proposed based on the findings of this study. The recommendations are concerned with improving spoken language ability and social skills of children with HI, promoting hearing peers' responses, and enhancing teachers' training to improve their professional skills in inclusive education.

Key words: Inclusive education, peer relationships, children with hearing impairment, Czech, China

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Chapter 1 Introduction

1.1 Background of research

In 1994, the Salamanca World Conference on Special Needs Education was held in Spain. Representatives of 92 governments and 25 international organizations participated in this important conference. The resulting agreement, known as the Salamanca Statement and Framework for Action on Special Needs Education, demonstrated an international commitment to inclusive education. Children with disabilities need to be accommodated in the least restrictive environments and regular schools rather than the specialized institutions should pave the way for the education for children with disabilities together with non-disabled peers (UNESCO, 1994). This statement is viewed as the most significant international document that has ever appeared in the field of special education (Ainscow & César, 2006; Ruijs & Peetsma, 2009). At present, inclusive education has been firmly established internationally as the main policy imperative with respect to children with special educational needs (SEN). More and more children with SEN go into regular schools from special schools to receive general education with typical children (Meijer, Soriano & Watkins, 2003).

According to UNESCO (1994, 2009), inclusive education should maximize potential development of children with SEN in the least restrictive environment. The functions of inclusive education for children with SEN have been often examined in academic outcomes and social outcomes (e.g. Ruijs, Peetsma, & Veen, 2010; Koster, Pijl, Nakken, & Van Houten, 2010; Ruijs & Peetsma., 2009; Care, 2013). Academic outcomes refer to effects of inclusive education on the academic achievement or performance of children and social outcomes involve social-emotional development of children in inclusive educational settings (Care, 2013; Stinson & Antia, 1999).

Social outcomes of inclusive education have been specially concerned by research. One of important reasons is that parents with children with SEN expect their

children to get more opportunities to contact and interact with typical peers in inclusive education, which may positively promote children's social and emotional development, as well as academic benefit (Koster et al., 2010). Nonetheless, including children with SEN does not automatically lead to an increase of social interactions, peer acceptance, relationships and integration between themselves and their typical peers, and it needs to take much more to facilitate integration of them (Antia, Stinson, & Gaustad, 2002; Hyde & Power, 2004; Monchy, Pijl & Zandberg, 2004; Pijl, Frostad, & Flem, 2008). Pijl et al. (2008) state that,

“ . . . physical integration is only a very basic condition (and) . . . becoming part of the group is not an automatism and . . . pupils with special needs in particular may need extra support in group participation. Support could focus on the peers, the teachers, and the pupils with special needs or the school organization. What support is most effective in what situation is as yet a largely open question (P. 403)”.

The social outcomes of inclusive education have been currently considered as an extremely complex, controversial and contentious issue might because it involves too much variables related to social-effective development, and thus no well-established structures and criteria have been established for assessing it. However, research on social outcomes of inclusive education mostly has concerned the social relationships between children with SEN and their typical peers (e.g. Frederichson, Simmonds, Evans & Soulsby , 2007; Ruijs & Peetsma, 2009; Wiener & Tardif ,2004).

Peer relationships are important social experiences of every individual since early childhood, which will greatly impact on individual's whole life. Rubin, Bukowski and Parker (2006) claimed that “Experiences with peers constitute an important developmental context for children. In these contexts, children acquire a wide range of behaviors, skills, attitudes, and experiences that influence their adaptation during the life span. Experiences with peers affect social, emotional, and cognitive functioning beyond the influences of family, school, and neighborhood (P.571).”

For the children with SEN, peer relationships of play a special role in their life. Building and developing good social relationships between them and their typical peers is one of preconditions for them to be integrated into the mainstreamed society and live a normal life in the future. Consequently, researchers have highlighted developing good relationships between children with SEN and their peers, and considered it as an important indicator of successful inclusive educational programs (Ainscow, M., & Césár, 2006; Powers, 2002).

Like other groups of children with SEN, growing number of children with hearing impairment (HI) attend regular school and receive education together with hearing children. Parents of children with HI, as well as other parents of children with SEN, send their children to regular school with a strong desire that their children can get more opportunities to contact and develop good relationships with typical children in inclusive educational settings (Hyde & Power, 2004; Pijl, Frostad & Flem, 2008). Nonetheless, children with HI often have communication and language difficulties, which may result in experiential deficiencies that negatively influence developing appropriate social relationships with hearing peers in their classroom.

Children with HI are a small incidence group who are educated in the regular school. It's normal that there is only one child with HI in the classroom, so that they have no choice but to interact with hearing classmates. How are the peer relationships of children with HI with their peers? Martin, Bat-Chava, Lalwani and Waltzman (2010) indicate that the poorer social relationships of children with HI with hearing peers in mainstream educational settings have become a serious concern for parents, educators, and mental health professionals. Other researchers also have particularly concerned about the social outcomes of children with HI in general classrooms focusing on their social interactions, peer relationships, social skills and behaviors, reporting that social functions of inclusive education on the children with HI are limited (Antia, Jones, Lucknes, Kreimeyer, & Reed 2011; Kluwin, Stinson, & Colarossi, 2002). Several previous studies on peer relationships of children with HI in general education settings demonstrate that they have poorer social relationships than hearing children (Cappelli, Daniels, Durieux-Smith, McGrath, & Neuss, 1995; Antia &

Kreimeyer, 1996; Nunes Pretzlik, & Olson, 2001). They get significantly lower likeability, social preference, and acceptance ratings when compared to hearing peers (Cappelli et al, .1995). Although they have more opportunities for social interactions with peers, they are still rated to be less accepted and liked by peers with compared to typical children (Antia & Kreimeyer, 1996). Nunes et al., (2001) found that deaf children were as likely as their hearing peers to be popular or rejected, but were significantly more likely to be neglected by their peers and less likely to have a friend in the classroom than hearing children. It appears that, from these studies, children with HI in regular schools often feel isolated and lonely. Nonetheless, other researchers get converse findings. For instance, Wauters and Knoors (2008) found no difference in social status between elementary Dutch children with or without HI over a 2-year period. Especially, the studies on co-enrollment program product positive results, showing that there is no significant difference in social interaction, behaviors, and communication participation between children with HI and their hearing peers, in addition, their social acceptance is similar to that of their hearing peers (Bowen, 2008; McCain & Antina, 2005).

The inconsistent findings based on the available literature have provided an unclear picture of the peer relationships of children with HI in inclusive educational settings. Besides, most of previous studies only stop at the level of the descriptive investigation for social relationships of children with HI, rather than further explore the influencing factors on their peer relationships in the contextual of inclusive education. Consequently, it has been still unclear about what factors are important for the peer relationships between children with HI and peers in mainstream schools, especially in classrooms where their social interactions most likely and often occur. Making these issues clear is vital for the effective practice in inclusive education for children with HI and to promote their social development and integration with typical children together.

Additionally, there have been seldom studies conducted to compare the differences between peer relationships of children with HI in different cultural contexts. Inclusive education is considered to be a national and cultural issue because

of different social, economic, thoughts and cultural variables. It is meaningful to know if there are differences, and what they are, on the peer relationships between children with HI and hearing peers in different cultures. Keeping these considerations in mind, the author of the dissertation, who comes from China, and study in Czech for PHD degree, choose *Peer Relationships of Children with Hearing Impairment in Regular Classrooms in Czech Republic and China* as the research topic for doctoral dissertation.

1.2 Aims of the research

The general aims of the research are to examine the social outcomes of inclusive education for children with HI, particularly focusing on their peer relationships in regular classrooms, and further uncover the factors affecting their relationships with hearing peers in both Czech Republic and China. To meet these aims, this research is conducted to (1) investigate the peer relationships of children with HI in regular classrooms, compared to their hearing peers; (2) explore the factors contributing to their peer relationships; (3) compare the differences in peer relationships between Czech and Chinese children with HI and in the influencing factors on that.

Specifically, the research focuses on these questions as following:

- (1) Are the peer relationships of children with HI similar to that of hearing children in regular classrooms?
- (2) What are the important factors influencing the peer relationships of children with HI in regular classrooms?
- (3) Are there some differences in peer relationships between Czech and Chinese children with HI and in the influencing factors on that?
-If yes, what are they? Why?

1.3 Outline of the dissertation

In this dissertation, there are six chapters. Chapter 1 introduces the background of this research and the main aims. Chapter 2 describes the literature review, focusing

on inclusive education, peer relationships of children with HI, and theoretical perspectives. Chapter 3 presents the methodology issues. The mixed methods research design is adopted in this research, with quantitative inquiry to examine peer relationships of children with HI, combined with qualitative inquiry to uncover the influencing factors. Chapter 4 presents the results of quantitative inquiry, describing peer acceptance, friendships and peer groups of children with HI both in Czech Republic and China with compared to hearing children. Chapter 5 presents the results of qualitative inquiry, describing the major categories and sub-categories obtained from constant comparative analysis of semi-structural interviews and comparing the differences between the Czech and Chinese theoretical models of influencing factors. Chapter 6 is with the discussion of the reported results from the quantitative and qualitative inquiry. After discussing the main findings, the recommendations for intervention are further put forward, together with the limitations of this research.

Chapter 2 Literature review

2.1 Hearing impairment

Hearing impairment is recognized as a global pandemic. Over 5% of the world's population, 360 million people, have disabling hearing loss/impairment, including 328 million adults and 32 million children (WHOa, 2013). Disabling hearing loss/impairment refers to hearing loss greater than 40dB in the better hearing ear in adults and a hearing loss greater than 30dB in the better hearing ear in children (WHO, 2013a).

There are different terms used to describe the loss of hearing, such as hearing impairment, hearing loss, hard of hearing and deafness. Hearing impairment and hearing loss are often used alternatively in documents of the World Health Organization (WHO) with the same connotation that 'inability to hear as well as someone with normal hearing' (WHO, 2006, P.17; WHO, 2013b). In this dissertation, the term "hearing impairment" will be used as defined by WHO (2006).

"Hearing impairment refers to complete or partial loss of the ability to hear from one or both ears. The level of impairment can be mild, moderate, severe or profound." (WHO, 2006, P.1)

According to the description of WHO, a person who is not able to hear as well as someone with normal hearing (hearing thresholds of 25dB or better in both ears) is said to have hearing impairment. It can happen in one or both ears, and leads to difficulty in hearing conversational speech or loud sounds (WHO, 2006). There are different levels of hearing impairment. The grades of hearing impairment are described in Table 2.1.

Table 2.1 Grades of hearing impairment 1

Grades of impairment	Corresponding audiometric ISO value	Performance	Recommendation
0-No impairment	25dB or better(better ear)	No or very slight hearing problems. Are able to hear whispers.	
1-Slight impairment	26-40dB(better ear)	Able to hear and repeat words spoken in normal voice at 1 metre.	Counseling. Hearing aids may be needed.
2-Moderate impairment	41-60dB(better ear)	Able to hear and repeat word spoken in raised voice at 1 metre.	Hearing aids usually recommended.
3-Severe impairment	61-80dB(better ear)	Able to hear some word when shouted into better ear.	Hearing aids needed. If no hearing aids available, lip-reading and signing should taught.
4-Profound impairment including deafness	81dB(better ear)	Unable to hear and understand even shouted voice	Hearing aids may help understanding words. Additional rehabilitation needed. Lip-reading and sometimes signing essential.

Note: Grades 2, 3 and 4 are classified as disabling hearing impairment. The audiometric ISO values are averages of values at 500, 1000, 2000, 4000 Hz.

(Source: World Health Organization Grades of hearing impairment, 2013b:

http://www.who.int/pbd/deafness/hearing_impairment_grades/en/)

There are other concepts related closely to *hearing impairment*, including *hard of hearing*, *deafness* and *Deaf* (with the capital "D"). It is necessary to clarify them.

The term '*hearing impairment*' is often used to describe people with any degree of hearing loss, from mild/slight to profound, including those who are deaf and those who are hard of hearing. The term '*hard of hearing*' refers to a hearing loss where there may be enough residual hearing that an auditory device provides adequate assistance to process speech. People with hard of hearing usually communicate through spoken language and can benefit from hearing aids, captioning and assistive listening devices. The 'deafness' usually refers to a hearing loss so severe that there is very little or no functional hearing.

The term 'Deaf' (with the capital "D"), is a reference to members of the Deaf community and Deaf culture. Deaf people view Deafness as a difference rather than a

disability and often feel a cultural bond with one another based on sharing a common language and experience of oppression. Besides, they are proud to be Deaf and feel that Deafness is a vital part of their identity and most likely use sign language.

Many individuals who have hearing loss prefer the terms "deaf" and "hard of hearing," because they consider them to be more positive than the term "hearing impaired," which implies a deficit or that something is wrong that makes a person less than whole.

The term of 'hearing impairment' is used throughout this study because of the following reasons. First, this term fits in with the social model of disability, namely that the effects of impairment result in the phenomenon of disability. Second, impairment here refers to the "functional limit at on within the individual caused by physical, mental or sensory impairment" (Barnes, 1991, P.2). This term is used in this study without any implication of deficit or being negative. Third, the term of hearing impairment is used in 'person-first' language in this study, such as children with hearing impairment and not used as hearing impaired children.

2.2 Inclusive education

In the early 1970s and 1980s, the shift to inclusion took place as a result of changes in societal rationalization. The World Declaration on Education for All in 1990s, presenting an overarching vision for the future that universalizing access to education for all children, youth and adults, as well as the promotion of equity (Hungerford & Volk, 1990), provided further impetus for inclusive education. Later, inclusive education was endorsed formally in the Salamanca World Conference on Special Needs Education in 1994 in Spain. The resulting agreement--the Salamanca Statement and Framework for Action on Special Needs Education-- is viewed as the most significant international document in the field of special education (Ainscow & César, 2006; Ruijs & Peetsma, 2009).

The statement asserted that, "...hereby reaffirm our commitment to Education for All, recognizing the necessity and urgency of providing education to children,

youth, and adults with special educational needs within the regular education system, and further hereby endorse the Framework for Action on Special Needs Education, that governments and organizations may be guided by the spirit of its provisions and recommendations.”(UNESCO, 1994: Article 1, Salamanca Framework for Action, P.8)

According to the statement, “every child has a fundamental right to education, and must be given the opportunity to achieve and maintain an acceptable level of learning...those with special educational needs must have access to regular schools which should accommodate them within a child-centered pedagogy capable of meeting these needs.”(UNESCO, 1994: Article 2, Salamanca Framework for Action, P.8)

Furthermore, regular schools are considered to play a key role within inclusive orientation, because they “are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover, they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system.” (UNESCO, 1994: Article 2, Salamanca Statement, p.9).

Inclusive education is a way of both thinking and doing, which fundamental principle is that all children should have the opportunity to learn together (Care, 2013). Actually, nearly 40 years ago, Scandinavian countries began referring to the principle of ‘normalization’, which was viewed as one of the first expressions of the philosophy. Normalization was defined as the process of making available to disabled people ‘patterns of life and conditions of everyday living which are as close as possible to the regular circumstances and ways of life of society’ (Nirje, 1969). In the past 40 years the field of special education has moved from a segregation paradigm through integration to a point where inclusion is central to contemporary discourse (Mitchell, 2010). Nowadays, inclusive education has emerged as one of the most the dominant issues in the education of students with SEN in many countries.

2.2.1 Comprehensions of inclusive education

There is no universally accepted definition of inclusive education. The term of 'inclusion' holds different meanings to different individuals. Moreover, inclusive education may be implemented at different levels, embrace different goals, and be based on different motives, reflect different classifications of SEN, and provide services in different contexts (Care, 2013).

Some scholars regard inclusive education as a process increasing children's participation and reducing exclusion. For example, Booth and Ainscow (2000) proposed that inclusive education "involves increasing the participation of learners in and reducing their exclusion from, the cultures, curricula and communities of local learning centers. It requires the restructuring of the cultures, policies and practices in schools so that they support the learning and participation of the diversity of learners in their community". Some researchers viewed inclusion as an approach or a principle, which aims at removing barriers to learning (Savolainen, Kokkala, & Alasuutari, 2000).

Others interpreted inclusive education from the angle of practice, concerning with the social position of children with disabilities, thinking highly of their social acceptance and belonging (Norwich, 1999). Lipsky & Gartner (1999), who describe inclusive education as students with disabilities having full membership in age-appropriate classes in their neighborhood schools, with appropriate supplementary aids and support services. DfES (2001) state that "inclusion is about engendering a sense of community and belonging and encouraging mainstream and special schools and others to come together to support each other and pupils with special education needs (DfES, 2001, P.3). Powers (2002) proposes a working definition of inclusive education. He conceives inclusive education as a response to student diversity based on principles of equity and acceptance that aim to give all children equal rights to participation in mainstream curricula and communities, as valued, accepted, and fully participating members of those communities, and also rights to achieve as much as they can academically, physically, and in their

social-emotional development (p.237).” According to Antia et al. (2002), inclusion denotes a student with a disability unconditionally belonging to and having full membership of a regular classroom in a regular school and its community.

Siperstein and Parker (2008) consider inclusion of children with disabilities to be constituted of three dimensions: physical integration, instructional integration and social integration. Physical integration refers to that children with disabilities spend substantial parts of school day staying in general classrooms with typical children. Physical integration is the lowest level of integration, but is an important first step and basic condition, because it provides children with special needs opportunity to attend regular school for contacts and relations with typical children. Instructional integration refers to that, children with disabilities in regular schools get access to the general education curriculum, appropriate and meaningful accommodations to improve their academic performance. Social integration is considered to the most difficult to operationalize and monitor, could be understood that children with disabilities have opportunities to develop normal social experiences with peers in general schools.

Ainscow and César (2006) distinguish two types of definitions of inclusion, referring to ‘narrow’ and ‘broad’ definitions. The ‘narrow’ definitions of inclusion refer to the promotion of the inclusion of the group of students with special needs in ‘mainstream’ or ‘regular’ education. The ‘broad’ definitions of inclusion, on the other hand, focus on the diversity of individuals and how schools respond to the diversity of all students. Initially inclusive education concentrated on students with disabilities’ access and participation in normative contexts. In recent years, the broader concept of inclusive education is more prevalent and inclusive education has been broadened to encompass not only individuals with disabilities but also all individuals who may be disadvantaged. The conceptualization of inclusive education was articulated in the UNESCO International Conference on Education in Geneva in 2008. Inclusive education is "an ongoing process aimed at offering quality education for all while respecting diversity and the different needs and abilities, characteristics and learning expectations of the students and communities, eliminating all forms of discrimination"

(UNESCO, 2009, p.126)

Ainscow (2005) views that there are four key elements in working definition of inclusion education after the collaborative research in school systems in different countries (e.g. Australia, Brazil, England, Romania, Portugal, Spain and Zambia). They are: (a) Inclusion is a process. That is, inclusion has to be seen as a never-ending search to find better ways of responding to diversity; (b) Inclusion is concerned with the identification and removal of barriers; (c) Inclusion is about the presence, participation and achievement of all students, and (d) Inclusion involves a particular emphasis on those groups of learners who may be at risk of marginalization, exclusion or underachievement (P.9). With regard to schools, Ainscow and Césár (2006) further develop a typology of six ways of thinking about inclusion in schools: (a) inclusion as a concern with disabled students and other categorized as ‘having special education needs’; (b) inclusion as a response to disciplinary exclusion; (c) inclusion in relation to all groups seen as being vulnerable to exclusion; (d) inclusion as developing the school for all; (e) inclusion as ‘education for all’, and (f) inclusion as a principled approach to education and society (P.15).

Despite the internationalization of the philosophy of inclusive education (UNESCO, 1994, 2008), the concept of inclusive education is often interpreted in different ways depending on varying contextual factors (Miles & Singal, 2010). Educational policies and practices which are labeled as “inclusive education” in different countries have a strong local flavor. The inclusive rhetoric and policies may travel across borders and from language to language, nonetheless, the educational practices, which are closely connected to the local culture, have proven to be harder to transform (Alur & Timmons, 2009; Mitchell, 2005). The diversity in nations’ situations, such as cultural factors, linguistic features, value systems, legislation, educational policy and availability of resources, influences the concept of inclusive education accepted and its actual implementation in practice in a given country. It is not surprising that virtually all countries have policies on inclusive education, or are in the process of developing them. Thus, inclusive education may embrace different goals, be based on different motives, reflect different classifications of special

education needs, be implemented at different levels, and provide services in different contexts. From this perspective, inclusive education may be regarded as a national concept (Foster et al., 2003; Hyde & Power, 2004).

2.2.2 Inclusive education in China

China had already implemented educational system which boasts significance same as inclusive education before the Salamanca World Conference on Special Needs Education in 1994, which was named “Learning in Regular Classroom (LRC)”. LRC is perceived as part of international inclusive education system but it has strong Chinese self’s characteristics and not the same as Western inclusive education (Deng & Poon-McBrayer, 2012). The major difference lies in why and how China implements inclusive education.

Background of inclusive education in China

In 1987, a national survey indicated that there were about 51 million people with disabilities in total and 8.17 million school-age children with disabilities among them. Additionally, less than 6% of those children were enrolled in school in 1988. A large number of children with disabilities were not access to education, especially in rural areas. How to make all children especially including children with disabilities get education provision was a challenge issue. There were only a small number of special schools which provided education for children with disabilities. Obviously, the special schools were far from adequate for children with disabilities. At that time, it was impossible to build special schools fast enough and maintain quality of education for so large number of students because of severe lack of resource and expertise (Deng & Poon-McBrayer, 2004). It was estimated that at least 21,000 new special schools were needed to serve the five million children with intellectual disabilities alone (Te, 1993). Other options were needed to be explored to overcome the challenge.

The open and reform policy during this period in China encouraged interactional exchanges with the West as well as economic growth. The concepts of

mainstreaming/integration and inclusion were almost immediately introduced to China and exerted great influence. Combined with Western concepts of inclusion and China's own situations, the well-known 'Learning in Regular Classroom (LRC)' was developed in response to both domestic need and international trends (Feng, 2010). In 1988, the first National Conference on Special Education was held in Beijing and the special education system--"special schools will consist of the 'backbone' of the system while special classes and Learning in Regular Classrooms programs will serve as 'the body'" was advocated (Deng and Manset, 2000, P. 125). Subsequently, a series of high-profile educational experiments on LRC were carried out in the end of 1980s and beginning of 1990s in some provinces. The findings consistently showed that the LRC educational system was effective and feasible. In 1994, the decision to make LRC the major placement option to students with special educational needs was made at the central government level (Ministry of Education of China, 1994). Afterwards, the educational model of LRC has been implemented all over the China.

It is important to bear in mind that even though the official LRC policy has been for only about thirty years, the practice of children with disabilities attending mainstream schools had existed much longer time (Deng & Zhu, 2007; Xu, 2012). In 1950s, children with disabilities being placed into regular classrooms had already appeared in individual cases (Deng & Zhu, 2007). Especially in the rural and remote areas of China where, because of limited financial resources and expertise and difficult transportation conditions, regular classrooms were often the only option for providing education for children with disabilities (Deng & Pei, 2009; Xiao, 2007). Nowadays, LRC has become the major service delivery model to universalize compulsory education for children with disabilities in China.

Chinese model of inclusive education

The debate on the models of inclusive education in the West created two camps in the field of special education: full inclusionists and a more cautious group of selective inclusionists or traditionalists (Brantlinger, 1997). The full inclusionists

advocate that all children should be educated in general schools without any discrimination and the placement of children with special needs in the regular classrooms must be full time ('one-track approach', e.g. Stainback & Stainback, 1992; Villa & Thousand, 1995). The selective inclusionists claim that a continuum of services which consist of regular class, resource room, special class, separate school facility, and homebound/hospital environment should be available and that placement of children with disabilities should be based on the severity of the disability ('multi-track approach', e.g. Kauffman, 1993; Fuchs & Fuchs, 1994; Crockett & Kauffman, 1999).

The Chinese model of inclusive education in some ways resembles the continuum of special education services of the selective inclusionists' views (Deng & Poon-McBrayer, 2004). The service delivery in China provides the options of special schools, special classes, resource classrooms and the LRC for children with disabilities. The LRC is the main strategy to universalize compulsory education for students with disabilities. The LRC programs have served more than 60% of students with disabilities attending regular schools (China's Ministry of Education, 2012).

Learning in Regular Classrooms (LRC), is defined as government-supported arrangement for children with disabilities to be educated in classrooms in neighborhood schools with their peers without disabilities (Deng & Manset, 2000). LRC is based on the pragmatic value orientation. It is a response to the reality that a large population of children with disability who, until the mid-1980s, were still denied by education and resources were in shortage and unbalance to keep quantities and quality in special schools, especially in rural areas. The original aim of LRC is just to offer educational opportunities to children with disabilities who were excluded from any form of education to attend school (State Council of China, 1989), while one of the primary goals of inclusive education in the West was to affirm the right of equal opportunity and to an appropriate education (Haring, McCormick, & Haring., 1994). Meanwhile, LRC was indeed impacted by the Western concept of inclusion. Therefore, LRC is a localized inclusive education model evolved from a combination of the Western concept of inclusion and practical considerations of the unique socio-cultural

conditions that exist in China (Deng & Poon-McBrayer, 2004). Piao, Gargiulo and Xu (1995) state that the LRC program in China does not reflect allegiance to inclusion, but inclusion will be a desirable goal for the future.

Implementing the ‘Learning in Regular Classrooms’

Despite of growing support for LRC, there were no clear direction for developing LRC and no model programs to reference. Educators have to explore and grope in the dark to find out the solutions. Deng and Poon-McBrayer (2004) summarized some common strategies conducted in practice to facilitate the delivery of the LRC program.

First, several measures have been implemented to improve social attitudes towards people with disabilities and inclusive education. Positive attitudes are critical for successful inclusion. The notion of educating children with disabilities in the regular schools together with typical children is still new to the general public, especially in the rural areas of China. A large number of people are suspicious of children with disabilities receiving education in the regular classrooms. In order to change the negative attitudes, the government and education authorities made great efforts to eliminate the stereotypes about disabilities via legislating, propagandizing by mass media programs, holding international conferences, and encouraging people with disabilities to participate in sports and performing arts activities and show their abilities and skills in the public places.

Second, the central government has worked a lot to establish an effective and functional administrative system to ensure inclusive education provisions. For instance, a series of law have been legislated to guarantee the right of people with disabilities. Besides, supervision has been strengthened through developing policies in various regions for effective inspection to make sure the compulsory education for children with disabilities.

Third, teachers have been asked to modify their instructional methods to accommodate the needs of children with disabilities. With the implement of ‘LRC’,

children with disabilities are educated in the same classrooms with typical children, thus teachers face the challenge of meeting diverse needs. The traditional whole-class lectures, which aim at teaching all students uniformly, need to be modified. Instead, individual educational plan (IEP) and individual tutoring for students with SEN have been adopted by teachers.

Fourth, teacher training has received great attention. Teacher training has been considered as one of the most decisive factors for the success of LRC programs. In order to strengthen teacher training, universities are requested to provide training programs for postgraduates and undergraduates in special education; special education training schools have been established to training secondary teachers; and other alternative training programs have been developed for new teachers' training or in-service teachers' training.

Fifth, research in special education has been promoted. Several higher education institutions from different disciplines rapidly formed a research core in special education, published a number of academic books and journals, conducted a number of research projects, and engaged in other relevant professional activities. Moreover, some private organizations have also contributed in special education programs and research.

Meanwhile, there are some issues needed to be addressed for future development of LRC. For example, the social climate is still unfavorable, the education system is exam-oriented and the resources needed for LRC program is still limited. Chinese government and professionals need to make more effort to work out these difficulties to further develop inclusive education in China.

2.2.3 Inclusive education in Czech

Special education has a long history in Czech Republic, since the first charitable institute for the Deaf and Dumb was built in 1786. During the period from 1950 to 1990, the special education system in Czech was characterized with segregation (Vitova, 2011). Students with disabilities were educated in an appropriate special school on the basis of their disability category (e.g., intellectual disability,

hearing impairment and physical disability) and also the level of their disability (Strnadová & Hájková 2012). However, inclusive education does not have a strong history and the implementation of inclusive education ideals in Czech is not easy.

History of inclusive education in Czech

The initial efforts to educate children with disabilities within the mainstream education system in Czech were primarily from parents in mid-20th century. Parents with children with disabilities put forward that they had the right to choose education pathway for their children, however their efforts were considered to be illicit because of lacking legislation support.

After the Velvet Revolution in 1989, significant changes took place in Czech. With the democratization processes and economic increasing, values of education for individuals became more and more appreciated. The chances to be employed grow higher and higher ever year, while children with disabilities actually did not continue to receive higher education after graduating from special schools. Therefore, more and more the parents of children with disabilities realized that it was important for their children to receive higher education as children without disabilities. Nonetheless, important tendencies within the educational system including high lightening integration with students or groups into mainstream schools as well as great efforts from parents of children with disabilities did not make significant effect in the beginning of 1990s. The Ministry of Education first mentioned possibility of integration children with disabilities into ordinary basic schools in 1991, however its implement completely depended on teachers' willingness to accept children with disabilities in the education organizations (Michalik, 2005, cited in Vitova, 2011).

The Salamanca Statement in 1994, as one of the key principles of inclusive education, have greatly supported and promoted the inclusive education development in Czech. More and more children with disabilities enrolled into regular schools to receive general education as the typical children. Meanwhile, special education offered a safety and protection for students in the special schools who may not have

succeeded in regular schools. In 2004, the Czech government finally replaced a new Law No.561/12204 Sb of the old one, which was the first official educational document for inclusive education (Strnadová & Hájková 2012; Vitova, 2011). This law cancelled the institute of exemption from school attendance as well, individual education plan (IEP) was legislatively described and collective curriculums for all students were determined by this law.

In 2010, the National Action Plan for Inclusive Education was adopted by government and this was an important step forward from a political-legislative point of view. Additionally, the decreasing birth rate in Czech plays a positive role in inclusive education movement, because regular basic schools have increased willingness to receive students with disabilities due to decreased number of typical students in basic (primary and lower secondary) schools. Thus, mainstream schools become more interested in inclusive approaches, which have been further supported by the Ministry of Education, Youth, and Sports.

The current state and implement of inclusive education

The inclusive education system belongs to multi-track approaches, which are characterized by existence of two parallel systems and by offers of services between both system and their connection (Eurydice, 2007). Within this system, children with disabilities can be educated in alternative organizational forms which suite them best in terms of their educational needs but also comply with their parents' requirement. Children can enter into regular classrooms in mainstream schools with adequate educational conditions, can be educated in a special class in mainstream schools, and also can choose special schools to receive education separately for children with disabilities. Individual integration into mainstream classrooms is preferred to other forms, meanwhile the child's special educational needs are considered.

In order to promote the inclusive education movement, many professionals and parents have been enthusiastically fighting for inclusive education in Czech all the time. They have made great efforts for accelerating inclusive education especially on

teacher training. Universities provide teachers' training including pre- and in- service training on local level and adopt new courses in inclusive education within the accreditation process. Moreover, basic schools have to modify their school educational programs for educating children with SEN in both mainstream classrooms and special classes in the schools. Besides, the government provides financial support for children's families including parental allowance, social benefits, and special allowances for families with child in foster care.

Nonetheless, inclusive education in Czech is still destabilized due to oppositions. The tensions between groups with supporting and opposing resulted in inclusive education being mistakenly presented by its opponents as a government-imposed integration of students with disabilities into regular schools (Janebová & Habart, 2011, cited in Strnadová & Halková, 2012). This view of inclusive education has understandably become a source of teacher and parent anxiety over possible threats to the development of the children with disabilities. There are other social barriers on the journey of inclusive education in Czech, including inconclusive attitudes in the educational community and within the government, lacking awareness of inclusive education as a key concept in modern education, and lacking understanding that all children have right of equal opportunities to receive education (Strnadová & Halková 2012).

2.3 Effects of inclusive education on children with SEN

Although the discrepancies exist among countries and practices, the trend towards inclusive education still holds. There are two types of arguments considered to be in favor of inclusive education: socio-political and empirical (Farrell, 2000). The socio-political arguments mostly state that inclusion is a matter of human rights, that is, children with SEN, as well as normal children, have equal right to be educated in general schools. Farrell (2000) stated that, however, there are problems with this line of argument. For example, parents think that their children with disabilities have right to receive general education and would like to send them to regular schools, while it

might objectively be better for their children to attend a special school. Therefore, it is necessary and important to know empirical support and evidence on the effects of inclusive education for policy decisions (Farrell, 2000; Lindsay, 2007; Ruijs & Peetsma., 2009; Care, 2013). Instead of the ideals in the human rights debate, decisions on inclusive education will be mainly based on evidence. In line of this evidence-based approach, studies focused on the effects of inclusive education on students with SEN have been conducted prevalently, which can be broadly divided into academic and social outcomes (e.g. Salend & Duhaney, 1999; Ruijs, Peetsma, & Veen, 2010; Koster, et al., 2010; Ruijs & Peetsma., 2009; Care, 2013).

