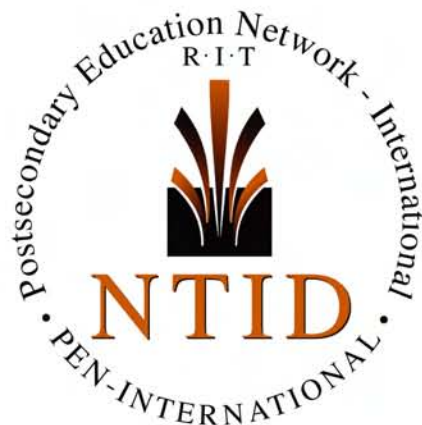# Postsecondary Education for Deaf People in China:
Issues, Roles, Responsibilities and Recommendations

A Report to the China Disabled Persons' Federation

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Postsecondary Education for Deaf People in China: Issues, Roles, Responsibilities and Recommendations

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Executive Summary

China has placed great value on bringing people who are deaf into society and the country is moving very quickly to make this a reality. With each 5 year plan ambitious goals are set as regards expected progress. China is facing all the challenges that have been faced around the world in the education of people who are deaf, but the country is dealing with the challenges on a much larger scale.

China is striving diligently to find solutions to these challenges which are in harmony with its culture and society. The country has displayed a refreshing willingness to explore solutions implemented in other countries in an effort to systematically determine which are appropriate for adoption or adaptation in China.

This report chronicles the myriad creative suggestions for improving postsecondary education for people who are deaf in China that were gleaned from interviews with administrators, faculty members, government and CDPF officials, deaf students, and deaf community members. It also includes a few relevant suggestions and ideas offered by the two authors of this report.

The two authors of this report were most impressed with the number of interesting and creative ideas being discussed and implemented in China as it strives to offer postsecondary education to people who are deaf. The following is a summary of the recommendations contained throughout this report. These authors realize that, once this report is subject to wide scrutiny, some recommendations will be adopted as is, others will be adapted and still others will be rejected.

- **Improve the quality of education**—China has achieved great success in assuring that most deaf children receive compulsory education and the country is establishing secondary schools and tertiary programs very rapidly. There is now a need to emphasize ways to improve the *quality* of this education.

  - Continue upgrading teacher qualifications. A number of programs are raising the academic qualification for new faculty members. However there are other important qualifications that respondents felt should be encouraged or required.
    - Encourage increased/enhanced levels of content area knowledge of faculty members.
    - Explore systematic ways for faculty members to update their content knowledge, such as professional organizations, workshops, and the like.
    - Provide more autonomy for administrators to hire the best qualified faculty members.
    - Strongly encourage and arrange for faculty members to increase their knowledge of deafness, including deaf culture taught by deaf persons.
    - Improve communication skills of faculty members by establishing policies and support structures.

- Create teacher training courses for deaf individuals.
- Consider hiring fully qualified deaf people as faculty members and provide educational and advancement opportunities for them.
- Many faculty and students have asked for simplified textbooks made for deaf students. Others warn that there is a significant risk of reducing the quality of education as well as eliminating important content. These authors strongly suggest that simplification of content is not a very productive approach. However, finding alternative approaches, including allowing for greater time to cover content, providing support services, utilizing new teaching approaches, and the like has allowed deaf students to learn the same material as their hearing peers.

o Encourage collaboration among faculty members and teachers, and between institutions in a search for effective and efficient ways to teach. There are a number of approaches being tried in China. There needs to be as much sharing and discussion as possible between faculty members regarding these approaches.
- Encourage and establish exchanges and workshops between colleges within and outside China, mainstreamed high schools serving deaf students, schools for the deaf, and rehabilitation centers.
- Explore creative ways to teach via visually oriented approaches (particularly when teaching abstract concepts) and use educated deaf adults to help develop such approaches.
- Explore creative ways of using existing and new instructional technologies.
- Collaborate with successful deaf adults, including members of the Chinese Association of the Deaf, to develop new ideas for teaching approaches.
- Undertake research to test new teaching methods.

o Increase flexibility since a "one size fits all" approach does not meet the educational needs of many students. More individualization currently is being considered and this should continue. Entering students might be offered courses that make more efficient use of their time. Further, policies and procedures that negatively impact upon flexibility should be examined.
- Some colleges require extra writing activities such as journal writings based on the demonstrated needs of most incoming deaf students. However, this should not be required for students who do not need such work.
- Entrance requirements might be expanded beyond an exam alone to include other measures, such as portfolios. Exams could also be made more comprehensive and standardized. At one college incoming students are given an exam to determine which level of Chinese courses is appropriate for an individual student. Several levels are offered.
- Increase the amount of time students can use the internet so that they can more readily access content in their fields of study.

- Establish high expectations as regards students' developing and utilizing their abstract thinking abilities. Research and experience has shown that deaf persons are very able to comprehend and work with abstract concepts if there is clear communication and effective teaching.

- **Diversify and increase numbers of majors beyond art and computers**—Almost every deaf individual interviewed expressed the desire for a greater choice of majors, noting in particular that there are students who might be very talented in areas other than art and computers. Some deaf students have gone to other countries so they could receive an education in a variety of fields not available to them in China.

    - Consider ways to provide deaf students access to mainstream programs. This would automatically increase the choice of majors.
    - Increase the knowledge of faculty, students, parents, high school teachers, and employers regarding the successful careers held by deaf people.
    - Work with employers to open new employment opportunities for deaf graduates.
    - Continue to find productive ways to educate society at large regarding the abilities and successes of deaf individuals

- **Create access to mainstream courses and programs**—A number of individuals interviewed thought that deaf students could succeed in mainstream courses and programs, including distance learning, if there were ways to overcome the barriers and obstacles to access within these programs. Limited resources and lack of accommodations were cited as barriers.

    - Examine existing structures for modifications that would make it easier to access the mainstream.
    - Consider creating transition programs to prepare students to attend bachelor's level mainstream programs if they are not initially prepared to do so.
    - Conduct a review of successful mainstream programs around the world to determine what features of these could be of use in China. It would be particularly useful to review a WWW site in the USA that provides suggestions for effective mainstreaming—http://www.rit.edu/~classact/.
    - Consider implementing accommodations that could foster mainstreaming such as:
        - Qualified and skilled interpreters in classrooms
        - Voice-to-text recognition programs
        - Employing hearing students as note takers.
        - Establish tutoring centers where deaf students can obtain help on a variety of topics, not only from hearing individuals but also from deaf peer tutors.

- **Improve pre-college education**—Underdeveloped pre-college programs were often cited as a serious limitation to the success of deaf students in college. However, there are few upper secondary school options available for deaf students. Irrespective, available middle schools are working very hard to prepare deaf students for college as students often go directly to college from these schools. It is important to note that most faculty and administrators at the postsecondary level could not visualize how to be helpful in improving pre-college education other than by raising entrance requirements and providing guidance and practice for the entrance exams. Nonetheless, there were some suggestions generated and these are noted below:

    o Continue government efforts to establish upper secondary schools for deaf students.
    o Create broader, more comprehensive entrance exams which could encourage pre-college programs to offer a broader curriculum.
    o Explore ways in which colleges can help with the improvement of pre-college education. For example, there has been discussion regarding establishing a preparatory year at colleges. This is a potentially very productive approach. In addition, colleges can also make use of pre-college teachers as experts in: teaching methods, communication, knowledge of deafness, and information regarding educational successes of deaf students.

- **Establish partnerships with employers**—Almost every respondent was deeply concerned about employment of graduates. The concerns, set in a context of high competition for jobs throughout the country, included: the lack of opportunities for deaf students to acquire work experience, the pressure in industry for efficiency and production, and the gap in information and skills between what colleges teach and what employers need.

    o Establish opportunities for deaf students to obtain work experience while in school.
    o Encourage employers to provide mentoring to young people as an investment in the future. Perhaps some incentives to do so could be built into government policies.
    o Consider ways to involve potential employers in discussions about curriculum in postsecondary educational. This could help reduce the gap between schooling and the needs of industry.
    o Educate employers regarding the abilities of deaf students, through individual contacts or through workshops.
    o Explain to employers how barriers to successful employment can be overcome. For example, DeCaro, Mudgett-DeCaro and Noble (1994) provide suggestions in this regard.
    o Market deaf graduates to employers on the basis of their abilities to do the job and not on the basis of sympathy.
    o Maintain ongoing contact with employers and graduates regarding successes and difficulties on the job and offer to act as a facilitator to help resolve difficulties that arise in the workplace.

- o Undertake more research regarding graduates' experiences on the job and document successful approaches to problem resolution.
- o Bring alumni to the college to share their successes and to discuss the challenges they encountered in obtaining jobs and keeping them.

- **Increase opportunities for student leadership development** —Currently, student leaders appear to have minimal responsibilities in college. There is a focus primarily upon arranging social events and passing on ideas to teachers and administrators. Several suggestions for increasing student leadership were suggested:

  - o Put deaf students in charge of arranging school-related activities instead of having hearing faculty do it for them.
  - o Use faculty members as mentors to facilitate leadership development.
  - o Encourage deaf students to take significant roles in educating hearing faculty and students about deafness, rather than having hearing faculty perform this role.

- **Improve communication competencies**—Each college approached communication differently. None has a communication policy and there was a desire for more guidance from the central government concerning the complex issues related to sign communication. It is significant that most hearing individuals, administrators and faculty, considered the sign skills of faculty to be "good enough." However, almost every deaf student interviewed felt that faculty sign communication skills need to improve.

  - o Establish communication policies at each college.
  - o Offer and require formal sign language training for faculty
  - o Offer enhanced opportunities and encouragement for hearing students to learn sign.
  - o Work toward national guidelines concerning sign language, being sure to involve fluent deaf signers in the discussions and decisions.
  - o Hold in-depth discussions with deaf students and faculty regarding the best way to improve classroom communication.
  - o Involve deaf students, deaf faculty, and deaf teachers in sign proficiency evaluations

- **Work to change perceptions as regards deaf persons**—One of the most challenging undertakings over the past several decades in the USA has been the effort to change attitudes and perceptions as regards people who are deaf. The struggle continues today. In China, strides are being made in this regard as deaf graduates enter society and the workplace and demonstrate their abilities to be successful but more work needs to be done.

Respondents in this study made suggestions that are relevant and important to changing perceptions because deaf individuals were not often spoken of as people with valuable experience that could be used to the benefit of colleges.

- o Make sure to focus upon what deaf people 'can do' and use successful deaf graduates as role models to illustrate what deaf people 'can do.'
- o Establish formal structures for alumni feedback. Many faculty members and teachers, especially deaf faculty/teachers, keep in contact with some graduates for program feedback. Some colleges have ongoing discussions with current students with regard to what they want at school, and with the Chinese Association of the Deaf. The CDPF also makes contact with members of the deaf community to assess needs and make recommendations. Nonetheless a more systematic and comprehensive approach is warranted.
- o Use successful deaf graduates as advisors to educate both deaf and hearing people in society about deafness.
- o Utilize successful deaf graduates as expert advisors to colleges from which they graduated since they have experience in overcoming barriers in education, society and the workplace that can be helpful to colleges.
- o Establish strong relationships with the Chinese Association of the Deaf (CAD) and seek its feedback and advice.
- o Increase dialogue with deaf individuals since the opinions and goals of deaf respondents in this study were often different from those of hearing respondents.
- o Be very careful not to use only those individuals who have significant residual hearing as role models. Profoundly deaf individuals whose primary language is sign language are excellent role models.

Addressing all the recommendations listed above would be a very daunting task indeed. The resources required to do everything suggested here would be enormous to say the least. In addition, achieving some recommendations will be dependent upon the achievement of other prerequisite recommendations. For example, as the quality of education is improved, as more graduates who are deaf are successful in the workplace and as teacher preparation programs for deaf people are established, a critical mass of deaf experts and of deaf teachers will become available to colleges.

The recommendations presented here need to be reviewed and those that are most important and/or are prerequisite for the achievement of other recommendations, or are easiest to accomplish could be given immediate attention. Others will need to be prioritized for future longer term planning purposes.

These authors strongly recommend that a review and prioritization process include, and take into account the needs of, employers, deaf individuals, the deaf community, faculty, administrators and policy makers. This will help assure that the needs of Chinese society are appropriately addressed.

Introduction

China is a developing country with a large population, moving very quickly on many fronts to become a modern, international player in the global marketplace according to a World Bank study (Dahlman & Aubert, 2001). This growth has occurred within the context of a progressively more market driven economy with a strong central government. In present-day China, education at all levels has assumed a central role as a tool for advancement and modernization. In the mid-1990s science, technology, and education were put at the forefront of development policy and given a leading role in driving change (Dahlman et al.). Overriding all of this development is the challenge of allocating limited resources on so many fronts simultaneously in a rapidly changing society.

Concurrent rapid growth and transition is taking place as regards improvement in the lives of people who are disabled. This is part of the country's far-reaching goal of realizing an increasingly humane civilization. The desire and will to achieve such improvement is strong. The Official website of Shanghai indicates that serving people with disabilities is an important undertaking and the "…sign of a civilized and progressive society and an important part of a perfect social security system" (Shanghai Municipality WWW Site, 2002). Similarly, Fang (2001) suggests that the development of special education is a sign of social and economic strength and represents a civilized society. The country's commitment to achieving these ends is evidenced by the fact that China is different from other developing countries in its very high literacy levels and the numbers of deaf people educated at the elementary level (Callaway, 1999b).

To demonstrate the progress being made, it is illustrative to review some statistics as regards the education of deaf people. In the fall of 2004, there were approximately 20.57 million deaf or hard of hearing people in China. In 1988 less than 6% of deaf children were educated in primary school. By 2004, in less than two decades, over 80% of deaf children were educated at the compulsory level which comprises 9 years of education, roughly covering primary and junior middle school levels.

Liu (1998) points out that establishing laws as the regulators and guiding principles for education is new to China. Legislation regarding education for disabled persons is, therefore, relatively recent. The first law establishing educational institutions for disabled persons was passed in 1951, however, further progress was slow until after 1978 due in large part to the Cultural Revolution. In 1982, the state officially accepted the responsibility for special education of disabled people, and in 1986 this responsibility was passed along to local governments (Liu).

On March 15, 1988, the government established the China Disabled Persons' Federation (CDPF). Deng Pufang, the son of Deng Xiaoping, was very influential in the decision to address the circumstances of Chinese citizens with a disability. Deng Pufang is himself disabled and uses a wheelchair for mobility. It was largely as a result of his efforts that the federation was established. The mission of the Federation can be summarized as follows:

The CDPF, affirmed by the law and ratified by the State Council, is the unified national organization of and for persons with various categories of disabilities in China, which represents the common interests and protects the lawful rights of persons with disabilities. The aim of the CDPF is to protect human rights of persons with disabilities so as to enable them to participate in society with equal status and opportunities and share the cultural and material achievements brought about by the socio-economic development. (China Disabled Persons' Federation and the Work for Persons with Disabilities in China. March 1998, p.2).

The CDPF organized and drafted the *Law of the People's Republic of China on the Protection of Disabled Persons*, which was codified on 28 December 1990—a significant turning point in the history of people with disabilities in China. The CDPF also promoted and participated in the formulation of the *Regulations on the Education of Persons with Disabilities and the Regulations on the Labour and Employment of Persons with Disabilities* (CDPF and the Work for Persons with Disabilities in China, 1998). This set of laws and regulations represented an important step toward the goal of including persons with disabilities in education and society.

All disabilities are combined under the umbrella of the CDPF. That is, the CDPF is designed to represent the common interests of all disabled persons. The specifics of representation for any one disability group are dealt with on the local level. Thus, the CDPF is a federation of single disability organizations, including the Chinese Association of the Deaf (CAD), established in 1956 as the only official organization for people who are deaf. CAD has local associations in all provinces and some large cities and each is a member organization of the CDPF ("Eastern," 1998).

It is important to note that individuals with disabilities are well represented within the structure of the CDPF. For example, more than half the membership of policy-making bodies and two-thirds of advisory committee members must be disabled (Callaway, 2000). While Deng Pufang has made it clear that the CDPF must consult with disabled persons and its membership before making policy, some have indicated that the deaf community and organizations, representing all individuals, need a greater voice in policy ("Eastern," 1998). Irrespective, it should be noted that the Beijing Deaf Association and the Tianjin Deaf Association are quite proud of their city's advances in equalizing opportunities for deaf people and the Tianjin Deaf Association president is quoted as saying, "TDA is an important bridge between the Deaf community and hearing people…Many people depend on TDA to fight for their rights." ("Eastern," p.19) Importantly, the *10th 5 year plan of the People's Republic of China* established as a goal the full utilization of organizations of disabled people and calls upon the nation to strengthen disabled people's organization, thus clearly demonstrating the government's recognition of the importance of these organizations.

The CDPF has direct responsibility for decisions regarding education for disabled persons, backed by laws passed in 1992 and 1994, the latter establishing a legal requirement for government at all levels of society to undertake this responsibility. As a

part of this responsibility the CDPF has established rehabilitation centers around the country for pre-7 deaf students. The function of these centers is to improve speech so that as many deaf students as possible will have the oral skills to enter mainstream hearing schools. The 10th 5-year plan (June 2002) set a goal of mainstreaming 25% of deaf students by the end of the plan. Students who cannot speak well enough to enter the mainstream attend schools for the deaf.