2.3.1 Academic outcomes

Academic outcomes of inclusive education refer to effects of inclusive education on the academic achievement or performance of children. A number of studies on academic outcomes of inclusive education on children with SEN have found positive or neutral effects. It has shown that students with SEN attending regular classrooms may achieve better academic results because they can learn from normally developmental students and can become more motivated to achieve, because of focusing more on academic progress in general education (Ruijs, Peetsma, & Veen, 2010). It has been found that students with SEN in regular primary education scored significantly better at language and mathematics than matched students in special education (Peetsma Vergeer, Roeleveld, & Karsten, 2001). Myklebust (2007) also report that students with SEN receive additional support in regular classes and are more likely to obtain formal qualifications than those attending special schools. Nonetheless, other researchers reported negative results. For example, Rogers and Thierry (2003) found that reading performance of students with SEN deteriorated in regular schools. No significant differences in achievement on reading and mathematics are found between children with SEN in inclusive and those in special education (Cole, Waldron, & Majd., 2004). Some studies find interactive effects of degree of disability and educational placement on academic achievement of children with SEN. For instance, students with mild learning disabilities showed greater

progress in reading in an inclusion program than in resource services, but this difference was not found for students with severe or more learning disabilities (Waldron & Mcleskey.,1998). Rafferty, Piscitelli, and Boettcher (2003), however, found children with severe disabilities achieved better in inclusive classes while there was no clear difference on impact on children with low levels of disability in inclusive or segregated educational settings. Ruijjs and Peetsma (2009) summarized that the majority of these studies found positive or neutral results and very few studies found adverse effects on the achievement of children with mild special educational needs. Thus, they conclude that students with special educational needs achieve better academic performance in inclusive settings than those in non-inclusive settings.

2.3.2 Social outcomes

There are terms with similar expressions of social outcomes of inclusive education, such as social and affective/emotional outcomes/effects/functioning, or socio-affective/emotional outcomes/effects/functioning. In despite of different expressions, these terminologies have the consistent connotation that social outcomes of inclusive education refer to the effects of inclusive education on social and emotional development of children. It is more difficult to assess the social outcomes for children with SEN in inclusive education than to assess academic achievement, because of relating to many different complicated psychological structures in social and emotional domains. Additionally, there is not yet a well-established criterion for determining the degree to which children with disabilities successfully socially included in inclusive settings.

The related variables emphasized in research on social outcomes of inclusive education for children with SEN are different. Frederichson et al., (2007) regard that peer group inclusion, social behavior, bullying and feeling of belonging as crucial for the social and affective outcomes of an inclusive program. Wiener and Tardif (2004) measure social acceptance, number of friends, and quality of relationship with the best friend, self-concept, loneliness, depression, social skills and problem behaviors of children with mild learning disabilities to compare the social and emotional

functioning of educational placement in both inclusive and separated settings. Ruijs et al. (2010) investigate the socio-emotional functioning of inclusion for children with SEN by measuring self-confidence, teacher-student relationship, peer popularity, well-being and behaviors at general school. Lam and Phillipson (2009) examine affective and social outcomes for low-achieving students in inclusive school with focusing on academic self-concept, alienation from school, teacher-students relationship, and social integration.

In addition, several reviews have been undertaken to overview or meta-analyze the impact or effect of inclusive education on children with and/or without SEN (e.g. Salend et al., 1999; Ruijs & Peetsma, 2009; Lindsany, 2007; Care, 2013). Salend et al. (1999) reviewed the social impact of placement in the general setting on students with SEN and high lightened peer interactions, social acceptance, social relationships/networks, friendships, self-concept, peer rejection, loneliness, motivations, and social status as students' social and effective performance's indicators. Ruijs and Peetsma (2009) propose that social position of children with SEN studies has been investigated quite often in studies on social outcomes of inclusive education, as well as well-being, peer acceptance, motivation, self-confidence, self-image and social behavior. Lindsany (2007) contend that several studies on effectiveness of inclusive education on social, emotional and behavioral development of children with SEN concern with several variables such as social competence, self-concept, social inclusion, bullying, friendship, social/school integration, peer interactions, social/peer relationships, self-perceptions, coping strategies, and loneliness. Care (2013) emphasizes social skills, self-concept, friendships, and social relationships in social outcomes of inclusive education for children with SEN in his review. Koster and colleagues (2009) view that *social integration*; *social participation* and *social inclusion* are the concepts which have the same connotation in the field of special education, as three different expressions for the social dimension of inclusive education. They review studies on social integration, social inclusion and social participation of children with SEN in primary schools and finally propose four key themes central to social outcomes of inclusive education: friendships/relationships, interactions/contacts, perception of the

pupil with special needs, and acceptance by classmates.

In summary, there have not been a well-established structures and criteria for assessing the social outcomes of inclusion for children yet. The related variables may embrace social competence, social skills, social position, peer acceptance, friendships, self-concept, social integration, social interaction, and sense of belonging, and additionally some negative aspects like loneliness, peer rejection, bullying, and so on (e.g. Ruijs, & Peetsma, 2009; Koster et al., 2010; Cara, 2013; Ruijs et al., 2010; Avramidis & Wilde, 2009; Mand, 2007; Boer, Pijl, Post, & Minnaert, 2013). Some of these terminologies are overlapped or some concepts and their understandings are arguable. We find that most studies on social outcomes at least measure social relationships between students with SEN and their peers in inclusive settings, such as peer acceptance, social status/position, and friendships.

In addition to these empirical studies stressing peer relationships, theoretical perspectives can support peer relationships of children with SEN's importance for success of inclusive education. From a philosophical perspective, good social relationships of children with disabilities in inclusive settings should be a goal of inclusion and represents central value to inclusive (Guralnick, 1990). 'Education for all' is the philosophical foundation of inclusive education, which not only requests providing every child with equal opportunity for education, but also implies regular schools should change to accommodate all different learners and meet their various meetings to make their development maximized (Stinson & Antia, 1999; UNESNO, 1994). The ideal outcome of inclusive education is "a student who is well integrated both academically and socially" (Stinson & Antia, 1999, p.165). From parents' perspective, one important motivation of parents to send their children with disabilities to regular schools is that they expect their children could have more opportunities to contact and interact with typical children, develop good relationships with them, and live in a normal environment (Nakken & Pijl, 2002). The school is the most important social context, especially in regular classrooms, where children establish and maintain connections to and friendships with peers. Additionally, parents assume that frequent contacts with typical peers contribute to form more positive

attitudes towards to children with disabilities (Koster et al., 2007). From a perspective of development, peer relationships of children with disability socially have positive effect on social, emotional and cognitive development of them. When children with disabilities are educated with their peers without disabilities, they can learn age-appropriate social skills by imitating peers, such as initiating and maintaining interactions, controlling emotions, being comprised, and cooperation, and so on. These abilities are necessary for them to adapt to larger mainstream society in future. Additionally, having good relationships with peers also can contribute their socialization, school adjustment, positive self-concept and well-beings (Wiener, 2004; Konza, 2008).

Moreover, the widely used ‘index for inclusion’ (Booth & Ainscow, 2002) presented several indicators for inclusive practice in schools. Some indicators are closely related to integrating students with and without special needs, addressing as “students help each other”, “bullying is minimized”, “all students take part in activities outside the classroom” (P.39-41). The indicators shows that much value is placed on implementing conditions that foster good relationships with students and students with SEN should develop and maintain relationships with peers as normal students (Pijl, Frostad, &Flem, 2008). Flem and Keller (2000) claim that peer relationships of special needs children are an important aspect of inclusion in regular education. Therefore, peer relationships can be considered as the core element of social outcomes of children with special needs in general schools.

Social outcomes of inclusive education program for students with disabilities in general education have been frequently controversial, such as acceptance by peers, development of friendships with peers, social position in regular classrooms (Lindsay, 2007; Salend & Garrick-Duhaney, 1999; Wiener & Tardif, 2004; Nakken & Pijl, 2002; Mand, 2007). Schools often tend to place priority on acquisition of academic knowledge but rarely make provisions for fostering social and emotional development of students with special educational needs (Cambra & Silvestre, 2003; Cara, 2013). It may result in that inclusion can be (relatively) effective academically, while children with SEN can experience rejection and bullying in mainstream schools (Dyson,

Farrell, Polat, & Hutchenson, 2004). Studies that have investigated the social effects of inclusive education on children with SEN have yielded equivocal results. For example, Wiener and Tardif (2004) find that students with SEN in more inclusive settings are better accepted by peers and have lower problem behaviors rated by teachers than students in less inclusive classes. Nonetheless, Pijl and his colleagues (2010) claim that it is not obvious for students with disabilities to have friends at regular school or in their classes. About 30 percent of students with disabilities have significant fewer friends and are less accepted by their classmates than their typically developing peers in inclusive schools (Pijl, Frostad, & Flem, 2008). It has been reported that students with disabilities often experience difficulties in social relationships with being less accepted by peers and struggles in establishing and keeping friendships in regular classrooms (Chamberlain, Kasari, & Rotheram-Fuller, 2007; Smoot, 2004; Symes & Humphrey, 2010; Koster, Pijl, Nakken, & Van Houten, 2010). Additionally, there are no clear differences in socio-emotional functioning between students with SEN in regular and special education (Peetsma et al. 2001; OfSTED, 2006; Mand, 2007; Hardiman, Guerin, & Firzsimons 2009). These outcomes seem to indicate that inclusive education does not always benefit students with disabilities socially in regular schools, especially with regard of fostering good relationships between children with SEN and their peer without SEN (Symes & Humphrey, 2010; Boer, Pijl, Post, & Minnaert, 2013).

2.4 Peer relationships

Relationships with peers are important social experiences of everyone since early childhood, which influence development and functioning in probably every other aspect of an individual's life. According to Bronfenbrenner's ecological systems theory of development, child's development is influenced by five environmental systems: microsystem, mesosystem, exosystem, macrosystem and chronosystem. Peers' interaction and relationships in school are in the context of microsystem, which refers to immediate surroundings of the individual, and have the most directed

function on individual's development (Bronfenbrenner, 1979).

Unlike the hierarchical relationships, for instance, parents-child relationships and teacher-students relationships, peer relationships are characterized to be more free, equal and voluntary. Consistently, researchers think high function of social relations with peers and propose that building relationships with peers is at the core of children's development (Kemple & Ellis, 2005). Positive peer interactions and relationships in childhood may positively affect the quality of later relationships, social adjustment and successful emotion regulation in the future (Zins, Weissberg, Wang & Walberg, 2004; McElwain & Valling, 2005). Interacting effectively with peers is also benefit to the cognitive development and school success (Ladd, Kochenderfer, & Coleman, 1997). While, negative peer relationships, such as peer rejection and exclusion, may predict negative academic achievement (Bush, Ladd, & Herald, 2006), school adjustment (Zettergren, 2003), victimization (DeRosier & Thomas, 2003), and loneliness and emotional distress and difficulties in adjustment (Ladd, 1999, 2003). Taken as a whole, peer relationships provide an important context for support, social interactions, and developing social competence, and thus play a vital role in social, cognitive and emotional functioning beyond the influences of family, school, or communities.

2.4.1 Research paradigms in peer relationships

Moreno was acknowledged to be the father of peer relationships study, who developed sociometric methods in 1934 (Moreno, 1934). His work had aroused a rapid accumulation of research on children's peer relationships. Three research domains can be identified in this particular field of research, including (a) peer acceptance/social status in the classroom as a whole, (b) dyadic friendships, and (c) peer groups or networks (for review see Gifford-Smith & Brownell, 2003; Rubin, Bukowski, & Parker, 2006)

Peer acceptance

Peer acceptance, or sociometric status, refers to the degree to which children are liked or disliked by the other children in a whole peer group, such as a classroom (Gifford-Smith & Brownell, 2003). Peer acceptance has been found to offer child opportunities to participate group's interactions to develop such capacities and satisfy the need of belonging. While low acceptance deprives children "of opportunities to learn normal, adaptive models of social conduct and social cognition...[and] undermines academic progress as well" (See Parker & Asher, 1987, p.358). As a result, peer acceptance is often positively related to the prosocial and cooperative behaviors, while peer rejection is often associated significantly with aggressive and disruptive behaviors (Schwartzetal, Melech, Lehmann, Burgess, & Harris, 2001; Chen, Li, & Li, 1994; Zhao, Shen, & Zhang, 2006). Additionally, it has been reported that peer rejection in childhood predicts a wide range of externalizing problems in adolescent, such as conduct disorder, delinquency, substance abuse, and attention difficulties. Meanwhile, peer rejection also is associated with some internalizing problems across life span, including low self-esteem, loneliness, depressive and anxiety problems (Rubin, Coplan, Chen, & Bushirk, 2005). Indeed, children with low peer acceptance often report to feel lonely, isolated, depressed and unconfident because of lacking of belongingness (Ladd, Herald, & Adrew, 2006)

The research on peer acceptance in traditionally examine acceptance in the classroom as a whole. Peer nomination task and peer rating task are two methods which are often used in studies on children's peer relationships in classroom. Peer nomination is the most widely used to assess children's peer acceptance/rejection or social status. This method originates from sociometry created by Moreno (1934) to examine attraction and repulsion within the peer group. Coie, Dodge, and Coppotelli (1982) further developed Moreno's work and created procedure for measuring social status via peer acceptance. In this measurement procedure, children typically are asked to nominate three or five peers whom "they like most" or "they like most to play with" and peers whom "they like least" or "they like least to play with".

Therefore, each child in a classroom receives both positive (like) nominations and negative (dislike) nominations. Based on the nominations, a set of indexes for peer acceptance can be obtained to measure children's likability and social standing in their classrooms.

Peer rating is another method used to assess peer relationships, particularly peer acceptance. In order to accomplish peer rating, children are asked to rate each of other children in his/her group (often a class) on a scale of likeability. This scale is a one dimension with one end reflecting acceptance ("like very much") and the other end reflecting rejection ("dislike very much). The mean rating score received across respondents represent individual child's social acceptance within the group.

Compared to the method of peer nominations, the use of peer ratings is less common, because this method cannot used to derive the sociometric categories and administration puts greater demands on the respondent, whereas nomination method can supplement understanding social status in important way (Maassen, van der Linden, Goossens, & Bokhorst, 2000; Gifford-Smith & Brownell, 2003). This framework not only can examine children's social status based on their categories, but also can examine acceptance, rejection, preference, impact, or popularity in the classroom as continuous phenomena (Cillessen & Mayeux, 2004). Continuous scores have advantages of not losing information and being more comparable to the stabilities of certain other dimension in the social development field, such as aggression. Furthermore, a continuous index measuring peer acceptance can be calculated, for instance, based on the peer rating on how much time or what kinds of things children like to spend with different classmates (Ladd, Hearld, & Andrews, 2006).

Children are categorized into different socialmetric status groups: popular, rejected, neglected, controversial and average children, based on their positive and negative nominations. Popular children are often described by their peers as friendly, cooperative, considerate, helpful and having social skills (Coie et al., 1992). Rejected children are identified to engage in more hostile and unprovoked aggression than other children (Coie et al., 1992) and thus they are often described as aggressive,

disruptive, and have poor social skills. Neglected children who have low social impact or visibility in the classroom and being neither liked or disliked by their peers, are characterized as shy or withdraw (Ollendick et al.,1992), involved in more solitary activities, and lacking prosocial behaviors but being less aggressive than rejected children (Hatzichristou & Hopf, 1996). Controversial children, who are highly visible members of their classroom and being both liked and disliked by their peers, are frequently rated as sociable, meanwhile controversial boys are likely to be perceived as aggressive and girls are likely to be perceived as arrogant or snobbish (Hatzichristou & Hopf, 1996).

Friendships

Friendships represent dynamic relationships between two individuals and are founded on cooperation, trust, commitment, reciprocal liking, and strong affective ties (Newcomb & Bagwell, 1995). The individuals within friendships view themselves as equal, voluntary, and intimate. Friendships and peer acceptance constitute two different domains within the larger realm of children's peer relationships and contribute in distinct ways to individual socio-emotional development (Hartup, 1996). Children with high peer acceptance or being liked widely by peers may have few or no reciprocal friendships, whereas children who are unpopular, rejected or neglected in larger peer group may still have friends (Ladd et al, .1997). Gest, Graham-Bermann and Hartup (2001) reported that 31% of popular children in second and third grades did not have friends, while 39% of children who were rejected by peers had at least one mutual friend in their classroom. Moreover, friendships appear to be universal, cutting across all culture and in every culture are distinct from other close relationships, such as relations among kin (Krappman, 1996).

Sullivan, Perry and Gawel (1953) emphasize the contribution of friendships in childhood and pre-adolescence and propose that close, mutual friendships provide companionships, increase sense of self-worth, positive self-evaluation, promote interpersonal skills development including sensitive to others' thoughts and feeling,

enhance feeling of personal well-being and prevent loneliness. Berndt (2004) propose that friends can provide four types of support for each other including informational support, instrumental support, companionship support, and esteem support. In addition, friendships also can facilitate skill-acquisition and learning, establish a normative culture that shapes behavior, and contribute to academic success, and promote or support positive adjustment (for reviews see Bukowski, Brendgen, & Vitaro, 2007; Rubin et al., 2006). Children without friendships may fail to acquire the social skills which are necessary for later successful relationships with others as adolescents and adults, and may feel lonely, depressed and exhibit maladaptive behaviors (Sullivan, 1953; Parker, Rubin, Price, & de Rosier, 1995). Nonetheless, friendships also have dark side. For instance, friendships sometimes also include contentiousness, conflict, coercion, jealousy, and betrayal. Moreover, children may have friends with antisocial characteristics and such friends, in turn, can enhance children's own antisocial tendencies, or may lead to bully-victim relationships, or even to enmity and mutual antipathies (for review see Rubin et al., 2005). In sum, friendships serve as key contexts for individual's development in many aspects and the most important function is to offer a base of security to generalize from family to themselves, their peers and environment (Rubin et al., 2006).

Compared to sociometric methods to assess peer acceptance, the measurement issues on assessing children's friendships are longstanding and difficult to solve. It is challengeable to operationalize friendships, especially define features of friendships. Therefore, there is no unique assessment technique have been developed to identify and measure children's reciprocal relationships. However, peer nomination is the most frequent means currently used for identifying friendships' number of children in a larger group. Friendships in this approach were operationalized to be the numbers of mutual positive nominations. That is, if two children nominate each other as the peer whom "like most", they are considered to have reciprocal friendships.

Other methods, such as behavioral observations and children self-report by questionnaires or interviews, are sometimes used both identify who children's friends are and to ascertain the characteristics of their relationships. The frequency, stability,

and affective quality of children's interactions with each other can be observed in naturally settings, and their interactions can then be compared to determine which features distinguish friends from non-friends. Apart from behavioral observations, children are often to identify their friends and report on the characteristic and quality of their friendships by answering the questionnaires and being interviewed.

Peer groups

Most of studies on peer relationships have focused on peer acceptance/ social status or friendships and less attention was paid to the peer group phenomenon. Children's peer relationships related to groups have captured researchers' increasing interests until recent years. The research on peer groups and networks dates back to the work of Coleman in the 1960s on examining girls' and boys' peer networks, however, more systematic research on this topic appeared until the late 1980s. Brown (1989) operationized the individual' peer relations on three levels: dyads, cliques and crowds. The dyadic level consists of reciprocal dyadic peer relations, such as friendships or romantic relationships. The clique level consists of peer groups of a small number of members who "hang around" together and develop close relationships. The crowd level consists of reputation-based peer groups of larger collectives of similarly stereotyped individuals who are defined by the primary attitudes or activities their members share. Later, Brown (1990) distinguished cliques and crowds as the two main types of peer groups. Cliques are based on friendships and often involved in relatively intensive emotions and interactions among group members, whereas crowds are more loosely organized and less intimate than cliques, and members of a crowd may not interact with one each another.

Children typically seek to be included by peer groups and, once included, their group and their membership of it, become a central focus of their attention (Nesdale, 2004). For children, their early orientation to other individuals and groups may reflect an inborn fundamental need to be accepted and to belong (Baumeister & Leary, 1995). Moreover, children spontaneously tend to compare their group with other groups and

they prefer to be members of higher rather than lower status groups and, children within lower status group are likely to leave the group (Nesdale & Flessner, 2001; Nesdale Durkin, Maass, & Griffiths, 2004). In childhood, peer groups are predominately at level of cliques, which are relatively small and intimate. However, as children develop into adolescents, children's involvements in cliques tend to decline and affiliation with larger crowds becomes a salient feature of adolescent social life (Brown, Eicher, & Petrie, 1986). Peer groups in the early adolescence typically are single-sex and mixed-sex peer groups become more prevalent in middle adolescence (Brown, 2004). It has shown that peer groups exhibit similarity in many characteristics and attributes, such as socio-demography, behaviors, and personality (McPherson, Smith-Lovin, & Cook, 2001). Research has demonstrated that adolescent peer groups are more homogeneous than the student body as a whole on reported frequency of some social behaviors including smoking, drinking, drug use, and dating and on the academic characteristics such as college aspirations, time on homework, and general engagement in schoolwork. Peer groups, in turn, shape and reinforce members' homogeneous behaviors and thoughts by in group's norms (Nesdale, 2004; Nesdale, Maass, Kiesner, Durkin, Griffiths & Ekberg, 2007).

Compared to friendships, peer group interactions and activities may have pervasive impact on individual social, emotional, and behavioral functioning and adjustment in larger social settings. Through peer group's interactions, a child can learn "(a) how to engage uncooperative activity aimed at collective rather than individual goals, (b) about social structures, (c) the skills associated with leading and following others, (d) the control of hostile impulses toward fellow members, and (e) how to mobilize aggression in the service of group loyalty by directing it toward outsiders." (for reviews see Rubin, Coplan, Chen, & Buskirk., 2005, p.481). Additionally, social networks and emotional connections with other members within a peer group can also provide support for children to cope with stress in life and, in part, are the sources of definition and support for identity development during preadolescent and adolescent years (Hartup, 1992; Brown & Klute, 2003). Moreover, peer groups may contribute to individual socio-emotional and school adjustment

(Chen, Chen, & Kaspar, 2001).

With respect to methodological issues, as with study of children's friendships, there is no universally accepted method for measuring peer groups. Measuring peer groups is a complicated task which often involving complex analytical procedures. Probably two techniques, Social Cognitive Map (SCM: Cairns, Cairns, Neckerman, Gest, & Garipey, 1988) and Social Network Analysis (SNA: Richards, 1995), have been the most common methods used to assess peer groups.

In SCM technique, typically, children are asked a set of questions about the affiliation patterns. Firstly children are often asked "Are there people in school/classroom who hang around together a lot? Who are they?" To ensure that the respondents include themselves, a set of followed questions are asked "What about you? Do you hang around together a lot with a group? Who are these people you hang around with?" Children are expected to report their own groups and other classmates' groups which they are most knowledgeable, to identify peer groups in their classroom or school. Children's responses are combined to produce a "social cognitive map" of the patterns of affiliation within the classroom or school based on shared perceptions of these patterns across respondents.

SNA is a technique involving self- report data from children through direct assessment or peer nominations to assess social groups. In direct assessment framework, children, typically, are asked to list their closest friends, described to respondents as "who do you hang around with the most?" The children are allowed to list as many as or as few friends as they want. Peer nomination is often used too, similar to those used to study social status and friendship, in which children are asked to nomination their only three or five closest friends. The primary purpose of these two approaches is to identify cohesive subgroups of individuals in a given social networks. Cohesive subgroups are "sub- sets of actors in a network among whom there are relatively strong and intense ties" (Wasserman & Faust, 1994, p.249). The identification of cohesive subgroups is based on the notion that "social forces operate through direct contact among subgroup members, indirect contact transmitted via intermediates, and relative cohesive within as compared to outside the group" (Ryan,

2001, p.1140). In peer nomination approach, obviously, clusters or sub-groups are derived on the basis of reciprocated nominations and the approaches requiring that nominations be reciprocated tend to identify smaller, more tightly interconnected clusters (Cairns, Xie, & Leung, 1998)

It should be noted that the SCM method is based on children's perceptions of any and all peer clusters in their classrooms. Contrarily, direct assessment and peer nomination elicit information about one's own peer groups only. Peer nomination produce smaller and tight clusters and subgroups that direct assessment method do. In sum, there is no uniformly accepted method on assessing peer groups and which method is used is depended on the purpose of the research.

2.4.2 Culture and peer relationships

Culture context plays an important role in the development of peer relationships and children in different cultures may engage in different types of social interactions and develop different types of relationships. Peer relationships are sensitive to culture influences, because children's behaviors, peer evaluations and responses, establishing and maintaining peer relationships, organization of peer group are often directed by culture norms and values (Hinde, 1987; Gifford-Smith & Brownell, 2003). For example, group affiliation in western culture, is regarded as fulfilling individual psychological needs; whereas in Chinese culture, the role of peer group is viewed to be important to socialize members in appropriate collective behaviors. Additionally, people valued highly on individual's independence, autonomy, and assertiveness in individual cultures; while it is significantly important to be interdependent, connected and conformed in collective cultures. These different norms and beliefs in various cultures provide a frame of reference for individual's evaluation on the "meaning" of self's and peers' social behaviors, which determine whether a child is accepted or rejected or the types of relationships child develops with others.

Cultural beliefs and values affect children's peer relationships at levels of acceptance and rejection, friendships and peer groups or social networks. At overall peer acceptance/ rejection level, culture may define appropriate and in appropriate

behaviors by providing a frame of reference for the social evaluation of the behaviors (Chen, 2000). These social evaluations, in turn, may affect children's interpretation and reaction to each other's behaviors in social interactions and then determine their acceptance or rejection by peers. For example, shy-anxious children are likely to be rejected or isolated in Canada, while their counterparts are accepted by peers and adjust well in social environment in China (Chen, Rubin, & Li, 1995). The different experience of shy-anxious children in Canada and China may reflect different cultural values on social behaviors. In Western cultures, children with shyness and inhibited behaviors are considered to have internal fearfulness and lack social confidence; however, children with shy, sensitive and restrained behaviors are perceived to be well behaved and understanding in Chinese traditional culture. At level of friendships, cultural values may be reflected in the structural and functional characteristic of friendships. French and colleagues (2006) found that Korean adolescents tended to form smaller exclusive friendships and lasted longer in duration of friendships than those in Indonesia. The findings may relate to Korean culture with characteristic of emphasizing intensive support and interdependent among friends. Finally, cultural values also influence peer groups or social networks of children in different social environments. For instance, the enhancement of self-esteem is thought to be common and important among friends in Western culture, while it is not highly appreciated among children's peer groups in Chinese culture (Chen, Kaspar, Zhang, Wang, & Zheng, 2004).

Two major theoretical perspectives have been explored to explain the role of cultural involvement in individual functioning and social relationships. The first perspective, represented by Bronfenbrenner's ecological theory (1979), focuses cultures as a context or a component of the sociological environment. According to this perspective, social interactions and relationships are more directly affected by the culture groups' beliefs, values, and practices than individual characteristics, because peer activities are often based on social norms and norm-related interpersonal perceptions, evaluation, and reactions (Hinde, 1987). Additionally, cultural beliefs and values such as socialization goals and practices may also indirectly influence social

interactions and relationships with peers through the organization of various social settings, such as community service, day-care arrangements and school (Tietjen, 2006).

Other researchers rely on the collectivism- individualism or interdependent - dependent value dimension to interpret cross-cultural differences in individual attitudes and behaviors and relationships. There are many differences in values between individual societies and collective societies. For instance, individual needs and characteristics, personal freedom and independence, and self-realization are highly lighted in individual societies; whereas interdependent ties among individuals, group loyalty, limited personal privacy, conformity to collective standards, and respect for authority are typically emphasized in collective societies (Chen, French,& Schneider, 2006). These values in different cultures are significantly associated with social interactions and relationships in the peer context.

The second perspective, represented by Russian sociocultural and activity theories (Lenontiev, 1981; Vygotsky, 1978), focuses on the process of the transmission or internalization of cultural values from the interpersonal or social level to intrapersonal or psychological level. Within this perspective, the development of human mental processes is mediated by psychological ‘tools’, such as language, signs, symbols, and concepts, which are products of human culture. Children master these tools through externalization of the external signs with cultural meanings during their development. The internalization, as skilled tutors and representative of the culture, assist children to understand and solve the task in their social interactions and relationships. The socicultural perspective has been typically interested in the uncovering the processes by which activities in a particular cultural setting affect the development of competencies (Chen, French, & Schneider, 2006).

2.5 Peer relationships of children with HI in inclusive educational settings

More and more children with HI have been placed in the regular schools to receive education with hearing children. One of intended benefit of inclusive

education for children with HI is to integrate children with and without HI socially and promote good relationships between them. Based on the available literatures, the first study on peer relationships of children with HI in regular schools was conducted by Esler in 1959. Esler (1959) compared the social aspects of children with HI and normally hearing children in a regular classroom setting and found that children with HI were less accepted than their normally hearing classmates. After that, peer relationships of children with HI did not receive enough attention and there were a paucity of research on this topic in 1960s. As the movement of “mainstreaming” or “integration” in end of 1960s and 1970s, integration of students with HI into regular classrooms became an important educational trend (Luckner, Rude & Sileo, 1989). Researchers became concerned about the impact of integration or mainstreaming on these children, especially on their relationships with hearing peers.

Much of the early research, especially in 1970s and 1980s, mainly focused on the academic achievement of children with HI and these studies generally showed improved academic performance such as higher levels of literacy and mathematical achievement for students with HI in general education as compared to those in segregated classrooms (e.g., Allen, 1986, 1999; Geers, 1990; Holt, 1993; Karchmer, Milone, & Wölk, 1979; Karchmer & Trybus, 1977; Kluwin & Moores, 1985; Zweibel & Allen, 1988). The later studies also suggested that the academic performance of children with HI who attend in inclusive education often equal to the performance of their hearing classmates, or was much better than those who study in special schools (Mitchell & Karchmer, 2011).

More recently, social outcomes of inclusive education for children with HI have captured researchers’ interests and increasing studies have been conducted to examine the social interactions and relationships between children with and without HI in general educational settings. Whereas research has got positive findings of academic performance, the studies on social-emotional aspects of children with HI in regular schools, especially on their social interactions and relationships with hearing peers, have demonstrated results more mixed. On one side, some studies which examine social integration of students with HI in general education have shown that inclusion

provides opportunities for children with HI to develop friendships with hearing peers and has benefited social and emotional development as a result of being educated in regular classrooms (e.g. Eriks-Brophy et al., 2006, 2007, 2012; Kluwin, 1999; Martin & Bat-Chava, 2003; Stinson & Kluwin, 2003). On the other side, a large body of research has shown that children with HI are likely to be isolated, rejected or even marginalized in regular classrooms. For example, Wauters and Knoors (2008) find that deaf children in inclusive settings seem to be more often involved in a network without any friendships, and have more socially withdrawn behaviors and less prosocial behaviors than hearing children. Wolters, Knoors, Cillessen and Verhoeven (2011) examine the peer acceptance and popularity of deaf children in mainstream and special education, reporting that deaf children in mainstream education are less accepted by peers than both hearing classmates and deaf children in special education. Nunes et al (2001) point out that deaf children in mainstream schools are more likely to be neglected by hearing peers and less likely to have a friend in the class. Similarly, Most (2007) presents that children with HI experience more isolation and loneliness in regular schools than do hearing children. Moreover, they rate their social-emotional competence and communicative competence significantly poorer than that of hearing classmates (Hatamizadeh, Ghasemi, Saeedi, & Kazemnejad, 2008). Based on 33 studies, Kluwin, Stinson, and Colarossi (2002) view that deaf and hard of hearing children in public schools often fail to establish meaningful and close relationships with their hearing peers and may not fully enjoy their social interactions and relationships with peers, in particular, with hearing peers. They engage in significantly less associative or cooperative play than children with normal hearing, after having access to both peers with and without hearing impairment (Antia & Dittillo, 1998), and make fewer significant contributions to interactions than hearing children (Duncan, 1999). These children are found to interact with peers for shorter periods of time than hearing children (Antia et al., 2011; Deluzio & Girolametto, 2011), tend to be neglected by their hearing peers as they initiate interactions (Deluzio & Girolametto, 2011). Even they have developed good spoken language with assistant of cochlear implants or hearing aids, they still be 'social deafness', which refers to

difficulties in social interaction especially involving groups of people or in noisy environment (Punch & Hyde, 2011). Moreover, children with HI may be at greater risk for victimization by bullying than hearing children because they appear weaker due to their hearing loss as well, because some bullies may believe children with HI cannot report what has occurred (Tresh, 2004).

2.6 Theoretical perspectives

2.6.1 The ‘homophily’ theory vs. the ‘contact’ theory

The ‘homophily’ theory Homophily theory assumes that there is a principle structuring people’s social networks, that is, individuals tend to associate with ‘similar’ others (McPherson, Smith-Lovin, & Cook, 2001). Homophily is based on many sociodemographic, behavioral, and intrapersonal characteristics. Male (2007) further developed ‘similarity’ hypothesis and distinguished three types of similarity: attitude similarity, demographic similarity and similarity in personality. He proposed that similarity is an important condition children’s friendship formation because of these reasons:

“If we like those who are similar to us, there is a good chance that they will like us; communication is easier with people who are similar; similar others may confirm the rightness of our attitudes and beliefs; and it makes sense if we like ourselves, then we should also like others who are similar to us.” (Male 2007, P.463–64)

According to the ‘homophily’ theory, typical children may attribute that children with SEN are different from them with regard of sociodemographic, behavioral, or intrapersonal characteristics. Therefore, they tend to exclude children with SEN who may in turn flock together. Guralnick and colleagues (1995) observed the social play and interactions between children with and without developmental delays and found that typically developing children preferred to interact with other typically developing children.

The ‘contact’ theory The contact theory, by contrast, refers to positive effect of increased contacts and integrations on the attitudes among individuals from

different groups. This theory, first proposed by Allport (1954), asserts that direct contact between groups of individuals with different backgrounds or characteristics can facilitate intergroup relationships by reducing prejudice between majority and minority group members, especially when interactions are frequent, meaningful, and of long duration (Allport, 1954; Whitley & Kite, 2010).

The contact theory originally developed with interracial interactions, however, researchers have extended this theory to understanding and promoting relationships between children with SEN and typical children in inclusive classrooms (e.g. Kalymon, Gettinger, & Hanley-Maxwell, 2010; Manetti, Schneider, & Siperstein, 2001; Slininger, Sherrill, & Jankowski, 2000). According to this hypothesis, placing children with SEN into regular schools with typical children provides both groups of them opportunities to direct contact with each other. They are able to understand and appreciate different points of views involving their way of life, contributing to typical children forming more positive attitudes towards children with special needs. As a result, children with special needs could develop positive relations and relationships with hearing peers. Indeed, there are empirical researches supporting this hypothesis (Capper & Pickett, 1994; Scheepstra, Nakken, & Pijl, 1999). Moreover, Gartin and colleagues (1992) report that co-operative learning arrangements foster cooperation between children with and without disabilities and have a function on promoting attitudes in both groups.

Despite documented benefits of intergroup contact, Pettigew and Tropp (2006) declare that contact alone may not lead to positive peer interactions and relationships between children with and without disabilities. The assertion is supported by their meta-analytic study to determine the impact of intergroup contact on attitudes towards different target groups, including individuals with cognitive, physical, and severe social-emotional disabilities. Actually, Allport (1954) ever warned that superficial contact might have negative impact on relationships between intergroup members. He held that positive effects of intergroup contact occur only in situations with four key conditions: equal group status, common goals, intergroup cooperation, and the support of authorities. Within contact theory, children with and without disabilities

can be regarded as two groups and their contact alone may not sufficient to promote their positive attitudes, and certain conditions must be in place for their positive relationships. For instance, children with SEN need to be equal to engage in reciprocal interactions; interactions between them should be frequent and aimed toward achieving a common goal with their cooperation; teachers and administrators should provide unequivocal support for ongoing contact between children with and without SEN.

Within the homophily theory, children with HI, in the regular schools where there is a hearing environment, may be perceived by hearing children as different from them due to their different hearing status, different speech and pronunciation, or different behaviors and personal characteristics. Therefore, children with HI may be excluded by hearing peers. While within contact theory, placement of children with HI in the regular schools provides opportunity for them to contact with hearing children and may relieve their prejudice between them. However, physical integration and superficial contact is not sufficient to promote effective interactions and relationships between them. Some necessary conditions including cooperation, equal status in interactions, repeated interactions over time, and support from teachers should be placed for their positive relationships. This study will examine the peer relationships of children with HI in the regular classrooms from the perspective of the contact theory.

2.6.2 Model of disability: ICF

There are a numbers of “models” of disability which have been defined over last few years. The four models most frequently mentioned are the medical model of disability, the social model of disability, and the ICF (International Classification of Function and Disability) model. These models have reflected dominant perceptions of and attitudes towards people with disabilities.

Medical model of disability The medical model of disability, in history, was most predominant before 1980. According to this model, disability is viewed as individual’s impairment or problem resulted from disease, injury or medical conditions. Medical

model regards it is the individual's impairment that leads directly to the lost of bodily and social functions and views disabled people as dependent, deserving of pity, or being acclaimed for overcoming adversity (Oliver, 1989). According to this model, interventions and treatments, on the basis of the notion of treatment, are a means to move an individual with disability from a disabled or unhealthy state toward a normal or healthy state, in order to make disabled individuals adapt to society (Lloyd, 2000). In addition, this model is strongly normative as people are considered disabled based on being unable to function as "normal" person does (Mitra, 2006, p.237).

This model has been critiqued by scholars and has been rejected by people with disabilities as resulting in their low self-esteem, undeveloped life skills, segregated education and high unemployment level (Oliver, 1990; Swain, Finkelstein, French, & Oliver, 1993). As these critiques of the medical model and changing social perceptions, a new model, the social mode of disability, has been developed in opposition to the dominant medical model (Barnes, 2004; 2008).

Social model of disability The social model of disability was originally proposed by people with disabilities themselves who feel socially isolated and oppressed, and thus this model has been as an emancipator force in the lives of people with disabilities (Tregaskis, 2002).

The social model of disability standing in contrast to the medical model mainly concerns with being justice and human dignity. According to this model, disability is regarded to be caused by society in which the needs of people with impairments are often given little or consideration (Oliver, 1996). The society's deprivation or exclusion of people with disabilities makes them lose the access to society. As viewed by Oliver and colleague: "Disadvantage or restriction caused by a contemporary social organization which takes little or no account of people who have ... impairments and thus excludes them from the mainstream of social activities (Oliver & Barnes, 1998, p.18)".

Furthermore, distinction is also drawn, in the social model, between impairment and disability: "Impairment is the functional limitation within the individual caused by physical, mental or sensory impairment. Disability is the loss or limitation of

opportunities to take part in the normal life of the community on an equal level with others due to physical and societal barriers (Barnes, 1991, p. 2)”.

Based on this model, social change is the primary remedy and accommodations should be provided to meet persons' needs to ameliorate their functions. This model advocates equality among individuals, and proposes that individuals with impairments can fully participate in social life if a society's attitudes, accommodations, and information are appropriate for them.

Although the social model of disability has been greatly welcomed by people with disabilities and supported by disability activities and academics, this approach is not without criticism. The main critique is, this model purely emphasizes on the social barriers of disabilities while completely exclude the personal and health factors of impairment (Swart & Greyling, 2011). Therefore, other more appropriate models including are called.

ICF (International Classification of Function and Disability) model ICF (WHO,2001) is a classification system developed by the World Health Organization(WHO) that focuses on the “components of health”. It is intended to be a universal classification system for all people. However, it provides a model as a useful tool to guide clinic thinking, practice, education and research in the field of childhood disability.

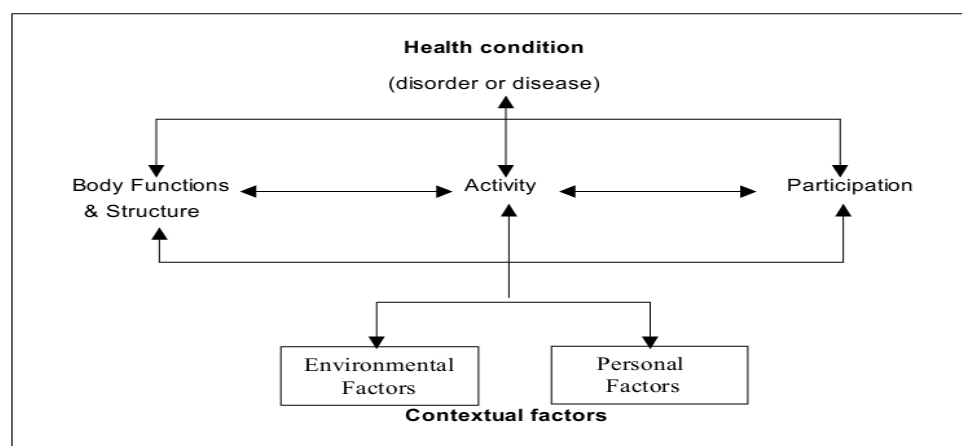
ICF model is based on the bio-psychosocial model of disability (WHO, 2002). This model incorporates what is true and useful in both the medical model and the social model, emphasizing the importance of understanding disability in people's fullest contexts. According to this model, disability is viewed as a multi-dimensional phenomena experienced at the level of the biology, the psychology, and society. This model presents disability and health from medical, social and psychological perspectives and interprets disability as the interaction of these three perspectives of factors. Medical and rehabilitative interventions are relevant to the body-level aspects of impairments. Environmental and social interventions are relevant to the restrictions in a person's participation in educational, economic, social, culture and political activities.

In the ICF model, disability is considered to involve dysfunction at one or more of these three levels: body functions' impairments, activity limitations, and participation restrictions. The term 'disability' is now an umbrella term to represent the dynamic interaction between person and environment. The traditional view that disability resides just within the person, in contrast, the ICF model reflects the idea that disability is a social construction involving an interaction of the person and their community or society. That is, disability and functioning are viewed as the outcomes of the interactions between individual factors (health condition) and contextual factors (environmental and personal factors) (WHO, 2001).

In this model, contextual factors that may impact a person's health state are classified into environmental factors and personal factors. Environmental factors include social attitudes, architectural or physical characteristics, legal systems, climate, terrain, and other characteristics of the psychosocial environment. Personal factors include age, gender, socioeconomic background, coping styles, vocation, education, experience, behaviors, personal character, and other factors which influence how disability is experienced by the individual. These two contextual factors influence and modify other components of disease or disorder, and need to be identified and considered in the mix of forces that together contribute to the dimensions of 'body function/structure', 'activity' and 'participation'.

The following diagram is one representation of the model of disability that is the basis for ICF.

Figure 2.1 The ICF model of disability



Source: World Health Organization. (2002). Towards a Common Language for Functioning,

Disability and Health: ICF (p.9). Geneva: WHO Press.

As shown in the figure 2.1, the ICF defines functioning and disability as multi-dimensional concepts relating to the body functions and structures, the activities people do and the life areas in which they participate. A person's functioning is viewed as a dynamic interaction between health conditions and environmental and personal factors. ICF puts the notions of disability in a new light. It acknowledges that every person can experience impairment in health and thereby may experience some disability. Thus, ICF "mainstreams" the experience of disability and recognizes it as a universal human experience (WHO, 2002).

The ICF model of disability provides a great perspective to understand the children with hearing impairment and their peer relationships in regular classrooms. Hearing loss (health condition) and contextual factors which are categorized into environmental factors and personal factors work together to contribute to child with HI 'body functions', 'activity' and 'participation'. Therefore, peer relationships of children with HI in regular classroom must be affected by various underlying factors, which need to be explored from different angles of view.

2.6.3 Bronfenbrenner's ecological theory

Bronfenbrenner (1979, 1994) argues that the entire ecological system in which growth occurs needs to be considered to understand human development. The system is comprised of five socially organized subsystems that help support and guide human growth, including microsystem, mesosystem, exosystem, macrosystem and chronosystem. Microsystem system refers to the relationship between a developing person and the immediate environment; mesosystem involves the linkages and processes taking place between two or more settings containing the individual; exosystem system comprises the connections between different social settings, at least one of which is not the immediate setting but indirectly influence individual development ; macrosystem consists of the dominant of a given culture and subculture, which particular reference to the social and economic structures and the attitudes, beliefs, values and ideologies present in the system; chronosystem" encapsulates the

dimension of time and the way it relates specifically to the interactions between these systems and their influences on individual development ” (Bronfenbrenner, 1994; Swart & Pettipher, 2011, p.15).

According to Bronfenbrenner (1979, 1994), the macrosystem is at the fourth level of ecological theory. This system involves the broader culture and cultural values, health and public policy, and laws are all a part of the macrosystem. The culture's belief systems and ideology influence the individual directly and the individual does not have much freedom in determining his or her cultural values. This system is generally considered to exert a unidirectional influence upon not only the person but the exosystems, mesosystems, and the microsystems as well. The macrosystem such as cultural, political, social, and economic climate can influence indirectly individual through community, school, and family.

In this study, participants come from Czech and China. Czech Republic is a landlocked country in Central Europe while China is located in East Asia. There are many differences in the two cultures, due to different history, social and economic development, and ideology, as well as geographical location. Different values and beliefs from the two different cultural contexts permeate participants' attitudes and behaviors, and thus further contribute to their involvement in the social activities. Therefore, differences in attitudes and behaviors between Czech and Chinese participants can be interpreted from the perspective of culture.

Chapter 3 Methodology

3.1 Research aims and questions

The purpose of present study is to examine the social outcomes of inclusive education for children with HI, specifically focusing on their peer relationships in regular classrooms, and further uncover the factors impacting their relationships with hearing peers in both Czech and China. To be more concrete, the aims of the study can be described as follows:

(1) To investigate the peer relationships of children with HI in regular classroom, compared to their hearing peers;

(2) To explore the influencing factors on their peer relationships;

(3) To compare the differences between Czech and Chinese children with HI in peer relationships and influencing factors;

(4) To propose some intervention strategies to promote social relationships between children with HI and their hearing peers in regular classrooms.

Specifically, the research focuses on these questions as following:

(1) How are the peer relationships between children with HI and hearing children in regular classrooms?

a. Are children with HI accepted by their hearing classmates?

b. Do children with HI have friendships in their classrooms?

c. Do children with HI have memberships of peer groups in their classrooms?

(2) What are the important factors influencing the peer relationships of children with HI in regular classrooms?

(3) Are there some differences between Czech and Chinese children with HI in their peer relationships and the influencing factors?

--If yes, what are they? Why?

3.2 Research hypotheses

H1: Children with HI in both Czech and China are less accepted by peers as compared to their hearing classmates;

H2: Children with HI in both Czech and China have fewer friends in their classroom as compared to hearing children;

H3: Fewer children with HI in both Czech and China have memberships of peer groups as compared to hearing children;

H4: There are various influencing factors on the peer relationships of children with HI in regular classrooms, at least including environmental and personal factors;

H5: There are some differences between Czech and Chinese children with HI in their peer relationships and the influencing factors due to cultural differences.

3.3 The rationale of mixed methods design

The present research adopted the mixed-method research design, combining both quantitative and qualitative methods. Mixed methods research is viewed as complementary choosing the most appropriate methods for the investigation (Creswell, 2003; Thomas, 2003; Feilzer, 2010). Historically, the ardent and divisive debate between quantitative researchers and qualitative researchers in social and behavioral science field had lasted throughout the 20th century. Proponents of both camps tend to focus on the differences between the quantitative and qualitative methods rather than on the similarities. Indeed, there are fundamental distinctions between two research paradigms in knowledge claims, strategies of inquiry and methods of data collection and analysis (Creswell, 2003). As regards knowledge claims, the quantitative paradigm is based on positivism, while the qualitative paradigm is based on social constructivism combined with interpretivism; As regards strategies of inquiry, the quantitative research mainly involves experiments and surveys; in contrast, the qualitative research mainly includes ethnographies, grounded theory, case study, phenomenological research, and narrative research. As regards methods of data collection and analysis, the researcher in a quantitative approach

often uses predetermined instruments that yield statistical data; alternatively, the research in a quantitative approach collects open-ended, emerging data with the primary intent of developing themes from the data (Creswell, 2003)

More recently, application of combining qualitative and quantitative approaches within the same study, which is commonly known as mixed-methods research, has been more acceptable and common in social and behavioral research (Collins, Onwuegbuzie, & Sutton, 2006; Klingner & Boardman, 2011). Researchers with mixed-methods research design argue that both quantitative and qualitative research are important and useful and the goal of mixed methods research is to minimize the weaknesses of both in single research studies and across studies (Johnson & Onwuegbuzie, 2004). Therefore, the mixed-methods research can help bridge the schism between quantitative and qualitative research (Onwuegbuzie & Leech, 2005).

Educational research, traditionally, followed the empirical and objective scientific model (Burns, 1997, p.3), which utilized quantitative methods of data collection, analysis and reporting modes. In the 1960s, there was a move towards a more constructivist approach which allowed for methods which were "qualitative, naturalistic and subjective" (p.3) in nature. However, today "educational researchers have acknowledged the value of mixing methodologies to provide a complementary set of information that would more effectively (than a single method) inform practice" (Odom et al., 2005, p.141)". Mixed-methods research can expand the scope or breadth of research to offset the weaknesses of either approach alone (Driscoll, Appiah-Yeboah, Salib, & Rupert, 2007). Further, by conducting mixed methods study, researchers can combine empirical precision with descriptive precision (Onwuegbuzie, 2003). As such, mixed-method research also can help evaluation researchers who endeavor to address a range of complex research questions that arise to be more flexible and holistic in their investigative techniques (Onwuegbuzie & Leech, 2005). Onwuegbuzie and Leech (2004) advocate that research with mixed methods can be used to enhance the interpretation of significant findings in educational evaluations. In addition, Gorard (2004) argues that mixed methods research requires a greater level of skill, can lead to less waste of potentially useful information, creates researchers with

an increased ability to make appropriate criticisms of all types of research, and often has greater impact.

Mixed-methods research is defined by as, “the class of research where the researcher mixes or combines quantitative and qualitative research techniques, methods, approaches, concepts or language in a single study or set of related studies. This type of research should be used when the contingencies suggest that it is likely to provide superior answers to a research question or set of research questions” (Johnson, Onwuegbuzie, & Turner, 2005, p. 19). Denscombe (2008) posits that the characteristics of the mixed methods approach involves its use of “(1) quantitative and qualitative methods within the same research project, (2) a research design that clearly specifies the sequencing and priority that is given to the quantitative and qualitative elements of data collection and analysis, (3) an explicit account of the manner in which the quantitative and qualitative aspects of the research relate to each other, with heightened emphasis on the manner in which triangulation is used, and (4) pragmatism as the philosophical underpinning for the research (P.272).”

Crotty (1998) described four key elements to consider in research design: the epistemology that informs the research, the philosophical stance underlying the methodology in question, the methodology itself, and the techniques and procedures used in the research design to collect data. Later, Creswell (2003) conceptualized Crotty’s model to address three elements leading to approaches and design process, including knowledge claims, strategies of inquiry and methods. The present research design is based on this model to lead the research design and three elements are presented in the immediate sections.

Knowledge claims

Pragmatism is thought to provide the knowledge claims or the underlying philosophical framework for mixed-methods research (Creswell, 2003; Tashakkori & Teddlie, 2003; Somekh & Lewin, 2005). Pragmatism is considered as a pragmatological tool to address problems and is not committed to any one system of philosophy or reality (Somekh & Lewin, 2005). According to pragmatists, there are different elements or layers in an experiential world, some objective, some subjective, and

some a mixture of the two and research aims to find “the truth”, whether it is an objective truth or the relative truth of multiple realities (Dewey, 1925, p. 47). Thus, pragmatists hold that quantitative and qualitative methods are not different at an epistemological or ontological level and they share many commonalities in their approaches to inquiry and call for a convergence of quantitative and qualitative methods (Hanson, 2008; Johnson & Onwuegbuzie, 2004). When considered as an alternative paradigm, pragmatism sidesteps the contentious issues of truth and reality, but accepts that there are singular and multiple realities that are open to empirical inquiry and orients itself toward solving practical problems in the “real world” (Creswell & Plano Clark, 2007, pp. 20-28; Dewey, 1925; Rorty, 1999). Pragmatist researchers focus on the ‘what’ and ‘how’ of the research problem (Creswell, 2003, p.11) and “reject the scientific notion that social inquiry was able to access the 'truth' about the real world solely by virtue of a single scientific method” (Mertens, 2005, p.26). It places “the research problem” as central and applies all approaches to understanding the problem (Creswell, 2003, p.11). With the research question ‘central’, researchers are allowed to be free of mental and practical constraints imposed by the “forced choice dichotomy between post positivism and constructivism” (Creswell & Plano Clark, 2007, p. 27) and different methods of data collection and analysis can be chosen as those most likely to provide insights into the question.

Strategies of inquiry

According to Creswell and Plano Clark (2007), there are four major types designs used for inquiry in mixed methods study. They are the triangulation design, the embedded design, the explanatory design and the exploratory design. The triangulation design aims to obtain different but complementary data on the same topic to best understand the research problem and bring together the differing strengths and non-overlapping weaknesses of quantitative methods and qualitative methods. Researchers adopt this design when they need to directly compare and contrast quantitative results and qualitative findings or to validate or expand quantitative results with qualitative data. The embedded design is a mixed methods design in which one data set provides a supportive, secondary role in a study based

primarily on the other data type. This research design is used when a researcher want to include qualitative or quantitative data to answer a research question within a largely quantitative or qualitative study. The explanatory design is a two-phase mixed methods design, with the purpose that qualitative data helps explain or build upon initial quantitative results. When researchers need qualitative data to explain significant results, outlier results, or surprising results, it is suitable to choose this design. Regarding the exploratory design, it is the two-phase design with the intent that the results of the first method (qualitative) can help develop or inform the second method. Researchers can use this design when they want to develop and test an instrument, generalize results to different groups, explore a phenomenon in depth and then measure its prevalence, identify important variables to study quantitatively when the variables are unknown, or test aspects of an emergent theory or classification.

Methods of collecting and analyzing data

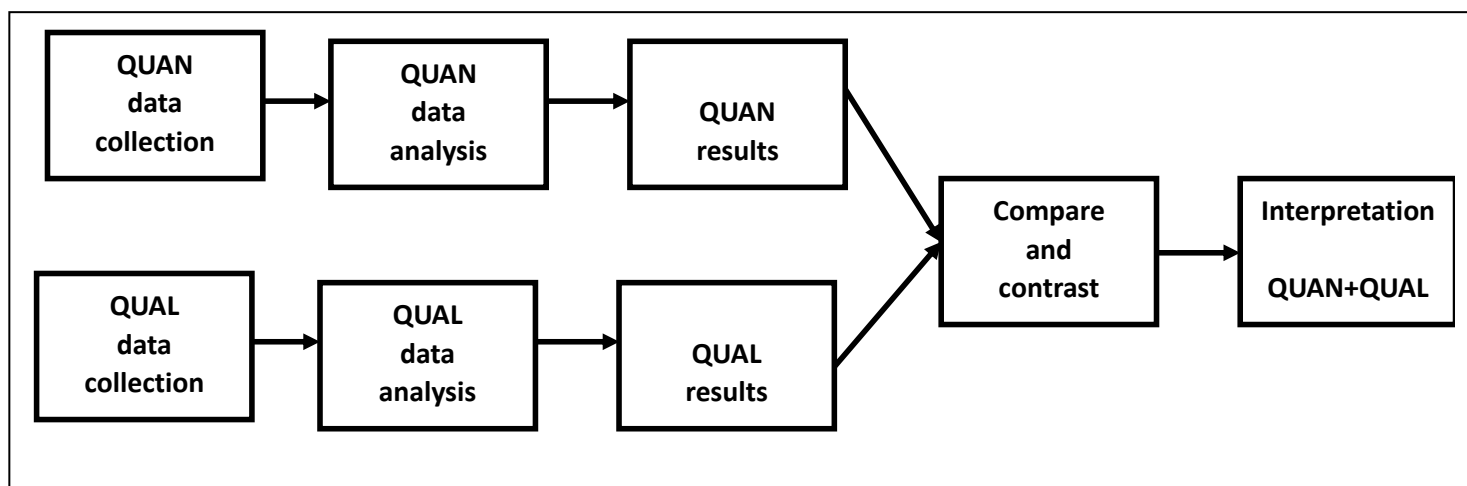
In quantitative data collection, the researcher often uses an instrument to measure the variables in the study. An instrument is a tool used to measure, observe, document quantitative data, containing survey questionnaires, standardized tests, and checklists used to observe behaviors. These instruments are administered to participants and collect data in the form of numbers. In quantitative data analysis, the researcher often uses mathematical procedures, such as breaking down the data into parts, comparing or relating scores, and interpreting the results in light of initial predictions or prior studies. In qualitative approach, the researcher collects data to learn from the participants in the study and develop forms (called protocols) for recording data as the study proceeds. There are different forms, such as an interview protocol consisting of questions, observational protocol in which research records notes about behaviors and thoughts of participants. Moreover, the text and image data may be gathered by the research, and then transcribed into database composed of words. In the qualitative data analysis, the text is often divided into groups of sentences (called text segments) and determined the meaning of the segments. The researcher analyzes the words or pictures to describe the central phenomenon under study, describe individuals or places, and explore the themes or broad categories that represent the findings.

The mixed-methods study is the combination of both methods to provide a better understanding of a research problem than either quantitative or qualitative data by itself. In the mixed-methods procedure, both quantitative and qualitative data are collected, analyzed and mixed in a single study or in a multiphase series of studies. Therefore, all the methods of collecting and analyzing data mentioned above in the quantitative and qualitative research can be used in the mix-methods study. It is noted that the researcher, who adopts the mixed-methods approach, need to decide emphasis you will give to each form data (the priority), which form of data you will collect (concurrent or sequential), how you will “mix” the data (integrating or connecting) and whether you will use theory to guide the study (Creswell, 2012).

3.4 The research design

The triangulation design with a convergence model was employed for this study. The triangulation design is the most common and well-known approach to mixing methods. This design is a one-phase design in which researchers implement the quantitative and qualitative methods during the same timeframe and with equal weight. The integration of qualitative and quantitative research strategies in this design can take advantages of each design, allow them to complement each other, and produce deeper insights than either one does by itself (Gall, Gall, & Borg, 2007).

The convergence model represents the traditional model of a mixed methods triangulation design, in which quantitative and qualitative data are collected and analyzed separately, and then the different results are converged or joined during the interpretation, and to draw valid and well-substantiated conclusions about the research problem (Creswell & Plano Clark, 2007). The triangulation design with convergence model is appropriate when researchers want to compare results or to validate, confirm, or corroborate quantitative results with qualitative findings. Typically, the qualitative and quantitative data are analyzed separately, and the results are converged during the interpretation. A model for this design is shown in Figure 3.1.

Figure 3.1 Triangulation Design: Convergence Model (Creswell & Plano Clark, 2007, p.63)

The triangulation convergence model is with both strengths and challenges. One of the strengths of this design is both quantitative and qualitative data can be used to complement each other, and the other strength is that two kinds of data can be collected concurrently in a shorter time frame. Meanwhile, some challenges are identified, such as additional effort in collecting concurrent data, implementing equal weight and expertise to each method, potentially contradictory results, sample size, and introducing potential bias in data collection (Creswell & Plano Clark, 2007).

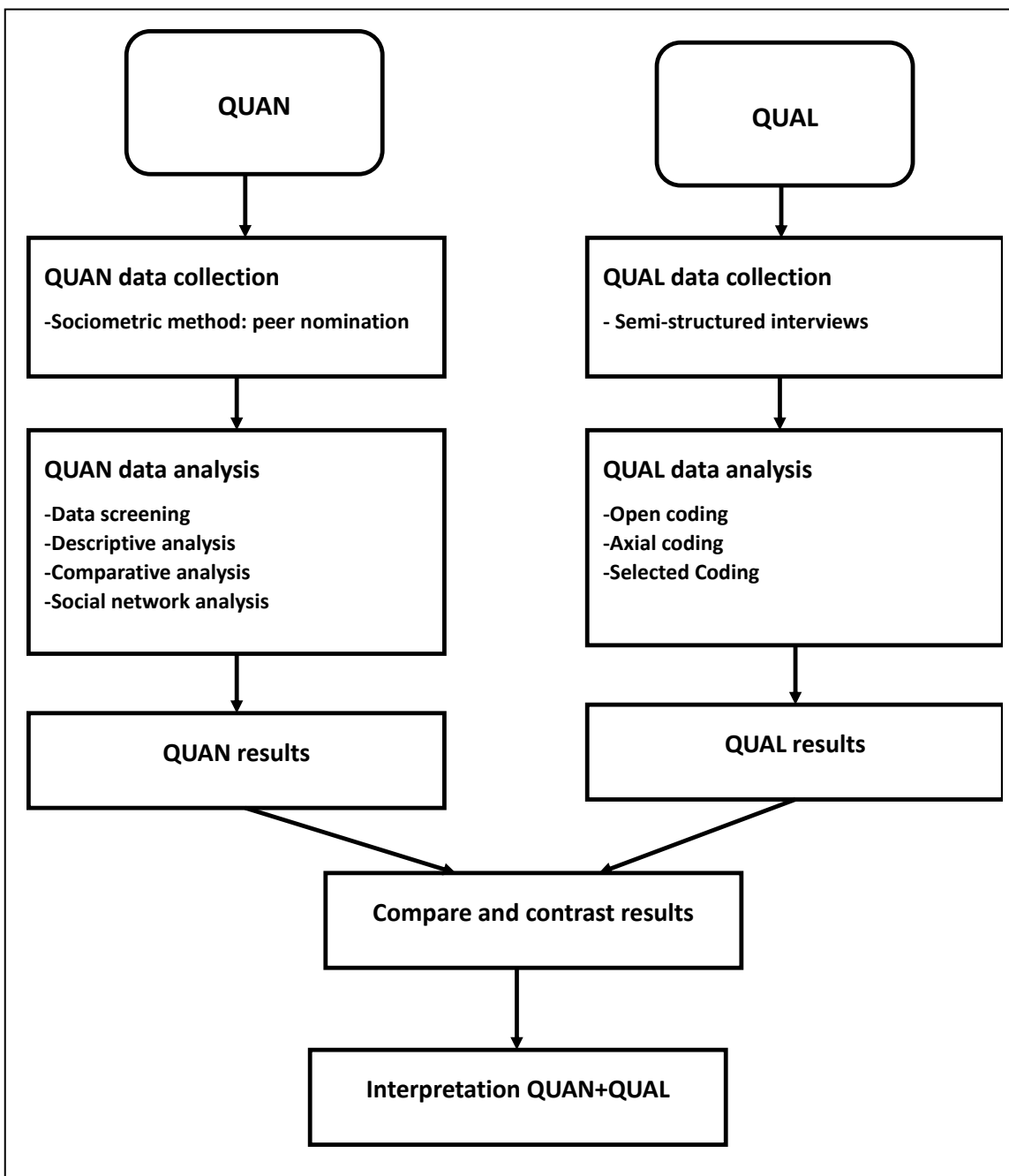
Regarding this study, the mixed methods triangulation convergence model design was chosen because this design matches the research problems, that is, peer relationships of children with HI in regular classrooms and the related influencing factors on them. The peer relationships can be investigated in quantitative methods and it is more appropriate to use qualitative methods to uncover the underlying determinants. Both quantitative and qualitative data can be used to probe the research topic in depth. In addition, the researcher sought to collect and analyze qualitative data to complement the quantitative data in order to better understand the nature of the topic. Moreover, the time for this doctoral research is rather limited. In order to conduct this study effectively in limited time, the triangulation convergence model research design is an available option. In addressing the challenges of this research design, the research of this study employed a documented a rigorous data collection procedure and paid equal weight to quantitative and qualitative methods with the

consultation and guidance provided by the experts.

In the present research procedure, quantitative data were gathered from a survey of 25 children with HI (10 in Czech and 15 in China) and 642 hearing children (188 in Czech and 454 in China). The qualitative data was collected by mean of interviewing 61 participants' (26 in Czech and 35 in China) to explore the related influencing factors. The goal of the quantitative survey is to investigate the current situation of peer relationships of children with HI in regular schools. The qualitative research procedure was on the basis of the grounded theory, in which semi-structured interview was used to collect text data, in order to reveal influencing factors on social relationships of children with HI and complement the results from the quantitative survey. The visual model of the procedures for the mixed methods triangulation convergence model design of this study is presented in Figure 3.2.

As shown in the Figure3.2, there are two parallel procedures were conducted concurrently including five steps in the research design: quantitative and qualitative data collection, quantitative and qualitative data analysis, quantitative and qualitative results, to compare and contrast results from both approaches, and interpretation of the entire results. In the quantitative procedure, sociometric method, peer nomination, was used to collect the data, and numerical statistic methods were employed to analyze the data, in order to examine the social relationships of children with HI in regular classrooms. The qualitative data was gathered by the method of in-depth semi-structural interview, and constant comparative analysis was used to reveal the underlying important factors affecting their peer relations. The results of the quantitative and qualitative were compared and contrasted and finally integrated during the discussion of the outcomes of the whole study.

Figure 3.2 The mixed methods triangulation convergence model design of this study



3.5 Quantitative data collection

Consisted with the theoretical structure of peer relationships outlined in chapter 2, three main dimensions of peer relationships including peer acceptance, friendships and peer groups of children with HI in regular classrooms were examined in this study. Peer nomination was selected to collect data, which was considered as a classic and effective method to study social relationships.

3.5.1 Participants

In Czech, with the help of professionals who are social workers for children with HI in special educational center and translators who are the local people in Czech with excellence in English, the researcher finally conducted this study in eight regular schools and 10 children with HI in these schools were selected to be the targeted participants. In China, the researcher conducted the investigation in six regular schools and 15 targeted participants with HI in these schools were selected. The targeted participants are selected to meet the criteria: (1) be diagnosed to have hearing impairment; (2) have received general education in regular school at least for one year; (3) be aged between 7 years old to 16 years old ; (4) the schools which students with HI attend are regarded to implement inclusive educational practice. Apart from the targeted participants with HI, hearing children who were the classmates of participants with HI were invited to participate in this survey (n=188 in Czech; n=454 in China). The demographic information of the targeted participants with HI in both Czech and China is presented in below table 3.1 and table 3.2.

Table 3.1 Demographic Characteristics of Czech participants with HI

Name	Age	Grade	Gender	Degree of HI	MCM	Auditory assistant	Educational Placement
DB	14	7	Female	Severe (61-80dB)	OL	Hearing aids	RC(>5hour/day)
NK	7	1	Female	Moderate (41-60dB)	OL	Hearing aids	RC(3-5hour/day)
MK	10	4	Female	Moderate (41-60dB)	OL	Hearing aids	RC(3-5hour/day)
OK	8	1	Male	Profound (>80dB)	OL	Cochlear implant	RC(>5hour/day)
LP	12	7	Male	Moderate (41-60dB)	OL	Hearing aids	RC(>5hour/day)
PP	16	9	Male	Mild (26-40dB)	OL	Hearing aids	RC(>5hour/day)
LR	15	9	Female	Severe (61-80dB)	OL	Cochlear implant	RC(>5hour/day)
KK	12	6	Female	Profound (>80dB)	OL	Hearing aids,	RC,(>5hour/day)
VB	10	3	Male	Moderate (41-60dB)	OL	Hearing aids,	RC(3-5hour/day)
PR	14	7	Male	Severe (61-80dB)	OL	Hearing aids,	RC(>5hour/day)
DB	14	7	Female	Severe (61-80dB)	OL	Hearing aids,	RC(>5hour/day)

Abbreviations: HI, hearing impairment; MCM, main communication mode; OL, oral language; RC, regular classroom

Table 3.2 Demographic Characteristics of Chinese participants with HI

Name	Age	Gender	Grade	Degree of HI	MCM	Auditory aids	Educational Placement
W-MJ	11	Female	4	Severe (61-80dB)	OL	hearing aids	Regular classroom(>5hour/day) and resource classroom (1-2hour/day)
G-H	8	Male	2	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day) and resource classroom(1-2hour/day)
L-YX	7	Male	2	Severe (61-80dB)	OL	hearing aids	Regular classroom(>5hour/day) and resource classroom(1-2hour/day)
L-QS	10	Male	3	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day) and resource classroom(1-2hour/day)
W-XY	12	Female	5	Profound (>80dB)	OL	cochlear implant	Regular classroom(>5hour/day) and resource classroom(1-2hour/day)
L-ZY	12	Male	5	Profound (>80dB)	OL	cochlear implant	Regular classroom(>5hour/day) and resource classroom(1-2hour/day)
L-Y	12	Female	5	Profound (>80dB)	OL	cochlear implant	Regular classroom(>5hour/day)
L-PY	12	Female	6	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
T-X	16	Male	8	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
H-MT	18	Male	9	Profound (>80dB)	OL	hearing aids,	Regular classroom(>5hour/day)
Y-XY	16	Female	9	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
J-Z	16	Male	9	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
B-WL	8	Male	3	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
SH-X	9	Male	4	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)
X-WX	8	Male	2	Profound (>80dB)	OL	hearing aids	Regular classroom(>5hour/day)

Abbreviations: HI, hearing impairment; MCM, main communication mode; **OL**, oral language; RC1, regular classroom; RC2, resource classroom

Note: Resource classroom is a room where a special education program can be delivered to a student with a disability, who qualifies for either a special classroom or regular classroom placement but needs some special instructions in an individualized or small group setting for a portion of the day.