At every level of government from the central government to local levels certain goals are established within the context of the central government's 5 year plans. The government establishes coordinated national, provincial and local 5 year plans for all areas and levels of society. In the area of deaf education, the 9th 5 year plan which covered the years 1996 to 2000, focused upon the improvement of compulsory deaf education, grades 1 through 9. In the 10th 5 year plan (2001-2005), the focus shifted to improving preschool and upper secondary school deaf education. Now for the coming 11th 5 year plan for 2006-2010, it is expected that an additional focus will include tertiary deaf education as well as continuing to focus upon other levels of education. The responsibility of the CDPF is to implement these government policies on all levels, and to represent disabled groups to the central government. The job of the CDPF is vertical: bringing down and implementing policies and bringing up the needs of disabled persons for consideration at the top.

Chinese Philosophies and Traditional Values

Changes and improvements in any society occur within the cultural, economic, religious, governmental, and historical contexts of the country itself. Fundamental traditional, Chinese cultural values (for example, humanitarianism, respect and care for the disabled) and ancient philosophies such as Buddhism and Confucianism are critical for understanding the changes occurring in deaf education in China, and are specifically noted in Chapter I, Article 7 of the 1990 *Law of the People's Republic of China on the Protection of Disabled Persons*. Some traditions are very helpful and support the goals of equality in education and work for deaf persons. Some, however, may unintentionally limit achievement of these goals. The following discussion highlights some important traditional cultural values that influence the attainment of the societal inclusion of deaf persons in Chinese society.

Social harmony and balance are very important in Chinese society. Confucianism stresses harmony and conformity within mainstream society (Lin, 2002). There is a strong focus upon developing together as a group or society, and on working together toward group or societal goals. "Building up a good social ambience with equality, fraternity and harmony..." is a goal that is stated for people with disabilities (Shanghai Municipality WWW Site, 2002). Further, the core curricula of schools for the deaf identify moral training and knowledge about society and social skills as required components (Callaway, 1999a).

Individual responsibility on the part of the disabled person is expected and likewise deeply supported by 2000 years of Confucian philosophy (Lin, 2002). That is,

individuals have an obligation to develop personal responsibility for their own self-cultivation and growth, and to adjust to the environment. They are responsible for becoming whole and well-balanced as individuals. There is very strong encouragement for them to become productive, contributing members of society, and the family's responsibility is to foster this self-reliance (Callaway, 2000).

Individuals who are disabled are often regarded as "ill" and accordingly their responsibility is to do what is needed to improve themselves, however it should be noted that the need for harmony and conformity often makes it difficult for a person who is disabled to request special circumstances or to ask for help (Lin, 2002). Chapter I, Article 10 of the 1990 *Law of the People's Republic of China on the Protection of Disabled Persons* states that, "Disabled persons should display an optimistic and enterprising spirit, have a sense of self-respect, self-confidence, self-reliance and make contributions to societal construction" (p.5). Further, Article 15 of the law indicates that disabled persons should actively take part in training programs for their recovery and strengthen their ability for self-care and work skills. In addition, the law emphasizes that deaf individuals should attempt to emulate excellent role models of successful disabled individuals, and are expected to take individual responsibility and do everything possible to improve themselves. Despite this strong belief in individual responsibility for self-improvement, Wu (2002) suggests that a challenge to Chinese education is to address the individual needs and personal development of students as well, through accommodation.

On the other hand, society also bears certain responsibilities. The greater society is expected to encourage individuals to grow and develop as whole, well-rounded persons. Confucian philosophy encourages rewarding of personal achievement (Lin, 2002), and competitions are frequently used to identify excellent role models. Chapter I, Article 12 of the 1990 *Law of the People's Republic of China on the Protection of Disabled Persons* states that it is the responsibility of governments and departments to award disabled persons who have been successful. The World Federation of the Deaf (1998) notes that while this is excellent, most of the role models highlighted are oral deaf adults and may therefore be unrealistic models for many deaf students.

Strong family and community responsibilities, along with deep respect for authority and elders, are also very important Chinese societal values. Families have a very strong responsibility to care for members who are disabled, and parents have significant input and influence regarding a disabled person's life, including education and work. Lin (2002) notes that the family has the primary responsibility for social welfare, followed by the state if the family is not able to provide for such care. Callaway (2000) indicates that Confucian teachings stresses conformity and behavior control, and as a result sometimes inclines a family to work very hard for "normality" for their deaf child.   Also, as a result of the one-child policy many families work very hard to have their only child be as "normal" as possible, although in most areas a family with a disabled child may have another child in 5 years as long as the disability is not hereditary (Callaway). In the case of a deaf child, the search for normalcy often results in parents seeking possible cures rather than seeking alternative ways for this child to learn and grow. In support of parents, the 10th 5 year plan set a goal to train 80,000 parents by 2005 regarding caring

for their disabled child. This same plan indicates that families are responsible for purchasing hearing aids but also stipulates that they can be obtained for free if the family can not afford to do so.

Continuous learning as a life-long goal is highly regarded in Chinese culture, again deriving from Confucius's philosophy (Lin, 2002). Education is seen as the ticket out of poverty and has a very important place in Chinese culture (Shettle, 1995). While centuries of Confucian tradition and rote learning have shaped methods of teaching and created a highly literate population on the basic level (75%), there is now a need for a modernized curriculum emphasizing not only the basic skills but also creative thinking, computer skills, risk-taking and the ability to apply knowledge to new problems critical (Dahlman & Aubert, 2001). Indeed, this is exactly the new approach being tried now in the PRC (Economist, 2003). Such an approach would encourage lifelong learning so that people continue to upgrade their skills and knowledge.

All these beliefs and values as well as others are an important part of the Chinese cultural context. The challenge is to make significant changes in the welfare of people who are deaf while working within this established system of beliefs. According to much of the literature reviewed for this report, the general understanding of deafness within China is mediated by the "medical" model. That is, there is a focus upon the medical aspects of deafness (a deaf person's physiology) and how to overcome these physical "weaknesses" in order to become "normal." Lin (2002) suggests that this view, along with the means and technologies to normalize are consistent with Confucianism and Chinese Buddhism. There is, however, a simultaneous understanding and emphasis upon the use of a deaf person's visual strengths for job or career training.

Attitudes within society toward persons with disabilities have been changing toward a greater understanding and acceptance of disability. There has been a very significant effort on the part of CDPF to portray people with disabilities as willing and able to work hard and to contribute to society (Callaway, 2000). Further, the 1990 *Law of the People's Republic of China on the Protection of Disabled People* emphasizes the need for popularization of this notion.

In recent decades, particularly in western societies but also worldwide, the medical view of deaf people in society as well as the linkage of deafness to persons with disabilities in general have been brought into question. The debate continues around the world; however the emerging view, buttressed increasingly by laws, supports recognition of deaf people as capable citizens, who if given access and accommodation, through sign language, aural/oral habilitation and education, are able to take charge of their own lives and affairs. Educated Chinese deaf persons and members of the Chinese educational establishment are well aware of these trends and the changes occurring within and outside of China. A continued discussion of these issues will lead to continued emphasis upon positive and constructive change to achieve what China refers to as modernity and an advanced society.

Deaf Education

The first school for the deaf in China reportedly was established in 1887 by Western missionaries trained in the oral tradition (Johnson, 2003). However, for the current study a group of college administrators indicated that even earlier, around 1840, a deaf school was started in Yantai by a British minister, and that in 1882 Shangdong's first school for the deaf was set up in Quigdao.

The history of deaf education in China begins, as so many in this field have, with a focus upon communication methodology for education. Much of the literature cited below reflects this focus. Signing was incorporated fairly early in some schools (Mei, 1999) and this continued until the early 1950s with the manual, oral/aural, and the combined methods being used (Fromkin, 1975; Johnson, 2003). During the 1950s, there was a shift to a predominantly oral approach combined with finger spelling and written language, with signs as a backup in cases where students failed to understand. Education itself, including deaf education, was seriously impeded between 1966 and 1976 during the Cultural Revolution. A government act of 15 March 1996 established sign language as the official language of deaf people to be used in education of deaf children in schools for the deaf. This act also encouraged research regarding documenting and unifying Chinese sign language (Callaway, 2000)—work began in 1959 on a unified sign language. The China Association of the Deaf has been heavily involved in this work. However, Callaway (1999b) points out that for the most part the sign system that is used is actually Sign-supported Chinese.

Shanghai was the first city to establish an upper secondary technical program for deaf students in 1954 with primarily vocational programs ("Eastern," 1998). The first upper secondary program to offer academic and college preparation was established in 1993 by Nanjing and the CDPF—this was part of the 9th 5 year plan. Most of the students attending this school were prepared for entry into the Technical College for the Deaf of Tianjin University of Technology. As of 2002 there were still only 5 upper secondary programs for deaf students in the country (Sun & Hu, 2002), but a CDPF administrator indicated that by 2003 there were 21 such programs enrolling a total of 1351 deaf students.

In 1985 legislation was passed that opened the doors of colleges to students with disabilities. Special education at the post-secondary level is identified as the education of deaf, blind, and mobility impaired individuals, however in most cases the post-secondary programs began with deaf education, in part because deaf education had a longer history. The first tertiary educational program admitting deaf students was established at Changchun University in 1987—two majors were available to students; Chinese traditional painting and arts/crafts. Chinese Sign Language interpreters from the local school for the deaf were hired and college faculty learned CSL (Yang, personal communication, September 15, 2003).

In 1991 Tianjin Technical College for the Deaf was established at Tianjin University of Technology and offered the first 3 year program for technology majors. Since then one

more national university program for deaf students has been established at Beijing Union University (BUU). Further, several local college programs have been established in Nanjing and Shanghai (Sun & Hu, 2002). The number of tertiary programs has increased now to almost 20 as provinces have established such programs. Further, one associate degree program in Hangzhou, Zhejiang has been expanded to a Bachelor's level program (Yang, personal communication, March 28, 2005). Two conferences regarding special post-secondary education in China were held recently; one in December 2003 in Nanjing, and one in October, 2004 in Tianjin. These conferences drew educators from across China and addressed issues related to college programs for students who are deaf.

More than 80% of the deaf students are now receiving the 9 years of compulsory education. CDPF figures as of July 20, 2004 state that there are 1,700,000 deaf children receiving compulsory education, 52% mainstreamed in regular classes, and 48% in special schools or special classes with no statistics with regard to whether or not those mainstreamed tend to be more hard of hearing (Nie, personal communication, July 20, 2004). With regard to language modality, Martin, Hussy, Sicoli, and Zhang (1999) noted that signs were traditionally seen as a tool to use when communication was not successful, particularly in the early grades, but that more signs were used in middle school classes. Most schools provide the core subjects along with moral training and social skills education, and many texts used in these schools have been developed by the National Education Commission for Schools for the Deaf, with others developed in Shanghai and some schools using mainstream textbooks (Callaway, 1999a). Students who attend mainstreamed schools receive the standard education with standard textbooks, but receive minimal or no extra support in learning (Martin et. al.; Johnson, 2003; Callaway, 1999a).

Johnson (2003) warns however, despite this remarkable progress, "With the well-intended goal of providing education to the majority of deaf and hard of hearing students, an evaluation into *the quality of education…*is in need. The focus has been on quantity, i.e., getting more students into the schools" (p 34). The World Bank (2001) similarly mentions a need for education in general to redirect the focus to improving the quality of the educational system. They recommend that the role of the Ministry of Education needs to shift from a tightly regulated system to assuring quality and equity of all of the institutions of higher education. Nonetheless the fact that students are now in schools is the critical first step.

There currently are not enough secondary school programs for deaf students but current goals are ambitious as regards establishing them as quickly as possible across the country. Sun and Hu (2002) found that the numbers of secondary students preparing for college is less than the enrollment goals of college programs serving deaf students. Because school options are primarily vocational in nature, with computer programming a recent addition, career options tend to be limited for deaf students (Martin, et al., 1999).

College programs for deaf students independently develop their respective entrance tests for deaf students. As a result, there is great variety in test content and level of difficulty (Sun & Hu, 2002), and many secondary deaf programs focus intensively upon

preparation to pass the tests to the detriment of learning foundational skills. There is great pressure to prepare for all these tests, since there is no standardized college entrance test for the deaf students.

On the other hand, only very few deaf individuals are able to pass China's national university entrance exams, and if they do pass there is minimal support or accommodation provided (Johnson, 2003). Yu and Zhang (2003), studying mainstreamed college students, recognized this dilemma and recommended that support services and assistance strategies be provided to deaf students in mainstream tertiary education.

Colleges for deaf students currently offer a limited set of majors. TaTa (2000) writes that Chinese deaf students attending university in the United States called for a greater range of majors to be offered in China for deaf students to pursue. The CDPF has recognized this challenge and is "… asking the special institutions of higher learning to offer more specialties according to the local market demands with consideration of the character of the disabled students" (Nie, personal communication July 20, 2004). This is essentially one of the same recommendations that emerged in this recent study.

Summary

The literature cited above provide the background and context within which the current study was conducted. The readings reviewed for this study help provide a general understanding of the education of people who are deaf in China, and provided guidance for interviews conducted for this study. A number of the studies were published shortly before our study but most did not focus upon tertiary education. Further, many of the tertiary programs involved in the current study were quite recently established, many had not yet graduated deaf students at the time of the interviews. A study of the fast-growing tertiary deaf education programs was considered to be important to the further development of deaf education at this point in the history of China. With this in mind, the current study was undertaken.

The Study

In 2002, the Postsecondary Education Network-International (PEN-International) undertook a series of interviews with a wide variety of individuals involved in some way with tertiary deaf education. The purpose was to collect and synthesize ideas which might result in recommendations for improvement of tertiary deaf education in China and provide helpful data helpful for the 11th 5 year plan of the People's Republic of China (2006-2010). This research was funded by PEN-International and The Nippon Foundation of Japan.

PEN-International is a multinational program that strives to improve the postsecondary education of men and women who are deaf around the world—primarily in developing countries. PEN-International is a partnership of universities and colleges in China, the Philippines, Thailand, Japan, Russia, South Korea and the USA. PEN is housed at the National Technical Institute for the Deaf at Rochester Institute of Technology. NTID is the largest technical college for deaf people in the world and is one of the eight colleges of RIT. RIT is a technological university that educates more than 15000 students in baccalaureate, masters and doctoral degree programs. There are approximately 1200 deaf student at RIT—about half of these students study in self-contained classes with deaf peers at NTID and the other half are mainstreamed in the other colleges of RIT with their hearing peers. NTID was established by an act of the Congress of the United States in 1965.

Research Team Members and Qualifications

The senior researcher was Patricia Mudgett-DeCaro, qualitative researcher, and RIT faculty member in the graduate level teacher education program at NTID, teaching research design and multicultural education courses. Her research is in the area of deaf education. She is the hearing child of deaf parents, a certified American Sign Language-English interpreter, and a trained counselor. Dr. James J. DeCaro is the director of PEN-International. He is the immediate past dean for NTID and has been involved in deaf education since 1971**.** Dr. DeCaro served as the overall project manager. Ms. Yufang Liu was a PEN-International Research Associate—a hearing person, who is a fluent Chinese and English speaker with intermediate American Sign Language skills and research experience in the field of deaf education. Ms. Junhui Yang is a Ph.D. candidate in the Deaf Education Program at Gallaudet University, a PEN-international intern. A Deaf woman educated in China, she obtained her BA degree in Modern Chinese Language and Education at the Capitol Normal University in Beijing, China and has taught Deaf students in China. She uses spoken/written Chinese, Chinese Sign Language, spoken/written English, and American Sign Language.

Interviews and Questionnaire

In preparation for the interviews, the researchers collected and read available literature regarding deaf education in China with the aid of Ms. Yufang Liu. The majority was obtained in English but a number of other articles were obtained din Chinese and

translated into English. The literature review commenced in May 2002 and ended in 2004. Therefore, it must be noted that several significant pieces of literature were not obtained and reviewed until the interviews were completed and analyzed. Interestingly, some of this literature reflects similar results as the present study.

After the literature review, general interview questions were developed reflecting the areas of interest or concern raised in the literature. In June of 2002 a group of faculty from Tianjin University of Technology visited NTID/RIT and they helped the researchers to think through the relevance and appropriateness of the preliminary questions, to make suggestions of groups of individuals who should be interviewed, and to provide advice regarding Chinese culture. This helped the researchers refine the interview protocols. These TUT faculty members were not interviewed formally.

A questionnaire was developed to gather specific facts regarding programs offered, number of students in the program and the like. It was given to program administrators prior to interviews. Most, although not all of the administrators completed the questionnaire. A letter of introduction with statement of purpose for the interviews was also given to the program administrators prior to the interviews. The questionnaire and letter of introduction were given only to administrators attending a conference in Tianjin (November of 2002). However the questions and content of the letter were included as part of every interview.

The interviews were standard semi-structured interviews; that is, general questions and more specific follow-up questions. Standard procedures for qualitative interviews rest upon the understanding that the questions must be open enough to allow for unexpected responses which are explored in increasing depth. New topics that emerge in one interview are often added to subsequent interviews in order to ascertain other perspectives on that new topic. If the questions are too precise, the answers will be limited to the ideas already conceived by the researcher, with limited space for ideas not considered by the researcher. "By using an inductive approach, the researcher can attempt to make sense of a situation without imposing preexisting expectations on the phenomena under study" (Mertens, 1998, p.160). This is particularly important when conducting research in an unfamiliar culture with an unfamiliar population. The role of the researcher in qualitative research is that of expert collaborator and listener. The respondents participate as experts in their field of expertise, including practical experience.

The interview questions focused upon the following topics: (a) institutional history, (b) government role, (c) college roles in deaf education, (d) college programs offered to deaf students, (e) college entrance processes , (f) faculty, (g) support services offered, (h) student characteristics, (i) partnerships, (j) jobs, and (k) general suggestions for improvement of tertiary deaf education.

A preliminary interview schedule was pilot tested with three Chinese individuals at RIT; one Chinese hearing college student, one Chinese deaf college student, and one deaf Chinese college graduates. These pilot interviews allowed the researchers and Ms. Liu to

test the questions to be sure they were clear, to decide upon the best translation from English to Chinese, and to train Ms. Liu in the precise, formal procedures of interpreting for an interview. It also provided a chance to go beyond the formal interview in asking questions about Chinese practices and culture which might affect deaf education.

Following the pilot interviews, a series of interview protocols were developed for use with different groups. Separate interview protocols were developed for college administrators, school for the deaf administrators, government officials, deaf community leaders, deaf students, and faculty because of their differing positions and possible perspectives. A copy of the general interview protocols that guided the interviews is included in Appendix A.

Respondents

It was critical to collect the opinions of a wide variety of individuals who had connection to, or interest in, tertiary education for deaf individuals. In addition to the TUT facultys' earlier advice. A highly respected and competent educator was very helpful in suggesting individuals to interview, and in contacting and making arrangements for interviews with individuals from specific groups to be interviewed. In addition, several individuals who had work previously with PEN-International helped by suggesting names of individuals to interview, both deaf and hearing.

A total of thirty eight (38) individuals were interviewed: (a) eleven (11) administrators or their representatives from college programs serving deaf students, (b) six administrators from Schools for the Deaf, (c) three government administrators of CDPF, (d) seven college faculty members (six hearing and one deaf), (e) three deaf teachers at the pre-college level, (f) three deaf college alumni, and (g) five deaf college students.

In total, there were 11 deaf and 27 hearing interviewees. Interviews were conducted over the time period of November 8, 2002 through February 24, 2004. Most of the college administrators were interviewed while attending a conference in Tianjin, supported by PEN International (7 to 14 November 2002). Several interviews were conducted thereafter through the use of videoconferencing using technology available at TUT and Pen-International office at NTID. In addition, some individuals visited RIT and were interviewed at that time.

Methodology

Interviews were conducted by Patricia Mudgett-DeCaro with the assistance of Ms. Liu and Ms. Yang as interpreters. Each interview lasted between 1 and 2 hours. Interviews with hearing respondents were audio taped and then transcribed by a professional transcriptionist. Interviews with deaf respondents were first videotaped, and then interpreted on an audiotape and transcribed.

Interviews were coded using standard coding procedures (Bogdan and Biklen, 1998). Mudgett-DeCaro led the process and Ms. Liu and Ms. Yang assisted in the initial phases

of coding. After discussion, a final list of categories was agreed upon. These categories are derived from the completed interviews themselves. Each interview was coded.

The 11 code categories (themes) that emerged were the following: (a) Deafness and deaf people, (b) Accommodations, (c) Major/program, (d) Jobs, (e) Faculty, (f) College entrance, (g) Government, (h) College role, (i) Other disabilities, (j) Problems, and (k) Goals.   Any one section of an interview can be multiply-coded if it pertains to more than one code, but is never given more than three codes. If it pertains to more than three codes, the three most significant are used. Mudgett-DeCaro, Liu, and Yang coded each interview individually and then compared the coding to be sure that we were accurate. If discrepancies emerged, they were discussed and a consensus was reached regarding the codes.   The coded information was entered into the Atlas-ti Computer Software which allows all sections coded similarly to be grouped and examined together. Each code category can then be summarized and relationships between code categories can be analyzed. (Discussion regarding validity using qualitative research methodology can be found in Appendix B.)

Findings

Certain of the findings of this study support those reported in literature mentioned previously. However, previous studies focused upon compulsory and upper secondary levels, whereas the focus of this study is on the fast-developing tertiary education of deaf students in China and the relationship of this expansion to the compulsory and upper secondary levels of education. These findings will be reported in two sections: Section I: Issues; and Section II: Roles and Responsibilities

Findings: Section I

This section is organized around specific issues or topics that were raised in the interviews, and details the various viewpoints and suggestions related to each. The issues discussed are as follows:

- Perception of deafness and deaf people
- College entrance
- Accommodations
- Majors/program offerings
- Employment

Each is discussed in turn in this section.

Perceptions

Respondents were not asked directly about perceptions of deaf people, but offered their opinions in the course of the interview regarding their perceptions of deaf people's abilities and capabilities along with explanations for these judgments. These perceptions influence or relate to the establishment of policies, structures, and activities of the college programs, including the specific majors offered for deaf students. Further, these perceptions influence the expectations that are held for deaf students, and the goals and vision for the future as relates to post-secondary educational programs. In this section of the report, these issues will be covered in detail.

Respondent's comments regarding perceptions of deaf people can be categorized as follows:

- Success stories
- Motivation
- Psychological issues
- Social interaction
- Academic ability
- Pre-college preparation
- Communication

Success stories. Nearly every hearing person interviewed, especially administrators, discussed the "extraordinary successes of deaf students*".* These successes spanned areas from personal growth to work related success. Successes were stressed as measures of the effectiveness of the postsecondary education programs, and to demonstrate the abilities of the students themselves. Successful students were offered as, and viewed as, role models for other deaf individuals. This is consistent with the Chinese approach of encouraging others to excel by selecting outstanding role models to emulate. Many of the hearing respondents talked about the successes of their students compared to hearing students at the college or even at the national level.

However it is interesting that not a single member of the deaf community (teachers, students or leaders) mentioned this kind of outside recognition as role models. Instead, deaf teachers at a school for the deaf mentioned the need for successful college students to come back and offer feedback to younger deaf students regarding how to entering and completing college. Several successful deaf college students mentioned that they have been on the internet with deaf individuals all over the country who are asking about college Deaf individuals were focused upon helping other deaf students directly.

In the area of personal characteristics, including physical abilities, several college administrators brought up the successes of the deaf students at their respective campus. For example, one college administrator pointed out that a deaf student was selected as the national self-strengthening model of disabled individuals. Others mentioned success in dance and other forms of performance art—"For deaf students especially in the field of dance they usually did better than hearing students and they won the first prize" (college administrator). One person expressed surprise that some of the deaf students were very talented in the performing arts:

> Their dance performance, the mimicry talents are just astonishing. At the mid-Autumn festival, deaf students had a fashion show. They acted like fashion models. Their expression, their way of walking is just like a professional model star (college administrator).

Another administrator pointed out students' enthusiasm and ability in sports, saying that deaf students had won sports competitions and noted that "…if it were not for hearing student drag them behind, they would win group gold medal" (college administrator). There was both pride in the students and also some surprise at their general success in the physical area, particularly among those with new programs for deaf students**.** It would seem that some general education about why deaf people can dance, or be successful in dance and sports would be useful – especially if it is explained by deaf people themselves. Interestingly, in contrast, no deaf individual, students, educators, or community, spoke about this sort of success as important.

Administrators also expressed pride in the successes of graduates, emphasizing their high quality work and their creativity. "We found deaf teachers work harder. They always wanted to do a better job than hearing teacher(s)" (college administrator). Despite the

small number of deaf teachers, one administrator indicated that, "...deaf teachers who are currently involved in education are doing excellently".

Success in artistic endeavors was a theme that ran through several interviews. Art students have succeeded well as teachers, art designers, and magazine cover designs, and have successfully entered graduate school in the United States, or have gone on to become deaf association leaders in China. According to several administrators, student's art work has been shown in a variety of prestigious venues in the United States, Denmark, Germany, and China, has been successfully sold, demonstrates creativity, and has won the praise of experts.

On the other hand very little mention was made of successes in academic fields not related to art, in large measure because there are few programs offered to deaf students in other areas of study. Information technology is an exception and there are increasing numbers of students in that field but none were mentioned as "success stories" or role models. While there are students who have gone on to college in the United States in non-art related fields, their successes were not mentioned.

Those interviewed gave the clear impression that outstanding role models have something to teach other deaf individuals. One mentioned the possibility of hearing students learning one day from deaf students, "Even in some areas deaf students may be better than hearing students" (college administrator). This and similar statements seemed to apply almost entirely to artistic success where there was also a sense of wonder that deaf students could do better than hearing students.

The successes of role models are promoted as a goal for deaf people, but also viewed as something of a miracle. It is worth noting unfortunately, that miracles are often viewed as so extraordinary that other deaf people do not expect they can do the same. Portraying role models as so extra-ordinary may work against the desired outcome of developing a general expectation that most deaf people can be successful and achieve if they work hard. Illustrating this point, in mentioning a deaf student in an American college, one administrator said that he hoped that one day she would not be such a "golden" example but that many students could achieve as she has. This indicates a sense that the ability is there but has not been developed in most deaf students as yet. There was a general awareness that high school education is very limited for deaf students, and it was suggested by several hearing and deaf respondents that deaf students could do much more if their early education was better.

Some additional recommendations related to the use of role models might include giving greater emphasis to what deaf students can do, both now and with better high schools. Videotapes or CDs showing discussions with successful deaf individuals in a variety of work areas could: a. highlight successful deaf people in various fields including art and IT, and, b. highlight successful Chinese deaf people in other countries other than the PRC. Perhaps more use could be made of teleconferencing in which both faculty and administrators interact with successful deaf role models from China and around the world. A search could be made within China for successful deaf individuals, with the

help of the deaf leaders and organizations, in as many fields as possible, and perhaps they could be videotaped doing their work and giving advice. Such videotapes might be shown not only to educators, but also to high school students and the general public

<u>Motivation</u>. The majority of those interviewed considered deaf students to be motivated, hard-working, and eager to learn. Several comments by college administrators are illustrative: "Through education they are very conscientious about work and they can do a good job"; "…[another] area that surprised is the eagerness of deaf students for higher learning …they are the best disciplined…on time…the most active participants"; and "There is a strong desire for higher learning" (a statement agreed to within a group of college administrators in an interview). A group of pre-college school administrators confirmed that many deaf high school students have expressed a strong desire to go to college after graduation. Further, deaf respondents noted the strong desire among deaf individuals for a college education and for expanded opportunities to study more than art and information technology.

In short, there was a clear and uniform indication that deaf college students are perceived to be highly motivated to attend post-secondary education. If more opportunities were available for such an education, deaf students would aspire to fill those programs, and administrators would welcome those new students, as long as they were qualified.

<u>Psychological issues</u>. There were some concerns expressed about the perceived emotional or psychological characteristics of deaf students. For example, in spite of the expressions of belief that deaf students are highly motivated, some respondents felt that many deaf students have psychological issues that they must overcome, particularly in the areas of self-confidence and feelings of inferiority, as well as rigidity. The following quotes exemplify such perceptions: "Deaf students have less self-confidence "[compared with hearing students]… Deaf students have strong psychological barriers" and "More deaf students have a sense of inferiority" (college administrator).

However, in contrast, some of those interviewed indicated that "…[deaf students] had a strong group concept"; that "Deaf students' independent ability and self-management ability is stronger than we thought..." and that deaf people have a "strong sense of self-respect and dignity…" Some faculty members expressed great admiration for the courage and confidence exhibited by deaf students, as well as their persistence.

Thus there were conflicting statements regarding psychological issues. It is not clear whether these concerns are widespread since they were not mentioned as frequently by those interviewed as were other issues. However, these concerns have guided programmatic interventions in some colleges.

<u>Social interactions</u>. Some respondents mentioned or implied problems that deaf students might have with social interactions at college with hearing students. For example, it was mentioned that deaf students should interact more with hearing students so that deaf students will develop skills and not be afraid when "in the hearing world". It

was also mentioned that there are limited interactions between hearing and deaf students on campus, but that hearing students are encouraged to interact with deaf students.

There was a strong sense that deaf people are not 'ready' for entry into hearing society and that hearing people, including other students, need to be understanding and help. "We want hearing students to understand deaf students and excuse them" said one college administrator, with another college administrator saying that "They have told the hearing students, we are giving deaf students special treatment only for now. We are helping deaf students to interact to adapt themselves in the hearing world which is worth the special treatment now."

There was also some mention that deaf people interacting primarily with other deaf people is not helpful interaction in preparing to enter society. On the other hand, a deaf teacher explained that she had recently gone to a conference of only deaf individuals, and was overwhelmed with how much she learned there because of the understanding and ease of communication that occurred when everyone was deaf.

Even though few individuals directly mentioned concerns about deaf students' interactions, others stressed the need to help deaf students to become good citizens, to learn the social skills required for work, that is, "…how to be a good person. A responsible person, a good citizen; …how to live a life in the hearing world; and also how to work in the market" (college administrators), and generally how to live a life. Thus there is an expressed need for making sure that deaf individuals, like all others in society, meet standards of respect and behavior in their day to day interactions. A deaf community leader and one deaf student mentioned the need for development of each deaf student as a "whole person". There was an emphasis upon the development of a whole person, not just skills in academic knowledge. This is consistent with the strongly held Chinese valuing of balance and harmony discussed earlier. These issues are important in designing programs for deaf students and are planned and organized in activities and systems at a number of campuses.

The majority of the views expressed as regards psychological issues focus upon the need for hearing people to help deaf people. This is consistent with society's role in helping others who are in need. "Patience", "understanding" and "aid" are requested of hearing students. The CDPF has the same focus, indicating that, "We try to organize charity, provide charity support to the disabled people and provide help to the needed disabled people" (CDPF administrator). It is interesting that this view was almost entirely an administrative focus, since none of the deaf individuals or faculty mentioned this topic. However, this general view is one that many deaf individuals believe is not helpful because it creates a culture of pity rather than encouraging independence.

It should be pointed out that both deaf and hearing people might benefit from learning about each other. In the United States there are some people who act as "bridges" between the two groups, for example interpreters and hearing children of deaf parents, or well-educated deaf persons or community leaders. Often both deaf and hearing turn to such people for help in understanding each other. It might be interesting to identify

people in China and who could be balanced mediators. There are several educators who are deaf that appear to be well balanced between both groups and already seem to serve this function informally. Perhaps successful deaf role models can partner with knowledgeable hearing people and together present a picture of the ways in which both deaf and hearing people can function in partnership, especially if the deaf person is not hard of hearing.

On a related topic, there was some discussion in the interviews regarding the safety for people who are deaf. Generally college administrators felt that deaf students in schools for the deaf were over-protected. One said, "We want to release them from the closed enclosure", yet the same person went on to say, "It takes time for the deaf students to adjust to the hearing world. At school, you are still at the safe world, but in the society, you can meet different kinds of weather. We worry about these deaf students". The elaborate structures put into place for nurturing deaf students is another indication of the same worry. Students at one college started out living at the school for the deaf but objected and were eventually moved to the college. The administrator said "they said they want to have more chances to interact with hearing students".

Finally there are issues related to safety on the job. As one administrator said, with regard to mechanical engineering, "because of the noise and the deaf and machine operations, safety is a big concern. So they think it is not suitable for deaf students." With regard to the same situation, another explained that with the one child only policy, each child is very dear and must not be put in danger. Thus, along with concerns about deaf students' ability to socially interact come concerns regarding safety, even as systems are put into place to lessen the protection. This creates a conflicting message as regards increasing and decreasing protection.

Academic abilities. Nearly everyone expressed the view that deaf students have strong visual abilities. This opinion was expressed by administrators, deaf students and teachers/faculty. However, deaf individuals simply note it as justification for new ways of teaching, whereas many of the administrators and hearing faculty focused upon it as an innate or developed skill of all deaf people. One faculty member said that deaf persons have an advantage in the arts due to their highly developed visual experience, and another noted that deaf people are acute in their visual abilities. The successes of graduates in art-related fields was cited as illustrative of this ability and "…shows that our students are qualified" (college administrator). This is seen as an area of strength, and also has a very strong influence upon decision regarding what majors and/or jobs are "suitable" for deaf persons. Nonetheless, there has been no research to support the idea that deaf people would necessarily be better at visual skills than anyone else. The question must be asked, are there deaf students who are very good at math or science or some other field but not at all good at art?

The majority of interviewees emphasized that deaf people are smart and creative. For example an administrator from the CDPF stated, "Oh deaf people are smart in general" and "…have good physical ability and mental ability." Nonetheless many of those interviewed felt that faculty and administrators have low expectations for deaf students;

believe that they can't learn; and, therefore too often don't push for higher achievement. A deaf community leader, discussing his history and successes, indicated that because of his demonstrated success, "College teachers now know that deaf students' study skills are very strong. They have a new way of looking at deaf students."

There was a general sense among many administrators and faculty that deaf students are strong in concrete thinking, and weak in abstract thinking. Even so, it was pointed out that it is teaching methods which are and should be the focus, that is, teachers must find visual ways to present theory and abstract knowledge rather than assume that deaf students can't understand the theory. It was also widely recognized that pre-college education needs to improve so that students have greater knowledge and experience in abstract thinking before they enter college. As one deaf individual said, "When you can't hear, it's not easy to receive information. It affects deaf people's overall judgment. For abstract thinking, good education can help."