3.5.2 Data collection method

The method adopted in quantitative inquiry is peer nomination. Three indexes of children's peer relationships, including peer acceptance, friendships and peer groups were assessed by this sociometric method. The rationale of peer nomination has been described in detail in above chapter 2. In this measurement procedure, children are asked to nominate three classmates whom "you like most to play with" and three classmates whom "you like least to play with" (seen in the appendix B). In order to avoid omission, a roster of classmates was provided to each participant. Every child in the classroom received both positive (like) nominations and negative (dislike) nominations.

3.5.3 Data analysis

Peer acceptance Because of different size of each class, numbers of nominations are standardized within each classroom or grade. On the basis of positive and negative nominations, scores are calculated for social preference and social impact for each child. *Social preference* refers to how much a child is liked by his/her classmates (Farmer & Farmer, 1996). The score of social preference is derived from number of positive nominations minus the number of negative nominations. *Social impact* refers to the visibility of a child in a classroom, which is, how well known by his/her peers (Farmer & Farmer, 1996). The score of social impact is the sum of number of positive nominations and the number of negative nominations.

According to the Z-scores of positive and negative nominations combined with social preference and social impact, children are classified into sociometric categories: popular, rejected, neglected, controversial, and average (for details, see the table 3.3).

Friendships Based on peer nominations, friendships in this study are operationalized as the numbers of mutual positive nominations. Children who nominate each other as the peer whom "like most" are recognized to have reciprocal friendships. The number of children receiving reciprocal positive nominations is the index of friendships.

Table 3.3 The calculation and criteria for each sociometric category

Categories	LM	LL	LM-LL	LM+LL
Popular	>0	<0	>1	
Rejected	<0	>0	<-1	
Neglected	<0	<0		<-1
Controversial	>0	>0		>1
Average			$-1 \leq LM-LL \leq 1$	$-1 \leq LM+LL \leq 1$

Note: Defining criteria are calculated in terms of standard scores; LM= liked most (positive nomination), LL=liked least (negative nomination)

Resource: Coie,J.,& Dodge,K.(1988). Multiple sources of data on social behavior and social status in school: A cross-age comparison. *Child Development*, 59, 815-829.

Peer groups In this study, a peer group is defined as an individual's small, relatively intimate group of peers who interact on a regular basis (often referred to as a clique) (Ryan, 2001). Peer group consists of individuals who share friendships, hang around and talk to each other as well as do activities together (Ryan, Wentzel, Baker, Brown, Davidson, & LaFontana, 2009). In line with Ryan's definition, a peer group here encompasses more than a best friend and is also distinct from the notion of "crowds".

A social network analysis computer program named UCINET VI (Borgatti, Everett, & Freeman, 1999) and sociograms are used to assign each participant into peer groups on the basis of mutual positive nominations. The purpose of this analysis in the study is to identify small and tight cohesive subgroups of children. A cohesive subgroup with two properties in terms of accessibility and size was analyzed. Accessibility refers to being close to each other, with not more than two steps from all other members in this study; while size refers to a minimum number of three members. The form used here is called an n-clique (n=2), which is viewed as appropriate to identify the children's cohesive subgroups in a classroom (Frosad & Pijl, 2007). A 2-clique is based on reciprocal relationships and a subgroup is consisted of at least three members. Therefore, following criteria are used to determine peer groups: (1) a

path (direct or indirect) has to exist from each member to every other member of the peer group and (2) there cannot be more than two indirect paths from any one member. These criteria are consistent with the study on analyzing peer group of children (Frosad & Pijl, 2007). The UCINET computer program generates lists of peer groups that meet these two criteria. Finally, a large sociogram is drawn and, each peer group and all individuals within each peer group are independently checked against each list, to ensure that they meet the criteria. In the sociogram, each child may have one of five positions in the social network: (1) clique member, with direct links between all of the members or indirect links not more than two paths to other members, (2) loose group member, who was in less interconnected group than cliques, (3) dyad member, in reciprocal friendships within two members, (4) isolate, having no reciprocated friendship in the classroom, and (5) liaison, who is only the intermediary between peer groups but not belonging to any group. In this study, only cliques are considered as cohesive subgroups/peer groups to be analyzed.

There is an example of social networks in a classroom and peer groups with children in the figure 3.3 and an example of 2-clique with pupils in figure 3.4. In the figure 3.3, the child named RD is at the edge of the social networks because no peers positively his name and he did not nominate positively anyone to be friend either. The red lines mean reciprocally nomination as friend and blue lines are only one-way nomination others but no reciprocal nomination. The arrows mean the direction of children who nominate others positively. In the matter of PR, who is one of the targeted participants with HI, he nominated KCH as friend without reciprocal nomination by KCH who nominated TK1 positively. In the figure 3.4, there are five children including KCH, MT, PR, RD and TK2 were not belonged to any peer group.

Figure 3.3 The sociogram of social networks in one classroom

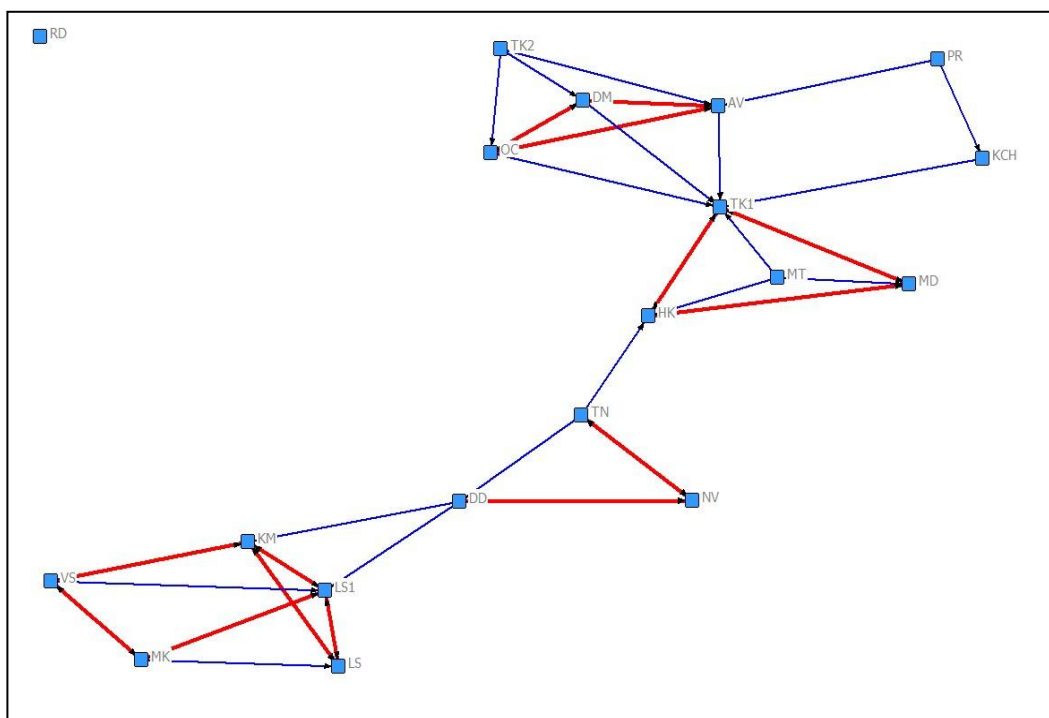
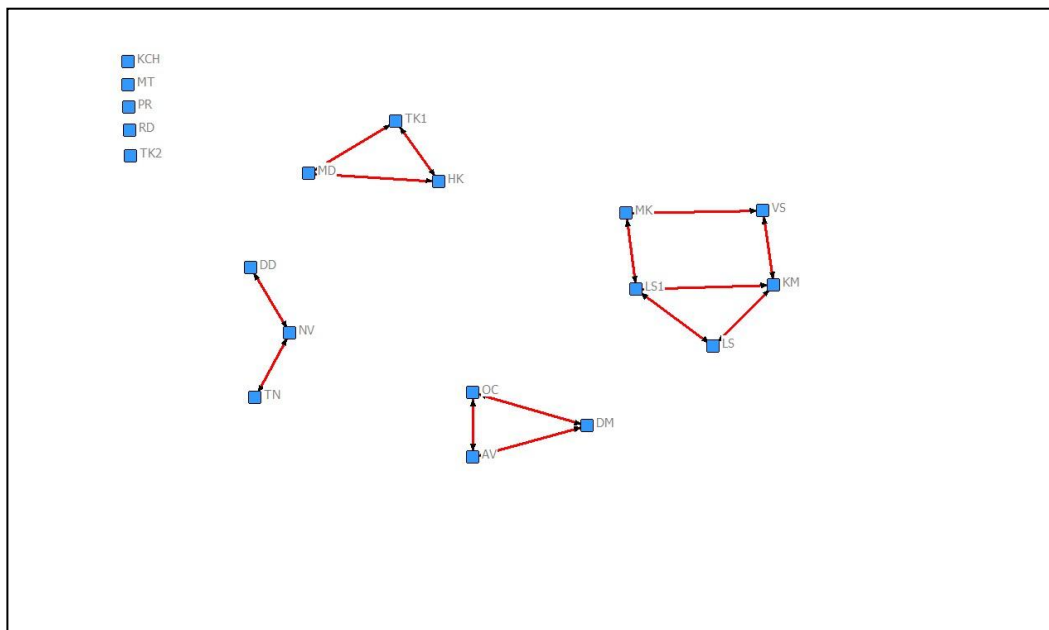


Figure3.4 The peer groups (2-cliques)in one classroom



3.6 Qualitative data collection

The procedure of qualitative data collection was based on the grounded theory (Glaser, 1998; Charmaz, 2000), in order to uncover what factors influencing the peer relationships of children with HI in regular classrooms. The ground theory, which is an approach whereby researchers become increasingly grounded in raw data and develop or refine theory based on the data, is appropriate for this study. Semi-structured interviews were the predominant mode of data collection.

3.6.1 Participants

In this qualitative procedure, children with HI, hearing peers of them, their teachers and some professionals received the interviews. In keeping with the aims of the study and qualitative approach guided by the grounded theory, sampling was purposeful firstly and then theatrically compliance with the analysis of data. Different groups of participants were selected to be interviewed, with the purpose of collecting rich information to best illuminate the questions and yield insights and in-depth understanding from different perspectives.

In Czech, there were the children with HI (n=10) who participated in both quantitative survey and interview, 10 hearing classmates of participants with HI, including 6 hearing classmates in one group focused interview and 4 hearing classmates in individual interviews were purposely selected in this procedure. These hearing classmates were at grade 4, 6, 7, and 9 and participants with group-interview were at grade 7. Six teachers who taught participants with HI and two professionals in special education who worked as itinerant teachers of the children with HI also received the interviews. These 2 professionals were very familiar with these children with HI in the present study and participated in the whole procedure of collecting data in Czech. In total, there were 26 participants in total selected to be interviewed in this study in Czech.

In China, similarly, the children with HI (n=15) participated in both quantitative and qualitative data collection procedures. 12 hearing classmates of participants with

HI, including 6 hearing classmates in one group-interview and 6 hearing classmates in individual interviews. These hearing classmates were at grade 4, 5, 6, 8, and 9 and participants with group-interview were at grade 8. Five teachers who were in charge of the class where participants with HI were in and knew them very well, two other teachers who worked in the resource classroom for the deaf children, and one professional in special education who worked as itinerant teachers of the children with HI, received the interview. The two resource classroom teachers and the professional were selected to be interviewed, because they were familiar to the children with HI in the present study and participated in the procedure of data collecting in China. Overall, there were 35 Chinese participants in total selected to be interviewed in the qualitative data collection process.

It has to be stated that there would be a language problem during the interviews in Czech, because the researcher of this study is Chinese who speak English well but are not good at Czech. Three assistants who were the undergraduates in the Palacky University, Czech people and good at English, provided great help to solve the communication problem. With the help of translation from these assistants, interviews went smoothly. In order to make interviews understood well, the major researcher and each assistant who was also good friend of the author discussed the questions and probable issues during the interviews in detail several times before every formal interview, in order to make interviews go well.

3.6.2 Interview Questions

The goal of the qualitative procedure was to complement and elaborate on the results of the statistical tests (Creswell et al., 2003). The researcher wanted to inquire what important variables are closely associated to and affect the peer relationships of children with HI in regular classrooms from various perspectives, from children with HI themselves, hearing peers, their teachers and professionals in deaf education. All the interview questions focused on the social relationships between children with HI and their peers, especially on influencing factors underlying them. The interviews incorporated an initial list of questions serving as a guideline only, which are very

open, so that unanticipated information can emerge. The researcher prepared an informal interview guide, in advance of interviews consisting of the issues planned to explore. During the interviews, however, researchers asked participants very open-ended questions, modified questions according to the participants' response, and followed with more discussions that were specific on topics related closely with the research agenda.

Children with HI were asked mostly opened questions about their relationships with classmates, experiences at school, communications and interactions with peers, difficulties they faced and coping strategies. In the hearing classmates of children with HI interviews, the questions fell into two categories: first, questions were related to relationships and interactions with children with HI; second, questions were related to their attitudes towards children with HI. In the teachers' and professionals' interviews, three categories of questions were asked. First, questions were involved to the social relationships and interactions with classmates; second, questions related to their experience of working with children with HI; third, their attitudes toward inclusive education for students with HI. The interviews' questions in detail could be seen in the Appendix C.

3.6.3 Procedure

A pilot study was conducted to examine the questions of interview and allow researcher to receive feedback on interviewing skills and interview format. One children with HI in regular school, one hearing classmates and one teacher participated in the pilot study and they did meet the study participation criterion. In the pilot study, we found one participant minded the tape-recorded during the interviews; therefore, we decided to make notes during the formal interviews with participant's permission. After the pilot interviews, the researcher modified the questions protocol slightly to be more appropriate; however, since no significant changes were made to the existing interview questions, the pilot interviews were included in final analyses.

Participants' recruitment for the formal study occurred through help from

professionals who worked for deaf children and were familiar with these participants with HI and their teachers in the study. Six hearing children in each country who are classmates of one participant with HI were selected to participate in a group interview. Except this one group-interview, other interviews were conducted in one to one. During the interviews in Czech, speech competence of most participants with HI was good enough to express their opinions and understood by interviewers, in addition with the help of translators and social worker, interviews went easily. However, some Chinese participants with HI's speech were not intelligible well and had difficulties in understanding interviewer in the study, therefore, spoken language as well as writing, gesture and little sign language were used in order to make each other understood well during communication. All interviews took average 60 to 90 minutes.

The collection of quantitative and qualitative data was gathered during about two months in each country (from April to June, 2013 in Czech and from September to November, 2013 in China). During the data collection procedure, the contents of interviews as well as notes, thoughts, impression of the participants, and questions emerged in mind were written down and compiled by the principal investigator as soon as possible to be prepared for analysis. Meanwhile, the analysis of data was conducted with accompanying the process of interview for producing and modifying the theory.

3.6.4 Development of theoretical sampling strategy

Data collection and analysis proceed simultaneously in the qualitative procedure. Many themes and categories emerged during initial analysis, providing a framework to develop both the interview topic guide and the theoretical sampling strategy. Firstly, the sample was selected on purpose, such as the all participant with HI and some of hearing children who enrolled quantitative inquiry were enrolled in the qualitative inquiry. Then, with the analysis proceeding and topics emerging, teachers who taught these children were considered to be selected, and then professionals for deaf children were theoretically developed to enrich the information and perspectives for uncovering the factors contributing to peer relationships of children with HI in regular

schools. Data collection was stopped when concurrent data collection and analysis suggested theoretical saturation.

3.6.5 Data Analysis

The interview data were analyzed using constant comparative method aiming at identifying theory that emerges from the data analysis and that is grounded in fieldwork (Strauss & Corbin, 1998). This approach of data analysis is viewed as a process of breaking down, organizing, and reassembling data to develop a different understanding of phenomena (Strauss & Corbin, 1998). It allows researcher to break interview data into smaller segments that were subsequently organized by key dimensions. In this study, constant comparative analysis was used to systematically and inductively code the interview data to build an understanding of different perspectives on social relationships of children with HI with hearing peers in regular schools. The coding procedures were implemented with a three-tiered procedure for open, axial, and selective coding by using interview text notes and memos. Comparison is a dominant principle of analysis process in qualitative research and considered as the main intellectual activity that underlies all analysis in grounded theory (Boeije, 2002). Boeije (2002) developed a step by step approach for constant comparison in qualitative analysis, which focusing on constant comparing in the analysis process. In matter of this study, three steps of comparison were used in the coding, including comparison within a single interview, comparison between interviews with in the same group, and then comparison of interviews from different groups.

Open Coding

Open coding is the first step. It is described as “the process of breaking down, examining, comparing, conceptualizing, categorizing data” (Straussand & Corbin, 1990, p.60). Firstly, raw data in this phase are examined to begin to develop concepts. Besides developing concepts, open coding also is involved the formulation of categories. A category is defined as “classification of concepts” (Straussand & Corbin, 1990, p.61). Categorization in grounded theory is viewed as a process of not just

grouping concepts together but also arraying concepts (LaRossa, 2005).

In this study, after transcription, interview data was examined line by line and was broken down into fragments in order to manage and conceptualize them through assigning labels to participants' ideas in interviews that represent their meaning regarding their views. An initial coding step in the analysis process resulted in a list of over 200 concepts based on all interviews. In accordance with constant comparison of interview data within a single interview, comparison between interviews with in the same group, and comparison of interviews from different groups, some major categories were developed after grouping concepts.

Axial coding

Axial coding is the next procedure in grounded theory that comes immediately after the open coding step to assembled data in new ways by making connections and links between categories during this process (Strauss and Corbin, 1990). It also has been defined as "a process of relating categories to their subcategories" (Strauss & Corbin, 1998, p.123). Subcategories are categories that answer the questions of "when, where, why, who, how, and with what consequences" around a focal category (Strauss & Corbin, 1998, p.125). In this study, codes from interviews were refined to find out core codes and these codes were compared with others, for the purpose of finding similarities and differences in terms of concepts that can be placed together within subcategories.

Selective coding

The final tier of analysis involved selective coding, which has been described as the process by which categories are related to the core category which ultimately becoming the basis for the grounded theory (Glaser, 1998, Strauss & Corbin, 1990). The core category is the one category among all the categories generated during coding that, in addition to other qualities, is theoretically saturated and centrally relevant (LaRossa, 2005). The core category can be any kind of theoretical code; it could be a process, a typology, a continuum, a range, dimensions, conditions or consequences among other forms and its primary function is to integrate the theory and render it dense and saturated (Holton, 2010). In line with Glaser's (1998)

approach, the goal of the study was to organize categories or themes into one theoretical scheme with the greatest explanatory power. This selective coding process was aided through the use of memos, notes, and diagrams during analysis.

3.7 Trustworthiness

Credibility According to Patton (2002), credibility is particularly dependent on the credibility of the researcher, because the researcher is seen as the instrument of data collection and the center of the analytic process. Therefore, researcher should make explicit their qualifications, experience and perspective to enhance credibility. The credibility of this study was addressed in both the design and implementation of the study through the major researcher's rapport with students, accurate record keeping, and complete data collection with support from professionals in special education. The major researcher of present study is a doctoral student in special education and studied psychology, with experience working with typical children and children with hearing impairment, which contribute to keep good touch in each participant. In addition, the major researcher has some experience doing studies on social relationships of children; therefore, she has competence to conduct the study in accurate way. Meanwhile, the major researcher maintained a personal log throughout data collection that included her thoughts about the interviews, descriptions of methodological choices, and theoretical notes for increasing the study's credibility.

Dependability In this study, the major researcher adopted two ways to achieve dependability of the study. First, in order to offset potential her bias and to ensure accuracy, including peer review and debriefing. She asked one colleague with rich experience in quality inquiry to analyze some transcripts from the main study, whose analysis was congruent with her own interpretation, thus enhancing the rigor of the analysis. Besides, the major researcher had readily available access to a supervisory team to provide some suggestions and feedbacks on the clarification, organization, and interpretation of categories. Secondly, a summary of what was said during the interview, as well as findings and interpretations were presented to some participants

for feedback to determine if she had presented a true picture from their perspectives.

3.8 Ethical considerations

The research ethics, as the moral standards of the study, are principally concerned with the effect of research on people. Importantly, the principle underlying 'research ethics' are universal, that is, the researcher has an obligation to respect the rights, values, desires and needs of the participants (Walliman, 2008, p.181) . According to the regulation of the Institutional Review Board (IRB), conducting the research must get the permission from participants, with providing information about the principal investigator, the research title and types, number and type of participants and type of view requested (IRB, 2013). Concretely, there were three ethical considerations that were emphasized when conducting this study. Firstly, an informal consent was developed. The informal consent contained all possible information on the goal of the investigation, the procedures followed during the investigation, and the participants are guaranteed certain rights, agree to be involved in the study, and acknowledge their right are protected. Secondly, actions has been taken to protect participants from harm was. In order to protect the rights of the participants, the researcher gave them a clear understanding of the issues on research before asking them to take part. Additionally, any sensitive topics were addressed in an appropriate way, generally through clear and direct questions to avoid any ambiguity. Furthermore, the investigators, during the interviews, remained alert to any signs of discomfort and if this presented, the participants were checked to be willing to continuance with the interview. Thirdly, the anonymity of participants was protected by numerically coding each returned questionnaire or writing initials of names representing of the full names, and keeping the responses confidential. While dealing with the data from the interview, the fictitious names for sue in participants' description and reporting the results. Moreover, participants were told that summary data and results would be disseminated only to the professional community, but in no way it would be possible to trace responses to individuals.

Chapter 4 Quantitative Results

The quantitative survey was to examine the peer relationships of children with HI in regular classrooms with compared to their hearing classmates. The analysis was based on three different indexes for peer relationships. The first index measured ‘peer acceptance’, based on the number of positive and negative nominations received from the classmates. Next, friendship which children had in their classroom was considered as the second index. Friendship in this study was elaborated as having mutual relations with other peers in class, on the basis of requiring a reciprocal choice, which meant two children positively nominated each other. The third index focused on peer groups in the class, referring to the subsets of actors among whom there were relatively strong, direct, intense, frequent or positive ties. These three indexes are analyzed and the findings from the investigation both in Czech and China are presented in this chapter.

4.1 The peer relationships of Czech children with HI in regular classrooms

The results of peer acceptance, friendships and peer groups of Czech children with HI in the classroom are presented in this section. The results have been described separately in four parts, including the overall description, and comparisons between children with HI and their counterparts with normally hearing in peer acceptance, friendships and peer groups, in order to draw the status quo of peer relationships of children with HI in classroom.

4.1.1 The overall description of peer relationships of children with HI

The overall descriptive statistic for the variables related to the peer relationships of children with HI in the regular classrooms include the Z-scores of positive nominations, negative nominations, social preference, and social impact, the social status which each child have been categorized, and the number of friendships. The number of positive and negative nominations for each child was collected from the

social metric method--peer nomination and was analyzed by SPSS 16.0 statistic software. Because of differences in size of class, the Z-scores of positive and negative nominations were used for further analysis. The Z-scores of social preference are obtained from the Z-scores of positive nominations subtracting the Z-scores of negative nomination. The Z-scores of social impact are obtained from the Z-scores of positive nominations plus the Z-scores of negative nomination. The social status is categorized into five types: popular, rejected, neglected, controversial and average. The criteria have been described in methodology part (Chapter 3). The number of friendships comes from the number of reciprocal positive nominations the children obtained from other children in the classroom, representing how many friends each child with HI has. $Z=0$ represents at the average level in one class, $Z>0$ means above the average and $Z<0$ is below the average. The descriptive statistics of peer relationships of children with HI can be seen in table 4.1.

Table 4.1 The descriptive statistics of peer relationships of Czech children with HI

Name	Positive Nomination (Z)	Negative Nomination(Z)	Social Preference(Z)	Social Impact(Z)	Social Status	Friendships (N)
DB	0.591	0.711	-0.196	1.017	Controversial	2
NK	1.472	-1.084	1.869	0.541	Popular	3
MK	-0.057	-1.323	1.060	-1.043	Neglected	3
OK	0.655	-1.127	1.164	-0.482	Popular	0
LP	-0.144	-0.187	0.069	-0.280	Average	1
PP	-1.157	0.575	-1.013	-0.263	Rejected	1
LR	-0.768	0.393	-0.760	-0.522	Average	1
KK	-0.954	-0.024	-0.470	-0.526	Average	0
VB	-0.854	0.818	-1.070	-0.219	Rejected	0
PR	-1.682	0.125	-0.633	-0.412	Average	0

4.1.2 Peer acceptance

The positive nomination, negative nomination, social preference, social impact and social status in this study were considered as indicators of peer acceptance, representing the likability of children by the whole class.

Two groups of participants in this study were compared. The targeted group consisted of participants with HI (n=10) and the matched group was comprised of

hearing children who were classmates of participants with HI (n=188). Because of small size of targeted group and unknown distribution of variables, the T-samples non-parametric test was used to test the differences in positive nomination, negative nomination, social preference, and social impact between the two groups of participants. The results in detail were showed in the table 4.2.

Table 4.2 Comparison between Czech children with and without HI in positive nomination, negative nomination, social preference and social impact

	Children with HI (n=10)	Hearing children (n=188)	Z	P
Positive Nomination (Z)	-0.148	0.105	-0.759	0.454
Negative Nomination (Z)	-0.091	0.018	-0.170	0.868
Social Preference (Z)	0.009	-0.008	-0.572	0.573
Social Impact (Z)	-0.184	0.224	-0.323	0.751

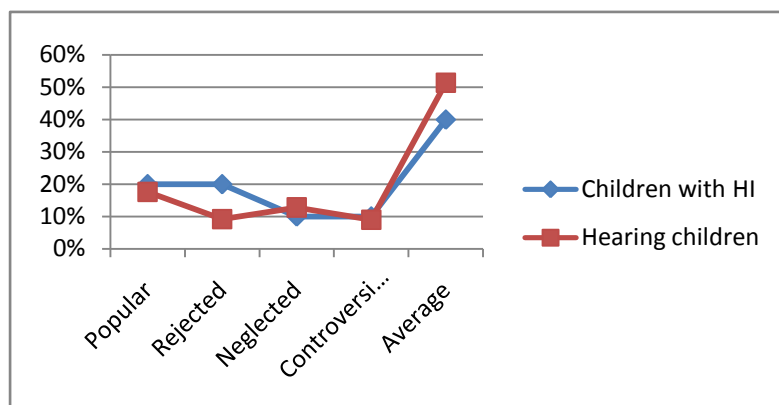
By the mean of Mann-Whitney U test, the significance of the differences between the children with HI and their typical peers was calculated. The outcomes showed that that there were no significant differences in positive negative nomination, negative nomination, social preference and social impact between participants with HI and hearing participants (Positive nomination: $Z=-0.759$, $P=0.454$; Negative nomination: $Z=-0.170$, $P=0.868$; Social preference, $Z=-0.572$, $P=0.573$; Social impact: $Z=-0.323$, $P=0.751$; all $p>0.05$).

As regard the social status, children were categorized into the popular, rejected, neglected, controversial and average groups according to the criteria of classification (see Chapter 3). The number and percentages of children with HI and hearing children in each category of social status were presented in the table 4.3 and the graph 4.1.

Table4.3 The number and percentage of Czech children with and without HI in social status

Categories	Children with HI (n=10)	Hearing children (n=188)
Popular	20% (n=2)	17.6% (n=33)
Rejected	20% (n=2)	9.2% (n=17)
Neglected	10% (n=1)	12.8% (n=24)
Controversial	10% (n=1)	9% (n=17)
Average	40% (n=4)	51.4% (n=97)

Graph 4.1 Comparison between Czech children with and without HI 1
in social status(%)



As the table 4.3 and graph 4.1 shown, 20% of children with HI in this study were popular and in the hearing peer group without HI 17.6% were regarded as popular. Of the children with HI 20% belonged to the 'rejected' group, while in the reference population only 9.2% were regarded as 'rejected'. The differences between the two groups were minimal with respect to the percentages categorized as neglected and controversial. There was 4 child in the group with HI (40%) was regarded as average, and 97 of hearing children (51.4%) belonged the average group. The findings showed that the percentages of children with HI and hearing children in popular, neglected, controversial and average children were similar. As can be seen in the above table 4.3, more children with HI were regarded as 'rejected' (20%) than hearing children(9.2%) in their classrooms, nonetheless, distribution over the social status groups did not significant differ for the children with HI and hearing children (Fisher's Exact Test =1.54, $p>0.05$). These outcomes suggest that the peer acceptance of Czech children with HI seem to be similar to their hearing peers in the regular classrooms.

4.1.3 Friendships

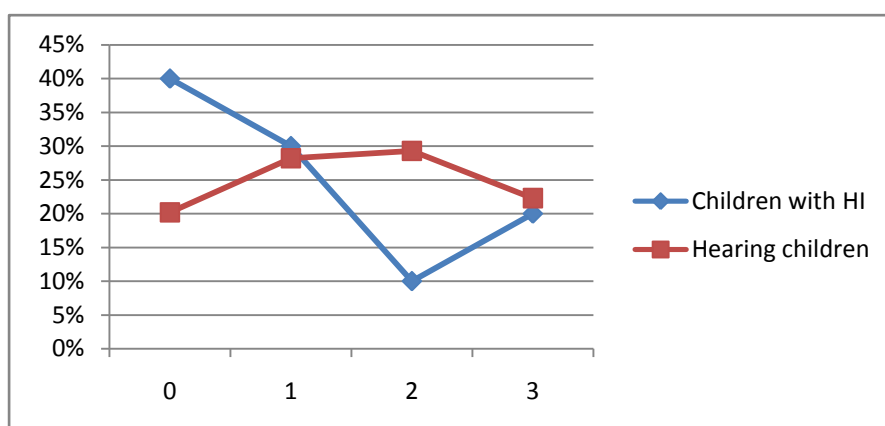
Friendships, as an important component of social relationships with peers, present the reciprocal relationships between two individuals. Friendships in this study were operationalized as the number of reciprocal positive nominations obtained in the task of peer nomination. The range of number of friends is from 0 to 3 for the numbers of

friends, as each child was permitted to choose maximum three names positively. The numbers and percentages of children with HI and hearing children who have no friend, one friend, two friends and three friends were presented in detail in the below table 4.4 and the graph 4.2.

Table 4.4 The number and percentages of friends of Czech children with and without HI

Number of friends	Children with HI (n=10)	Hearing Children (n=188)
0	40% (n=4)	20.2% (n=38)
1	30% (n=3)	28.2% (n=53)
2	10% (n=1)	29.3% (n=55)
3	20% (n=2)	22.3% (n=42)

Graph 4.2 Comparison between Czech children with and without HI in friendships



The data in the above table and graph show there were 4 children in the group of children with HI (40%) had no friend, while in the group of hearing peers 38 (20.2%) without friendships. Of the children with HI 10% had two friends, while in the group of hearing classmates 29.3% were identified as children with two friends. The percentages of children who had one friend and three friends in both groups appeared to be equivalent. There was no significant difference in the distribution over the number of friends between children with HI and hearing children (Fisher's Exact Test =2.94, $p>0.05$), while it was worth noting that much more children with HI (40%) tended to have no friend in their classroom as compared to their hearing peers (20.2%).

4.1.4 Peer groups

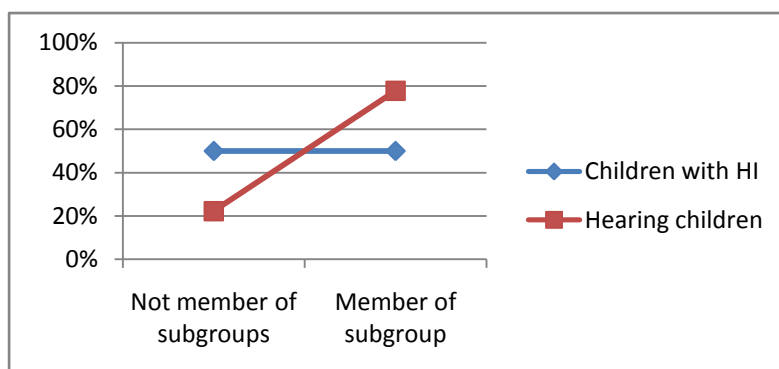
The peer group is operationalized in this study as the 2-clique, being regarded as a cohesive subgroup in which members are close and intensive. The peer group has characteristics in terms of accessibility and size. Accessibility in this study refers to being not more than two steps from all other members, and size here with reference to a minimum number of three members within a peer group. Such peer group often called a 2-clique, which is based on reciprocal relations, and thus children without friendships cannot be part of a peer group. In accordance with the operationization of the peer group, when two children who only have reciprocally relations each other while have no reciprocal relations with others, such children are considered to only have friendships but don't belong to any peer group. The number and percentages of children with HI and hearing children who were and were not member of peer groups in the classrooms were presented in the below table 4.5 and graph 4.3.