Pre-college preparation. Every person interviewed mentioned the need to improve pre-college academic preparation of deaf students. There was concern raised about low expectations, insufficient numbers of high schools, and resultant poor foundational knowledge. This perspective is reflected in the comments of an administrator who said, "We do not have enough high school of the deaf…the requirement is not as vigorous or the standard of high school for the deaf is not comparable to high students in the hearing school students" (college administrator). A deaf community leader, who attended a mainstreamed high school, was shocked at the poor foundation of his college classmates who graduated from schools for the deaf. Several interviewees pointed out that pre-college education is particularly lacking in science, and math, and that Chinese and English knowledge is very weak. Unfortunately "Many compulsory education level teachers and principals still feel that deaf students do not need high level degree(s)" (deaf leader).

Communication. The amount and type of communication required in a profession or major was often used as a measure of its suitability for deaf people. Information technology was cited as an area where language was not required as students could use "applied skills."

With regard to what sort of language skills are required for success, there was mention of success being related to the ability to "have some language ability, lip reading ability" (college administrator). The significance of writing in interaction with hearing individuals on campus was also noted is represented in the following statement by an administrator, "…their main communication is writing, including library and cafeteria…" More regarding communication is found later in this section.

Summary. Perceptions and attitudes have a direct impact upon the decisions individuals make as regards what is and what is not "suitable" for people who are deaf. Thus the perception that deaf people are strongly visual led, in part, to the almost universal programming in visual arts at the college level. Even computer majors are often related to graphic design. It was actually quite difficult to discuss "other fields" with some of the

interviewees because a question about other majors was almost uniformly interpreted as meaning "other applications of artistic abilities". Likewise perceptions regarding communication abilities appear to have led to majors which do not require communication of various sorts.

The perception that deaf students are weak at abstract thinking further limits the availability of certain majors. Low expectations as regards deaf students' abilities in fields other than those that use concrete applications of skills means that students who are excellent in other fields and at abstract thinking, may be discouraged from pursuing studies in fields other than art and computing. It should be noted that there are some significant differences between the responses of deaf and hearing interviewees—for example regarding the role of successful alumni, expectations, concepts of suitability and variety of majors and issues related to safety. There is a resultant need for more in-depth partnership and discussion between decision makers and deaf students and alumni.

College Entrance

Four different aspects of college entrance will be covered in turn:

- Different entrance exams
- The role of entrance exam and the relation to pre-college programs
- Role of parents
- College selection and continuing education

Each is discussed below.

__Different entrance exams__. Deaf students who desire to continue their education must take a college entrance examination that is different than the exam administered to hearing students. All hearing students who apply to college must take the national college entrance examination—a three-day test administered in July each year. However, each college program for deaf students designs its own college entrance test, administers the test, and admits deaf students independently. An administrator explained that students,

…apply to our school out of your own choice. And the Ministry of Education gives the authority that we can write out the test and give the test to the students individually. Then we can admit students independently.

Another administrator explained that, "The entrance exams are designed for deaf but [the formats are] similar to those for the hearing students."

It is interesting to explore why deaf students take different college entrance exams and the difference between those exams and the national college entrance exam. Hearing students' college entrance exam covers Chinese, Math, English, Physics, Chemistry/Biology, History, and Geography. The combination of subjects depends upon whether the student wishes to pursue a major in science and technology or liberal arts. These disciplines are considered to be foundational.

For deaf students, the college entrance exam covers only two to three basic courses—Chinese, Math, possibly English, plus a test that relates to the major the deaf students wish to pursue, e.g., computers or arts. Secondly the admission standards for deaf students and for hearing students are different. "The test is easier than the test given to hearing students. It is like this, for basic courses, meaning Chinese, Math, the test is easier….Major test questions are the same. The standard and the quality vary" (college administrator).

The following explanations were provided as to why the subjects areas covered in the tests are fewer and why the admission standards are lower. First, it was noted that the, "Deaf high school graduate is only equivalent to 7th or 8th grader of hearing students in basic course knowledge" (college administrator). Second, the curriculum for deaf high school students and curriculum for hearing high school students was identified as being different. For example, the textbooks for deaf students were identified as being "…different from regular high school textbooks and the students haven't [been] taught the content of what's being tested and their scores were lower" (college administrator). Third, curricula and textbook at the secondary level were also identified as problematic by high school administrators. They indicated that, "…there is no national textbook available for either preschool education or high school education." Finally, it is important to note that there are so few upper secondary schools for those who are deaf that students go to vocational schools. Therefore, a separate set of deaf college entrance exams that meet deaf students' unique circumstances are used for college entrance decisions.

**Role of entrance exams and pre-college programs**. The college entrance examination serves as more than a standard to admit qualified students to college. It also functions as a tool to bridge high school and college in both positive and negative ways. A college administrator clearly describes the significance of the college exam to pre-college programs as follows:

> College entrance exam is the directing stick. All high schools design their courses according to the national entrance examination. If I have three exams, so maybe they have only three classes. So it deeply affects students' ability training. Maybe right now some students have very poor knowledge in history because we don't have history exam in our entrance examination. As college, we want students with comprehensive knowledge while high schools focus on having more students pass the college entrance exam and get accepted by college. As long as students scored high in the college entrance exam…that is all that matters.

The college entrance examination score is the only standard used to decide whether a deaf student can go to a particular college. A student's grades, his/her leadership skills and athletic or other talents/qualities do not appear to be considered in the admissions process.   As a result of this focus on the exam, there are often intensive preparation classes offered for students who wish to take the exams. The problem with these intensive training classes (Sun & Hu, 2002) is that they focus upon possible questions that might appear on the entrance exam and practice those questions. However, the classes do not teach basic foundation knowledge. Therefore, students may learn to take

the test and improve their score but not actually possess the skills needed to negotiate college program smoothly.

Because each college entrance exam is unique to that college, deaf schools at the secondary level bear the tremendous burden of preparing students for these individual tests. For example, one high school administrator commented that his high school tutors "…students individually for the focus they want." Many students applied to more than one college and therefore must prepare for different test for each college and must travel to different locations to take each test.

College selection and continuing education. At one time there was only one college with a program for deaf students but now there are a number of such programs. Students identified several variables that they consider when choosing a specific college or university: a. that there is a special program for deaf students, b. proximity to home, c. availability of a baccalaureate program, d. availability of a major of interest, and, e. their level of skill in the English language which might prevent attending a hearing college without support services.

Several students and alumni mentioned returning to college and said that this is not a difficulty. For example, one deaf alumnus reported going to one college for an associate degree, taught 2 years, and then went to a different college for 3 years to get a BA degree. Another graduate mentioned a friend who stopped out for a year and then returned to finish. Further, another alumnus indicated plans to go back to school to acquire more skills in computers but will have to work at the same time for family economic reasons.

However continuing education that is outside of a specific program for deaf students, and distance learning courses, are not often accessible to deaf students. In order to take a distance learning course, students have to pass a difficult exam. In addition, programs other than at the specialized colleges for deaf students offer no access services. Therefore continuing education is mostly limited to the deaf education programs.

Summary. Pre-college preparation certainly makes entrance exams challenging and there are calls for a national textbook that may help to standardize the education over time, and therefore the exams too. However with the entrance exam as the only measure of college entrance, some have suggested adoption of a more diverse set of criteria for college entrance. For example, an art portfolio in addition to the exam might be used as one possible measure. Some form of pre-college transition program other than simply offering study and practice for the exam might be helpful in better preparing students for their academic studies as well as study skills and social interactions. Accommodation for mainstream programs, currently not affordable, are nonetheless a critical step toward pre-college preparation and entrance exams.

Accommodations

Accommodations provided for students vary across each of the colleges for students who are deaf. Some of the accommodations can be categorized as promoting access while others may not be helpful for various reasons. They fall into four categories:

- support services
- teaching methods
- requirements and structures
- extracurricular or out-of-class activities.

Each of these will be discussed in turn in this section. However, it is worth noting that administrators, faculty, and deaf individuals emphasized the need for visual learning methods across all four categories, but not everyone agreed on what that should mean in practice.

Support services.   Support services cover a wide variety of possible services, including communication access, tutoring, speech and audiological services, and notetaking. This covers the broad area of "access" to information through various accommodations.

Most of the college administrators mentioned sign communication in the classroom as an accommodation for deaf students. However, the precise form varied widely among colleges. At some colleges faculty do not sign very much in the classroom but write on the board. At a few colleges, faculty members use sign as a primary modality for communication with students. At some of the colleges teachers are encouraged to sign and speak at the same time in class. However, only one college has sign classes for teachers. This college uses skilled teachers of the deaf who are recognized as good signers to teach and evaluate new faculty skills. One college pays for faculty to take sign classes outside of their regular responsibilities, but most expect faculty to learn to sign from books or from the students.

Most administrators expressed the opinion that their hearing faculty signed well enough. In contrast however, those deaf students interviewed overwhelmingly indicated that faculty members' sing ability was their top priority as regards communication, and that while some hearing faculty sign most do not sign fluently. Students indicated that the vast majority of faculty members depend upon writing on the board for communication in class, saying "we understand more or less". Teachers often can't understand students and this negatively impacts student learning. These sorts of concerns were typical of student responses. One faculty member who is aware of this problem, alters his teaching to talk less and show more, knowing that communication always gets altered in passage. He also uses students as bridges for communication after first checking to see that they understood a concept clearly. Students recognized that many or even most of the faculty were highly motivated to sign well but that there was insufficient support from administration. This is an area of significant disagreement between deaf individuals and many administrators who often felt that the signing ability of the faculty was good enough.

As for the use of interpreters, some colleges have interpreters in every class, but expect teachers to know enough sign language to do one-on-one tutoring with deaf students. Several of those interviewed mentioned that retired teachers from schools for the deaf are hired as interpreters, either until a teacher can sign well enough to communicate for or herself, or as interpreters in classes where the teacher continues to speak. When asked about the possible use of interpreters for mainstreamed classes, one administrator indicated that interpreting in a regular class would slow down the class too much for the hearing students. In contrast, at one of the universities with a program for deaf students, interpreters are used in the classrooms of the deaf program instead of having faculty sign for themselves, using the rationale that teachers do not sign well enough and it makes the class too slow if they do. Thus "pace" was expressed as a concern but viewed from different perspectives at the various colleges. Parenthetically, it is worth noting that this same opinion was expressed at the Rochester Institute of Technology where approximately 500 deaf students are mainstreamed with their hearing peers until a study was done finding that the pace was slowed but not overly so. Further it was found that this "slowing" resulted in hearing students finding that they were able to absorb and learn information more easily as a result of the slower pace.

It should be noted that students did not talk much about interpreters, instead focusing on the need for faculty to be better signers. One student mentioned the use of hard of hearing students as interpreters along with writing, saying it was "ok but not great". Two students explained that they preferred direct communication from a faculty member rather than having an interpreter who mediates the communication.

Several faculty members (deaf and hearing) and some students mentioned communication access via technology, particularly the internet, and the need to increase the use of such technology to improve access for students who are deaf. The internet was considered to be very helpful for students to ask questions and get answers from faculty at any time through email. However, there are real limitations to implementing this approach because of the numbers of computers available for student use or the limited number of hours they are available to students.

Most faculty and some administrators also mentioned the need to use a wide variety of communication approaches (sign, speech, writing, and multimedia) in order to meet the needs of students. It is recognized that every possible form of communication should be used to facilitate access to information.

Tutoring. was also often mentioned by respondents as a support service. Administrators usually spoke of tutoring as the responsibility of faculty members or as being provided by hearing peers, in part as a way to foster interaction. One college program that uses peer tutoring has made arrangements with the Chinese Language Department of the university to pair qualified hearing students with deaf students as tutors in Chinese language. They are currently considering expanding the program to other departments and subjects. However, the same college also expects faculty members to do one-on-one tutoring.

Interestingly, administrators and faculty mentioned that most tutoring is provided by faculty members, whereas students indicated that they received most of their tutoring from other students. Students indicated that, while they might ask faculty for clarification, most faculty go home after teaching their courses. Further they expressed concern that communication with and by some faculty members is not clear. Therefore students focused upon finding deaf friends from their class or 'good-hearted' hearing students to work with them as tutors in the evenings. One described the process in this way, "First you find hearing students who are friendly and interested in deaf students and then you later be 'brave' and ask them to help with coursework." Another indicated that deaf students have to be assertive to find hearing student tutors. Many students indicated that they would appreciate some sort of formal tutoring program at their college, but went on to indicate that they would still maintain their informal system as well. With regard to organizing a tutoring program, one faculty member noted that "tutoring needs work" and mentioned planning a program to train hearing students for volunteer tutoring work with deaf students.

One college pairs up deaf and hearing classes taking the same subject so that interaction might be enhanced and tutoring provided. Interestingly, most of those interviewed assumed it would have to be hearing students tutoring, however one student and one faculty member focused upon deaf students providing peer tutoring. Both indicated that a deaf student who understands the faculty member can act as a bridge for other deaf students, by using sign. The process was explained as follows: "…taking the best deaf students, who have residual hearing and checking their understanding carefully by having those students rephrase what was learned, and then having them explain to other deaf students."

Finally, as regards tutoring, students indicated that space for such activity was an issue. It was mentioned that the number of students in a dorm room made it difficult to engage in tutoring or studying in these room so most students sought classroom or laboratory space for study or tutoring. Thus while both students and faculty/administrators feel that tutoring is important and necessary, they appear to have different ideas about where and how students receive help. While some students work hard to seek out tutoring services at their college, some students indicated that, if they don't understand, they just study harder on their own, re-reading text materials.

Audiological testing laboratories, speech training, and other such services were mentioned by faculty and administrators as important services for students. One administrator mentioned that it was important to have interpreters but also equally or more important for the deaf students to learn to speak and speechread. Students did not mention speech training at all in the interviews. Even those who had been mainstreamed and used speech throughout high school focused upon the need for sign language communication at college.

Other forms of support services such as notetaking were not mentioned spontaneously during the interviews. However, when asked directly about this service, most administrators, faculty, and students indicated that this service was not available and

there appeared to be little interest in exploring this service. Only one student indicated that it would be helpful to have someone take notes. This could be in part because the classes are not mainstreamed.

Relating to access in general, one deaf leader noted that there are a wide variety of access issues in everyday life, not just college life. This included issues regarding captioning on television, interpreters for public events, digital signage in public, and the availability of cell phones and computers for use in society at large. Such global societal access issues will require considerable public discourse and the allocation of scarce resources. Thus it will most likely be some time before these issues are resolved.

**Teaching methods**. One of the greatest areas of concern raised by faculty members related to best practices for teaching deaf students, including the incorporation of new instructional technologies. The use of multimedia technologies in order to enhance visual teaching methods has been mentioned earlier in this report. However, implementing and utilizing such educational technology presents a challenge for faculty members. For example, one indicated that she has been "…trying the Internet and PowerPoint but at this moment, the teacher/student collaboration using the PowerPoint is still developing. Not quite mature enough to use."

However, there was agreement that use of these technologies must become a routine part of teaching students who are deaf. The following statement is indicative of this perspective:

> We need to have computer internet accessibility for everyone in the classroom. The students must have access to the internet. The classrooms must use the computer and overhead and PowerPoint. Today teachers write on the board and that is boring and that is a waste of time.

However the use of multimedia technologies was not the only suggested change in teaching methods, there were several excellent examples of other ways that faculty have altered their teaching methods to accommodate the needs of deaf students. The following is one example:

> I think there is a big adjustment, and the main adjustment is the information exchange. The language, when I teach the hearing students I can demonstrate. I show the student how to do the work with the paintbrush in my hand and talking with my back facing the students. And the hearing student can receive the information. With the deaf student I cannot. They cannot hear. And also with my painting brush in hand, I cannot sign. So, it is very awkward….Now I have separate piece of paper. Now, with that piece of paper, I do the sketching and then I add some colors and then at the same time, on the side, I write the words. And then this way, the student can see the painting and the words and the connection….It is only the key words presented and not all the sentences. You are presenting this painting and you want any student to understand your thinking

of the picture and the key words….after I finish, I face the students and talk [to fill in the rest of the information]

Summarizing what he considers to be effective teaching, one faculty member said, "Basically in teaching deaf students I think there are three key words. One is visual language. The second one is use student as helpers, other deaf students. The third is feedback from the deaf students. The strategies we use are collecting more visual material....instead of using talking."

Several faculty members also mentioned other teaching adjustments, including using sign language, spoken language, and written language. One faculty member emphasizes the reading aspect of learning, saying, "I encourage students to read and read and read. If you don't understand ask the teacher. Ask me and read some more." Several mentioned the difficulty of using available textbooks and how these must be altered by the faculty member in order to use them with students who are deaf. That is, there is a sense that textbooks should be modified so that students can read them more easily.

A number of students confirmed this perspective by indicating that their college texts are very hard, especially in math and science and mentioned that there should be special texts written for deaf students. However, one administrator noted that the nation-wide opinion and debate is divided as regards this issue. He indicated that middle school and HS texts have been modified and are simplified for students who are deaf and as a result they learn less. He was quite worried about this and felt that deaf students can and should have the same quantity and quality of education, and text books.

Many examples were provided as regards how curriculum and content were reduced and simplified. Often English requirements are reduced or eliminated, and one college mentioned offering applied and concrete courses as opposed to abstract and theoretical aspects of a course. For example, a faculty member related that she teaches less theory in computer hardware, and emphasizes the software more because students have a hard time with the theory, and because they are more interested in software applications such as web design. In one case, fewer days working independently off campus were required of deaf students (2 weeks instead of 3 weeks in art) due to a desire to protect deaf students. All of these modifications fall under the category of simplification of the curriculum.