Table 4.5 The number and percentages of Czech children with and without HI in peer groups

	Children with HI (n=10)	Hearing children with (n=188)
Not member of peer group	5(50%)	42 (22.3%)
Member of peer group	5(50%)	146 (77.7%)

Graph 4.3 Comparison between Czech children with and 1

without HI in peer groups



As can be seen in the above table and graph, that there were 50% children with

HI have no membership of any peer group, while in the children without HI only 22.3% did not belong to peer group. As a result, only 50% of children with HI have memberships of peer groups, while of the reference group without HI 77.7% belonged to at least one peer group in the regular classroom. The results from the Chi-square test showed significant difference in the membership of peer groups between these two groups of children ($X^2(1, N=198) = 4.01, P < 0.05$). It was demonstrated that the rate of children with HI (50%) who were out of any peer group in the regular classrooms was significantly higher than those hearing peers (22.3%). The finding implied that Czech children with HI were more likely to be rejected by peer groups than their hearing peers in regular classrooms.

4.2 The peer relationships of Chinese children with HI in regular classrooms

Similar to the procedure in Czech study, the task of peer nomination was conducted to Chinese children with HI in the regular classrooms, as well as their hearing classmate. The Z-scores of positive nomination, negative nomination, social preference, social impact, categories in social status, number of friends and membership of peer groups are presented in the this section.

4.2.1 The overall description of peer relationships of children with HI

The overall descriptive statistic for the variables related to the peer relationships of children with HI in regular classrooms obtained from investigation in China. The means of calculating and analyses of these variables were same to that for data in Czech investigation. The Z-scores of positive nominations, negative nominations, social preference, and social impact, the social status which each child had been categorized, and the number of friends were presented for further analysis. The overall descriptive statistics are shown in the table 4.6.

Table 4.6 The descriptive statistics of peer relationships of Chinese children with HI

Name	Positive Nomination (Z)	Negative Nomination (Z)	Social Preference (Z)	Social Impact (Z)	Social Status	friendship (N)
W-MJ	-0.352	0.05	-0.28	-0.18	Average	1
G-H	2.73	2.97	-1.14	3.26	Controversial	2
L-YX	2.29	2.01	-0.41	2.42	Controversial	1
L-QS	0.06	-0.51	0.41	-0.48	Average	3
L-ZY	-1.37	1.52	-2.0	0.15	Rejected	0
W-XY	-0.40	-0.80	0.30	-0.87	Average	1
L-Y	-0.40	-0.80	0.30	-0.87	Average	2
L-PY	0.58	-0.23	0.42	0.08	Average	3
T-X	-1.63	0.17	-0.90	-0.89	Average	0
H-MT	-0.40	0.25	-0.34	0.12	Average	2
Y-XY	0.63	-0.30	0.45	-0.08	Average	2
J-Z	-0.40	-0.30	0.13	-0.46	Average	2
B-WL	0.00	-0.35	0.31	-0.33	Average	2
SH-X	-0.41	1.29	-1.06	0.93	Rejected	1
X-WX	-0.79	3.02	-2.17	1.26	Rejected	0

4.2.2 Peer acceptance

Similarly to analysis for data from investigation in Czech, positive nomination, negative nomination, social preference, social impact, and social status were considered as different indicators for peer acceptance of children here.

The differences in positive nomination, negative nomination, social preference and social impact between Chinese participants with HI and matched participants were examined by the results of Mann-Whitney U test. The results can be seen in the table 4.7.

Table 4.7 Comparison between Chinese children with and without HI in positive nomination, negative nomination, social preference and social impact

	Children with HI (n=15)	Hearing children with (n=454)	Z	P
Positive Nomination (Z)	-0.011	-0.000	-0.093	0.468
Negative Nomination (Z)	0.533	-0.018	-1.818	0.034
Social Preference (Z)	-0.400	0.013	-1.752	0.040
Social Impact (Z)	0.271	-0.009	-0.810	0.211

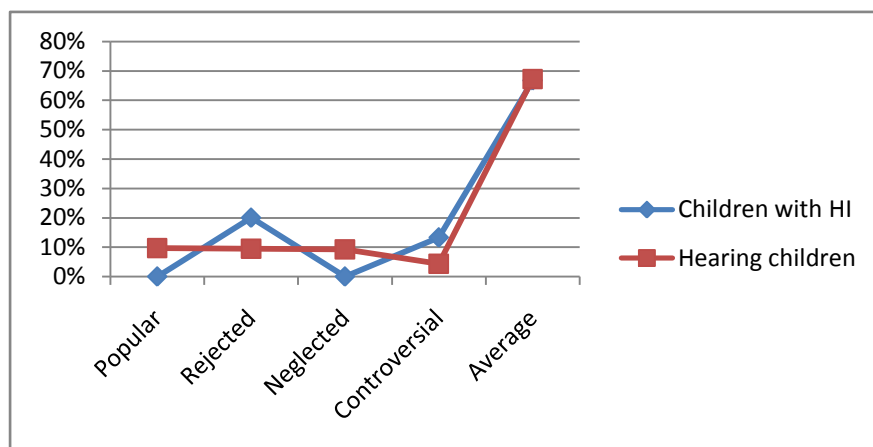
The results from Mann-Whitney U test showed that the differences in negative nomination and social preference between children with HI and hearing children were significant (Negative nomination: $Z=-1.818$, $p=0.03$; Social preference: $Z=-1.752$, $p=0.04$; both $p<0.05$). Compared with hearing children, negative nominations received by children with HI was significantly more, while their social preference was significant lower. In other words, children with HI were more likely to be rejected and less preferred by their classmates. The results did not show significant differences in positive nomination and social impact between these two groups of participants (Positive nomination: $Z=0.093$, $p=0.47$; Social impact: $Z=-0.810$, $p=0.21$; both $p>0.05$). The detailed descriptions can be found in the below table 4.7.

As respect to the social status, there were no participants with HI categorized to be the popular group, 20% of them were regarded as rejected, no children belonged to the neglected group, 13.3 % of them were controversial children and the left 66.7 % in the group of children with HI were regarded as the average. Relatively, in the group of hearing children, 9.7% of them were belonged to the popular category, 9.5% were regarded as rejected, 9.3% were categorized into the neglected group, 4.4% were controversial and the left 67.2% were regarded as average in social status. All the number and percentages in each social category were presented in the below table 4.8, and the visible comparison can be seen in the graph 4.4.

Table 4.8 The number and percentage of Chinese children with and without HI in social status

	Children with HI (n=15)	Hearing Children (n=454)
Popular	0% (n=0)	9.7% (n=44)
Rejected	20% (n=3)	9.5% (n=43)
Neglected	0% (n=0)	9.3% (n=42)
Controversial	13.3% (n=2)	4.4% (n=20)
Average	66.7% (n=10)	67.2% (n=305)

Graph 4.4 Comparison between Chinese children with and without HI in social status



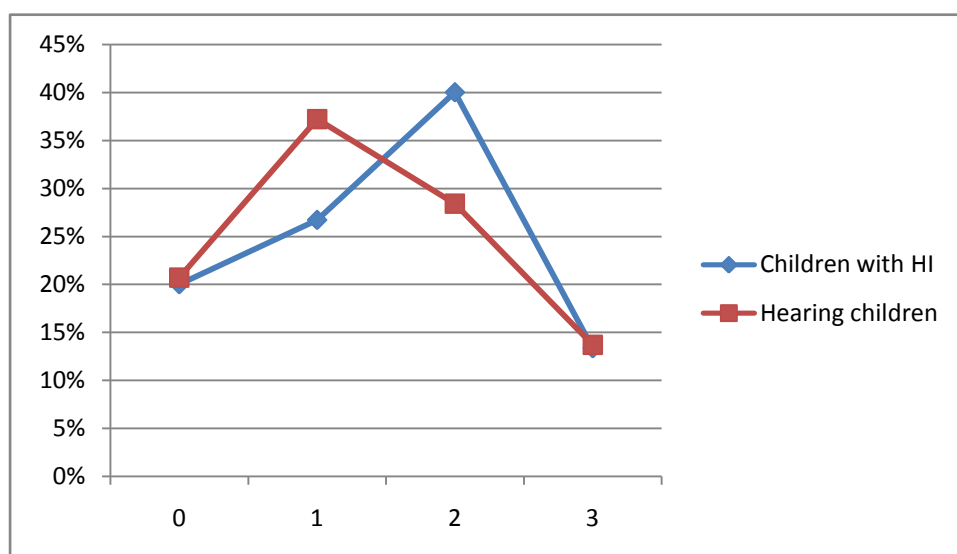
The differences in distribution over the social status categories were tested by the Fisher's Exact Test. The outcomes demonstrated there was no significant difference between children with and without HI (Fisher's Exact Test =6.08, $p>0.05$). Nonetheless, there was no children with HI were regarded as popular, and much more children with HI (20%) were categorized into the rejected group as compared to hearing participants (9.5%). The findings may imply that Chinese children with HI are more likely to be disliked and rejected by peers in the regular classrooms.

4.2.3 Friendships

The number of friends ($n=0, 1, 2, 3$) and percentage in each category of Chinese children with and without HI are presented in the table 4.9 and the visual comparison between them are presented in the graph 4.5.

Table 4.9 The number and percentage of friends of Chinese children with and without HI

	Children with HI ($n=15$)	Hearing Children ($n=454$)
0	20% ($n=3$)	20.7% ($n=94$)
1	26.7% ($n=4$)	37.2% ($n=129$)
2	40% ($n=6$)	28.4% ($n=169$)
3	13.3% ($n=2$)	13.7% ($n=62$)

Graph 4.5 Comparison between Chinese children with and without HI in friendships

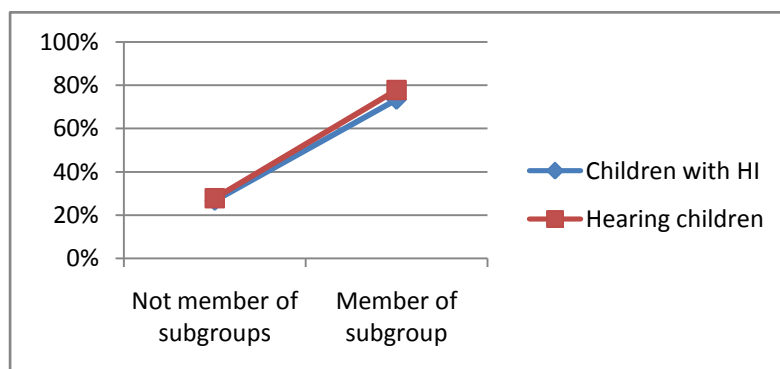
As the results presented in above table 4.9 shown, in the children with HI group, 3 of them (20%) had no friend, 4 of them (26.7%) had one friend, 6 of them (40%) had two friends and 2 of them (13.3%) had three friends in their classroom. In the hearing children group, 94 children (20.7%) were identified to have no friends, 129 children (37.2%) had one friend, 169 children (28.4%) had two friends, and the left 62 children (13.7%) had three friends in the class. The results from the Fisher's Exact Test suggested no significant difference in the friendships between children with HI and their hearing classmates (Fisher's Exact Test=0.20, $p>0.05$). Especially, the percentages of children with HI who has no friend and three friends are similar to that of hearing children. Overall, the mutual relations with peers of Chinese children with HI appear to be equal to that of their hearing classmates.

4.2.4 Peer groups

The peer groups of all children with and without HI in their classroom were identified based on reciprocal friendships along with accessibility and size. The membership of peer groups of both Chinese children with HI and their hearing peers were presented in the below table 4.10 and the visual comparison was presented in graph 4.6.

Table 4.10 The number and percentages of Chinese children with and without HI in peer groups

Group	Children with HI (n=15)	Hearing children with (n=454)
Not member of peer group	4(26.7%)	126 (27.8%)
Member of peer group	11(73.3%)	328 (72.2%)

Graph 4.6 Comparison in peer groups between Chinese children with and without HI

As can be seen in the above table 4.10, of children with HI 26.7% were identified as no memberships of any peer group, and 73.3% were member of at least on peer group in their classroom. In the reference group, there are 27.8% hearing children were not member of any peer group and 72.2% of them had memberships of peer groups in their class. The Chi-square test was used to test the difference in memberships of peer groups between these two groups and the results showed no significant difference between these them ($X^2(1, N=469) = 0.01, P > 0.05$). The findings demonstrated that the percentages of Chinese children with and without HI who are part of peer groups were almost the equivalent.

4.3 Summary

The similar data collection and analysis procedures in this study were conducted in both Czech and China, with purpose of investigating the peer relationships of children with HI who are educated in regular classrooms with typical children. The task of peer nomination was used to collect data. Dominant dimensions related to the peer relationships of children with HI in this study focused peer acceptance,

friendships and peer groups were analyzed with compared to their hearing classmates. On the base of the positive and negative nomination, social preference, social impact, social status, friendships and membership of peer groups were further calculated to illustrate the research problem. Differences in each dimension between participants with HI and their matched hearing participants were tested to clarify if they were included socially in the inclusive education.

Peer relationships of Czech children with HI The findings from Czech investigation showed that: (1) there were no significant differences in positive negative nomination, negative nomination, social preference and social impact between children with HI and hearing children (all $p>0.05$); (2) results demonstrated no significant difference in the distribution over the social status groups between children with and without HI; (3) It was noted that children with HI who had no friend (40%) were much more than hearing children without friendships (20.2%), even though the difference did not reach at significant level (0.05) ; (4) Children with HI who were identified to not be the member in any peer group were significant more than hearing children ($p>0.05$).

Peer relationships of Chinese children with HI The findings from investigation in China showed that: (1) the negative nominations children with HI received were significantly more than hearing children, while their social preference was significant lower than hearing children ($p<0.05$); (2) even if the outcomes demonstrated no significant difference between children with and without HI, nonetheless, it was a remarkable fact that there was no children with HI were regarded as popular, and much more children with HI (20%) were categorized into the rejected group as compared to hearing participants (9.5%); (3) the percentages of children with HI who had no friend and had friends were similar to that of hearing children; (4) it was equivalent between children with HI and hearing children in their membership of peer groups in regular classrooms.

In summary, peer acceptance of Czech children with HI was not significant different from their hearing peers, while the friendships and membership of peer groups showed significant less than their hearing classmates. With reference to

Chinese children with HI, their peer acceptance was significantly poorer than their hearing peers, that is, they tended to be more rejected and are likely to be less popular than hearing children. However, their friendships and membership of peer groups in the class were similar to that of hearing children.

It could be concluded from the findings that the overall peer relationships of children with HI in regular classrooms both in Czech and China seemed to be poorer than hearing peers. In addition, the patterns of peer relationships of Czech children with HI and Chinese children with HI in regular classrooms appeared to be different. Children with HI in Czech were accepted equivalently to their hearing classmate, while they tended to have less friends in the class and were more likely to have no memberships of peer groups as compared to their hearing classmates. Relatively, children with HI in China appeared to be less accepted by their peers in their classrooms when compared to hearing peers, however, their friendships and memberships of peer groups were paralleled to their typical classmates.

Chapter 5 Qualitative Results

The qualitative inquiry was conducted to explore the factors contributing to child with HI social relationships with their hearing peers in regular classrooms both in Czech and China. There are deficient studies focusing on influencing variables on peer relationships of children with HI in the inclusive educational settings and no appropriate theory to interpret their poorer relationships with hearing peers in regular classrooms. In the qualitative procedure, the author adopted the qualitative research design based on the ground theory in order to uncover the factors affecting peer relationships of children with HI in the regular classroom and further attempted to develop a theory to explain the phenomenon.

Semi-structural interviews were conducted to children with HI, their hearing classmates and teachers, and professionals in deaf education with purpose of getting rich views from different perspectives. During the process, collecting data was through interviews and data was analyzed by the mean of constant comparative analysis. The procedure was the same in both Czech and China. The issue on methodology has been discussed in the chapter 3. In this chapter, the results of qualitative inquiry are presented. Firstly, a synopsis of the ground theory is given in the form of figure. Then, a detailed description of main categories along with each sub-category discussing its properties and dimensions follow. Finally, comparison between results from Czech and China is presented.

5.1 Synopsis of the grounded theory

A synopsis of the grounded theory of factors contributing to the peer relationships of children with HI in the regular classrooms was presented in this section. Figure 5.1 presents an illustrative model of grounded theory generated by the qualitative data analysis form inquiry the Czech and Figure 5.2 presents the other model of theory developed from the inquiry in the China.

Interestingly, the same major categories were identified from data analysis in

both Czech and Chinese interviews. There are:

- Child with HI factors
- Hearing peer factors
- Teacher factors
- Social situations

Although the same major categories were found in both Czech and Chinese study, there were some differences in sub-categories. In this chapter, the author firstly will describe the major categories by providing representative examples of quotations from both Czech and Chinese participants. Then, the differences in the models between Czech study and Chinese study will be followed in detail.

Figure 5.1 Illustrative model of the grounded theory: factors influencing peer relationships of Czech children with HI in regular classrooms

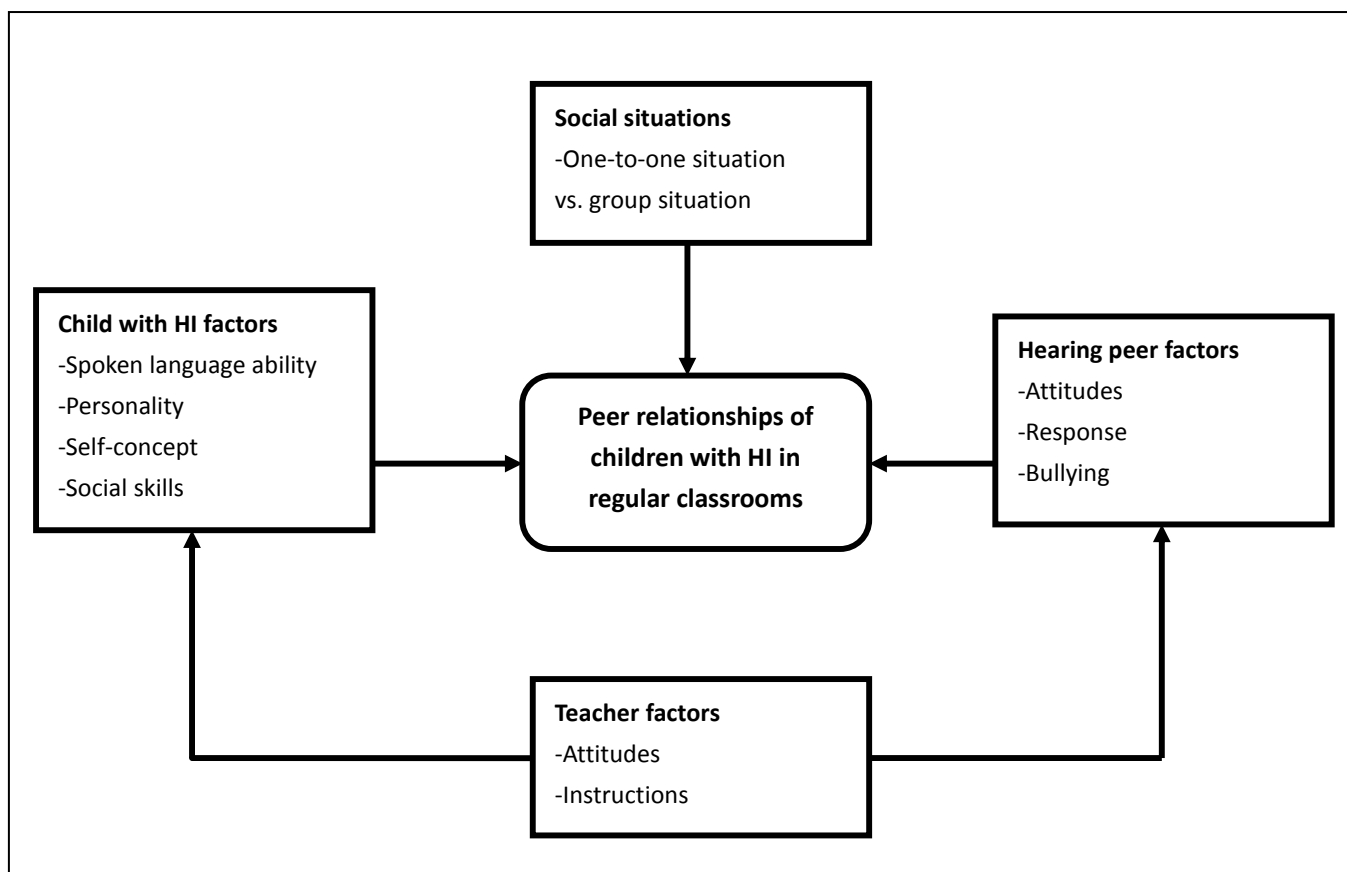
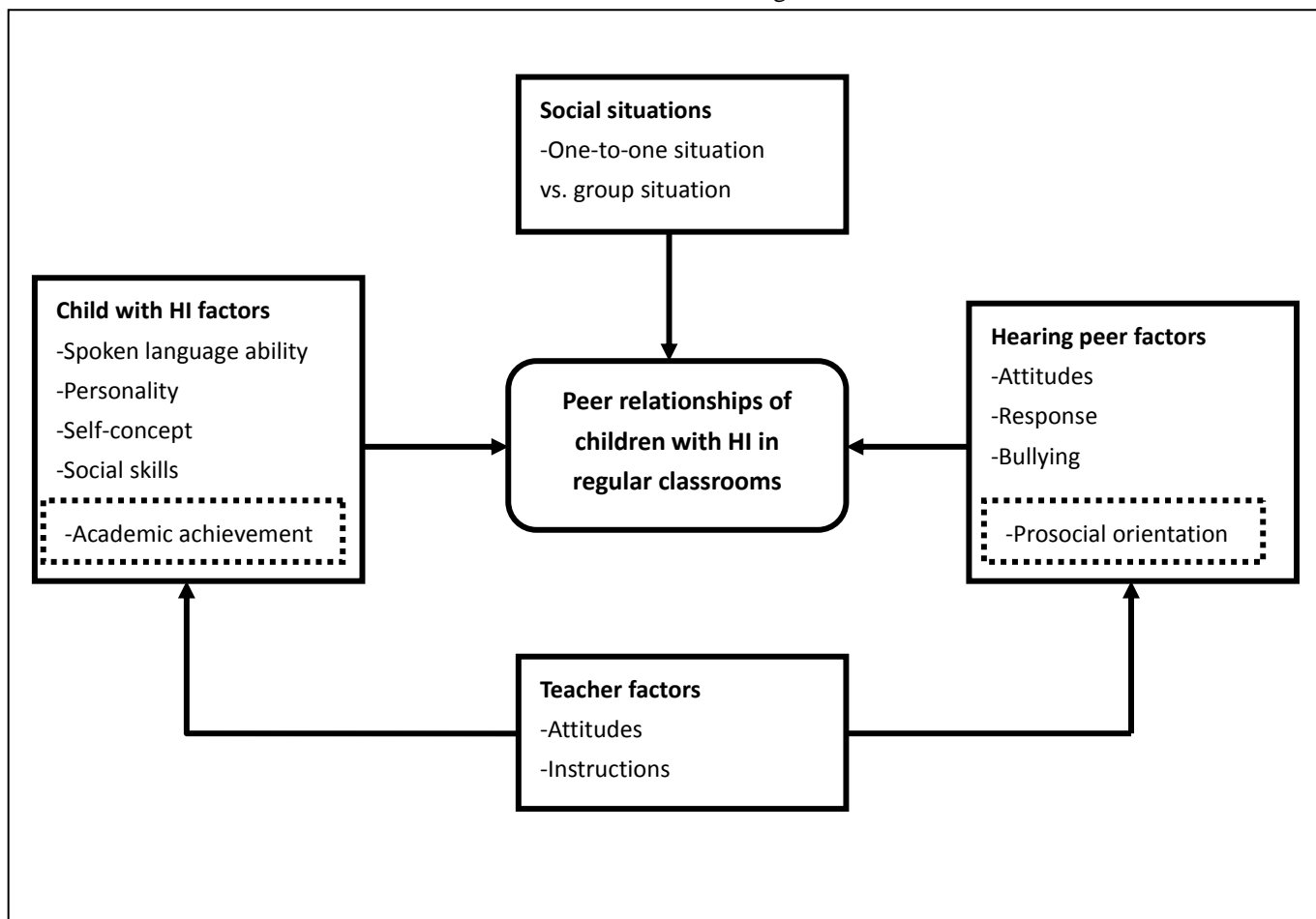


Figure 5.2 Illustrative model of the grounded theory: factors influencing peer relationships of Chinese children with HI in regular classrooms



5.2 The major categories

5.2.1 Category 1: Child with HI factors

There are five sub-categories within this major category: spoken language ability, personality, self-concept, social skills, and academic achievement.

Spoken language ability

All participants with HI in the study use spoken language as their main communication mode in the regular schools where there is a hearing world. The defective spoken language ability seems to constitute the greatest obstacle in establishing social relations between children with HI and their hearing peers. Most participants with HI also commented that communication with hearing peers was really a big challenge and brought about barriers to build and keep relationships with hearing peers. Especially, Chinese teachers and hearing students mentioned child with HI poor spoken language ability several times.

Czech participants

The spoken language ability of most of Czech children with HI seem to be well enough for them to communicate with classmates and teachers in regular schools. Nonetheless, there were three children with HI performed much poorer spoken language ability and they actually had great difficulty in social interactions and relationships with their hearing peers in class. When the hearing classmates of these three children with HI received the interviews, they mentioned that children with HI had difficulty in understanding them in daily conversations. For instance, some hearing children said, “He (child with HI) cannot understand some words. It seems that sometimes he cannot understand my ideas...” (Czech participant B4) “She (child with HI) cannot understand some funny things... Sometimes I told a joke, everybody laughed, but she looked very puzzled.” (Czech participant B5) “The problem is that he often answers irrelevant to my questions. I am not sure if he really understands me.” (Czech participant B6)

As regards children with HI themselves, they were also conscious of their spoken language's role in their relations with hearing peers. One boy with HI who needed an assistant with his study in the class talked about his trouble in communication with hearing peers:

“It is hard for me to communicate with classmates. When I speak to them, ask them some questions, or tell some interesting things, they always interrupt me and ask me to repeat. Sometimes they get understood after I repeat. However, sometimes I repeat several times, but they still cannot understand... Sometimes, I write down... They say my pronunciation is different from theirs... I feel so sad it seems classmates do not like to talk to me.” (Czech participant A8)

The professional teacher, who works as social worker for many years and has much experience on education for deaf children, also emphasized the crucial role of spoken language ability of children with HI in their social interactions and relationships with peers. She interpreted that children with HI experienced difficulties in both understanding and expressing in communication, as a result, it is hard for them build good relationships with hearing peers.

“I think speech and language ability are important for their peer relationships. It is the basic competence for communication between peers. However, because of hearing loss, child with HI speech and language ability are delayed ... Yes, they received speech training in early years, but their language development is still lagged behind typical children's. In general, with age's growth, the gap on speech and language' competence of children with HI might be larger and larger. They cannot understand some certain words (e.g. adjective words), especially some abstract words or sentences. In addition, it is difficult for them to understand some complex communication contents in social interactions. Maybe they can repeat every words and sentences, but actually, they do not know what the words or sentences exactly mean...” (Czech participant C6)

Chinese participants

Chinese participants with HI in this study are reported to display poorer in communications and received more negative evaluations from their hearing peers in

their spoken language ability. Apart from difficulties in receiving and understanding message in the communication, most of Chinese hearing children mentioned the poor speech indelibility of children with HI several times. They indicated that they often cannot understand children with HI, because their oral language is unintelligible, especially their pronunciations were unclear, as illustrated in the following excerpts. “His (child with HI) pronunciation sounds a little strange, very different from ours, and unclear.” (Chinese participants B6) “Sometimes, he (child with HI) speaks to me a lot, but actually I just understand a few words.” (Chinese participants B7)

Older hearing children stated the spoken language of children with HI blocked their communications and created obstacles in developing friendships between them. When asked why not choose a child with HI to be best friend, a girl answered that,

“Her (child with HI) pronunciation is so different and sounds vague. I often didn’t know what she said, especially 3 years ago when she just came to our class. Now, it is better because I get more familiar with her pronunciation. Nevertheless, I still cannot understand her very well ...It is really hard for us to be close friend... I mean, I would like to...but, you know, talking, whispering and sharing thoughts are very important for friends.” (Chinese participants B2) This opinion represents the views of most hearing students, especially most girls.

A girl with HI only chose another girl who also had hearing impairment as her best friend with the explanation that,

“I like to stay with B (another child with HI in the same class) who is the best friend of mine. I feel more relaxed and comfortable with her...It is easy for us to communicate, because we can understand each other easily...While it is not so easy to talk with other classmates (hearing students). Sometimes, I cannot hear clearly and understand them well. They always speak too fast and unclearly. Sometimes, they cannot get my meaning...” (Chinese participant A5)

Personality

Interviewees across children with HI, hearing students and teachers mentioned

personality is important for relationships between children with and without HI. The children with HI who have some personality such as outgoing, agreeable and temperate are easier to be accepted by peers and make friends with hearing classmates, while children who are introverted, shy, and hot-tempered are to be less liked by peers, and have more troubles in building and maintaining relationships with peers.

Czech participants

One child with HI talked about personality's role on his relationships with hearing classmates.

“I have no problems with my classmates. It is just because they (hearing classmates) are more active, but I am a quieter. I do not like to spend much time on playing with others, but just like to be quiet and reading book, thinking, writing stories or playing computer by myself”. (Czech participant A2)

From perspectives of hearing children, children with HI are easily to be explosive and irritable. A hearing child didn't like to play with the child with HI in her class, because “sometime I am scared when he (child with HI) is explosive suddenly...” (Czech participant B3)

Teachers also note that child with HI personality is one of the reasons why hearing children don't like to make friends with them. One teacher who taught a child with HI in grade one viewed the child with HI's personal characteristics as self-centered and bad-tempered, which hindered the development of social relationships with other kids. She presented that,

“At most time, he (child with HI) is OK, gets along well with classmates. However, he sometimes has conflicts with other kids. Maybe it relates to his personal characteristics. He always wants to get what he wants. If he fails to get, he is explosive and quick-tempered...He was sad, cried, or angry, pushed other kids, and did not want to talk to anybody for a long while...” (Czech participant C5)

Chinese participants

Hearing children prefer to play with children with HI who are “nice, mild, tolerant, innocent and ingenuous.” (Chinese participant B7) Nonetheless, children

with HI who are impetuous and churlish are more likely to be unaccepted by peers. A junior school student with normally hearing expressed his opinion on how his classmate with HI's personal characteristics affecting his relationships with peers.

“He (child with HI) is extroverted and active, but he is easily impulsive and hard-nosed. If he wants to do something, he must do. Even if we think it is not good for him, he still insists doing it and is deaf to our advices...He gets irritated and impulsive easily especially when he has conflicts with classmates...He rushes away or shouts to others loudly... When he is calm, it is ok for us to play and do things together... but many classmates keep distance from him...”
(Chinese participant B8)

Another Chinese teacher who works as an assistant for children with HI in a primary school commented that,

“Generally speaking, children with HI are more introverted, dependent or self-centered and hotheaded. Um ...maybe it is because of their hearing loss and parents' overprotecting them...Sometimes, you know, such personal characteristics bring barriers to their social relationships with classmates.”
(Chinese participant C3)

Self-concept

Self-concept here is defined as an individual's awareness of her/his own identity in this study. Participants with HI, especially older children, they talked more about their perceptions on themselves, hearing loss, and their relationships with others.

Czech participants

When talking about their experience in regular schools, some children with HI referred to their perception of themselves. They viewed themselves as different from typical classmates, especially because of the hearing aids on their ears. One boy from grade 7 also said he did not like wear the hearing aids, because the hearing aids made him different from typical people. He described that,

“I don't like wearing the hearing aids... I do not want to let others recognized me to have hearing impairment. When they see the hearing aids I wear, they think I

am a disabled person. They will treat me in different way. I do not like they look at me with strange eye. I want to be the same as others...When I do not wear the hearing aids, I feel better. Maybe I can have more friends.” (Czech participant A6).

Another girl with HI expressed her unwilling to let others see the cochlear implant. In order to hide the cochlear implant, she keeps long hair over her shoulders all the time. Moreover, she perceived herself different from other, especially when “I cannot join in classmates’ discussion and talking, I feel I am different from others because of my hearing impairment...Sometimes I am angry with other classmates, because nobody talks to me. They only talk to each other in both class and break. I feel I am the different one in the class.” (Czech participant A5)

Most children with HI had more positive self perception and evaluation. They think themselves the same as others and had good relationships with classmates. For instance, one child with HI perceived himself as that “I can do the same things as others...I have friends, I like to play with them...they treat me very well.” (Czech participant A4). Another child with HI said “I am the same as them...I think I have many friends...I am liked by classmates...I don’t like others treat me in different way. I don’t hope people do something special for me.” (Czech participant A2)

Chinese participants

When Chinese participants with HI were asked about their perception of themselves, they often answered they were different from other classmates, even the children are very young. Relative to Czech children with HI, Chinese children with HI seem to be more sensitive to hearing impairment and expressed less acceptance of their hearing loss. They tend to perceived themselves to be different from the typical children, less competent in social relationships.