However there is another form of curriculum modification which requires more courses or coursework. That is, some colleges require deaf students to take more hours of coursework in Chinese or English, or journal writing. These requirements are not individual specific, but are general requirements for all deaf students entering the college. Deaf students cannot "test out" of these requirements regardless of their abilities.

Requirements and structural accommodations. Structural accommodations manifest themselves in a variety of forms: a. special entrance exams are created by each college, b. only selected majors are available for deaf students, and, c. classes and labs for deaf students are separate from those for hearing students.

This is not so different from the National Technical Institute for the Deaf at Rochester Institute of Technology and Gallaudet University in the USA. College entrance exams are either modified or different scores are considered for admission. For example, it is recognized that for many deaf students' knowledge of idioms and world knowledge and experience may be barriers to successful exam-taking ability.

Likewise, at NTID not all majors are offered. The main difference is that if a deaf student's English and math levels are good enough to qualify for baccalaureate degree programs, intensive support services are offered to make it possible for the deaf student to succeed in the other colleges of RIT, e.g., tutoring, note, taking, interpreting, real time captioning and the like.

__Extracurricular accommodations__.   Issues related to accommodations outside the classroom are significant ones. Some colleges offer almost no such services, stating that this is part of preparation for the 'real world' where students have to make it on their own. Other colleges offer extensive extracurricular accommodations.

Usually some or all extracurricular activities are offered to both deaf and hearing students. In activities outside of class, there was a strong emphasis by administrators on interactions between deaf and hearing students so that the deaf students can learn how to live with hearing people. Deaf students mentioned that there were many activities available and several mentioned that there was much opportunity to interact with hearing students through activities, in the cafeteria, in the dorms, and in the evening study classrooms. However no students talked about interaction with hearing students unless asked, and then did not seem to see it as an issue, nor as a major goal. This, in contrast to administrators who focused heavily upon this as a goal. However, at one college, deaf students who had not been housed on campus requested a move to campus so they could interact with hearing students. It is interesting to note that many deaf students say that they come to RIT specifically to get experience in living in a 'hearing world', but with support services to make that interaction possible.

In an effort to teach and prepare hearing students for having deaf students on campus, some colleges offer a variety of information or orientation activities for students who are not deaf. Both psychological and physiological aspects of deafness are covered in these sessions. Some programs go further and offer counseling to both deaf and hearing students regarding tolerance and accommodation. It was mentioned several times that such training about deafness is provided to leaders of student organizations and these leaders are expected to assume the responsibility to pass this information on to hearing students in general.

There was frequent mention as regards modifications in the cafeteria. These modifications ranged from none at all to a special cafeteria window where students can use paper and pencil to put in their food orders. Other colleges created methods "in-between" emphasizing pointing along with paper and pencil. In nearly all cases, cafeteria workers were told that deaf students would be part of the student body and these workers were provided some instruction regarding interactions.

Housing options also vary across colleges – in one case 1 or 2 hearing students are assigned to live with deaf students and help out with telephone messages and the like. In another case it was mentioned that deaf students have the same choices as hearing students regarding where to live, and no accommodations were mentioned.

Summary. With regard to support services there is considerable variation between colleges, particularly regarding communication in the classroom. Support services for a mainstream class are rarely discussed, seen as too expensive, or judged unworkable for various reasons. Collaboration between colleges within China and outside would be a useful way to search for accommodations that might be feasible. Deaf and hearing respondent had rather different opinions regarding the signing abilities of faculty and how tutoring takes place. In-depth discussions of these issues with students would seem important in order to clarify these differences and find creative solutions.

As for teaching methods, all respondents supported increased use of multimedia technologies despite some obstacles, and several faculty members have used very creative new approaches to teaching their classes. Simplification of texts or curricula can pose a danger by lowering expectations and limiting the possible achievement of those who are able to do more. Requiring additional courses should be based upon need, established through individual assessment, since this can be a waste of time for the best students.

Colleges are conducting considerable experimentation. Research and collaboration on the effectiveness of these experimental approaches would be helpful. In addition, the opinions of deaf individuals should be a critical aspect of research and program design.

Communication

Communication of course is the underlying issue related to all aspects of deafness. It is also particularly complex in China, as students to tertiary level education programs come from all over China where both spoken and sign language dialects differ widely. Communication is an inseparable part of every topic discussed in this report so far and therefore this section will seek to summarize and tie together points previously made as well as to expand upon those points. The following topics will be covered:

- Types and roles of communication
- Communication outside the classroom
- Communication training and evaluation

Types and roles of communication.   Types of communication include oral communication, sign language, writing and reading internet forms such as email, and other visual means of communicating through multimedia in particular.

As mentioned earlier, the traditional view taken was that signs are useful if oral communication is not successful. However, the official view has changed in various ways

over time. There is strong debate regarding the role of sign language in education at present.

> …they have a different understanding about how do you think about sign language. Sign language, should (it) be the main language for deaf people (or) deaf people should have their hearing people's spoken language as main language and use sign language as an assistance to facilitate them to learn the mainstreamed language? (college administrator)

However there is beginning to be some interest in bilingual approaches to education. For example, UNICEF sponsors a preschool program in one Beijing school for the Deaf, and there was a conference concerning the theories and teaching methods of bilingual education recently. It was suggested that there needs to be more support for bilingual approaches since with one language deaf persons are behind, whereas with two languages they can communicate more easily and understand better. It was also noted that there is in fact more Chinese Sign Language (CSL) recognition now in China and that the CDPF in Beijing is even planning a CSL competition. At one college students can nominate a good sign language model and there are competitions with prizes of money, credits toward promotion, and even possible dismissal for faculty who sign poorly. However the majority of college programs have no required levels of sign fluency for their faculty, and most offer no incentives as regards sign skill development.

Another important issue raised during the interviews are the differences between Chinese Sign Languages (CSL) (native) versus standardized Signed Chinese (following written Chinese structure and grammar using CSL vocabulary). One deaf teacher explained that; "Deaf teachers are native signers and the hearing teachers find it difficult; it's not their native sign…. there is some difficulty in communicating with the students." A college administrator indicated that this issue is recognized nationally as there is discussion regarding the issue of which form of sign language teachers should learn and use:

> …there is a big issue regarding deaf education, and regarding sign language too because currently in China, the government and the experts in deaf education and including within the deaf field, they do not have a united opinion and understanding about sign language…

Several faculty members, deaf and hearing, and some students mentioned communication through technology, especially the internet. However, there are real limitations caused by an insufficient number of computers or limited computer time. In fact one faculty member says that he often keeps in contact with former students by cell phone because computer access is not always available. Faculty and some administrators also mentioned the need to use a variety of communication approaches.

> We use sign language, spoken language and written language, multi-media. The reason we use spoken language is because many students after language training, speech therapy, they have some language ability and other students have residual hearing….And also we offer the spoken language because deaf students come

from all over China. It is like they have their own dialect, their own sign dialect which is hard to communicate and hard to understand.

Administrators in particular frequently expressed support for what using a variety of approaches simultaneously, in order to meet the needs of the variety of students. There was also emphasis upon the need for deaf students to be able to communicate in society and in the workforce by both administrators and faculty. Indeed one faculty member who has kept in touch with former students gave an example of frustration and loneliness experienced by some graduates once they are at the workplace. He encourages them to explain clearly their needs and work out an agreement regarding the best way of communicating.

In summary, there is ongoing debate regarding the use of various forms of communication, but as one student says, "I (use) both sign languages…Signed Chinese for class (and sometimes use voice and speech with teachers), and CSL to communicate, to chat with people. If I meet hearing people then I write back and forth." As in the United States, most deaf individuals are competent in the use of multiple communication approaches; however the deaf respondents in this study overwhelmingly indicated that the ability to sign was the number one priority and preference for them in communication.

**Communication outside the classroom**. There was considerable variation as regards communication outside of the classroom. Several administrators arranged extracurricular events for deaf and hearing students so that deaf students could learn how to communicate better with hearing individuals. In one case, interpreters were provided for some extracurricular activities in order to better mutual understanding. In general though, given the scarce resources, there was little consideration of support out of the classroom. Writing is perceived to be the most useful approach outside of the classroom. One deaf adult pointed out that even when hearing individuals sign very well, they tend to sign only in class or if they are talking directly to a deaf person and even forget to do that at times. Thus the deaf faculty member or teacher loses out on many opportunities to share information and ideas and often feels "alone and lonely."

**Communication training and evaluation**. Responsibility for sign language training resides both with the CDPF and with individual colleges. Individual colleges are completely independent with regard to their policies and decisions about what and how to teach the faculty. However there is some confusion as indicated b the following statement by a college administrator:

> In China we have a special organization that is in charge of language. It belongs to the ministry of state. However, that organization does not cover sign language area. Sign language is assigned to CDPF. But, in CDPF we do not have a specific office that takes care of sign language. So, the sign language project is assigned to the education section of CDPF. In this section, since it has evolved in education, it is the focus on how to teach sign language…the last time I talked with her, she had some thoughts but they haven't been formalized yet.

Again, as has been mentioned earlier, there is little official training in sign language at most colleges. At one college all faculty are given at least 3 sign classes and are said to be required to be at a certain level before they are allowed to teach. This was the only college that actually offered sign classes. Other colleges encouraged teachers to learn to sign on their own from books or from students. Students also confirmed that the faculty who are motivated usually learn most of their signing from students.

With regard to teaching sign language to hearing students, there was some effort in a few colleges. One college had established interest groups where the classes were taught by deaf students and another college was considering summer sign classes for hearing students.

The evaluation of faculty sign skills varied widely. One college used compulsory level teachers who are recognized as good signers to teach and evaluate sign skills. At another site a panel of hearing individuals evaluates the new teachers. Deaf individuals are not a formal part of the evaluation. However, they do attend and can disagree with the approval of the panel of evaluators. Deaf interviewees indicated that evaluation panels should consist of 6 deaf and 2 hearing individuals. In contrast, at another college, deaf students evaluate the teacher's sign skills each semester and if they are poor they must have more training in their weak areas.

While most discussion focused on sign language training and evaluation, some discussed teaching and evaluating deaf students' Chinese language learning.

> Deaf students, their (Chinese) sign language order is different from written language. So, when they are writing, they will follow their sign language order …and to the hearing people they don't think that the deaf students write good Chinese (college administrator).

That college is now designing multilevel testing of deaf students' abilities with written Chinese and multilevel courses so that students can be placed in the correct level. Currently this is a research project that is being designed and tested.

Summary. Overall the issue of communication in education of deaf students is a very complex one and every program has a different set of decisions regarding addressing the issue. None of the colleges has an actual communication policy and the government has not provided guidelines in this regard. It is also clear that there is a different emphasis and focus between deaf individuals who strongly emphasize the need for quality sign language in order to improve access to information, and most of the administrators for whom it was a lesser priority and who had a tendency to feel that the faculty signed well enough. Faculty themselves were apparently highly motivated to learn to sign well, but in general hearing individuals stressed the need to use multiple communication methods in class to meet the needs of the variety of students present. Clearly further dialogue is in order and greater involvement of deaf individuals, whether students, alumni, or faculty/teachers would be helpful.

Majors and Programs Offered

The offerings of majors and programs for students who are deaf are remarkably similar across colleges for a variety of reasons discussed below. However most of the programs are quite new and are beginning to explore alternative possibilities. One of the strongest issues discussed by deaf students and community leaders relates to the desire for wider offerings in the future. The four topics reported upon below are as follows:

- Curriculum
- Employment market demands and majors offered
- "Suitability" and the majors offered
- Expanding majors offered

Curriculum. The majority of college programs offered are two year programs and many have been established recently. Several programs were so new that they did not yet have graduates at the time of this study. Only three of the colleges offered four year bachelor degree programs for deaf students. All of the programs are self-contained, meaning none of them are mainstreamed, although all are situated on a campus with hearing students. Most of the programs also include courses for blind students (with a different set of majors and courses offered). As mentioned earlier, due to the underdevelopment of upper secondary programs for deaf students, many of the deaf students attending these colleges are coming straight from a "middle school" education to a college program with gaps in foundational knowledge. This of course places strong limits on the programs that can be offered at a college. However it was not clear how this applies to graduates of mainstreamed upper secondary programs, recalling that approximately half of the deaf students were educated in the mainstream before college and did attend upper secondary programs in mainstreamed classes with hearing students.

The programs offered at the colleges in this study are related primarily to the arts or computer science. Arts and crafts and Design were the most often mentioned, but the related fields of Interior Decoration and Design, Fashion Design and Creation, Advertising Design, Photography, Animation, Landscape and Gardening and the like are also strongly represented. Computer Information and Management, and Computer Science also are offered. One college offers Social Affair Management only for students with residual hearing, and one previously offered Mechanical Engineering but closed that program in 2003 due to lack of applicants (Note: Since this study there may be additional programs and majors available for deaf students.)

There is a striking similarity between programs offered across colleges (Art and Design and Computers). Several programs have a wide variety of majors within the two general areas outlined above and were considering adding more majors, but again, within these two broad areas. Both areas are well respected in China and many students have done well in art-related competitions and in obtaining appropriate and related work after graduation despite a variety of difficulties. A number of administrators emphasized the skill and successes of deaf students in the arts field as mentioned earlier in this report.

The similarities and relatively limited majors is not surprising given the relative youth of tertiary education for deaf men and women in China. However, it is worth noting that deaf students in other countries with a longer history of postsecondary education for deaf people have wider ranging choices of majors and are subsequently employed in a wider range of jobs.

Employment market and majors offered. Finding employment in China is currently challenging for everyone, making it potentially more difficult for graduates who are deaf. The greatest worry expressed by deaf students related to finding a job. As one deaf community leader stated, "In China, what to learn, what major to choose depends of whether you will find a job after school. It does not depends on if you like the major or not." As was further pointed out by one administrator, "If we offer students majors that are not needed, there is no point for deaf student to take (them) and couldn't find a job". In majors where hearing students have a hard time finding jobs, it is even harder for deaf students, but if they major in fashion design for example they can "…work at a clothing factory or company. If they can't find a job there, they can easily start a tailor shop, a small business. They can support themselves and give no burden to the society" (college administrator).

For this reason most of the colleges start with an analysis of the job market to assess areas where there are jobs and where they think deaf students will be hired. The colleges strive to determine employment market demands and develop a major in that area. One administrator gave this example.

> In terms of animation, lots of animation design companies recently recruit many of our art design students even though they are not in animation design field, but they come close…And from this we know there is a big demand for animation designers and that is a good way to set up this major (college administrator).

Even though students very much wish to have more choice of majors, their greatest concern is finding work. The areas of art and computer science have proven to be areas where graduates have found employment. However, one college administrator pointed out that there are potential problems ahead with college programs all having a similar focus on art and computer science stating that, "When all the colleges offer the same programs, there will be an employment problem." However he went on to say that, "Market demand will automatically force colleges to offer different programs to students. But it will take time. Again, China's deaf college education is just beginning."

There are two questions that need asking: first, could employers be educated regarding the abilities of deaf graduates such that they would hire them? and second, is there a place for an active role by some office of the college to search out new majors and to essentially create a demand? For example, many employers do not understand what deaf workers can do or how to make it possible for them to do the work. In some cases once they better understand, they are more willing to hire deaf workers and colleges can plan a significant role in promoting the abilities of graduates.

There are individual students whose abilities and strengths do not lie in the computer or art related areas.   These are people who are highly skilled in other areas but not in these two areas. Because of the limited number of majors available to these students they have limited options to pursue an academic program in which they posses interest and abilities. As one administrator said,

> My understanding is that in your country (USA) deaf students after high school graduation they can take courses with hearing students…but in China we don't have enough facilities, resources to support students to take course with hearing students.

Another administrator offered a salient example by noting that "In our college there is one deaf student. He asked to go to hearing classes. He went there only a few times, and then he decided to come back to deaf class. The pace is different….In the hearing class there is no sign interpreter." Therefore most students cannot enter mainstream college classes due to lack of support. Further, programs for deaf college students offer other limited majors. Therefore, some students lose the opportunity to get a college degree and contribute to society in an area in which they excel. This is an area for future consideration among all the colleges that educate students who are deaf.

Suitability and majors offered. A general perception expressed by several administrators and some faculty members is as follows: art and computers are most suitable as a match for deaf students because deaf students have visual strengths that compensate for their deafness.   It is interesting to note that none of the deaf respondents offered this point of view. Clearly, there is a potential for discordance between the desire of deaf people for access to majors of all kinds and the perceptions of decision makers as regards majors that are suited to deaf peoples' skills and abilities. The term "suitability" appeared frequently in many of the interviews. For example the comment of one college administrator is illustrative of this point, "When we are thinking about majors, we are taking…what is suitable for them into consideration. We thought the arts and crafts design are the most suitable for them."

In discussions regarding suitability, it became clear that the term applies to two different situations. The first relates to expectations and stereotypes regarding what deaf persons can do and worry about specific barriers that are imposed upon deaf people. The second meaning relates to the level of students' foundational knowledge.

With regard to stereotypes and attitudes, communication with hearing people was often cited as a primary factor as to whether or not a major was suitable for deaf students. As one college administrator explained,

> Computer majors in the computer department is more suitable. Courses such as economics and management knowledge require more than just operation after they graduate from college because they lead to management. For computer, deaf

students can independently operate it...There is less communication required...It's an application focus. Therefore there is no high need for language.

A deaf community leader commented, "I think deaf people can do many things....As long as it does not require too much listening, deaf people can do it." This comment does not say that the deaf person themselves could not do most jobs, but rather that certain communication requirements of some jobs present a serious barrier to communication.

A series of studies done by DeCaro and colleagues (DeCaro, Mudgett-DeCaro & Dowaliby, 2001) in several countries with regard to what careers deaf people might be encouraged to pursue if they had the appropriate qualifications, found that occupations involving communication with hearing people, and occupations with possible safety concerns were considered less suitable. Further, the studies found that deaf respondents were more able to creatively think of ways to solve the communication barrier than many hearing individuals… presumably, because they have had to be creative in everyday life in thinking of solutions to obstacles. Technologies such as email and internet use were often mentioned as substitutes. A dialogue regarding overcoming communication barriers, especially with the involvement of deaf individuals, would be a useful activity for each college serving students who are deaf.

As a side note, the issue of safety as a factor in suitability was only mentioned twice in the present study, that is, with regard to the mechanical engineering program that was closed, in part because parents worried that it was not safe for their deaf son or daughter, while one faculty member said that many of the industries have practical issues like danger involved—safety was not discussed by others. This may relate to the types of majors that are available, to which the issue of safety does not apply. This area might be explored in the future in China.

There exists a belief that deaf people are more suited to fields that require visual acuity. This perception has a strong influence upon establishment of majors which require a visual orientation. Illustrative of this perception is the comment of a faculty member who said, "The reason is, they use sign language. Over the years of using sign language, that exercises their eyes and they have an accuracy. They see it and they see it accurately. They memorize it. And also with the sign language, their hands are very flexible." As mentioned earlier, although it is a logical conclusion, there has been no research yet to establish this as a fact.

Finally, as elaborated earlier, there is a commonly held belief that deaf students are not able to think abstractly very well. Deaf individuals challenge that belief and asserted that they often think more concretely because they had never been challenged to think abstractly in compulsory education. They believe that improving their education would result in an improvement of their abstract thinking. Parenthetically, the lack of confidence in students' abstract thinking abilities was very common in the USA and was only seriously challenged starting in the 1960s. Experience has shown that while it continues to be a challenge at times to teach abstract thinking to deaf students, a great

number of deaf individuals have no difficulty with abstract thinking and application to learning.

The other type of meaning given to the idea of "suitability" related to students foundational knowledge and the quality of the education they had received prior to coming to college. One college administrator explained it in this way,

> In China, the higher education program for the deaf is based upon deaf high school education or compulsory education. At present, special high school education is lagging behind normal high school education. Deaf high school students are poor at natural science course. They are poor at science and technology related knowledge, especially poor at math and physics.

However, it is important to reiterate that almost everyone emphasized poor preparation as a significant problem.

Summary. Thus for a number of reasons, some majors are considered more suitable for deaf students than others. The current focus on improving high school education opportunities for deaf students will hopefully be a factor in improving deaf students' preparation for expanded college programming over time. Issues related to stereotypes and expectations might be addressed in various ways. One to review research that has already been done on this topic and conduct relevant research in China. Another approach is to use role models from within and outside of China to demonstrate the variety of abilities and work that deaf individuals have shown that they can perform.

There are formidable obstacles to offering majors: guaranteed employment offerings; weak foundational knowledge of students; lack of resources to support qualified students in the mainstream; and, beliefs that perhaps deaf students are not able to succeed in the sciences and other such areas. Nonetheless college administrators acknowledge the fact that market demands are changing. Indeed all of the administrators felt it is possible to increase the number and type of majors offered to deaf students, although many suggestions were still within the arts/computer areas. With the strong desire of deaf students and possible changes in employer demands, change will certainly occur over time. However colleges might be able to encourage such change in various ways, and some are described in the following section on employment.

Employment

The greatest concern of deaf students, college administration and faculty relates to employment. When students discuss concern, the first is usually employment. "Many people are very worried about finding a job when they graduate" (Student leader). Discussions regarding employment centered on five general topics:

- Societal context regarding employment
- Selection of major based upon employment
- Obtaining employment

- Barriers in obtaining employment
- Jobs obtained and the outcomes

Societal context regarding employment. The challenge of finding work is not just one for deaf students but for all of society as the China transitions to a market economy. The numbers of individuals seeking employment are huge. "Just for this year college graduates are 2.8 million," said one CDPF administrator. He explained that there are approximately 14 million unemployed per year whom the government tries to help to find jobs:

> In the past all of the college graduates are assigned by the government to a work unit. But right now we are in the market economy. So we have two choices. It is the employee pick their own employer or the employer pick their own employee….And so the college graduates are facing great difficulties in seeking employment.

One deaf student put it this way, "Before, students would be placed, but now school is not responsible for job placement. Individuals are responsible. People are kind of paranoid and concerned because hearing people have a hard time finding jobs. Deaf people have much more concern in the job search."

In addition, it was explained that as a part of the new economy,   "…factories are focusing on efficiency and productivity" (faculty member), which makes the job market highly competitive for all individuals including college graduates. However, one college administrator pointed out that anyone who has a college education has a better chance for a job than others, deaf or hearing. One CDPF administrator agreed, saying that, "Deaf people or all of disabled people who have received higher education, their opportunities of being employed is far better than those disabled people who have not gone through college." There is however a further general difficulty, an associate degree and bachelor degrees means less and less in a rapidly changing society where more people are obtaining masters degrees.
While deaf students worry abut employment, one CDPF administrator commented that nevertheless, "In terms of employment, deaf people have a better chance of being employed than the rest of disabled people." He went on to say that the only disability that deaf people have is that they cannot hear and therefore have more chances at obtaining employment. Another CDPF administrator noted that deaf people are smart in general and through education they can do a good job. Nonetheless student remained concerned as illustrated by the comment of a student who noted that, "The situation about disabled people finding jobs doesn't look good. For example, (deaf) college graduates last year in art majors and computer majors, most have not found jobs."

Offering majors based upon employment. As discussed earlier, majors are established based primarily upon the findings that graduates are likely to be hired after graduation. Offering a major is partly based upon national employment need, and partly on local needs. Majors offered in rural areas may differ from those offered in urban locations. Students, deaf and hearing, select majors with an eye to employment. Illustrative of this

point, one hearing faculty member said, "…(I am) still interested in archaeology and I have never dropped that interest…but art and painting is for the job. I transferred to learn art...because it is easy to find a job." Another hearing faculty member added, "I loved art but for college I went into electronics because at that time the country placed a strong emphasis on industry and electronics." However later when there was a need for an art teacher for the program, he was able to go to art school and become an art teacher.

For deaf students, as discussed earlier, the availability of majors is limited. However as one student admitted, even though she very much wanted a major that is not offered to deaf students, "The number of deaf people is small. If you add more majors, in class students would be very few. So how would the teachers teach?" Without resources for access to mainstream programs, this is indeed a limiting factor. A number of respondents had originally wished for education or employment in areas in which education was not offered. For example, one student noted, "In my dream, I would like to become a government officer…(meantime) I will have a degree in art." Another wanted to be a lawyer but since it was not offered as a major for deaf students, she indicated that she went to college and said, "it was just art only so I put up with it and I went to college for that because I really wanted to go to college….If I had the opportunity, I would still want to be a lawyer." Of course most people have dreams that aren't realized, deaf or hearing. The difference is that possible choices are more limited for deaf students compared to their "dreams". In contrast however, for students who always wanted and loved computers or art, the choices in those majors are excellent and diverse.

Obtaining employment. In such a tight and competitive job market, it is a challenge for graduates to find employment. There were a variety of approaches used by students.

"First you write a resume and send it out to different companies," said one student, but most students indicated that the college faculty often helped with at least the initial contacts. As one working graduate said, "The school knows my skills and what I have already learned and tells the different companies that I am a wonderful student and explains it, and the company listens and looks and accepted me." Faculty members often go with the student to the initial job interview, not only to talk about the student, but also "…the faculty explains in detail about their abilities and that's all. The next step is completely responsible on the student and their own abilities" (student). Thus the education of potential employers is also undertaken by faculty. Faculty members therefore use their contacts with businesses to help students find suitable employment.

On an organizational level, college administrators help in more global ways: one holds a job fair, another has public announcements in the local newspaper, and others use various forms of public relations to convince employers to consider hiring deaf graduates. The Chinese Association of the Deaf also assumes some responsibility in helping graduates to get jobs. One student noted that the association gets together often with the CDPF staff and the college administrators to discuss job issues. The Tianjin Deaf Association established as a specific goal, helping deaf individuals to gain employment.

It is a direct part of the responsibility of the CDPF and the overall government to aid in the employment of people who are disabled. One CDPF administrator explained the system in the following way:

> The government has stepped in to help. There are three ways; one is to group all of the deaf people together in welfare companies. In China we have about 50,000 of these kind of welfare companies where all the deaf work together. The second is individual enrollment to recruit deaf people. The third is the government has policies. The companies have to have 1 % of the employees to be deaf/disabled. If you do not have that number of disabled people employed in your company, you pay the average of the employee's salary and…the federation takes this money to use for the disabled peoples' job training.

One student said noted that she was soon joining the Communist Party and feels that this will give her an advantage in finding work. Thus there are a variety of strategies employed at all levels to help deaf and disabled individuals find employment. Nonetheless there are many barriers to overcome in this search.

Barriers to obtaining employment. A variety of barriers can make it difficult for deaf graduates to find work: attitudes and lack of knowledge regarding deafness; lack of student experience; intense competition; and, a gap between what colleges teach and employers want.

Regarding attitudes and stereotypes, one faculty member explains that, "very often when a deaf student graduates and goes to work they often surprise the hearing people because they have learned pretty much everything…they wouldn't believe deaf students can do that much." "One of the major problems is that many businesses and companies are not ready to accept deaf people, not because of what deaf students know and don't know but because they really don't understand deaf people. It is a kind of fear" (college administrator).

Skills and knowledge are also an issue. One student who would like to be a government official explains that for such a post she must first take a test and then be interviewed face to face. She asks, "How does a deaf person do that? Deaf people have limited information because of (lack of) access. There is much new information that deaf people don't know." This was illustrated by a high school teacher who pointed out that society demands a lot more skills than in the past. Therefore academic requirements at all levels must be raised and the linkages between elementary, middle school, high school, colleges and society must be strengthened.

Stiff competition makes jobs very hard to get and deaf graduates may be disadvantaged as indicated by the statement of one student leader, "If hearing people and deaf people have the same skills and level of knowledge, the boss will tend to pick the hearing person. No discussion." Experience is important in obtaining a job but experience is very hard to obtain. "One of the disadvantage preventing these students going to the fashion design (is that) the big companies require you to have a working experience. And

since the students just graduated from college they don't have these kind of experiences" (faculty member). An art teacher who is deaf, agrees, saying, "…because employers are so pressured to do the most efficient production, fast and good, they don't want somebody new. They want experience. But how do you get experience?" Summer jobs are not a solution. As one deaf student explained, there are no work opportunities and, during the summer, students are busy studying. As a result, students don't have the time to work and summer jobs are very difficult to find.

Colleges and universities do not currently have many work-related experiences built into their programs. For example, a faculty member noted that, "In the past there has been a history of school and factory collaborative partnerships. That was before the Cultural Revolution. But now this is an area that we need to work on." While some colleges are trying to do so, it is difficult to interest companies in such endeavors. Illustrating this point, one faculty member noted that, "At this point we are in the passive position. How can we make the factory take us? That is the problem…. Even in fashion design where there is no danger involved, we have contacted a few companies and the students themselves have tried contacting the companies and the companies are not interested"

Nonetheless there was one example of a college collaborating with an interior design firm, and another example of collaboration in the area of creating posters for a business. However, there was doubt expressed as regards the willingness of most companies to participate in these efforts. Irrespective, a few solutions have been tried or are being considered. One such approach is for colleges to establish its own fashion factory. At one college a company trained deaf students for 2 months before they graduated, on basic skills and other required knowledge, then they gave a test and hired the best ones.

A final barrier that is mentions as regards obtaining employment relates to a "…disconnection between what the college taught students and what the big companies and businesses need from the graduates. There is a gap" (college administrator). Several respondents agreed that the colleges and worksites have different focuses and goals. However, there are more and more universities connecting with big companies to seek advice and counsel regarding curriculum. Some institutions are also establishing advisory boards regarding what majors and courses should be offered. One employer designed 4th year courses to better prepare students for their company. More such creative approaches are needed and being considered.

Jobs obtained and the outcomes.   The jobs students are obtaining, how this relates to their education, and whether they keep these jobs are also topic in which great interest was expressed. To put this into perspective, one CDPF administrator points out that there are significant successes, for example, of those students that graduated from BUU, 70% of them have jobs and 20% have gone on for higher education. He mentions that about 5% of those who got jobs, were not happy with their employer or their work and are now unemployed.

Of those employed graduates who were interviewed for this study, several commented regarding the link to college studies. Two alumni mentioned that their current jobs are

only marginally related to their majors. One, hoping to be able to have a job using his computer education, noted that, "Right now I have to put up with this but eventually, I will move up." In the area of fashion design some graduates were not able to find a job in their field and changed to computer advertisement since they already had also studied computer operations. One current student points out that several graduates from the art and computer programs could not find jobs in their area and ended up doing things like selling cell phones. However one college administrator explained that, "A deaf student, after their college graduation, their first job may not tie into their major. But most of them are willing to accept their first job…because they felt that with this first job they are getting experiences." He went on to say that graduates feel they get a better understanding of the society itself and can use their first job to look for future employment that connects more closely to their major. He stresses that it is the education itself that is most important, "I definitely feel that education is the foundation for deaf people's future survival in this society".

Issues on the job that cause unhappiness often relate to communication with the boss. Some faculty members keep in contact with graduates and give them advice about getting used to communication in the workplace because communication difficulty with a boss can lead a graduate to quit a job. Students are often not used to factory work and the amount of work can be formidable. For example, in the fashion industry an employee is expected to design and work on 10 different clothing items simultaneously. Some of these challenges can be overcome by students finding initial employment in smaller enterprises.

__Summary__. The role of faculty members is clearly significant and could perhaps be formalized or encouraged in structured ways. Further, there can be education of students regarding the communication challenges they will face on the job and how they might handle them in the workplace. Successful graduates might be brought back to help educate students regarding such challenges and also to serve as role models. However, it is also important to show employers, through the media, successful graduates and emphasize to employers the abilities of deaf men and women. Further, in the realm of research, one college and the CDPF have joined forces to design a survey to investigate graduates' job situations, the problems they are facing and possible solutions. Such research would create an excellent baseline and progress toward more successful employment of graduates over time.

Findings: Section II

Section II is organized around the overlapping and related roles and responsibilities of organizations and individuals within the overall hierarchical structure of education for deaf persons. This section touches upon the broad range of issues raised in the interviews but focuses primarily upon the responsibilities related to these issues. The relevant groups discussed in Section II are the following:

- The central government roles
- The China Disabled Persons' Federation roles

- College administrator roles
- Faculty members and student roles
- Parent roles

As will be seen, the overall goals of the stakeholders are essentially the same across these groups, but there is increasing variety in the implementation as one moves from central government to individual faculty and teachers. In addition, it is worth noting we note that there was greater uniformity of response the higher one moves up the chain of command. That is, there was more uniformity among CDPF interviewees and college administrator's points of view than among faculty, deaf community leaders, and students.

Central Government Roles

Findings regarding the roles that the government plays in the development of China's education for deaf persons as obtained from the interviews are reported in this section. Also reported are respondents' expectations and opinions as regards what government can do and should do to promote high school and post-secondary deaf education. The role of the CDPF is also discussed. The following roles were emphasized and will be discussed below regarding the central government:

- Establish guidelines regarding the direction for development
- Establish legislation which enhances education opportunities
- Hire program directors and some faculty and establishment of standards for hiring.
- Fund special education
- Establish standardized curricula and textbooks

Establish guidelines. As mentioned in the introduction, every five years the Chinese government makes a National Economic and Social Development Plan guiding the direction and the focus of the country's development. All the government branches and departments at lower levels then make their own five-year working plans based on the national five-year plan. At the college level it was explained that:

> The 10th five-year plan goal was (to train) 500 graduates (speech therapists and equip them with college level specialized technical skills), 100 per year who are deaf…ours is one of 10 campuses which are all separate. We have the deafness and training focus here. (college administrator)

The five year plans have not yet focused specifically upon tertiary education for disabled people themselves. The upcoming plan may begin to do so.

Establish legislation. National legislation regarding the rights to college education of students with disabilities was adopted in 1985. This legislation mandated that colleges should not reject morally and academically excellent students with physical limitations or illness who have reached college admission standard and who can learn at college and

perform in future employment. This legislation made the first college program for the deaf possible and it provides legal protection for disabled students going to college.

Hire and establish standards for hires. The government role in deaf education also extends to assigning individuals leadership positions at the CDPF and at colleges and universities with programs for deaf students. The central government maintains control of hiring and quality standards. Universities and colleges also assign individuals from within the institution to work with deaf students. Several of the respondents expressed attitudes similar to the following one regarding the practice of assigned jobs: "We also accept this assignment by the institute." However, one college administrator expressed a wish for more autonomy in hiring in order to hire faculty members who meet the needs of the college.