There are some quotations from them as following: “I don’t have many friends...I think I am different from others, because of my hearing impairment” (Chinese participant A9) “...I am different from other peers...There is only I who wears hearing aids in the class...Besides, I find all classmates can speak fast and frequently, but I cannot. I speak slowly and my pronunciation is different from

theirs...They can hear and understand easily, but it is hard for me..." (Chinese participant A2)

A young boy with HI who was at grade 2 thought himself as so unfortunate because of hearing loss. " I am different from others, because I have this (cochlear implant) on my ear but others don't...I am so unfortunate that there are problems with my ear. I cannot hear anything when I take this (cochlear implant) off...This (cochlear implant) also brings me troubles too. Sometimes, peers ask me what this is and why I wear it. I tell them I cannot hear without it. Some classmates looked surprised and strange and some laughed at me. Why am I unfortunate...?" (Chinese participant A1)

Children with HI tend to contact with other children with HI, especially in the schools there are some students with HI in different classrooms. They are more likely to form the peer groups with children who also have hearing impairment and identify themselves as another community which is different typical students. A boy with HI who is at grade 9 is educated in a junior high school where there are other students with HI in his class and other grades. He presented that,

"There are other peers with HI, just like me, in this school. We know each other well and often play and kill time together... We are different from hearing people. When we communicate with each other, we often use sign language or body language. It is easier for us to understand each other...Some classmates like me, while some dislike...Maybe they think I am different. I wear hearing aids and the way I speak is different from theirs." (Chinese participant A12)

Social skills

Social skills are viewed as the socially acceptable behaviors that enable an individual to interact effectively with others, referring to appropriate social behaviors, and strategies to initiate and maintain interactions, build and keep social relationships or cope with conflicts with others. In accordance with analysis of the interviews from children with HI, it appeared that children with HI had strong desire to interact and contact with hearing peers, however inappropriate social behaviors and deficit in

social skills contributed to peers' rejection or ignorance.

Czech participants

Initiate interactions effectively provides opportunity to establish relationships with peers and possibility to develop further friends. The ability to initiate is one of important social skills. However, it was reported by teachers that children with HI tended to wait and see rather than actively initiate interactions, and could not effectively maintain the involvement in their interactions even if they succeed in taking part in peers' activities. As one teacher said,

“He (children with HI) likes to play with classmates during the break, but he is not active. Sometimes, he just stays beside to look and not join in peers' activity until peers invite him to join in them. He is passive and sometimes, he withdraws from interactions. He used more gestures, with little spoken language...It seems that he doesn't know how to interact with peers appropriately.” (Czech participant C3)

Moreover, some children have some improper behaviors such as cannot control temper, break the play rules, or not cooperative as playing with peers, and as a result, they are excluded by peers and get isolated. Another teacher took an example to illustrate some problem behaviors of child with HI badly affected his relationships with classmates.

“He (child with HI) has some bad behaviors...One time, he was playing ball with peers on the playground. Everyone had to wait to get the ball when others were passing the ball. Sometimes, they had to wait a little longer...everyone was happy and enjoyed the game...however; he suddenly rushed up to attempt to get the ball. He did not want to wait and follow the rule, just behaved rudely to grab the ball. Everyone had to keep the rules and peers stopped him. He failed to get the ball and went away angrily. He cannot control himself...Some kids told me they don't want to make friends with him...” (Czech participant C5)

Chinese participants

Similar to Czech children with HI, Chinese children with HI also lack social skills to interact socially and make friendships with peers. Teachers reported that they

seemed to be more passive, likely to stay alone, and easily anxious, and these impeded social skills directly impact their relationships with classmates. One teacher said,

“The peer relationships of she (child with HI) is OK, but not so good... Yes, she is a quiet girl, but is too passive... She rarely introduces herself to others actively and initiates conversations or interactions with peers. She always waits to be invited by peers to join in them. If not, she just stays alone by herself.” (Chinese participant C4) Another teacher worried out this student with HI’s peer relationships in her class, because “his social competence is not good. He often plays with a few classmates who sit next to him and seldom play with others. It is harder for him to make friends. Additionally, he seldom takes an active part in class activities.” (Chinese participant C3)

One teacher explained children with HI did not make some behaviors of which hearing classmates dislike on purpose; however, these behaviors were unbecoming their relations.

“He (child with HI) is active and likes to play with classmates. However, he has some behaviors that peers don’t like...For example, some students tell me he always hit them. The fact is that when he wants to talk with somebody, he always pats the peer. Maybe he pats too heavily, the peer thinks that he hits them. Therefore, peers get angry and go away...In addition, when he call somebody, he doesn’t call his/her name, but just call ‘ ei, ei ’(Onomonoepia). Hearing peers think that he is impolite and doesn’t respect them...” (Chinese participant C8)

In despite of being perceived as passive, awaiting, and hovering as interacting in peers’ activities, most children with HI, both in Czech and China, expressed their strong willingness to play with hearing peers. However, they “don’t know how to join in the going peers’ activities” or make them involved in the interactions longer (Czech participant A2).

Academic achievement (Only in Chinese model)

The sub-category of academic achievement only emerged during the analysis of Chinese participants' interview. Academic achievement of children with HI was identified to be crucial for their social relationships with peers in China. First, both children with HI themselves and teachers of them reported that academic achievement of most HI children was poorer than typical children. One teacher viewed the child with HI in her class as behindhand in study, as "he has much difficulty in learning, especially in reading and writing. He is one of the worst students on academic performance..."(Chinese participant C3)

One teacher who works in the resource classroom for children with HI commented that,

"...As regards their academic performance, in general, most of them perform poorer than typical students. It is probably that they will get poorer and poorer with increasing of study requirements and grade. Their academic achievements are below average in their class and even some of them performed the worst...Of course, there are children with HI study well, but the number is small...Their participation in class is not good, most of them cannot understand teachers or some of them do not listen to teachers ..."(Chinese participant C5)

Their poor academic achievement, on one side, influences their self-concept. They perceive themselves as inferior than classmates and consequently they are likely to have no confidence. On the other side, teachers' and hearing classmates' attitudes towards them is dependent in part on their academic performance. Teacher and hearing peers perceive children with HI as less competent because of lower academic achievement. Negative self-concept and peers' attitudes contribute to their social performs and relationships. Additionally, children with HI spend much more time on study, resulting in limited time on contacting with peers. One boy with HI said,

"Poor academic performance makes me worried, and it affects my relationships with classmates. I have to spend more time on study, and have no time to

communicate and play with classmates. I am always the last one on the academic performance in the class. I made great effort but still failed. Others only spend 1 hour on doing schoolwork but I have to spend 3 or more time on that. I have no self-confidence, comparing to normal hearing students. I know, teachers and classmates think I am worse...”(Chinese participant A 13)

5. 2.2 Category 2: Hearing peer factors

Three common sub-categories emerged within this theme in both theoretical models: hearing peers’ attitudes, responses and bullying. Besides these three sub-categories, another one sub-category named prosocial orientation was identified in Chinese model. The author presents the common sub-categories in both models firstly. Next, another sub-category, prosocial orientation, will be stated separately.

Attitudes

During the interviews, every hearing student talked about his/her attitudes towards children with HI. The findings showed that their attitudes played an important role in their behaviors and relationships with children with HI in their class.

Czech participants

Most Czech hearing students viewed children with HI as a member of their class and accepted them. In addition, they consider children with HI as the same to themselves. Generally, Czech hearing students’ attitudes towards children with HI are positive.

There are some quotations from them as following: “We like to play with him (child with HI). He is one member of our class. We are the same.” (Czech participant B10) “There are some problems with his hearing, but he can do many things like us.” (Czech participant B9) “All of us, including he (child with HI), are good friends. We treat him the same to others.” (Czech participant B8) “Sometimes, I just forget her (child with HI) hearing loss. She is a nice girl and has many advantages. For example, she draws very well. Um, she is also good at math and driving horse.” (Czech participant B1) “He (child with HI) is an excellent classmate, he liking reading and he

can write very interesting stories.” (Czech participant B5)

Chinese participants

Adversely, the results from the Chinese hearing students’ interviews showed that hearing peers’ attitudes towards children with HI are tend to be negative. Most of them viewed children with HI in their class as different from themselves due to hearing loss and pronunciation. For instance, some hearing students mentioned that “he (child with HI) is different from us. He has hearing problems.” (Chinese participant B8) “He (child with HI) speaks so different from us. He speaks slowly, write slowly, but we can do that much faster than him.” (Chinese participant B9) “There are some difference between us...Um, her pronunciation is vague and slow. She speaks word by word, while we can speak frequently. She is quiet and likes to be alone. In addition, she needs our help. We would like to help her, because she has hearing loss.” (Chinese participant B10) “He wears strange things (hearing aids) on his ears. There are some problems with his ear.” (Chinese participant B6)

Additionally, some hearing children considered hearing loss as a pity, as one girl said, “I feel pity that she (child with HI) has problems with her hearing. She cannot hear like us. What a pity!” (Chinese participant B12) Besides, another girl thought the children with HI “must feel sad about their hearing problem.” (Chinese participant B11) Moreover, some children thought that children with HI need more attention from teachers and classmates’ help because of hearing loss.

Response

Both groups with and without HI, as the main actors during the relationships, contribute to their communication and interactions. Hearing peers’ response was regarded by children with HI as ignorance, misinterpreted, impatient during the social interactions, which greatly impede the possibility for establishing relationships between them. From the perspective of children with HI, hearing peers were likely to ignore them and seemed to be reluctant to interact with them. It may imply that hearing children were not aware of child with HI needs and did not take into account of their feeling.

Czech participants

Some participants with HI reported that they often did not get responses from hearing peers, or hearing peers always spoke to them behind them so that they couldn't hear clear and understood them. One boy with HI reported that he often felt ignored by hearing peers when he played with them. He took an example as following:

“Once, two boys sitting next to me were talking something interesting during the break. They laughed and really enjoyed themselves. Finally, I heard that they were talking about a bird with a strange nose. Then they started to imitate the bird's nose. They looked funny, really... I wanted to join in them very much, but at first I just looked for a while... Finally, I decided to join in them and touched one peer to want to ask him how to do that, but he did not react to me. He just spoke to other peers. I tried two more times again, the peer finally paid attention to me but just looked at me for one second, then turned back to play with others. I really wanted to join in them, and then I imitated them, but no peers paid attention to me. Finally, I stopped imitating them and just looked at side.”

(Czech participant A4)

Apart from no responding from hearing peers, they seem to be impatient to interact with children with HI, especially when children with HI need to ask hearing peers to “repeat again, but he (hearing peer) displayed impatient to reply to me...”

(Czech participant A2)

Chinese participants

Most of participants with HI also said it was hard to get hearing peer attention when they wanted to interact with them. Hearing children were viewed by children with HI to dislike to talk and play with them, and to speak too fast and softly or speak to children with HI behind or besides, not face to them, or even not respond to children with HI. These behaviors of the hearing children in China imply that they lack the knowledge of hearing loss, have disregarded child with HI special needs in interactions and relationships with them, and display bluntness to inappropriate responses to children with HI. Additionally, some child with HI behaviors are often

misinterpreted by hearing peers as rude or aggressive, just like a Chinese boy with HI said in injured tones “I just touch classmates lightly in order to get their attention, but they say I beat them...” (Chinese participant A3) Besides, hearing peers sometimes display impatience when children with HI ask them for help. One child with HI said,

“Once, teacher asked us to discuss in the class. The topic was very interesting. I really participated in the group discussion, but I could not hear classmates clear and I was lost... I asked a classmate to repeat for me and I still did not understand. I asked to repeat again for me, but I still could not catch it. Then, I asked for help again, however, the classmate got impatient and did not reply to me ...” (Chinese participant A1)

Bullying

Some children with HI talked about experience of being bullied by hearing classmates, particularly by boys. Peers’ bullying was reported to bring about badly influences on social relationships between children with HI and classmates, as well as psychological problems.

Czech participants

There were three participants with HI in this study reported that they had experience of being bullied. One girl with HI said that she had good relationships with girls but had bad relationships with some boys in her class, because these boys always teased her. She said that “...Sometimes they imitate my voice and talking, sometimes they appear in front of me suddenly and make faces, sometimes they look at me with a sardonic expression...” (Czech participant A3)

The other girl with HI reported that her similar experience that she always was teased by three boys in her class. “I don’t get along well with boys, especially theses three boys (names of boys)...They give me the nickname; sometimes they catch my head by hairs; sometimes they imitate my speaking and laughed at me...”(Czech participant A6)

Another girl transferred to the present school from another school where she was bullied seriously by one boy.

“I was taunted badly. When I tried to get them to stop, they would force their way on me more...I was anxious and felt scared everyday in that school...Finally, I was afraid to go to school...Now, in this class, I feel much better. Everyone is nice to me...”(Czech participant A7)

Chinese participants

Chinese participants with HI reported similar experience of being bullied and being ignored by hearing peers. One boy with HI told me his story:

“Some boys are really annoying. They often tease me. They always want to touch my hearing aids from my back...Once, they said they wanted to have a look at my hearing aids. I took one off and gave them to have a look. They got my hearing aid and ran away at once. I asked them to return to me, but they didn’t...Finally, somebody told me they threw it into wastepaper basket...When I wore it again, I found it was broken...I was so angry and sad...”(Chinese participant A2)

Other participants with HI also reported that “My hearing aids were lost by them. My dad says the hearing aids are very expensive. I have to take good care of them...Now, I keep distance from them... Some classmates call me ‘LONG ZI’ (the nickname), because I cannot hear. I dislike this name.” (Chinese participant A4)
“Some boys always sacred me from my back, or pat me...Sometimes they laughed at me, but I don’t know why.” (Chinese participant A15)

Prosocial orientation (Only in Chinese model)

Prosocial orientation refers to the attitudinally based tendency to consider the interests of other people in either physical distress or psychological distress. It focuses on helping, caring and taking responsibility for children with HI in this study. This sub-category emerged from analysis of interview of Chinese hearing students who have friend with HI. When asked why to choose child with HI as their best friend, almost all of hearing children mentioned willingness to help and the sense of obligation and responsibility in the relationships with children with HI . They are the

assistant peers for children with HI, and would like to be the friend and help children with HI. These hearing students firstly were assigned, based on their willingness, to be the desk mate of children with HI by teacher, with purpose of providing help to them. They are sensitive to child with HI distress and needs, display concern, and provide assistance to children with HI. One boy in Grade 4 told that,

“I sit next to him (child with HI), his desk mate. I can help him when he has difficulties. For example, when he cannot hear or understand others, I can repeat and explain for him. When teachers ask us open the book and he does not hear that, I tell him which page we should turn on. I often help him with study and other things...I would like to help him. I think if I have some difficulties, I also hope somebody will help me...He likes to play with me and often tell me his ideas. I find he has many advantages. He is very kind and innocent. Sometimes he is very funny...”(Chinese participant B7)

Other participants also highlighted their willingness to help children with HI and understanding and concerning their distress. They admitted that children with HI in their relationships were more independent and they took greater responsibility and displayed more patience. However, they do not mind that because children with HI indeed need more care from them and they feel have responsibility to help them.

5.2.3 Category 3: Teacher factors

The initiate analysis of theoretical model, teachers' function was considered as a potential category; therefore, teachers were selected later to enrich the information. The role of teachers was later identified to be an important factor affecting peer relationships between children with HI and their hearing peers in line with the analysis of interviews. Teachers' attitudes towards children with HI and their instructions were recognized as two sub-categories within this major theme, indirectly affecting the relationships between students with and without HI in the regular classrooms through influencing hearing peers' attitudes and behaviors, along with child with HI self-concept.

Attitudes

Teachers' attitudes, here, focus on their attitudes towards children with HI and the inclusive education for them in regular schools. During the interviews of children with HI and their hearing classmates, they mentioned several times of their teachers. They indicated teachers' attitudes contributed to their attitudes towards children with HI, such as "Our teacher treat she (children with HI) just like us, there is no difference." "Teacher often tells us he (children with HI) just has hearing impairment, but he is same to us and can do many things..."

Czech participants

Interviews of Czech teachers consistently demonstrated that teachers hold positive attitudes towards children with HI in their classes. They point out that that being educated in regular schools benefits children with HI. There are some quotations from their interviews.

"Whether a child with hearing loss study in the normal school, it is up to the degree of hearing loss. It is good for them in normal school, because they can learn more, can communicate with normal people and go into normal society. There is richer environment and more activities in normal school than special school, they can experience more." (Czech participant C2)

"Students with hearing impairment studying normal schools is good...They can get function in normal world and society and can live or behavior in the same way as normal people... I just treat them as typical students, not differently. "

(Czech participant C4)

Apart from teachers' positive attitudes towards child with HI receiving education in regular schools, other teachers also expressed their effort to improve their professional knowledge and skills in special education for these children.

"We need to learn more about hearing impairment and learn how to help or instruct them in better way...We received some teacher training on deaf education...Sometimes, teachers who teach the child with HI often communicate and discuss about his/her issues..."(Czech participant C5)

Chinese participants

With respect of Chinese teachers' attitudes towards inclusive education for children with HI, it appeared to be more negative than Czech teachers. Except the teachers who work in the resource classroom and the professional for deaf education, most of teachers who are in charge of the class took less optimistic attitudes towards children with HI and the inclusive education for them. For instance, two teachers who taught the student with HI at least for three years expressed their views and worries.

“I think it is better for children with hearing impairment to go to special school. They often sneak off and cannot concentrate on teachers in the class. Sometimes, they disturb teachers...It is hard for them to listen to teachers carefully, I know. It is too difficult for them. They cannot hear...There are so many students in my class, it is impossible for me to take care of everyone...” (Chinese participant C4)

“He (child with HI) is the first student with disabilities I teach since I became a teacher 16 years ago. His academic performance is poor...He is one of the worst student on study. With the grade's increasing, schoolwork will become more and more difficult and his study will become worse and worse... It is a big challenge for him to study in regular school, really...The rehabilitation of his hearing impairment and language competence is not good...I do not know how I should do for his study... Studying in the regular school is really hard...Maybe it will be better for him to go to special school.” (Chinese participant C1)

The above two quotations represent the views of most teachers in regular schools. In additional, teachers mentioned several times about big class size in Chinese regular schools. It is normal that there are 50 students or more in one classroom. It is really difficult for any teacher to pay attention to or give individual instruction to every student. As a teacher said,

“If there is a student with HI in my class, it is big challenge for me. On one side, student with HI will increase my workload and mental pressure if they have bad behaviors or interrupt other students' learning; on the other side, I have no confidence to educate students with HI well because of lacking professional

knowledge and skills.” (Chinese participant C6)

Nonetheless, there is one teacher hold mixed attitudes towards inclusive education for children with HI. She supported the children with HI whose rehabilitation efficacy s good and can perform well in academy receive in the regular schools.

“B-WL (the name of the child with HI) is a good student, academic achievement is well. He has good capacity of imagination and draws pictures well. He is polite and kind. He speaks slower than typical students, but clear, no problem to understand him... I really support the children with hearing impairment, like B-WL, receive education in regular schools. They can contact the society and grow up like other typical kids. I think it is much better for them to attend regular school than staying in the special school where there is segregated environment... Actually, he is the same to other kids...Of course, if the children’s hearing loss is too severe and rehabilitation efficacy is not good, it is better for them to go to special school...”(Chinese participant C3)

Instructions

Teachers’ instructions to children with and without HI are identified as the other sub-categories within the major category of teacher factors. Teachers’ instructions include instructions to both hearing children and children with HI on their values, behaviors when interacting with each other, along with some direct inventions on the relationships between them.

Czech participants

Children with HI think it is necessary for teacher to give instructions when there are difficulties in interaction with hearing peers. For example, one participant with HI mentioned that when he did not understand group peers’ talking and no peers explained for him even if he asked for help, he felt frustrated in such case. He said “if teachers did not pay attention to me or did not help me, I really do not know what I should do.” (Czech participant A2)

Some teacher talked about how they instructed hearing students to interact with

students with HI. For instance, “If the classroom is very noisy or he(child with HI) is back to you, you have to go close to him and touch him to get his attention, then speak to him...Additionally, when there are conflicts between children with HI and hearing peers, we have to instruct them how to solve them.” (Czech participant C2) “When teasing occurs, we should explain to boys why the child with HI have some different behaviors and tell them not do that.” (Czech participant C4)

The other teacher added she told normal students “have to speak to her (child with HI)louder, face to face, keep class quiet, so that she can hear clear...”. (Czech participant C3) Besides, she thinks that it is important for teachers to pay attention to special professional skills and guide students in right way. Teachers need to explain for hearing children in order to let them know more about hearing impairment and related knowledge, so that they can treat child with HI appropriately.

Chinese participants

During the Chinese participants’ interviews, Chinese teachers several times mentioned their instructions to hearing students from perspective of moral education. For instance, they tell students to help students with HI, because they have hearing loss and need help. As mentioned above, almost every child with HI has an assistant peer to help in various aspects. Besides, they often instruct other hearing students to be kind and help classmates who need help. For example, a teacher told me how she gave instructions to hearing students.

“I tell my students that he (child with HI) has problems with hearing. Everyone in our class should take care of him and help him. In addition, I also have held many class activities with topic of ‘Concern and Love Classmate’, in order to let students know why we should care and help child with HI and how to help him...Sometimes, hearing students laughed at him because of his pronunciation. I told hearing students the way he speaks is different from us and we should not laugh at him but should be patient to listen to him...In general, the class climate is good. Most of hearing students care and help him.” (Chinese participant C1)

Another teacher also expressed the similar views, that “What I do is to tell hearing classmates to take care and help him. There are some class activities with

topic “help people with disabilities” with purpose of educating hearing students to have responsibility to help child with HI. In addition, I ask students to find advantages of child with HI and tell them to accept him...” (Chinese participant C2)

Most of teachers in regular schools, especially teachers who take in charge of the class where there is child with HI, give instructions to hearing students through the similar ways mentioned above by these two teachers. They often instruct and guide the hearing children from a moral view and highlight helpfulness and caring for children with HI.

5.2.4 Category 4: Social situations

Social situations refer to one-to-one social situations and group interactions situation. Almost all children with HI reported that social situations were important for their interactions and relationships with hearing peers, as well as acoustic environment. In one-to-one social situations where it is quiet, children with HI can hear clear and interact with hearing peers smoothly, while they perform worse in the group and noisy environment. This major category was commonly identified both in the Czech and Chinese interviews.

Czech participants

All participants with HI indicated that they felt bad when classroom was noisy and crowd, especially when some classmates were shouting, screaming, and laughing loudly in the break. In such noisy environment, some of them had to take off their hearing aids, or covered their ears, or turned off their auditory assistant. They dislike staying in such noisy environment, because “I cannot hear clear, and I don’t know what classmates are talking, I cannot join in them.” “Sometimes, I want to escape from the noise...”

Children with HI are more willing to interact with peers in one-to one situation rather than in group interactions. One child with HI said,

“There is no big problem for me with interacting with one classmate and we can understand well with each other. If they cannot understand me or I cannot understand them, they will ask me to repeat or I will ask them to repeat. It is no

problem... However, there are some difficulties when taking part into group activities. It is hard for me to understand or listen clear what group peers are talking. I am often lost ...Yes, I can ask group peers one by one or just ask someone to tell me what they are talking, but I do not want to interrupt them too much.” (Czech participant A3)

Another child with HI said that he did not like group discussion or activities too, because “everybody talks. It is difficult for me to understand very well. I have to ask somebody to repeat for me what they had discussed. Sometimes peers did not reply to me... I feel bad about that. It seems that I am the only one who is out the group.” (Czech participant A2)

Chinese participants

The Chinese participants with HI meet the same problems when they are in bad acoustic environment and prefer to stay in the quiet environment. They said “I don't like the playground where it is too noisy.” “When somebody is screaming in the classroom, I will be crazy...”

“...However, I feel more comfortable to talk with one peer. I can hear clearly and the peer speaks slower or writes down for me. If I do not understand, it is ok to ask for repeating...but I am often confused in the group's activities. Everyone is talking and there is much noise...In addition, peers are busy with discussing and talking and have no time to repeat for me.” (Chinese participant A11)

Teachers are also aware of the environmental and social situation factors' role in social interactions and relations of children with HI. As a teacher explained:

“...Even for an excellent children with HI, I mean, his speech and language ability is good and have equivalent social skills to other peers, it is hard for him to performance well in group and noisy environment. In such situation, there is too much background noise, so that he cannot hear clear anything at all...Maybe he will escape from the crowd or turn off his hearing aids or cochlear implants and stay alone...while in one-to-one social situation, he may perform greatly, being extrovert, active, talkative...” (Chinese participant C5)

5.3 Summary

The same four major categories were identified from the interviews in both Czech study and Chinese study, including child with HI factors, hearing peer factors, teacher factors and social situations. The findings from the analysis based on interviews of children with HI, hearing children, teachers and professionals, implicate that the model of influencing factors on peer relationships of children with HI in regular classrooms is multi-levels, including four dimensions mentioned above.

Nonetheless, there are differences in sub-categories between Czech and Chinese influencing factors models. Firstly, in Chinese model, there are five sub-categories within the major category of “child with HI factors”: spoken language ability, personality, self-concept, social skills and academic performance, while there are only four sub-categories, except the sub-category of academic achievement, within the categories in Czech model.

Secondly, there are three sub-categories within the major category of “hearing peer factors”: attitudes, response, bullying and prosocial orientation in Chinese mode, while in Czech model, there are only the former three factors, and the sub-category of “prosocial orientation” does not emerge within this major category.

Thirdly, besides academic achievement and prosocial orientation, there are other different findings obtained from comparison between Czech data and Chinese data. (1) Chinese hearing children’ attitudes towards children with HI seem to be more negative than that of Czech hearing children in regular schools. (2) Czech teachers’ attitudes towards children with HI and inclusive education for them are more positive than Chinese teachers. (3) Czech teachers’ instructions focus on hearing students’ practical behaviors to children with HI; while Chinese teachers’ instructions focus on moral education of hearing students and highlighted providing help and care to children with HI.

Finally, the impacts of factors on peer relationships of children with HI in regular classrooms as well as differences in findings from the qualitative inquiry are presented in below table 5.1.

Table 5.1 The comparison between Czech and Chinese model

	Impacts on peer relationships	Differences in findings between Czech and Chinese inquiry
Category 1: Child with HI factors		
-spoken language ability	The poorer spoken language ability of children with HI creates the biggest obstacle for their relationships with hearing peers.	
-personality	Children with explosive, easy-irritated, and self-centered personal characteristics have more difficulties in peer relationships.	
-self-concept	Children with HI often perceive themselves as different from hearing peers because of hearing loss and display incompetence in interactions with hearing peers.	
-social skills	Children with HI have deficit in social skills in initiating and maintain interactions with hearing peers.	
-academic achievement (only in Chinese model)	Low academic achievement negatively impacts their self confidence, teachers' and hearing classmates' attitudes, further contributing to their behaviors and social relationships.	Chinese children with HI reported they displayed low academic achievement, which make them felt pressure and influence their relationships.
Category 2: Hearing peer factors		
-attitudes	Hearing peers' attitudes towards children with HI contribute to their acceptance of children with HI.	Chinese children's attitudes towards children with HI seem to be more negative than that of Czech hearing children.
-response	Hearing peers' inappropriate responses such as ignorance, impatience, and misinterpreted impede their relationships with children with HI.	
-bullying	Children with HI reported the experience of being bullied by hearing peers destroyed their relationships.	
-Prosocial orientation (only in Chinese model)	Hearing peers' prosocial orientation plays an important role in their friendships with children with HI in China.	Chinese hearing children who have friends with HI consistently reported their prosocial motivation to help and take care of children with HI.
Category 3: Teacher factors		
-attitudes	Teachers' attitudes children with HI directly influence hearing peers' attitudes and behaviors towards children with HI and child with HI self-concept, further contribute to their relationships.	Czech teachers' attitudes towards children with HI are more positive than that of Chinese teachers.
-instructions	Teachers' effective instructions have positive impact on relationships between hearing students and children with HI.	Czech teachers' instructions focus on hearing students' practical behaviors to children with HI; while Chinese teachers' instructions focus on moral education of hearing students and highlighted providing help and care to children with HI.

Category 4: Social situations		
-one-to-one situations vs. group situations	Children with HI perform better in one-to-one social situations, while perform much worse in group and noisy situations.	

Chapter 6 Discussion

The present study examined the following main questions: How are the peer relationships of children with HI in regular classrooms? What factors contribute to the peer relationships of children with HI? What differences between Czech and Chinese children with HI in their peer relationships and the influencing factors?

A mixed methods triangulation convergence research design was adapted in the current study to investigate the peer relationships of children with HI and identify factors contributing to their peer relationships in the regular classrooms. In the quantitative survey, three indexes of peer relationships including peer acceptance, friendships, and peer groups of children with HI were examined. The results showed that when compared to hearing children, Czech children with HI tended to have less friend and less likely to have memberships of peer groups, and Chinese children with HI were more like to be less accepted by peers in their class. The findings demonstrated that peer relationships of children with HI were poorer than their hearing peers in regular classrooms. In the qualitative inquiry, a grounded theory design was used to explore the important factors affecting child with HI peer relationships by the mean of semi-structured interviews of children with HI, their hearing classmates and teachers, and professionals in deaf education. As a result of the qualitative data analysis, two theoretical models of influencing factors for peer relationships of children with HI in Czech Republic and China have been developed. The models revealed that four common major categories were identified from both Czech and Chinese interviews: (1) Child with HI factors, consisted of spoken language, personality, self-concept, social skills in both, and academic performance which only emerged in Chinese model; (2) Hearing peer factors, comprised of hearing peers' attitudes, response, bullying in both Czech and Chinese models, and prosocial orientation which was embraced only in the Chinese model; (3) Teacher factors, commonly including teachers' attitudes and instructions within this major category, and (4) Social situations, focusing on one-to-one situation and group situation. The

quantitative and qualitative findings highlight that the social outcomes of inclusive education for children with HI, focusing on their peer relationships in regular classrooms, seem to be not effective. This study implicates the importance of educational interventions in order to promote social relationships between children with HI and their hearing peers, and need to take various considerations from children with HI themselves, hearing peers, teachers, and social situations.

6.1 Peer relationships of children with HI in regular classrooms

The present study finds that children with HI in both Czech and China have poorer peer relationships with compared to their hearing classmates in regular classrooms. These findings are consistent with those of previous studies conducted to examine social integration or relationships of children with HI in regular schools. It has been reported that many children with HI have difficulties in forming and sustaining relationships with hearing peers (Weisel, Most, & Efron, 2005).

Regarding peer acceptance, Cappelli, Daniels, Durieux-Smith, McGarth, and Neuss (1995) found that deaf students in elementary general school received lower ratings of likeability than did their hearing classmates. A study conducted by Antia and Kreimeyer (1997) demonstrated that deaf children who were in preschool, kindergarten, and first grade general education classes also less accepted by peers as compared to their hearing peers. Nunes, Pretzlik and Olsson (2001) deaf children were not rejected by their peers, but they were significantly more likely to be neglected in regular school. Other researchers also indicate that children with HI are frequently neglected or rejected by their hearing peers, receive frequent negative nominations, are less well accepted than their classmates even after an intervention designed to increase acceptance (Antia & Kreimeyer, 1996; Cappelli, Daniels, Durieux-Smith, McGrath, & Neuss, 1995). Dixon, Smith, and Jenks (2004) viewed that children with HI in regular school are at greater risk for being considered lower class, being socially excluded and being marginalized.

With respect to friendships, children with HI are less likely to have a friend in

the classroom (Nunes, et al., 2001); Wauters and Knoors (2008) also found that children with HI seemed to be more often involved in a network without any friendships than their hearing peers. They may experience more feeling of loneliness and isolated, and an absence of close friendships (Kluwin, Stinson, & Colarossi, 2002; Nunes, Pretzlik & Olsson, 2001; Scheetz, 1993; Stinson & Whitmire, 1992; Stinson & Antia, 1999; Stinson & Kluwin, 2003). Although cochlear implant have benefited their speech and spoken language ability and thus improve their ability to develop relationships with others, children with HI may perceive greater loneliness later in life (Schorr, 2006). Moreover, child with HI friendships are short-term and casual (Stinson, Whitmire & Kluwin, 1996), and even their friendships with deaf peers are also less stable than those among hearing children (Lederberg, Rosenblatt, Vandell, & Chapin, 1987).

In reference to peer group, fewer children with HI may have memberships of peer groups due to their deficiency in interacting in group activities. It has been reported that children with HI face much difficulties in entering group interactions. Knutson, Boyd, Reid, Mayne and Fetrow (1997) found that one third of participants with HI failed to enter a group situation where a dyad of hearing peers was already interacting. Boyd, Knutson and Dahlstrom (2000) conducted a Triad peer entry deaf-hearing comparison with 6-to 7-year-old children with implants. In their slightly older sample of 29 children, 27% failed to enter the peer group of hearing peers compared to 5% of hearing children who failed entry. Similarly, Martin, et al. (2010) revealed that children with HI experienced significantly more difficulty in the Triad interaction situation than in the Dyad condition. Based on these studies, it could be referred that child with HI frequent failures in entering into peer group activities leads to the shortage of opportunities to interact with peer groups, therefore resulting in being less accepted by peer groups especially those consisted of hearing peers.

In summary, the present study highlights that the social relationships of children with HI in regular classrooms are poorer than their hearing peers. The results of the current study may support the social contact theory, rather than the homophily theory. The homophily theory claims that people tend to make friends with others who have

similar sociodemographic, behavioral, intrapersonal, or/and attitudinal characteristics (McPherson, Smith-Lovin, & Cook, 2001; Male, 2007). According to this theory, hearing children may regard children with HI as different from them and thus completely exclude them. However, this study finds that both Czech and Chinese children with HI have friends who are hearing peers. There are 60% Czech participants with HI have at least one friend with normal hearing, and 80% Chinese participants with HI have one or more friends in their class. Moreover, 50% Czech participants with HI belong to at least one peer group and 73.3% Chinese participants with HI have their own peer groups. In addition, Czech participants with HI are accepted by peers similar to their hearing classmates. Although Chinese participants with HI seem to be less accepted by peers, there is only 20% of them are rejected by peers. Therefore, hearing children may view children with HI different from themselves in sociodemographic, behavioral, intrapersonal characteristics because of their hearing loss, nonetheless, they also contact and associate with children with HI when they are placed together in the same classroom.