Although the government role has changed in recent years so that people can now apply for jobs that they wish to have in the market economy, as a result of previous assignments of personnel, a large number of the administration and faculty now working at the tertiary education level with students who are deaf had no knowledge or experience related to deafness before they began this work. This has produced mixed results. While faculty and administrators who come to their posts unencumbered by the strictures of precedent in deaf education are more likely to attempt innovative approaches to education, a lack of basic understanding about deafness negatively effects their ability to make effective and efficient instructional decisions. This lack of knowledge emerged as one of the areas most often and urgently mentioned by faculty as a problem area in need of solutions.

Fund special education.   Generally respondents at all levels expressed their satisfaction that the government is working hard to improve deaf education, as is illustrated by the following quote:

> The government invested a lot of equipment, to some degree even
> more to deaf schools than to hearing schools. The government and provincial
> levels all have plans and increase in investment. All try hard to invest in the deaf
> education (school for the deaf administrator).

Suggestions regarding how the government could help were varied. Some relate to funding as represented by the following quote by a School for the deaf administrator, "The government needs to publicize more about deaf education. The provincial level government cares. But rural area disabled people don't go to school because funding is an issue. And the government needs to offer more funding." Given China's population and resources, money is limited; however one administrator from the CDPF indicated that nonetheless overall deaf education is in a better situation compared with the education of those with other disabilities. One college administrator agreed noting that deaf education has the lead in special education. A CDPF administrator points out that increased funding, when available, will "not [be] a matter of reducing the funding and giving more to the disabled. It is the increase in funding in all areas of disabilities."

Finally, a group of six administrators suggested that, "We need the government to pay attention to special education. The government must emphasize research exchange…should have workshops like this PEN-International training in other area to bring new concepts to help."

Establish standardized curricula and textbooks. Colleges are concerned about the level of preparation of students who apply for entry. Upper secondary education for deaf persons only became a national focus during the 10th five-year plan, and there is no national unified curriculum or textbook for use at high schools for the deaf. This has resulted in wide variations in student preparation and challenged college programming. The following quote illustrates the problem:

> Each school designs new program for that locality because there is not a national standard to follow. What courses to offer depends on regions and location of the deaf high school. For example, in big cities and well-developed area like Beijing, more advance technology related courses such as computer knowledge is offered vs. in rural areas where carpenter or farming skills are taught (school for the deaf administrator).

Several respondents stressed the need for the government to create a national curriculum and develop textbooks for use in Schools for the Deaf that would allow students to be better prepared to attend college. Students who are mainstreamed already follow the national curriculum and use standard textbooks without accommodation and support services.

One college administrator also expressed a desire for a national consensus and government guidance related to the use of sign language in teaching deaf students, as each college has been developing their own communication policies and they differ greatly.

CDPF Roles

In addition, the roles of the CDPF were discussed. There were five topic areas that emerged from the interviews:

- Implement government guidelines and legislation on the provincial and local levels
- Distribute funding and materials
- Establish special education programs
- Employment aid
- Relay concerns and suggestions from disability groups to the central government for consideration.

Each are is covered in turn below.

__Implement guidelines__.   Although the CDPF is a quasi-governmental organization, respondents usually referred to them as "government". The central government works with local governments and with the various levels of the CDPF to offer guidance and standards for special education around the country. The CDPF is responsible for implementation of these guidelines on local and provincial levels. Each province, autonomous region and municipality has its own federation for disabled persons but they work together as a part of the overall CDPF structure. For example, "Tianjin Disabled Association is responsible for different disabilities, for the deaf, for the blind, for the retarded, and for mental illness, and for the mobility disabled people of Tianjin city..." (CDPF administrator).

__Distribute funds and materials__. The CDPF is responsible for distributing funds and materials to the various special education programs and efforts. Colleges and disability groups work directly with the CDPF to request funding, and to justify that spending such funds. The CDPF also distributes funds to the China Association of the Deaf, primarily for social activities.

__Establish special education programs__. The CDPF plays a pivotal role in the establishment of deaf education including post-secondary deaf education. Great efforts have been made by provincial and municipal level federations for disabled persons to provide occupational training of people with disabilities, mostly through schools for the deaf and college programs for the deaf. One deaf respondent mentioned that in fact the motivation for the establishment of tertiary programs for deaf people was coming primarily from the government, but a CDPF administrator pointed out that in this new market economy where students are facing heavy competition for employment, both students and their parents are now pushing hard for college education.

Specifically, The CDPF has played a major role in establishing tertiary education programs for deaf students in Tianjin, Beijing and Changchun (CDPF administrator). The following quote illustrates the importance and involvement of the CDPF in this role:

> Chairman Deng first had this idea of having a higher institution for the deaf. Once I heard the idea, I went to talk to him, and got this project….We gave this to our Tianjin Department of Education. We have this Tianjin Technical College for the Deaf (CDPF Administrator).

While the current study focused upon tertiary education for people who are deaf, the CDPF focuses upon the entire range of deaf education and students with other disabilities. Those who enter college are the very best and brightest deaf students in China. At the same time, because of its broad focus, the CDPF interviewees were well aware of the difficulties caused by the fast growth of college programs when pre-college programs are still underdeveloped. One CDPF administrator said the organization was spending considerable time thinking about this problem and meant to find ways to support the improvement of 15 high schools over the next few years. The CDPF is also

thinking about efficient ways to use the limited resources for such a small incidence group and had considered two possible approaches:

- Adding a one-year pre-college program to existing colleges for deaf students
- Establishing a high school program at already existing college for deaf students

In this way, colleges could be enlisted in developing better students. A CDPF administrator suggested that, "The first way is to have the high school come to the college. The second way is extend the high school education."

While the system of tertiary education is seen as tied directly to the CDPF as a government representative, respondents also indicated that there are often very strong individuals and grass-roots initiatives that influence the establishment of post-secondary education for deaf students, starting with Deng Pufang.

> The background is there is an honorable president. He is blind. After he came back (from abroad) he report his observations (of deaf and other disabled students were able to received college education) to the Chairman Mr. Deng. Got the support from the Chairman, Mr. Deng. Then he went to our president. This president at that time is also the deputy minister of the education of the province. ...Since he is in charge of admitting students to higher education, he realized that many disabled students are qualified but would not be accepted. He worried about that. Since the honorable president reported to him of his observations abroad ...He is very interested and supportive the idea of setting up a higher learning institute for the disabled. With the joint efforts of Jilin province and China Federation for Disabled People they got some funding and they built a building and started the school (college administrator).

The founding of Zhongzhou University special education program was also made possible by an individual person's interest and influence.

> Zhengzhou School for the Deaf, there is a Dean, Mr. Meng, Who is in charge of deaf education. He is the national "Model worker." He is very devoted to deaf education. At Zhengzhou school for the deaf, he is also responsible for senior high school students. Many of these deaf high school students expressed strong desire to continue college education. There are only a few number of deaf colleges which can admit limited number of deaf students. He felt bad for those high school graduates who want to go to college but could not. As a result Mr. Meng came to us and together, we approached to our provincial education department and apply to educate deaf students at college level. Our university approached to the provincial education ministry and took an active role in negotiating this deaf education plan with the education dept. and got their support (college administrator).

Communication in education. The government, through CDPF offices, has taken active steps related to communication in education. As mentioned earlier, in 1996 an act

established sign language as the official language of deaf educated at schools for the deaf and encouraged research and standardization of Chinese sign language. The Chinese Association of the Deaf has been heavily involved in this standardization process. CDPF also has responsibility regarding the teaching of sign language in education. At the same time the government has established Rehabilitation Centers with the goal of enabling as many deaf children as possible to develop sufficient oral communication skills to enter and succeed in mainstream classrooms where there are generally no support systems. Further, programs have been established to encourage and train families in conducting rehabilitation work at home. With regard to speechreading, when asked what percentage of Chinese can be understood in that fashion, one administrator indicated that to his knowledge there was not yet research on this question but he estimated about 20% due to the 4 tones of the language that cannot be seen on the lips. This would appear to be another area for potential important research given that the government is encouraging as much mainstreaming as possible.

Employment aid. As mentioned previously, it is a direct responsibility of the CDPF to provide aid in the employment of people who are disabled. This is done by providing incentives companies to hire disabled people and through the establishment of welfare factories.

Relaying concerns and suggestions. The CDPF is charged with the responsibility of meeting with those involved with disabilities, not only to implement guidelines, but also to listen to concerns and pass them to the Central Government. As mentioned above, the shortcomings of high school education are noted by the CDPF and considerable thought has been given to solutions. Also the interests of parents and individuals with disabilities concerning the need for tertiary education has been noted by the CDPF.

One School for the Deaf administrator noted, "We already feel that the government gave us a lot of attention. Society has a different attitude now." Further, a college administrator indicated that "the government is taking our advice and suggestions seriously…" as regards recommendations that were presented to the ministry of education with the support of the CDPF.

On the other hand there is also some desire for faster progress and more autonomy in some areas as in this suggestion offered by a college administrator,

> The government should give us (college of special education) more control and autonomy… The government is taking our advice and suggestions seriously into consideration and some the government has already taken actions to resolve problems. But I'm only wishing the government can speed up.

One teacher in a School for the Deaf captured the sentiments of others when he explained that change is very slow, in part because a suggestion must be passed through various levels before a decision is made and then passed down. "China looks up," this teacher said. This individual recommended that collective decision making involving several levels of individuals, and group decision making process would be very helpful in

fostering effective and efficient decisions. Thus there seemed to be some desire for an adjustment to the balance between central government controls and guidance, the local CDPF organization, and local controls and flexibility

<u>Summary</u>. The central government, through the 5 year plans, establishes national guidelines regarding educational development. Further, the government passes legislation that establishes legal precedents, requirements, and protections for all individuals and groups, including those with disabilities. Hiring standards, and often hiring itself, is a role assumed by the central government for leaderships within the CDPF and educational institutions. The CDPF, a quasi-governmental organization, assumes the role of implementation of guidelines and relaying of concerns at the local level up to the central government levels. However the CDPF organization also has considerable input into the use of funding and the establishment of programs. Concerns expressed by respondents focused upon a need for greater funding, a national curricula and texts, and guidelines for the use of sign language in education, as well as an adjustment in the balance between various groups involved in deaf education.

College Roles in Deaf Education

While government assumes the primary role of establishing guidelines, programs, hiring and standards, each individual college or university has several more specific responsibilities within the context of those guidelines. Respondents in this study stressed a number of roles and responsibilities that many colleges currently undertake, and ones they should undertake. Eight are summarized immediately below. Each will be dealt with in turn in this section of the report.

- Increase the quality of education by increasing faculty qualifications—including content knowledge, knowledge of teaching methods and knowledge of deaf culture, and by hiring additional deaf faculty.
- Create an environment for teaching life and social skills so graduates can function as a whole person in society.
- Create accommodations and support services to help students learn better
- Enhance public awareness regarding deaf students' abilities and strengths.
- Create partnerships with corporations and to develop strategies for exposing students to work experiences, and to enhance job opportunities for students and graduates.
- Create partnerships with upper secondary schools to improve pre-college education.
- Create partnerships with other universities/colleges in China and internationally to conduct research regarding effective teaching methods for deaf students' employment needs of society, and career history of graduates.
- Form partnerships with the deaf community so that their needs, knowledge, and experience are considered in tertiary education programs.

Tertiary deaf education on a significant scale, as mentioned earlier, is relatively new for people in China who are deaf. Many needs have been identified and innovative

approaches to education are being implemented. Many of these approaches have been framed within the Chinese way of competitions and use of role models. Education of a whole person is critically important and sometimes said to be more important than content knowledge.

Increase quality of education. It is the responsibility of the college to focus on quality of education. "Quality" was perceived differently by different individuals and groups. The various factors related to quality were; content knowledge and degrees, knowledge about teaching methods for deaf students, knowledge regarding deafness and deaf culture, choice of majors, and signing competency.

A number of respondents (administrators, faculty, and deaf students) mentioned the need for teachers to have greater content knowledge or to teach up-to-date information that is not found in textbooks. Administrators indicated that they are addressing quality by raising the requirements for hiring. Several colleges began by borrowing faculty from other schools, but increasingly faculty are hired directly to work with deaf students. Content and degree qualification requirements are increasing. At the time of this research study, two universities required faculty to have a Bachelors degree and have majored in the content they teach.

Several individuals indicated the need for better knowledge as regards teaching methods for deaf students. At the moment most faculty indicated that they learned primarily from experience and observation. One college did not want faculty to teach any differently while others require faculty to take some special education courses. One college requires all faculty to take special education courses at the graduate level within two years of their hire: "We offer faculty courses on special education, introduction to special education and also psychology of deaf people. We also offer training on teaching methods".

Respondents emphasized the need for more knowledge regarding deafness and deaf culture. Many faculty members knew little or nothing about deafness before they began teaching. The following quotes illustrate the point: "I have never had any contact with deaf people [before this job]" (faculty member), and "…many of these teachers have never had any contact with deaf students before" (college administrator). The latter administrator cited above establishes as a goal, increased understanding by faculty of deaf people. One student suggested that new teachers should be mentored for an extended period of time by teachers who have considerable experience with deafness and the teaching deaf students.

Several students and deaf individuals, as well as some administrators, mentioned the need to find and hire more deaf faculty to enhance quality education. With regard to the role now or in the future of deaf teachers, there were differing points of view. Some colleges do have deaf individuals as assistants or lower level teachers at their colleges, others do not. One administrator pointed out that deaf teachers are good role models and that some of the "…less challenging courses are taught by deaf graduates. But the lecture is designed by hearing teacher" (college administrator). One college is "experimenting" with deaf teachers; however find that although they work harder, the deaf students prefer

hearing teachers for content, feeling that they possess more content information, and deaf teachers for interaction. At least two schools indicated that, in the future, deaf individuals should be enrolled in teacher training programs, but at the moment there are no specific training programs to teach them to be qualified to teach at the postsecondary level.

As noted previously, an important issue that emerged in almost every interview was concern about the limited number of majors for deaf students and the limitations that this imposes. However, there were differing opinions regarding this issue. The vast majority of deaf respondents shared the view offered by one deaf graduate that, "It should first have a lot of majors. Students would have freedom of choice of any major that they wanted." Students indicated considerable frustration with the limited choices of majors from which they can select. Most tertiary program administrators and CDPF representatives strongly agreed that there should be more options but stressed the importance of further investigating the needs of society and the workplace. They indicated the need to match majors with these societal needs as well as with deaf students' abilities. "Right now we have been trying to see what is the demand in the society in the job market and then we will design the courses and offer majors accordingly to the deaf students" (College Administrator).

It is important to mention again that all deaf respondents emphasized the need for faculty to sign well as a way to improve the quality of education. Most colleges did not require this skill, although two did require some level of sign ability before teaching. Several deaf respondents pointed out that formal evaluation of sign ability should be done primarily by deaf faculty or individuals, not by hearing individuals alone. No college had a stated communication policy. Nonetheless, most colleges do encourage faculty to learn sign but vary widely in their approaches. Few colleges had built-in incentives and most expected faculty to learn to sign essentially on their own.

At college, both administrators and faculty make decisions regarding communication in and outside of the classroom; however each college has its own set of decisions at this time, resulting in a wide variety of approaches.

> The problem is that what I don't want to see is each school has its own policy. In this case, what I really want to see my school and all the other schools who are involved in deaf education come to a united understanding….That is why I was hoping the government, the federations, can come up with a policy….I have talked to the federation people and we didn't get any clear advice. (College administrator).

The issue of who should make decisions regarding communication for education is not yet clear and is in flux.

Create environment for teaching life and social skills. Many colleges felt it was their responsibility to find ways to help deaf students develop and enhance their life and social

skills, but approached this very differently and is described elsewhere in this report. Some colleges created extensive programming to make sure that deaf students had many opportunities to interact and learn with hearing students, while others felt that their presence on a mainstream campus was sufficient.

Create improved accommodations and support services. Ideas regarding support services and accommodations for deaf students in the classroom were raised throughout the interviews of administrators, faculty members, and students. Most deaf students and graduates stressed the need for colleges to offer increased support services within their self-contained programs. These services were also considered important if deaf students are to be successful in mainstream classes. Tutoring and interpreting were the frequently mentioned as the most needed support services. In addition, internet access was identified as a need, as was space for studying. Many deaf students felt that colleges should offer sign courses for hearing students on campus, and some colleges do.

Some colleges offered significant support services, others had none. Colleges are currently experimenting with various support services and sharing what they are learning. However, college administrators differ in the priority they give to providing such services, particularly given the limited resources to offer these services. Thus there is a wide variation regarding the level of responsibility assumed by individual colleges for the provision of support services.

Enhance awareness of students' abilities and strengths. An important expressed responsibility for individual colleges was that of publicizing the abilities of deaf persons in society. Several students agreed with one student's comment, "I want the school to have more explanation and advertisement in society to improve society's knowledge about deafness and help deaf students find better jobs in the future."   College administrators tended to agree with the need to raise societal awareness. One aptly identified the challenge as follows, "… many businesses and the companies are not ready to accept deaf people not because of what deaf students know and don't know but because they really don't understand deaf people. It is a kind of fear." The same administrator went on to describe one of the few successful partnerships with an employer, detailing the advantages to the employer as well as to students. As that administrator put it:

> I think that the school has some responsibilities. We may not let a society know enough what our deaf students can do… So, I keep telling my teachers, you are teachers, you are teaching deaf students. You also have the responsibility to educate the society. Let the society know about your students.