Conversely, social contact theory advocates that direct contact between groups of individuals with different backgrounds or characteristics can facilitate intergroup relationships by reducing prejudice between group members; positive effects of intergroup contact occur only in situation with four conditions: equal group status, common goals, intergroup cooperation, and the support of authorities (Allport, 1954). This theory can be extended to understanding and promoting peer relationships between typical children and children with special educational needs, in this study, between children with and without HI. Compliance with social contact theory, placement of children with HI into regular together with typical children provides opportunities for interaction and developing relationships between these two groups. However, only physical placement into regular classrooms does not sufficiently ensure establish and maintain positive social relationships between children with HI and their hearing counterparts (Nunes, et al., 2001; Cambra, 2002). The results of current study reveal that children with HI in both Czech and China have poorer social relationships than their hearing classmates in regular classrooms. Czech children with

HI have more difficulties to make a friend in class and less likely to belong to a peer group, and Chinese children with HI are more likely to be rejected and to be less liked by peers.

In contrast, the studies focusing on co-enrollment program for children with HI suggest that social relationships between children with and without HI are more positive (Bowen, 2008; Kreimeyer, Crooke, Drye, Egbert, & Klein, 2000; McCain and Antia, 2005; Wauters & Knoors, 2008). Kreimeyer et al. (2000) stated that interactions between children with and without hearing impairment in the classroom setting and lunchroom increased during the course of the co-enrollment program. McCain and Antia (2005) reported that the children with HI showed no difference in classroom communication and social behavior when compared to children with typical hearing. Bowen (2008) reported that students who are D/HH had similar social acceptance to that of typical students. Wauters and Knoors (2008) revealed that children with HI were similar in their peer likeability and social status to hearing children.

In co-enrollment programs, children with HI are co-taught by a general education teacher and a special education teacher. All students and teachers can use sign language and spoken language in order to communicate with children with HI well. In addition, children with HI participate in all class activities with special educational teachers' instructions. In co-enrollment programs, there are a large number of opportunities for children with HI and peers to cooperate and get known each other and the contact between them are intensive and persistent rather than superficial and temporary. It probably that the co-enrollment programs create enough conditions such as equal group status, common goals, intergroup cooperation, and the support of authorities which are requested by effective intergroup contact based on the social contact theory. The present study implies that the social relationships between children with HI and hearing children is not positive, may due to lack of some essential conditions for effective contact between them as those the co-enrollment program provide .

In order to provide the ideal conditions for effective social contact and positive

social relationships between children with and without HI, it is first and foremost to know what variables are important for their peer relationships. The qualitative inquiry of this study indicates that the peer relationships of children with HI in the classrooms are affected by four major factors with twelve subsets, including (1) child with HI factors: spoken language ability, personality, self-concept, social skills, and academic achievement; (2) hearing peer factors: attitudes, response, bullying, and prosocial orientation; (3) teacher factors: attitudes and instruction, and (4) social situations.

6.2 The influencing factors on peer relationships of children with HI in regular classrooms

In order to clarify the important factors associated to the peer relationships of children with HI in regular classrooms, a qualitative inquiry was conducted based on the ground theory concurrently with quantitative survey. Four common major categories were identified in both Czech and Chinese data analysis. They are ‘child with HI factors’, ‘hearing peer factors’, ‘teacher factors’, and ‘social situations’. These major categories along with each sub-category will be discussed in this section.

6.2.1 Child with HI factors

Spoken language ability

In this study, all participants with HI both in Czech and China use spoken language as their main communication mode in regular school. During the interviews, we found some children spoken language ability was better, while others’ was worse. Additionally, hearing children and teachers also underlined the role of spoken language ability in social relationships between children with and without HI. Both children with HI and hearing peers are aware of the communication difficulties as the greatest barrier for their relationships.

According to Blamey’s definition, spoken language consists of speech perception and speech production as its receptive and expressive components (Blamey, 2003). Language is the base of communication, crucial to initiate, manage and sustain social

interactions and, central to any close relationships (Durkin & Conti-Ramsden, 2007). Longoria, Page, Hubbs-Tait, and Kennison (2009) propose that children's language ability is significantly associated with social competence, especially strongly related to verbal aspects of social competence, which is important for forming close relationship with peers. The study of McCabe (2005) demonstrates that children with language impairment have poor social competence and behavioral problems, and have particular difficulty in task orientation, assertiveness, peer social skills, and frustration tolerance. In addition, they are more likely to be dependent and isolated in the classroom. Gallagher (1999) describes the emotional and behavioral difficulties exhibited by language-impaired children including "general immaturity, inattention, hyperactivity, impulsivity, frustration, aggression, conduct disorders, low self-esteem, low self-confidence, social withdrawal, depression and anxiety" (p. 2). Furthermore, Hart, Fujiki, Brinton and Hart (2004) proposed that children with language impairment adapted to their linguistic difficulties by avoiding or withdrawing from interaction, thereby they had limited opportunities to practice social skills.

Although major children with HI have no intrinsic impairment in their language learning abilities, those who were born in hearing family do not share a common language with their parents. They tend to be exposed to less linguistically rich environments than either hearing children of hearing parents, or deaf children of deaf parents, so that development of their language ability is impeded, presenting deficits of sign or spoken language (Marschark, 2001; Schick, de Villiers, de Villiers, & Hoffmeister, 2007). Even if children with HI have received extensive oral training, untrained listeners may have difficulty in understanding these children (Martin & Bat-Chava, 2003).

Consistently, researchers have acknowledged spoken language ability of children with HI play a critical role in their relationships with peers in the inclusive educational settings and considered delay in spoken language ability to create great barriers for children with HI in establishing and sustaining social relationships (Antia & Stinson, 1999; Bat-Chava and Deignan, 2001; Lederberg, 1991; Spencer, Koester, & Meadow-Orlans., 1994). Lederberg (1991) examined the effect of D/HH children's

language ability on their play-partner preferences and on the characteristics of their play and social interaction with peers. Participants with HI were divided into high, medium, and low language ability levels, based on their scores on language tests. Results demonstrated that children who had high language ability preferred to play with child with high language ability and used more linguistic communication with them. Besides, they initiated more interactions than children with medium or low language ability. Similarly, Spencer et al (1994) reported that children with high language ability engaged in peer communication at a significantly higher rate than children with medium or low language ability. Social communicative deficits of children with HI was exhibited similarly to those described in children with specific language impairments, therefore it ‘follows that similar outcomes may be evidenced through interactions between children with hearing loss and their typically hearing peer’ (Bobzien, et al., 2013, p.340).

A main factor in spoken language communication is speech intelligibility. Speech intelligibility can be defined as the accuracy of what hearing impaired individual delivers through speech and intelligibility of this speech by a normal listener (Girgin & Ozsoy, 2008). Speech intelligibility is a crucial feature in interpersonal communication and considered to be most practical measure of communication skills. Many individuals with HI have voice and speech characteristics that affect their speech intelligibility. For example, they tend to omit or substitute consonants and to neutralize vowels, they may have monotonous speech, and their voices may be characterized by inappropriate resonance, pitch, or intensity (Eisenberg, 2007; Peng, Tomblin, & Turner, 2008).

Most et al., (1999) reported there were significant positive relationships between speech intelligibility of children with HI and hearing children’s attitudes towards them. That is hearing listeners’ attitudes towards HI children with poorer speech intelligibility were significantly lower than those towards HI children with good speech intelligibility. Most, Weisel and Tur-Kaspa, (2007) examined relationships between speech intelligibility and sense of loneliness and coherence of DHH (Deaf and Hard of Hearing) children in group inclusion and individual inclusion. Results

showed that significant relation between them emerged for children in individual inclusive settings. The study emphasized the importance of good speech intelligibility not only for basic communication but also as a factor that affects HI children's social and emotional feelings. The later study conducted by Most, Ingber and Heled-Ariam, (2012) demonstrated that social competence of preschool children with hearing loss in group inclusion was significantly related to their speech intelligibility and both social competence and sense of loneliness of HI children were more dependent on their speech intelligibility. Therefore, authors of the study suggested that educators and parents should look beyond academic benefit of inclusive education and pay attention to importance of speech intelligibility of children with HI for their social and emotional development. In addition, the limited production of intelligible speech and speech comprehension result in inadequate understanding others' thinking and feeling, therefore contributing to the difficulties in socialization with hearing peers (Rommel & Peters, 2009; Schorr, Roth, & Fox, 2009).

Summarily, delays in spoken language ability can affect children's development of communication and interaction strategies; ability to self regulate in relation to attention, impulsivity, and emotions (Rieffe, 2011); general level of social functioning (Stinson & Whitmire, 2000), and limited opportunities to develop relationships with peers (Hart et al., 2004). It could be reasonably believed that poor spoken language ability of children with HI has drastically limit opportunities to interact with peers and impaired their social competence development to develop positive peer relationships in the hearing environment where oral is the main communication mode.

Personality

The present study demonstrates that children with HI who are outgoing, friendly, mild and generous are more liked by peers than those with characteristics as introverted, irritable, impulsive and high-tempered. This finding supports the view that personality is closely related to social relations with peers.

Personality is defined as the dynamic organization within the person of the

psychological and physical systems that underlie that person's patterns of action, thoughts and feelings (Allport, 1961). The personality of an individual broadly influences cognitive and socio-emotional functioning in his/her life. Previous studies find that personal characteristics can predict child with HI relationships with peers (Bat-Chava & Deignan, 2001; Punch & Hyde, 2011). Parents of children with HI reported that personality of their children with HI changed after the cochlear implant, becoming more extroverted, which directly helped them develop positive relationships with others (Bat-Chava & Deignan, 2001). Punch and Hyde (2011) also found similar results, indicating that personality of children had a role in the nature of their social participation; that is, children who were friendly, outgoing and confident appeared to have relatively good peer acceptance and social relationships with hearing peers. The personality of children with HI, especially assertive and confident in communicating and interacting with hearing peers, could positively contribute to their peer relationships in the regular schools (Martin & Bat-Chava, 2003; Martin et al., 2010). These findings are consistent with the report in the literature of a relationship between peer acceptance and positive affects, optimism, and resilience (Oberle, Schonert-Reichl, & Thomson, 2010). Moreover, Most et al. (1999) implied that the hearing peers' perception of child with HI speech intelligibility is in relation to the personal characteristics of their classmates with HI.

Self-concept

The present study finds that some children with HI, especially Chinese children with HI, perceive themselves as different from hearing classmates, or as a person with a disability, because of hearing loss, hearing aids/cochlear implant, and pronunciation.

Self-concept is an individual's perception of oneself, derived from the social environment and proved the culminating force in directing behaviors (Byrne, 1984). Cambra and Silvestre (2003) report that children with special needs have significantly lower self-concept, both in social and academic dimensions. Similar findings are obtained from study on perceived competence and social adjustment of children with

HI, showing that children with HI rated their competence significantly poorer than their hearing classmates (Hatamizadeh, Ghasemi, Saeedi, & Kazemnejad, 2008). Schmidt and Cagram (2003) also report that integrated students with HI, in comparison to their hearing peers, have a lower social self-concept, as well as a general and academic self-concept. Cambra (2005) found deaf students, especially boys, displays unwilling to accept their deafness and the limitations imposed on them by their hearing impairment. Van Gurp (2001) compared the self-concept of students with HI in different educational settings, finding that the social self-concept (e.g. perception of peer relations) of students who were integrated with typical students was lower with compared with students in segregated settings. Weisel and Kamara (2005) regarded that children with HI often demonstrated low self-esteem compared to hearing children, regardless of attending inclusive educational settings or specialized settings.

Literature review indicates that self-perception is associated with children's peer acceptance, as well as personal and social adjustment (Asher, Parkhurt, Hymel, & Williams, 1990). The children with negative self-concept tend to experience loneliness and social anxiety (Clever, Bear & Juvonen, 1992). In the light of previous studies, Hocutt (1996) observed that children with HI in regular classroom suffered regarding self-concept. Cappelli et al. (1995) explored psychosocial development in deaf students who were integrated into regular classrooms and indicated that deaf students were more likely to show behavioral problems, low self-esteem and feelings of social isolation. The present study also find that children with HI who were perceived themselves as different from others also were reported by hearing peers and teachers to be passive, unconfident, and self-restrained in interactions and have less positive peer relationships. The results can be supported by the findings of Kent (2003), who indicates that those who self-identify as having a hearing disability are more likely to report feeling lonely or experience being alone than those who do not have such kind of self-identify. Although peer relations play a vital role in construction of children's self-concept and children who perceive themselves as accepted and liked by peers tend to develop positive feelings and self-esteem (Israelite, Ower & Goldstein, 2002), self-perception, in turn, affects children's development of

social relationships with others. Kiff and Bond (1996) captured the importance of self-perception on social adjustment and described a deaf adult's experience that how his perception of deafness and being different from others affected his social relationships and psychological adjustment. Kent (2003) indicated that the prevailing negative social stigma of deafness might influence the individual personal perceptions of deafness common among young people, further increasing the likelihood of isolation. These findings confirm the view of Van Gurp (2001), that is, one of primary functions of the self-concept is to organize the data of experience, particularly that of social interaction, into sequences of action and reaction. In keeping with previous literature, it could be interpreted that the child with HI lower ability developed to act and interact effectively with significant others early in life may negatively contribute to construction of self-concept. The inadequate self-concept, in turn, makes children with HI struggle to meet greater challenges as they proceed onto later childhood (Hatamizadeh et al., 2008; Jambor & Elliott, 2005; Martin et al., 2010).

Social skills

The current study demonstrates that children with HI are less active to initiate interaction with hearing peers, and display withdrawal, hovering, and passive. Even if they are involved in peers' activities, their interactions are often ended soon. It appears that children with HI don't have effective strategies to initiate and maintain interacting with peers.

Having age-group appropriate social skills is a crucial condition for developing social relationships with peers. Social skills can be defined as socially acceptable learned behaviors that enable an individual to interact effectively with others and avoid socially negative responses (Greshman & Elliot, 1984). This concept of 'social skills' is from a behavioral perspective and is premised on the assumption that specific, identifiable skills form the basis for socially competent behavior (Elliott & Busse, 1991). Behaviors such as sharing, helping, initiating relationships, asking for help from others, giving compliments, and saying 'thank you' or 'please' are

consistently agreed examples of social skills. According to teacher reports, essential social skills in school include listening to others, following the class rules, complying with teachers' instruction, cooperating with peers, and controlling temper in conflict situation (Gresham, Elliott, Vance & Cook, 2011). Children can develop these social skills by everyday interacting with peers, family members and others, via coping others or instructions from experienced people. During these interactions, different body systems including the visual, auditory and language systems, as well as psychological systems need to function together.

Children with social skill deficit are at risk for social-emotional difficulties and negative interactions or relations with peers (Farmer, Pearl, & Richard, 1996; Frostad & Pijl, 2007). For example, children with more negative social behaviors, such as disruption and aggression, tend to be rejected by peers. They may have few or no friends and feel more isolated, lonely, or being excluded by peer groups. Therefore, children with social skills deficit will have much less opportunities to develop social skills and qualitative social experiences. Children with special needs are often reported to have difficulties in building and maintaining social relationships with normally developing peers. One of important factor is that they are at risk in acquiring insufficient sets of social skills (Monchy, Pijl & Zandberg, 2004). Kluwin, Stinson and Colarossi (2002) review studies and present that social skills in deaf education has primarily used the concept of social maturity. Studies suggested that students with middle hearing impairment are more socially mature than children with severe degree of hearing impairment. Moreover, researchers propose that hearing impairment can greatly impact a child's social and emotional skill development, as well as the relationships with peers (Moeller, 2007), and they often fail to follow the typical social skill development time line (Schum, 1991). Students with hearing loss, in particular, display higher rates of externalizing behavior problems than children with normal hearing (Van Eldik, Treffers, Veerman & Verhulst, 2004; Hinshaw & Lee, 2003). For example, children with HI often have difficulties in initiating social interactions (Brown, Remine, Prescott & Rickards, 2000; Weisel, Most, and Efront, 2005; Vandell & George, 1981). Weisel et al. (2005) examined the initiation of social

interactions by young preschoolers who are D/HH who simultaneously attended a special center and a regular kindergarten. The findings revealed that although preschoolers who are D/HH made more attempts to initiate interaction with hearing peers than with D/HH peers, the rate of the children's initiations in the regular program were less successful than initiations made towards children in the special program. Their failures in social interactions may be associated with their insufficient social skills and inappropriate strategies in interacting with hearing peers. Vandell and George (1981) claimed that children with HI are probably to be the initiators with inappropriate signals which are impossible to be received, for instance, gestures or vocalizations to one's back. They often wait and hover, even use a behavior unrelated to ongoing activity, or disrupts the ongoing play to attempt to join in peer interaction, resulting in more failure in gaining peer play (Brown, et al., 2000).

Children with HI in this study have been reported to be overreaction when conflicts occurred and the colliding with peers can easily provoke their strongly emotional response, suggesting that they may lack appropriate strategies to cope with stressful situations. Coping strategies are distinguished into problem-focused and emotion-focused coping (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). The problem-focused coping employing planned and assertive behaviors directed at the stressor, whereas the emotion-focused coping refers to regulate emotional consequences of the stressor. The problem-focused coping has been consistently reported to be more successful, across situations, than emotional coping in reducing the negative experience of stress (Compas, et al., 2001). Stinson and Liu (1999) found children with HI who adopt the problem-focused coping strategies in interactions, for instance, directly telling hearing peers what they can or want to do, make interactions more effective. Martin and Bat-Chava (2003) also indicated that asserting needs can facilitate establishing friendships with hearing peers for both girls and boys with HI. Whereas emotion-focused coping used in conflict situations, such as getting angry easily and expressing anger more bluntly rather than considering how to resolve the conflict, may have negative effect on forming friendships with hearing peers, even damage the peer relationships (Rieffe & Meerum Terwogt, 2006).

Academic achievement

The Chinese children with HI in current study report that their poor academic performance affects their interactions and relationships with hearing classmates. Theoretically, children with HI, who are included in regular schools, are expected to achieve academic achievement similar to their hearing classmates. However, students with HI do not perform academically as well as normal-hearing students, and their academic achievement may be at lower level in classroom academic status, especially in vocabulary and reading comprehension (Blair, Peterson, & Viehweg, 1985; Hocutt, 1996; Stinson & Antia, 1999). With grades increasing, the increasing academic demands add difficulty for children with HI on study, and thus the lag between them and typical children in academic achievements increases with age (Hocutt, 1996).

Poor academic performance of children with HI contributes to develop low academic self-concept by comparison of self-perceived academic abilities with the perceived skills of other hearing classmates. Meanwhile, lower academic achievement also influence hearing peers' perception of children with HI as less competence. Hearing classmate tend to perceive them as having much difficulty in relation to learning acquisition and consider special education to be better to meet their needs than general education (Cambra, 2002). Negative academic self-concept and lower assessment by peers are significantly related with poor peer relationships (Van Gorp, 2001). A body of evidence indicates that there is a positive relationship between academic performance and psycho-logical adjustment (Hishinuma et al., 2001). Additionally, children with HI in this study report that they have to spend much more time on study therefore, there was rather limited time playing with peers. Thus, it is reasonable to believe poor academic achievement of children with HI probably has restrained their peer relationships in the regular classroom.

6.2.2 Hearing peer factors

Attitudes

Hearing peers' attitudes towards children with HI in the present study focused on their perception of child with HI hearing loss and competence. With comparison with Czech hearing children, Chinese hearing children tend to perceived children with HI as different from them because of their hearing problem, as more dependent, receiving more attention from teachers and less competent. The attitudes of Chinese hearing children with HI towards their classmates with HI seem to be somehow negative.

These findings are consistent with results of Cambra (2002)'s study, showing that hearing adolescents considered deaf classmates as less competent in learning and more likely to have behavioral problems and believed the needs of mainstreamed deaf students could be better met by a special school. Sinson and Liu (1999) found that the peer acceptance of children with disabilities is affected by other children's understanding of a child's special needs, centering on misinterpretation, fear, communication breakdowns, frustration, and lack of familiarity with deaf peers. Bowen (2008) reported that students in co-enrolled classroom with both hearing and students with HI had a more positive attitude towards deafness and an improved awareness of certain aspects of hearing loss compared with students in classroom only with hearing students. It suggests that the co-enrollment programs in inclusive education indeed have effects on changing hearing peers' attitudes towards children with HI.

Attitude is an individual's viewpoint or disposition toward a particular 'object' (a person, a thing, an idea, etc.). It is considered to be consisted of cognitive, affective, and behavioral components (Gall et al., 1996; Eagly & Chaiken, 1993). The attitudes of typically developing students towards children with disabilities have an important effect on integration of them into regular classrooms and other social activities (Bossaert, Colpin, Pijl, & Petry, 2011). Positive attitudes towards children with disabilities can facilitate the inclusion of disabled students (Vignes et al., 2009). While negative attitudes is regarded as the barrier which may limit students with disabilities

from participating activities in school, and result in low acceptance by peers, few friendships, loneliness, being rejected or bullied, problem behaviors, and difficulties in academic performance (Stoneman, 1993; Jackson & Bracken, 1998; Ollendick, et al., 1992).

Response

Children with HI reported in this study that their initiation or communication needs were often ignored or misunderstood by hearing peers. For example, when children with HI actively initiate interactions with visual or gesture means, their initiations may probably be paid no attention by hearing peers. Previous studies found that, children with HI initiate interactions as often as hearing children, but they experience more failures in initiation, and it seemed that their initiation attempts were more likely to be refused or rejected by their hearing partners (Vandell & George, 1981; Bat-Chava & Deignan, 2001; Deluzio & Girolametto, 2011). Moreover, children with HI are often misunderstood by hearing peers during interactions. For instance, a physical contact such as tapping a peer's shoulder, with purpose of attracting peer's attention or face peer to facilitate speech reading, may misinterpreted as a violated behaviors by peers (Martin & Bat-Chava, 2003). It may be because children with HI use more non-verbal clues, such as signing, eye contact, exaggerated facial expressions, or touching to get attention and communicate with others, which are easily misinterpreted by hearing people as excitable, aggressive or intrusive.

Apart from being ignored or rejected and misunderstood, this study revealed that hearing children also exhibited impatience when communicating with peers who have hearing impairment. The patience the hearing peers display in interactions with children with HI is considered to play a pivotal role in relationships between them and children with HI. If the typical children would like to take additional time and effort, their relationships with children with HI seemed to be better, while if the children were impatient, the relationships between them were worse (Bat-Chava & Deignan, 2001). Indeed, many hearing children exhibit impatience in communicating with

children with HI, because it takes more time to understand peers with HI due to their unclear speech, impeding their relationships with children with HI (Foster, 1998).

The results can be explained from the perspective of hearing status. For peers' hearing status, studies indicate that both HI children and hearing children prefer to interact with peers of similar hearing status (Vandell & George, 1981; Spencer et al., 1994; Rodriguez & Lana, 1996). In the study conducted by Vandell & George (1981), dyadic free play of 16 deaf preschoolers and 16 hearing preschoolers are videotaped on 2 occasions (once with hearing partner and once with deaf partner) to assess their peer interaction. Results suggest that mean interaction duration and proportion of time spent in interaction are greater in "like" dyads (hearing child and hearing partner or deaf child and deaf partner) as opposed to "mixed" dyads. Deluzio and Girolametto (2011) report that hearing playmates initiate interactions less often with the children with SPHL (severe to profound hearing loss) and ignore their initiations more often than those of other hearing children. These results are supported by the former studies, showing that both a higher quantity and quality of social interaction among deaf and hearing children when they know each other with the same hearing status (Rodriguez & Lana, 1996; Spencer et al., 1994). It is conceivable that HI children prefer to interact with peers who also have hearing impairment. Additionally, it has been reported that children with HI can use different interaction strategies based on peers' hearing status (Duncan, 1999; Weisel et al., 2005). For example, deaf children use more visual and less object-based strategies when interacting with deaf playmates than interacting with hearing playmates (Lederberg et al., 1986).

Bullying

In the current study, some children with HI reported to experience being bullied in both Czech and China. They were teased, laughed, given nicknames, or imitated. They expressed their anxiety or fear to these guys who bullied them and also reported that bullying made them struggled with their relationships with hearing classmates. The result is in accordance with the finding of Kent (2003). Kent who examines

health behaviors of mainstreamed students with HI and reported that the incidence of being bullied was significantly higher in students with HI than hearing students.

Bullying is considered as a subtype of aggressive behavior, in which an individual or a group of individuals repeatedly attacks, humiliates, and/ or excludes a relatively powerless person (Salmivalli, 2010). According to previous literature, bullying constitutes a serious risk of the psychosocial and academic adjustment of both victims and bullies; even peers who merely witnessing the attack may be negatively influenced (Erath, Flanagan, & Bierman, 2008; Nanset al., 2004; Nishina & Juvonen, 2005). Sullivan (2006) asserts that children with disabilities are frequently targeted by bullies and those with apparent disabilities, such as hearing loss, are twice as likely to be bullied as children whose disabilities are not readily observable. Dixon, Smith, and Jenks (2004) interviewed students with HI, hearing students, teachers, parents, staff in school and mainstream managers and indicated that students with HI were stigmatized and thus at greater risk for being bullied, and being marginalized. Skelton and Valentine (2003) also reported that some children with HI experienced a lot of bullying by hearing peers and got involved in fights with them in the mainstream school.

Children with HI are at risk of being bullied or victimized may because they often have inadequate social skills (Weiner & Mark, 2009). Children with HI who grow up in hearing family often lack essential social information, increasing the vulnerability to victimization by bullying (Bauman & Pero, 2011). Besides, some personality factors such as lack of emotional control in children with HI have been associated with increased vulnerability for victimization (Kusche, Garfield, & Greenberg, 1983). Moreover, child with HI social immaturity may contribute to a decreased ability to cope with effectively with being bullied (Bauman & Pero, 2011). Finally, there might be another reason that bullying children with HI is not easy to be known by teachers or adults because of children with HI difficulty in communication and oral expression (Tresh, 2004).

Prosocial orientation

This sub-category was identified in only from Chinese interviews. Chinese hearing children who have friends with HI consistently reported they would like to make friends with classmates who have hearing impairment, because they are willing to help and have responsibility to take care of the peers with HI. This finding confirms the result of study conducted by Nunes et al. (2001), who found that the hearing children who had deaf friends indicated pro-social reasons for the friendship, rather than the typical enjoyment and intimacy reasons offered by children at their age. These hearing children, in contrast to others who gave up, viewed it as worthy to make more effort and patience to help their deaf friends (Nune, et al., 2001).

Prosocial orientation, as a form of altruistic motivation, is related to helping people in either physical distress or psychological distress (Staub, 2005). Prosocial orientation is comprised of a positive view of human being, a concern for people's welfare, and a feeling of personal responsibility for others' welfare (Staub, 2003). Empathy and sympathy, which are two closely related and identical effectives, are regarded as the roots of prosocial orientation. Empathy is the vicarious experience of others' feeling; sympathy includes both feeling with and concerning about a person and a feeling of sorrow or concern for the distressed or needy others (Eisenberg, 2002).

Prosocial orientation involves helping, cooperating, sharing, caring and taking responsibility for others, representing the attitudinally based tendency to consider the interests of others during social interactions (Eisenberg & Fabes, 1998). It appears to be cognitive, especially based on measurement; however, it combined with cognitive dimension and affective dimension (Staub, 2005). Radke-Yarrow et al (1983) indicate that children with prosocial orientation are sensitive to others' distress and needs, display concern, and tend to provide assistance to others.

6.2.3 Teacher factors

Attitudes

The teachers' attitudes in this study focus on teachers' attitudes toward the inclusive education for students with HI and their perception of the students with HI, with implication their acceptance of the students with HI in their class. The findings of the current study indicate that teachers' attitudes toward children with HI contribute to the attitudes of hearing peers towards them and child with HI self-concept, further influencing relationships between these two groups of children.

It has been reported that students and teachers possess somewhat negative attitudes toward students with disabilities, or that they view individuals with disabilities as different from and inferior to individuals without disabilities (Gething LaCour, & Wheeler, 1994). With respect to teachers' attitudes towards students with HI in regular school, the studies have obtained inconsistent results. Eriks-Brophy and Whittingham (2013) indicated the surveyed teachers had favorable attitudes toward the inclusion of students with HI in the general education classroom, and had confidence in their ability to teach students and knowledgeable regarding the effects of hearing loss on learning and language. Consistently, Prakash (2012) find that teachers working in regular school hold positive attitudes towards inclusion of children, and view inclusive education can meet the needs of students with HI. However, Dukmak (2013) report more negative finding, that only 16.3% teachers in Arab Emirates support the regular classroom placement for students with hearing impairment.

In present study, Chinese teachers hold negative attitudes towards placement of students with HI into regular classrooms and consider special schools as a better choice for students with HI. The negative attitude of teachers directly affects child with HI self-concept and behaviors, further negatively functioning on their social interactions and relationships with hearing peers. Yaker (1994) asserts that the negative attitudes and actions of others can negatively affect the behavior, social relationships, education, employment, and health of individuals with disabilities. For

instance, if teachers have low expectation on the students with disabilities in terms of their academic achievement and appropriate behaviors, the students with disabilities may probably behave as expected, exhibiting inappropriate behavior and taking little effort into schoolwork.

Additionally, teachers' attitudes may contribute to hearing students' perception and acceptance of children with HI. Roberts and Coursol, (1996) reported that children with disabilities who receive negative attitudes from teachers, were more likely to experience loneliness, absence of friends and absenteeism. Research among typically-developing samples suggests that young children develop social preferences about their peers, in part, based on their observations of whether the teacher thinks the peer is desirable (Hughes & Kwok, 2006). A teacher's liking of a student may mediate as well as moderate the typical link between a child's aggressive and withdrawn behavior and peer rejection, because peers take cues about whether or not to judge a child as deviant based on the teacher's response to that child's behaviors (Mikami, Lerner, & Lun, 2010).

Instructions

The present study finds teachers in both Czech and China take some instructional practice with purpose of promoting social relationships between children with HI and hearing peers. Children with HI also express their need teachers' instructions mediating their relationships with children with HI.

Research suggests teachers' instructions play important role in peer relationships among students. Teachers' input and guidance provide opportunities for children to learning prosocial behaviors, such as being kind, helping, tolerating differences, handling rejection and inclusive (Koplow,2002). Teachers take responsibility to create controlled, balanced environment where children will have opportunity to interact with each other and grow emotionally attached (Mantzicopoulous, 2005). In addition, teachers may be able to continue to help students by fostering an accepting, caring environment that can help students develop friendships and increase engagement and

connectivity to the classroom across all grades (Stanulis & Manning, 2002). Teachers' instructions on guiding peer relations improve the chance for children to form better relationships in the future (Pianta & Walsh, 1996). White and Kistner (1992) explored how peer ratings of a student changed depending upon teacher tone and response to behavior in lower elementary school and indicated that children were aware of teacher behaviors toward their peers and make judgments based on teacher behaviors. Overall, teachers' instructions and guidance may function on students' attitudes, behaviors and acceptance towards peers.

Research focusing on the teachers' instructions on peer relationships between children with HI and their peers indicates that teacher-mediated instruction to develop skills of children with and without peers are effective to promote their peer interactions (Antia, Kathryn, & Nancy, 1994). Teachers' instructions include teaching children how to greet, cooperate, share, initiate and maintain interactions, compliment, and praise in the peer interaction. DeLuzio and Girolametto (2011) proposed that teachers' instructions targeted on hearing peers to promote their social strategies in interacting with children with HI, such as teaching hearing peers inviting, providing praise or approval, asking questions, may increase the response of typical hearing children to their peers with HI.

6.2.4 Social situations

Both Czech and Chinese children with HI reported that they preferred to interact with one hearing peers, whereas have much difficulties in groups discussion or activity in which two or more hearing peers interact with them. Such social situations' functioning on peer interaction and relationships has been reported in previous research.

Parents of children with HI report that their children with HI are better able to follow conversation and communication with hearing peers in one-to-one social situation or in small groups, while struggle to hear and follow conversations in groups of peers (Bat-Chava & Deignan, 2001; Punch & Hyde, 2011). In one-to-one situations, children are able to understand what peers are saying and thus are more confident to

interact with and respond to others. As groups growing larger, children with HI face more difficulty in understanding conversation and therefore have less confidence in participating in the group peers' activities. Teachers were also aware that adolescents face the difficulty of coping in the particularly noisy environments that are typical of teenagers' social gatherings (Punch & Hyde, 2011)

Punch and Hyde (2011) examined the social participation of children with HI in general schools, focusing on their peer relationships, socioemotional well-being and social inclusion with hearing and deaf peers. They found that children with HI face increasing difficulties in social interactions involving groups of people or in noisy environments, in contrast to one-to-one interactions, which are generally easier for children with HI to manage. Martin et al., (2010) arranged children with and without deafness in dyadic and triadic conditions to examine their ability to interact with peers in different social situations. The findings suggested that 20% of deaf children failed to enter in dyadic condition where deaf children interacted with only one hearing peer, whereas 40% of deaf children failed to enter into triadic condition where deaf children entered a group of two hearing children. These findings indicated that deaf children found it more challenging to enter already established peer groups when compared to one-on-one interaction. The study further suggested that deaf children might experience more difficulties in larger social settings.

Martin et al. (2010) interpret the effect of social situations on relationships of children with HI from the perspectives of acoustic and social factors. The acoustic factors refers to greater difficulty on the part of the children with HI to attend to multiple conversations conducted simultaneously compared to one-to-one situation, where there are much more noisy increasing difficulty to hearing clear. The social factors pertain to greater social difficulty arising from the need to join in an existing group of peers with two or more instead of one peer, which may require higher level of social skills in larger social situation while children with HI often lack adequate social competence (Martin & Bat-Chava, 2003). Therefore, it appears that children with HI may face additional levels of combined difficulties from acoustic and social aspects when they enter into the group situations from the one-to-one situation

(Martin et al, 2010; Punch & Hyde, 2011).

Overall, peer relationships of children with HI are affected by various factors, including child with HI factors, hearing peer factors, teacher factors and social situations. These findings are in line with ICF model of disability, which provides “a coherent view of different perspectives of health from a biological, individual and social perspective” (WHO, 2001, p. 28). According to the ICF, disability represents the dynamic interaction between person and environment and is the outcomes of individual’s health conditions and contextual factors which are consisted of environmental and personal factors. The influencing factors identified in this study can be classified into environmental and personal factors in accordance with the ICF model of disability, and these variables dynamically interact with each other and contribute to the peer relationships of children with HI in the classroom. For instance, child with HI poor spoken ability and social behaviors contribute to teachers’ negative attitudes towards them, and then teachers’ attitudes, in turn, affect their self-concept and behaviors and hearing students’ perception of them, therefore further influence their relationships.

6. 3 Integration of quantitative and qualitative results

6.3.1 Factors contributing to poorer peer relationships of children with HI compared to hearing children

The results of quantitative inquiry show that the overall peer relationships of both Czech and Chinese children with HI are poorer than their hearing children in the regular classrooms. The findings of quantitative inquiry can be explained by the results from the qualitative inquiry.

The qualitative inquiry indicates that several factors contributing to the peer relationship of children with HI, including both resilient and risk dimensions. With respect of the risk factors, there are children with HI’s poor spoken ability language ability, personality such as impulsive, easily irritated, and self-centered, deficit in social skills, lower self-concept, and poor academic achievement; hearing peer

negative attitudes, inappropriate response such as ignorance, impatience, or /and misinterpreted, bullying; teachers' negative attitudes and ineffective instructions; and group social situations. These risk factors are considered to contribute to the poorer peer relationships of children with HI in the regular classrooms. This interpretation can be supported by previous studies concerned with influence of spoken language ability (Antia & Stinson, 1999; Bat-Chava & Deignan, 2001; Lederberg, 1991; Spencer et al., 1994), personal characteristics (Martin & Bat-Chava, 2003; Martin et al., 2010), self-concept (Hatamizadeh et al., 2008; Jambor & Elliott, 2005), social skills (Farmer et al., 1996; Frostad & Pijl, 2007; Van Eldiket et al., 2004), academic achievement (Cambra, 2002; Hocutt, 1996; Van Gorp, 2001), peers' attitudes (Stoneman, 1993; Jackson & Bracken, 1998; Ollendick, et al., 1992), response (Vandell & George, 1981; Bat-Chava & Deignan, 2001; Deluzio & Girolametto, 2011), bullying (Kent, 2003; Salmivalli, 2010), teachers' attitudes and instructions (Eriks-Brophy & Whittingham, 2013; Mantzicopoulos, 2005) and social situation (Bat-Chava & Deignan, 2001; Punch & Hyde, 2011) on the peer relationships of children with HI.

6.3.2 Factors contributing to differences in peer relationships between Czech and Chinese children with HI

The quantitative inquiry suggests the patterns of peer relationships display differences between Czech and Chinese children. That is, as compared with hearing classmates, Czech children with HI have similar level of peer acceptance, while have poorer friendships and memberships of peer group; Whereas Chinese children with HI are less accepted by peers, while their friendships and belonging to peer groups are equivalent to their hearing classmates.

The comparison between Czech and Chinese qualitative inquiry results demonstrates that there are differences in the following five sub-categories: academic achievement of children with HI, hearing peers' attitudes and prosocial orientation, and teachers' attitudes and instructions. Differences underlying these influencing

factors may contribute to the differences in pattern of peer relationships between Czech and Chinese children with HI.

In the light of Bronfenbrenner's ecological theory (Bronfenbrenner, 1994), culture and subculture, play an important role in individual development, that is, differences in culture values and actual situations in the society directly the people's thoughts and behaviors. The differences in influencing factors between Czech and Chinese model are considered as associated with differences in culture, history, society between two countries.

Factors contributing to difference in peer acceptance

Research has demonstrated that peer acceptance of children is closely related to the academic achievement (Hishinuma et al., 2001), hearing peers' attitudes (Vignes et al., 2009), teachers' attitudes (Hughes & Kwok, 2006) and instruction (Stanulis & Manning, 2002). In this study, Chinese children with HI are less accepted by their peers, while Czech children with HI are accepted similar to their hearing classmates. The difference in peer acceptance between Czech and Chinese children with HI may be associated with the differences in child with HI academic achievement, hearing peers' and teachers' attitudes towards children with HI.

Academic achievement

Chinese children with HI regarded their poor academic achievement to be negatively contributing to their peer relationships, while this theme was not identified in the Czech inquiry. Chinese participants with HI reported that their poor academic performance made them feel great pressure and influenced their self-perception and peer relationships. They have to make more effort and spend much more time on study but get lower academic achievement than hearing classmates. Their poor academic performance also contributes to hearing peers' and teachers' perception of them. Children with HI are often perceived as less competent in learning and difficult to get success in academic domains. It seems that poor academic achievement has

brought about great pressure on the children with HI and further affected their peer relationships. The children with HI pressure of academic achievement from rooted in the Chinese significantly highlighting academic achievement of a child.

Education has historically played a central role in China, and academic achievement of children has been extremely concerned by parents and educators. The academic achievement has been considered as the biggest resource of pressure for most Chinese students since they are very young. It is related to people's perception of education, high expectation of parents and the demands and availability of better educational opportunities, better job, social status and so on. Therefore, academic achievement is one of the most important criteria of assessing students in the educational system.

The nature of the pressure for high academic achievement is exerted with a cultural and social context. China has the tradition of academic examination is an important source of academic pressure (Li & Li, 2010). The academic examination stem from the Sui Dynasty over 1400 years ago, when an examination system was established to select government officers among civilians from various levels of exams. Scholars who worked hard at study through years and passed the exams were given title, prestige, and power. A family could benefit and prosper for generations with such a scholar. A lot of people take the exams from when they were very young until very old, with the expectation of getting a better life. "From a poor guy in the morning to someone going to the royal palace in the evening" was the dream of ancient scholars and the description of "play no attention to outside matters, only focus on saints book" vividly depicted the life of them (Li & Li, 2010, p.212). This examination system which lasted for over 1300 years also had its positive side and had made great contribution to the fairness in competition, political stability, Chinese civilization and the spread of Confucian culture. Although this examination system had been abolished for more than 100 years, this tradition of moving up the social ladder through education has a tremendous impact on Chinese cultural values.

Teachers' and hearing peers' attitudes

With compared to Czech participants, Chinese teachers' and hearing peers' attitude towards children with HI seem to be more negative. These negative attitudes are in relation to the negative attitudes towards people with disabilities, which are rooted in the characteristic of Chinese society and culture.

Chinese society is collectivistic, in such culture, conformity is highlighted and the evaluation of a person's worth is often based on how much he/she contributes to the society (Hampton, 2000). In traditional Chinese society, the people with disabilities are considered to not only make much less or no contribution to society, but also put a burden on the society particularly on family. Therefore, person with disabilities are often perceived as less competent and even useless, and as a burden to the family. They are often regarded as the disadvantage and socially marginalized groups.

Another significant value system in Chinese culture is Buddhism, believing in Karma (Hampton, 2000). Karma is the belief that good deeds will cause positive consequences, while bad deeds will bring about negative consequences. This belief make people believe that if a family has a child born with a disability, the family must have behaved badly (Bui & Turnbull, 2003). Therefore, Chinese people, especially in rural areas, perceive the birth of a child with disabilities as a sign of their parents' bad Karma or a curse from their ancestors (Chiang & Hadadian, 2007). As a result, parents and other family members of child with disabilities often feel ashamed of having such a child with disabilities. Chinese parents may "felt uncomfortable acknowledging their child's disability and their need for services in their own communities" (McCallion, Janicki, & Grant-Griffin, 1997, p.345), and they even hide their child with disabilities at home. Additionally, Buddhism encourages self-restraint, self-deprivation, self-abnegation, self-effacement, and humbleness (Bui & Turnbull, 2003). Influenced by Buddhism, people are encouraged to accept the social role of people with disabilities as a marginalized population who are inferior to others and persons with disabilities themselves mostly accept their stigmatized roles in society.

During the past long time, children with HI mostly were placed into segregated

schools and sign language was their main communication mode. Inclusion education for children with HI is a completely new for both teachers and typical students in regular schools. Although government has carried out several measures to improve social attitudes towards people with disabilities and inclusive education, the notion that placement educating children with disabilities into the regular classrooms and receive education together with typical children is still new to the general public, especially in the rural areas of China (Deng & Zhu, 2007). It needs more time to change the public's attitudes towards people with disabilities and inclusive education.

Apart from the traditional cultural values and the current status of inclusive education in China, there are other factors contributing to teachers' negative attitudes towards children with HI. Firstly, as previously described, academic achievement is valued highly in China. Assessment a teacher's quality, to a large extent, relies on his/her students' academic achievement based on the mean of test scores. Children with HI often perform poor in examination and get low scores. Therefore, some teachers think children with HI's poorer academic scores of the tests pull down the average scores of students in his/ her class and result in others' low evaluation of them. Again, there are too many students in a classroom and the teaching task is heavy for each teacher. Teachers report that they have no enough energy and additional time to educate children with HI. Finally, it is the most import that teachers lack professional knowledge and skills to instruct the students with HI appropriately. Teachers admit that they don't know much about hearing loss and have no idea about how to teach them, even if they are willing to make effort and spend more time on a child with HI in their class.

Compared to Chinese teachers, Czech teachers hold more attitudes towards inclusive education for children with HI. Czech Republic is a country with a special history with significant changes taking place in 1989. Czech society was collectivistic before; however, it has been individualistic for nearly 25 years. The social values have been greatly changed. A recent study by Pančocha and Slepícková (2011) suggests that younger and more educated groups of population are more tolerant to people with disabilities than older groups and groups with lower education; in addition, a person

with a disability has been more often accepted as a schoolmate or child's schoolmate by respondents with lower age and higher education. These results provide evidence for the findings in present study that Czech children hold positive attitudes towards their classmates with HI and accept them as similar to hearing peers. Czech Republic lies in the Europe, near to many countries which have developed inclusive education for a longer time, such as Britain. It is easier for Czech people to study and are affected by the advanced thoughts and practice for inclusive education in the Europe.

Czech teachers have similar worry about lacking professional skills to educate children with HI; however, their awareness of inclusive education is better than Chinese teachers. Furthermore, there are much fewer students in one classroom. The classrooms investigated in the present study consist of 15 to 20 students, no more than 30 students in one classroom, whereas it is normal that there are 50 or more students in one classroom in China. A Czech teacher reported that there is a rule in the regular school, that is, if classroom where there are students with HI, the number of students should be less and the acoustic equipment should be met with needs of students with HI. Finally, the assessment system of teacher is different in Czech, and academic achievement is not so highlighted in Czech as in China.

Teachers' instructions

This study finds that Czech teachers' instruction focuses on practical instructions, such as teach hearing students how to interact with, how speak to peers with HI, and how to cope with conflicts, while Chinese teachers consistently instruct hearing students to take care of, help hearing classmate with HI to foster their virtues and goodness.

It is worth noting that Chinese teachers' instructions are more abstract and impractical. Maybe children know they should be kind to children with HI, however, don't know how to interact effective with them, because of lacking necessary knowledge about hearing loss and social strategies. After ineffective attempts to interactions may make hearing peers feel difficult to contact with children with HI

and perceive them as different and less competent, consequently disliking or ignoring peers with HI.

Valuing highly on moral education is rooted in Confucianism in China, which is the dominant philosophy in China. Confucianism encourages people to be tolerance, obedience, virtue, and courtesy (McLoughlin, Zhou, & Clark, 2005). According to Confucius, everybody should love all, no matter he/she has or hasn't disability. Furthermore, the people with disability should be helped and supported more by the society. Moral education should help children develop personal qualities such as helping and loving people with disability. Moral education is an important course in Chinese educational system. In addition, Chinese often view people with disabilities are more vulnerable and need more help. Teachers may consider it as a good opportunity to educate typical students from moral perspective as there is a student with disability who need help and caring in the class.

Besides the cultural and social values, differences in professional knowledge and skills of teachers might be another factor. Czech teachers they have more professional knowledge and skills than Chinese teachers and apply the theoretical information into practice. The Czech teachers have to take part in some teachers training compulsorily to improve themselves (Vitova, 2011), therefore they getting professional knowledge about education for children with HI are more actively. The professionals in the special center often communicate with them and discuss how to educate students with HI more appropriate. In China, special educational training for teachers in regular school has been developed in recent years. Many teachers have not received professional training on inclusive education for students with HI systematically. When asked about whether they have received professional training, nearly half answered no. Lacking theoretical instructions, Chinese teachers naturally think about and instruct hearing peers from the angle of moral education, however they seem to don't know how to effective instructions in practice to promote relationships between children with and without HI.

Factor contributing to difference in friendships and peer groups: prosocial orientation

Regarding the differences in friendships and peer groups between Czech and Chinese children with HI in regular classroom may be relations to the difference in the major category of hearing peers factors. Besides the common sub-categories including hearing peers' attitudes, response, and bullying, there is additional sub-category in Chinese model, that is, prosocial orientation.

Prosocial orientation is essential for the functioning of the collectivistic society, and prosocial attitudes and behaviours are highly valued and encouraged in China (Ho, 1986). In collectivistic cultures, one of primary tasks it to help children learn how to control individualistically oriented acts and to develop cooperative and prosocial attitudes and behaviors (Chen, 2000). Chinese students are required to receive collectivistic moral education in which children are encouraged to cooperate with and help each other in the peer group. Children are also encouraged to display prosocial behaviours in a variety of collective activities that are organized by organizations such as the Young Pioneers and the class committee.

As mentioned above, Confucianism has planted love, mercy, kindness and charity deeply into Chinese national culture and thus affected the people's thoughts and behaviors. People with disabilities are often considered as unfortunate, pitiful, and deserving sympathy and helping. With the function of family's and school's education as well as teachers' instructions from the perspective of moral education, these cultural values play an important role in children's evaluation, perceiving, treating children with HI in their classroom.

Moreover, cultural endorsement of a prosocial orientation may facilitate the friendships between hearing children and children with HI. In China, children with HI are often perceived as disabled person, who are considered as more sick and vulnerable. Therefore, it is understandable that Chinese hearing children who have friends with HI express their willingness to be friend to help and take care of them. Western people may view friendships as mutuality, reciprocal responses and having

equal obligation and responsibility among friends (Chen et al., 2004). Children's unwilling to make friends with children who have disabilities partly due to their unwilling to take more responsibility in the friendships relations (Kalymon, et al., 2010). Unlike western people, Chinese think highly of help in friendships. If friends need help, Chinese people will probably provide help unconditionally and consider providing help to friends as responsibility. In the friendships relations between a hearing child and child with HI, the hearing child is often willing to put forth greater effort and take more responsibility.

It is not contradictory that hearing children would like to make friends with children with HI, while they display fewer acceptances of peers with HI. This is because peer acceptance and friendships are different dimensions of peer relationships. Peer acceptance, in this study, represents the overall degree of being liked by the whole class, whereas friendships represent voluntary, intimate relationships between two children. The children who are rejected or unpopular in the class may have mutual friends, while those are popular may have no friends (Gest, et al., 2001).

Not all children have prosocial orientation, because it is a complex structure affected by contextual and personal factors. The traditional culture can be considered to be one of external factors indirectly affecting an individual's prosocial orientation. Besides, other factors such as family, peer, and individual personality have more directly influence the prosocial orientation. For example, Ma, Cheung and Shek (2007) indicate that cohesive and warm relationships among family members are essential for the development of prosocial orientation; individual with personal characteristics such as extrovert and socially desirable tend to offer more help to others; in addition, girls are more like to display prosocial behaviors like cooperating, sharing and helping than boys. Therefore, it is difficult to foster every child to develop prosocial orientation. From this perspective, it can be explained why some Chinese children with HI are rejected by the hearing peers.

It is noted that the children in this study who have friends with HI are chosen by teachers to be assistant for children with HI. It has been probably that these children usually display prosocial attitudes and behaviors and then regarded to be the most

suitable peer to assist children with HI. Therefore, these hearing children's prosocial orientation facilitate developing friendships between them and classmates who have hearing impairment. Summarily, Chinese traditional philosophy and moral education's value highly on prosocial orientation, and children with personal prosocial orientation tend to make friends with peers who have hearing loss and help, take care of them.

Regarding peer group, in this study, focuses on 2-clique peer group, which is small, intensive, close and based on friendships. Although not all children have friendships can belong to a peer group, children who have friends in the class are more likely to be member of a peer group, by links of friends' relationships. The present study indicates that children with HI who have at least one friend in the class, except only 1 child, others all have memberships of peer groups in both Czech and China. It demonstrates peer group is closely associated with friendships, therefore, prosocial orientation of the hearing children can facilitate children with HI develop memberships of peer groups.

6.4 Recommendations for intervention

Based on the findings of this study, appropriated interventions are urgently needed in order to promote peer relationships of children with HI in the regular classrooms. Four recommendations have been put forward as following, with purpose of providing useful reference for practice in inclusive education.

6.4.1 Developing spoken language ability of children with HI

In line with previous research, this study confirms again that communication is the biggest barrier for children with HI to build and maintain relationships with hearing peers in the regular classroom (e.g. Antia & Dittillo, 1998; Antia & Stinson, 1999; Bat-Chava & Deignan, 2001; Bobzien et al., 2012; Lederberg, 1991; Spencer et al., 1994). Developing age-appropriate spoken language ability of children with HI seems to be particularly important for engaging meaningful social interactions and promoting their peer relationships.

Early language input

Research has demonstrated that poor language ability early in life is related to later deficits in language development (Rescorla, 2002; Ziegler, Pech-Georgel, George, Alario & Lorenzi, 2005). Getting language input and acquisition to children with HI at the earliest possible ages is crucial for the prevention or remediation of delay, which has been strongly emphasized in the clinic literature (Ramkalawan & Davis, 1992; Yoshinaga-Itano, Sedey, Coulter, and Mehl, 1998). Hart and Risley (1995) report that children who are deprived of sufficient amounts/and or quality of language input in their earliest years are at risk for poor outcomes in language. For children with hearing loss, early diagnosis and hearing aid fitting or cochlear implantation are significantly associated with improved speech and language outcomes (Osberger, Maso, & Sam, 1993), as these auditory assistive equipments provide essential conditions for getting language input to children with HI. Especially, cochlear implant with advantages over conventional amplification has shown great benefits on language acquisition and communication development. Researchers indicate that children with severe-profound hearing loss receive cochlear implantation at earlier age may get more benefits based on the assumption that the earlier the input is experienced the greater the benefit will be to the child (Connor & Zwolan, 2004; Spencer, 2004). There are potential advantages for children who receive cochlear implant during infancy. One advantage is the longer duration of auditory stimulation and the other advantage is that auditory input during the first two years of life, which is a potential critical period for language development, may be particularly conducive to more rapid progress in spoken language (Nicholas & Geers, 2006).

Intervention approach

There are four main approaches to improve child with HI communication: visual methods focusing on sign language, total communication combining lip-reading, speech, natural gestures and written language, Auditory-Oral approach especially for children with HI in special school, and the Auditory-Verbal approach utilizing listening as a primary modality for development of spoken language.

Auditory-Verbal therapy (AVT) refers to an intervention approach for children

with HI to develop spoken language that emphasizes the development of spoken language through early identification of hearing loss, optimal amplification, and intensive speech and language therapy where parents serve as the primary language models for their children (Eriks-Brophy, 2004). One of the primary goals of this intervention approach is to foster educational and social inclusion children with HI with hearing peers, and enable them to become independent, participating and contributing citizens in mainstream society (Auditory-Verbal International, 1991). The Auditory-Verbal approach is based on the notion that most children with mild to severe/ profound hearing loss are able to communicate through spoken language if provided with appropriate amplification, and abundant listening and language stimulation to develop their residual hearing (Lim & Simser, 2005).

Therefore, Auditory-Verbal therapy may be an available option for children with HI in the inclusive educational settings, which has been viewed as effective to improving language and speech ability based on evidence in practice (see review of Eriks-Brophy, 2004), as well as their social attention and skills (Goldberg & Flexer, 2001).

6.4.2 Improving social skills of children with HI

According to Martin and Bat-Chava (2003), social skills are needed at each development level especially if one is to make friends and interact with peers. However, this study found that many children with HI in regular classroom lacked appropriate socio-emotional skills, contributing to difficulty in peer relationships.

There are two main approaches to intervene on social skills. One approach focuses on improving social skills, including smiling, body posture, eye contact, greeting, turn waiting, cooperation, sharing, complimenting, communication responses, initiating and maintaining conversation, and praising. The intervention strategies involve instructions, modeling, promoting, group discussion, feedback, role-play, positive reinforcement, and home activities (Rivet & Matson, 2009). The other approach has been to incorporate cognitive skills, such as the cognitive-social skills program developed by Suarez (2000), aiming to improve thinking and social

skills of deaf children in order to promote their social, emotional and personal adjustment. Suarez (2000) reported that this invention program succeeded in improving deaf children's social and emotional adjustment, social problem-solving skills and assertive behaviors, especially in making comprehensible the steps implied in the solution of interpersonal problems.

There is another school-based curriculum called PATHS (Promoting Alternative Thinking Strategies) program, which is based on the affective- behavioral- cognitive- dynamic (ABCD) model of development and change (Greenberg & Kusche, 1993). This program targets at self-control, awareness and communication of feelings, and problem-solving skills. It has been shown that the PATHS program increase social problem solving, emotional recognition, and teacher-and parent-rated special competence in children with HI (Calderon & Greenberg, 2003).

6.4.3 Promoting hearing peers' response

Hearing children in this study display ignorance or being unwilling to respond to the initiation of children with HI. Children with HI highly need the support and scaffolding from their interactional partners in regular school. Therefore, instructing normally hearing children to appropriately respond to peers who have hearing loss may benefit their relationships (Deluzio & Girolametto, 2011). Peer-mediated interventions emphasize the involvement of typically developing peers as socially competent facilitators to promote appropriate communicative and social behaviors and stress on training typically developing children (Bruce & Hansson, 2011). This approach can generate many occasions for practice for children in order to make the acquired skills permanent and stable over time. Three main aspects are focused in peer-mediated interventions for children who have difficulty in communication: (1) manipulation of the situation, encouraging typical children to interact with target children, (2) peer instruction in social interaction strategies, teaching typical peer special social skill strategies to enhance social interaction with target children, (3) instruction of targeted child in initiation strategies, teaching them initiation skills to increases peer effectiveness (DiSalvo & Oswald, 2002). Peer-mediated intervention

approach has been reported to effectively promote communication skills in young children with communication problems (Chung et al. 2007; Bruce & Hansson, 2011); it may contribute to improve interaction between children with HI and their hearing peers.

6.4.4 Enhancing teachers' professional skills

Teachers both in Czech and China in this study delivered their worries about insufficient professional knowledge and skills to instruct children with HI and promoting their relationships with hearing peers in the regular classroom. Besides, Chinese teachers' attitudes towards inclusive education for children with HI seem to be negative, due to their lack of understanding inclusive education (Deng & Poon-McBrayer, 2004).

Teachers in regular schools mostly only have received training in general education, while have not received any or sufficient special educational training. When they face a student with HI in his/her class, it is normal for them to feel incapable to instruct them to fully engaging in class activities with hearing classmates and promote their relationships. Inclusive education requires that teachers have additional skills to be able to cater to diverse students' needs. Inclusive education training is in great request to provide in-service teachers in regular schools with professional and practical instruction. Fundamental knowledge and skills of inclusive education, such as understanding needs and abilities of children with special educational needs and pedagogic skills such as instructional accommodation and activity differentiation, should be provided widely to teachers. Meanwhile, the connections between regular school and special school are meaningful to increase opportunities for teachers in general education to learn more professional knowledge through being supported by or discussing with teachers from special schools. Additionally, related policy or law is needed to encourage and support teachers' training.

Apart from in-service teachers' training, pre-service teachers' training must be done to prepare well for inclusive education. Pre-service or initial teacher training is

viewed as the best point at which to try and influence positive attitudes towards inclusive education (Loreman, Forlin, & Sharma, 2007). Pre-service refers to training individuals before they become teachers and mostly are implemented in university or college. The inclusive education should be a compulsory subject for all teacher candidates and an integral part of teacher training curricula. Countries, such as U.S. and Australia, with strong track records of implementing inclusive education have strongly emphasis on pre-service teachers' training and adopted the model of inclusive education as compulsory subject in training programs for a long time (Van Laarhoven, 2007). Importantly, the government should work towards promoting inclusive education and supporting inclusive education as a compulsory subject in pre-service teachers' training programs.

Returning to social contact theory, four conditions including equal group status, common goals, intergroup cooperation, and the support of authorities are necessary for effective contact and intergroup relationships. The study is with expectation that under the instruction of teachers, children with HI's age-match spoken language ability and sufficient social skills, in addition with hearing peers' active, effective responses can facilitate creating these critical conditions and contribute to their effective contact and relationships. That is, children with HI can engage equally in reciprocal interactions, their interactions are frequent as well as intensive; they can participate in all classroom activities with cooperation aimed towards achieving a common goal, as well, teacher can provide effective instructions.

6.5 Limitations of the present study

First, the sample size of children with HI in the present study is small due to various reasons as following. Firstly, students with HI are in low incidence population in regular schools. It is often that there are only one or two children with HI in one school and occasionally, more than two or three in only few regular schools. Again, the research is needed to get the permission from parents of children with HI and it happens sometimes that parents don not willing to make their children participated in

the study and refuse to give us permission. Additionally, investigations could be conducted suitably in the school to not disturb class much, and then have to get administrator's and teachers' permission to participate in the study. Some targeted children did not participate in this study because of inappropriate time for their class and getting no permission from administrators and teachers, as well as parents. Finally, each school is dispersive and it is a long way to go to each school. It takes much energy and time on the way. It is difficult for the major researcher to go to more schools and do more investigations.

Second, implicit variables related to peer relationships and quality of friendships of children with HI are not involved in this study. Peer relationship is a multi-dimensional structural concept, including both explicit and implicit aspects. In this study, peer acceptance, friendships, and peer groups were measured to assess the peer relationships of children with HI, however, the three indexes are only relation to the explicit structure of peer relationships. The implicit variables such as the feeling of being isolated, sense of loneliness, or sense of community and belonging are not involved in the quantitative phase. In addition, friendship in this study is defined as the number of reciprocal positive nominations. This operational definition has focused on the quantity of friendships and ignored the quality of friendships. Although this study demonstrated that some children with HI have hearing friends in their classroom, it is unclear about their quality of friendships.

Third, more appropriate methods could be adopted to collect data. The mixed-methods research design was adopted in this study, however, only sociometric methods- peer nomination, and semi-structural interview were used to collect data. Other methods such as observation could be used to gather more rich information. However, observation regularly would spend too much time, as well as teachers refused to give permission, therefore, observation peer interactions and classroom participation of children with HI have not implemented. In the future, the major researcher of this study will try to cooperate with teachers in regular schools and get opportunities to observe children's naturally behaviors or reactions during their social interactions and relationships.

Fourth, the differences in peer groups between Czech and Chinese children with HI in the regular classroom have not been interpreted sufficiently in this study. Czech children with HI displayed fewer memberships of peer group than their hearing classmates, while Chinese child with HI belonging to peer groups were similar to their hearing peers. The researcher explained in this study that peer group is on the basis of friendships and most children with friends often belong to peer groups through links of friends. Chinese children with HI were found to have equivalent friendships to their peers, so they have similar memberships of peer groups; whereas Czech children with HI have fewer friends than their hearing peers, therefore fewer of them belonged to peers groups. There must be other explanations such as cultural perspectives, and researcher should seek to come up with other appropriate interpretations.

Fifth, differences in pattern of peer relationships between Czech and Chinese children with HI need to be further probed. This study, in the quantitative inquiry, have not only found the overall peer relationships of children with HI are poorer than their hearing counterparts in both Czech and China, but also has found some differences in peer pattern of peer relationships between Czech and Chinese children with HI. The qualitative inquiry focused on the influencing factors on the overall peer relationships to provide explanation for why child with HI peer relationships are poorer than their hearing classmates. Although the differences in pattern of peer relationships between Czech and Chinese children could be interpreted by some influencing factors, the interpretation was not deep and more research is needed to further explore this issue.

6.6 Conclusion

The present study aims at examining the social outcomes of inclusive education for children with HI, focusing on their peer relationships in regular classrooms. A mixed methods study with triangulation convergence model design was conducted, combined with quantitative survey and qualitative inquiry in both Czech Republic and China. The sociometric method, peer nomination, was used to collect data in the

quantitative survey, in order to investigate the peer acceptance, friendships and peer groups of children with HI in regular classrooms. During the qualitative inquiry, data was collected by the mean of semi-structural interviews, with purpose of explore the important factors contributing to the peer relationships of children with HI.

The findings of quantitative inquiry demonstrate that the overall peer relationships of children with HI are poorer than their hearing peers in the regular classrooms in both Czech and China with compared to hearing children; furthermore, the pattern of peer relationships displays different between Czech and Chinese children with HI. Czech children with HI are accepted by peers similarly to their hearing classmates; while they have fewer friends in the class and belong to fewer peer groups as compared with hearing children; whereas Chinese children with HI are less accepted by peers than hearing children, while the number of their friendships and memberships of peer groups are equivalent to hearing classmates.

The results of qualitative inquiry indicate that four common major categories of influencing factors on peer relationships of children with HI emerge in both Czech and Chinese data analysis. They are child with HI factors, hearing peer factors, teacher factors and social situations. However, differences appear in sub-categories within some major categories. In Chinese model of influencing factors, child with HI factors include five sub-categories such as spoken language ability, personality, self-concept, social skills and academic achievement, hearing peer factors embrace four sub-categories such as attitudes, response, bullying and prosocial orientation, teacher factors are comprised of teachers' attitudes and instructions, and social situations. In the Czech model, academic achievement of children with HI and hearing peers' prosocial orientation have not been identified and the other sub-categories are the same to Chinese model.

Integration with the findings from quantitative and qualitative inquiry through comparing and contrasting, the poorer peer relationships of children with HI in regular classrooms as compared to hearing children are affected by several risk factors including poorer spoken language ability, personal characteristics such as impulsive, easy irritated, self-centered, lower self-concept, deficit in social skills of children with

HI; hearing peers' negative attitudes, ineffective response like ignorance, impatience, or /and misinterpreted, bullying; teachers' negative attitudes and invalid instructions; and group and noisy social situations. The differences in pattern of peer relationships between Czech and Chinese children with HI are associated with differences in sub-categories of influencing factors. The first difference is that, peer acceptance of Czech children with HI is equivalent to their hearing peers, while Chinese children with HI are less accepted by peers with compared to their hearing classmates. It may be related to poor academic achievement of Chinese children with HI, hearing peers' negative attitudes, teachers' negative attitudes and ineffective instructions in practice. The second difference is that Czech children with HI have fewer friends in the class as compared to their hearing classmates, while Chinese child with HI friendships and memberships of peer groups are similar to their hearing peers. The difference may be attributed to the Chinese hearing students' prosocial orientation in the relations of friendships between them and children with HI.

Finally, recommendations for intervention on social relationships of children with HI with hearing peers in the regular classrooms are put forward based on the findings from this study. The recommendations focus on improving spoken language ability and social skills of children with HI, promoting hearing children's response and enhancing teacher's professional training.

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Appendix A Demographic information about children with HI

1. Name_____;
2. Age _____;
3. Grade_____;
4. Gender: (1) male; (2) Female
5. Degree of hearing impairment:
 - (1) Mild (26-40dB) (2) Moderate (41-60dB)
 - (3) Severe (61-80dB) (4) Profound (more than 80dB)
6. Placement in regular schools (may choose more than one option):
 - (1)Regular classroom (2) Special classroom (3) Resource classroom
7. Number of hours in mainstream schools:
 - (1) Less than 1 hour/day (2)1-3 hours/day
 - (3) 3-5 hour/day (4) more than 5 hours/day
8. Preferred communication mode in the school:
 - (1) Spoken language (2) Sign language
 - (3) Both spoken and sign language (4) Others
9. Auditory aids
 - (1) Hearing aids: _____years
 - (2) Cochlear implant: _____years

Appendix B Peer nomination task

Who do you like most to play with in the class?

Please write down his/her name (maximum 3 names).

1. _____; 2. _____; 3. _____;

Who do you like least to play with in the class?

Please write down his/her name (maximum 3 names).

1. _____; 2. _____; 3. _____;

Appendix C Interview Questions**For children with HI:**

1. How is your school life in this school?
2. How are your relationships with classmates? Why?

For hearing children:

1. What do you think of XX (the name of child with HI in their class)?
2. How easy or difficult is it to make friends with classmate with HI? Why?

For teachers:

1. How are the relationships between XX (the name of child with HI) with classmates? Why?
2. How about your experience on educating a child with HI?
3. What do you think of children with HI receiving education in the regular schools?

For professionals:

1. What do you think of the peer relationships of children with HI in the regular classrooms?
2. What factors do you think are important for peer relationships of children with HI?