Create partnerships with employers. Nearly every respondent was greatly concerned about employment. Students used to be assigned to jobs after graduation, now they must find employment themselves. Employers want experienced workers, but there are very few ways in which students can gain such experience. While these same concerns apply to hearing students, there is overall competition for jobs and deaf persons are considered to be at a disadvantage in a competitive environment. Asked about the possibilities of

summer work and work-study as possible ways to overcome these challenges, respondents said it was not possible. They identified the scarcity of summer employment opportunities, and the need to study hard even in the summer as obstacles. This situation raises the question of possible college roles in employment.

While opportunities for work during education are being sought, the relationships with business and industry were identified as difficult to develop. "In the past there has been a history of school and factory collaboration established partnerships. That was before the Cultural Revolution. But now this is an area that we need to work on" (college faculty).

> …in general the factories, in general are not interested in having students come over to do the co-op. And, many of industries have practical issues like danger involved…. We have contacted a few companies and the students themselves have tried contacting the companies. And the companies are not interested (College faculty).

However, it was noted that there is a strong interest in establishing industry and education partnerships, and such an approach was identified as a critical role that colleges must play:

> There is a disconnection between what the college taught students and what the big companies and the businesses need from the graduates. There is a gap…. There are more and more universities connecting with big companies in the business world ….It is getting to be very popular now….(college administrator)

Some colleges have been able to form limited contact with employers for developing in-house work experiences at the college; others have college laboratories in which students practice their skills. There were other creative approaches that were broached by those interviewed. One faculty member thought that perhaps colleges should establish their own factories in which students could work and gain experience. Another college administrator suggested that colleges work with employers to design courses for the final year of college so that students were prepared for exactly what is needed in the workplace, noting that this had been done at one hearing college.

As for finding employment, most of the colleges do assume some role in helping deaf graduates acquire jobs. At least one mentioned holding a job fair in which employers come to the school; however most of the help appears to be through individual faculty efforts.

Create partnerships with pre-college programs. Nearly all respondents (administrators, faculty, and deaf students) indicated that upper-secondary education must be improved for deaf pupils or the many difficulties in educating students on a college level will continue. Upper-secondary education was considered to be wanting as regards preparing deaf people to enter college. Therefore, faculty and students felt that colleges had a responsibility to offer more individualized education for students depending upon their needs.

There was not much emphasis regarding the role that colleges might have in helping improve the foundational education at pre-college level, beyond advising pre-college administrators and teachers on their syllabus and providing materials to help students prepare for the individual college's entrance exams. Most administrators felt that this was all that they could do to be helpful. However there were instances of college administrators talking with pre-college principals or sometimes with individual teachers concerning additional knowledge or skills that students need for college.

However as mentioned previously, the CDPF is giving thought to the issue of college roles in improving pre-college education. It was also suggested by a college administrator that a preparatory year at college would be excellent, and that this is a realistic possibility.

Create partnerships with universities and conduct research. Several students, faculty, and college administrators mentioned the need to continue the efforts undertaken by PEN-International to train faculty members from Chinese colleges, and to have faculty exchanges as ways of learning more about teaching methods used around the world. PEN-International partner institutions in China are now sharing what they have learned using the videoconferencing capability of their PEN multimedia labs. As a result, the structure exists for creating a network that could blanket all of China. The structure is there and some interactions already have occurred between colleges within China. Because there are so many creative ideas being generated and experimentation occurring, peer interaction among Chinese universities that educate deaf students would be extremely beneficial and productive.

The need for research was also mentioned several times as an area of need. To address this concern, one university joined with the CDPF to create a survey of graduates, but otherwise there was little research mentioned. However, university administrators were keen to foster collaborative research within China and with other countries regarding various areas of scholarly inquiry; teaching and learning, employment and career development, to name a few.

Create partnerships with alumni and the deaf community. A number of respondents spoke of the need for more systematic and formal communication between colleges and deaf students, graduates and the Chinese Association of the Deaf (CAD). One deaf student did mention that CDPF, college administrators, and the local Deaf Association get together to discuss education and job opportunities fairly often in the student's city. No other individuals mentioned this sort of communication.

There does appear to be informal feedback collected by college faculty members from graduates. However, none of the colleges appeared to have a formal means of maintaining contact and receiving feedback from graduates. The value of collecting such feedback on a formal basis is recognized as being very important for improving the quality of programs offered for students who are deaf.

There, however, was almost no sense among administrators of the advantage to partnering or interacting with alums or deaf adults. It is important to point out that deaf people were rarely spoken of as experts or partners in the education process. This is important since deaf students, graduates and deaf community members may have much to offer as regards the needs of deaf people in tertiary education. As more deaf individuals receive better education, and as the internet has grown, associations of the deaf are organizing and developing into entities that might soon be recognized as having something of value to offer regarding serving deaf students.

Summary. Colleges and universities have responsibility for offering and improving the quality of education for deaf individuals at the tertiary level. This requires them to focus upon faculty qualifications and access to continuing education, student services, program offerings both as majors and as extracurricular programming, research possibilities, and outreach to employers, and pre-college programs. Colleges are also discussing partnering with employers, other universities and colleges, the deaf community (including students and alumni), and international institutions. These colleges and universities have developed a wide variety of approaches to these issues and are developing ways of sharing their successes and disappointments with each other in an effort to improve.

Faculty and Student Roles in Deaf College Education

Faculty have as their central role the teaching of content, and this was not discussed but assumed. Increasingly higher levels of certification and other requirements are indicative of their responsibility to remain current as regards content. However there are many other roles that faculty assume in addition to direct classroom teaching. The primary roles and responsibilities are summarized below and each will be discussed in turn in this section of the report.

- Continual self improvement
    - Keep up to date in their respective content fields
    - Learn and improve signing ability and learn about deaf people and deaf culture
    - Learn best practices for teaching deaf students and individualize teaching to fit student needs including learning new approaches to teaching; using new technologies for teaching and learning; and sharing and discussing new knowledge with peers.
    - Raise and enhance expectations for deaf students
- Establish and offer additional educational opportunities
    - Tutor and provide learning accommodations for deaf students
    - Serve as advisor, mentor, and counselor to students
    - Foster students' growth in social skills and foster deaf/hearing interactions
- Solicit feedback from current students and alumni
- Help students to find employment
- Establish contact with pre-college teachers, and schools for the deaf
- Educate society regarding the skills and abilities of deaf people

Faculty members' roles and responsibilities are very broad and not dissimilar to those at most colleges in the United States. However there is a greater emphasis for faculty who teach deaf students to take on a "personal" role with students, that is, work with students to enhance their social skills. Further, faculty assume a greater than usual role in helping students to find employment.

Continued self improvement. Self improvement is particularly salient within a cultural belief system where each individual is expected to focus upon such throughout their career. As discussed earlier, colleges are taking steps to increase the teaching qualifications of their faculty through upgrading hiring requirements; however there are many areas of professional development which are the responsibility of the faculty members themselves.

Individual faculty members have the responsibility of remaining current in their field of content expertise. Students indicated that the textbooks or software they use are often out of date and therefore faculty members need to teach beyond available material. When asked how they keep up to date in their fields, faculty members offered several responses. Some have continued to take college courses or have attended workshops, and most indicated that they acquire new information from the internet. A statement by one faculty member is illustrative:

> Last year I attend a Microsoft training session. Also, there will be news on the web site saying that there will be a new software or product coming to the market. They will tell where and what time and it's free. You can always go and I go.

Another takes advanced college courses working towards a BA in art education and reads articles on the web. "…I read that and think about it and contact people and discuss….That is the sign of a good teacher in any country" (deaf high school teacher). In some areas such as fashion, there is new information available via TV and magazines. One respondent mentioned that students keep up very well with fashions so he learns from his students, and several faculty members mention conversations with colleagues along with readings in general.

None of the respondents belonged to professional organizations. One indicated that there is a national professional organization in his area but he didn't feel that the information would apply to his teaching of deaf students.

As for sign communication ability, every deaf person interviewed indicated strongly that faculty must learn to sign well. Sign skills are acquired in different ways, formally and informally, and expectations for learning it are varied, as mentioned as mentioned elsewhere. However, many faculty members are highly motivated to do their best. "Actually my sign language getting better and in the class when I teach sometimes, I don't know the sign languages. How to sign it, I would just ask the students" (faculty member). Some students indicated that as long as the faculty member is highly motivated to learn, they are happy to help. However, despite motivation, there are obstacles. One respondent mentioned two major issues that make it difficult for faculty

members to learn sign; the amount of time spent with students, and the variety of native sign languages.

> It is very necessary [for faculty to learn Chinese Sign Language-native language] but difficult for several reasons. One is for basic teaching of teachers, we are teaching the students of all the college not just deaf students….we have only for each year 64 hours of teaching deaf students. Our interaction with deaf students is really limited. And besides deaf students come from all over the country and each student comes with their own sign language. It is very hard to understand their language. To be able to really understand deaf students, it is really important to understand their sign language. We are working on that (faculty member).

Self-improvement for faculty members regarding sign ability is not only left mostly to each individual, but is also a complex issue which is addressed differently by each college and individual faculty member. There is one additional issue of concern, mentioned by a deaf teacher, that hearing teachers often forget to sign or sign only in class to students, thus leaving out deaf teachers/faculty and depriving students of access to general information not taught in class. Nonetheless, as mentioned above, the faculty members are enthusiastic and motivated to improve their signing ability.

Many of the respondents also indicated a need for faculty to learn more about deaf people and their culture. Most of the hearing faculty and administrators had no knowledge of deafness before becoming a teacher, and expressed a need for further information. Some colleges suggest or recommend courses on psychology of deafness as a way of learning. One deaf college faculty member acts as a bridge for learning, in the following way:

> College teachers and staff must study deaf students and hearing students to see what the difference might be. Many college teachers don't know what deaf students think about, what the characteristics are….I get along well with the hearing staff and teachers, if I have time, often we talk. And I tell them, the hearing teachers, during lunch or during break. We talk and talk and talk a lot about the deaf experience and ways the deaf students learn….and then I eat and talk with the students. So, I am communicating with both the staff and the students in the afternoon, when the classes are done.

As mentioned earlier, one of the greatest areas of concern raised by faculty members who were interviewed related to learning best practices for teaching deaf students. Again, colleges varied in their approaches, but faculty members are highly motivated to improve. They indicated that they learn via observation and working with a mentor as well as by taking formal courses. In addition there is some considerable communication between faculty, and across colleges and universities, regarding best practices for teaching deaf students:

> All [departments] are doing the same thing. They are teaching and they are summarizing and they share their experience to find a way to improve. And we have faculty meetings where we discuss cross majors about how to teach deaf

students….We have a cross college exchange activities going on too where basic teaching teachers go to other colleges….we brought our own topic and share experiences.

As mentioned above, some faculty and teachers share information with others through the internet. One deaf teacher who had collected material at a workshop, took them back to the principal, and set up an internet chat with others who had been at the workshop. In this way, the exchange of information and experience could continue across the country.

Many of the college programs for deaf students are quite new and faculty members did not know what to expect when they started teaching. At one college, because the faculty members had never had contact with deaf students, they were afraid that they would not know how to teach to them. However, after the students arrived, faculty members began to feel more comfortable.

Faculty members stressed that they need to learn how to teach more visually. One faculty member captured the challenge when he said, "…college teachers are used to teaching hearing students…there is a mismatch between the visual learning. It doesn't fit." Another respondent said; "We are trying to find a way to make the abstract theories into pictures and images…we are searching for a method" (faculty member).

In order to circumvent communication difficulties, several colleges encourage the use of multi-media approaches as well as signing by its teachers. A number of faculty members also talked about multimedia technology along with sign language as the best approaches to making education visual. Students also emphasized the need for visual teaching methods including educational technologies.   In addition several students mentioned the need to increase the amount of communication between students and faculty through the use of more email. Unfortunately there is limited access to internet time at the moment. Students do communicate in a variety of ways if a teacher is accessible, "They [students] do ask questions by email. …. They most tend to come and see me face-to-face… they make contact by cell phone…MSN on-line to talk" (faculty member).

Students also take the initiative to address their own needs. For example, students at one college wanted to learn some material not offered at their college but offered at a nearby hearing college. The deaf students contacted students at the other college and the following is a description of what took place:

> The two of them [students from another college] were willing to type to communicate what they said. And, also they brought their work to demonstrate and show students what they were doing and how they made it. Students really learned so much, more than in class….No staff were involved. Just the class themselves did it as an activity. They didn't even tell the teacher.

Such exchanges between hearing and deaf students as peer teachers in subject areas of interest might be a very interesting way to enhance faculty/student interactions, hearing/deaf student interactions, and add to the curriculum.

Finally as regards teaching methods, students and faculty members mentioned the need for faculty members to individualize teaching. This is a new approach in a country where the group needs are strongly emphasized.   Nonetheless faculty members and students mentioned that individualization is increasing. It was pointed out that students in college classes function at different skill levels, and that for that reason, faculty members are trying to individualize their teaching even though they are still teaching to the entire class.

Faculty members stated the need to raise their expectations and overall goals for students who are deaf. A number of the faculty and administrators indicated that their initial expectations for the deaf students were quite low:

> The teachers did not [have] high expectations for deaf students to accomplish a lot in two week period. But when they came back and presented these wonderful art work that's better than hearing students did in three weeks, the teachers were surprised (college administrator).

Some indicated that rather low expectations were initially transmitted by teachers at the schools for the deaf. For example, one deaf respondent relayed how he had to overcome some real attitudinal barriers at college in order to get a bachelors degree. This respondent felt that some faculty members looked down on deaf people but were very impressed once they saw what he and the other deaf students could do.

__Establish and offer additional educational opportunities__. Faculty often have roles to play encouraging student progress and growth beyond the classroom. Many faculty members are very involved with such additional duties and very enthusiastic about establishing new opportunities or programs for students.

Faculty in some colleges have an important role in one-on-one tutoring with deaf students and many faculty members make themselves available to provide such assistance to students. In addition, several colleges make use of peer tutors who are supervised by faculty members, as a vehicle for teaching content and also to foster deaf/hearing interactions. Some colleges have organized specific tutoring programs, while others simply help to find students, usually hearing students, who are willing to help deaf students. On the other hand, some colleges have no specific tutoring programs. Deaf students indicated that they use a combination of tutoring from faculty members and from willing hearing students, and from deaf peers.

Many faculty members mentioned their role in fostering interaction between students and teachers. Many see the advantage of teacher/student interactions and also several mentioned that sign language is instrumental for that interaction. For example, one faculty member noted that, "At the moment only the class advisors know the sign language. And they have close relationship with deaf students and deaf students are close to them" (college administrator).   Respondents from one college indicated that teachers do often create individual relationships with students, and often keep in touch.   In

general, it appeared that such interaction is encouraged. Class advisors have a particularly strong role at some colleges in mediating between deaf and hearing students, or working with them to solve problems. They consider their role to be telling hearing students to be patient with deaf students, while encouraging mutual understanding. In general it appeared that many of faculty members are motivated to improve their interaction with students, although it was pointed out that the relationships are much stronger between deaf students and their high school teachers. It appears that deaf college students had some difficulty adjusting to the greater independence required of them in college.

Faculty members also are expected to facilitate the development of students' social skills, or preparation for life in the hearing society. Overall the goal is "normalization" – that is "shortening the distance between deaf and hearing students" according to one college administrator. Several interviewees mentioned that schools for the deaf tended to over-protect and under-challenge deaf students, thereby not preparing them for college or for independent living in society.

Deaf students are expected to learn how to interact within the hearing society. Thus many faculty members said that they need to strongly foster interaction between deaf and hearing students. Faculty members therefore are involved in quite a few extra and special programming to create special opportunities for deaf and hearing students to interact. In addition faculty members expect to foster student independence. Faculty members attempt to prepare deaf students to function as seamlessly as possible in the hearing world.

__Solicit feedback from current students and alumni__. Faculty interaction with students also affords opportunities for them to elicit feedback from students. One student indicated that teachers often ask for feedback in order to improve their classes. Several students involved in student government explained that they work to pass along ideas from improvements from students to teachers, although usually feedback comes directly from student to faculty members. As mentioned earlier, some individual faculty members act as bridges, passing along student feedback to other faculty.

At least one college and an affiliated school for the deaf have frequent contact regarding requirements and areas for improvement, although the emphasis seems to be upon the improvement of the school for the deaf rather than the college. There were no formal systems established for feedback from alumni to the college, although several faculty members indicated that they do keep in touch with graduates and sometimes collect feedback. One administrator indicated that he chats with graduates about their jobs, and it is this college that is planning a research project to follow students after they graduate. It was clear though that for the most part the deaf faculty and teachers maintained closer contact with graduates than the hearing faculty. Using deaf faculty and teachers to facilitate alumni contact would be an area worth investigating.

Help students to find jobs. Faculty members also help students to find employment. As one student explained:

> Most of the teachers help the students look for jobs. If students want to go to a particular place to work or a company or a unit, they tell the teacher and the teacher goes to that place or unit or company with the student to explain that this student is quite skilled, is wonderful and if your company wants fine, we'll be more in touch. If the person says they don't understand what the deaf person can do, the faculty explains in detail about their abilities and that's all. The next step is completely responsible on the student and their own abilities (deaf college student).

Several students mentioned this as a real benefit in a time when jobs are hard to find. One college has even established a website where students and faculty can post job openings and discuss employment.

Establish contact with teachers and, schools for the deaf. As for schools for the deaf and pre-college teachers, faculty members did not express a need for continued interaction after initial programming began. However, for sign language many faculty members did rely, at the start of the deaf education program, on a school for the deaf. One college requires all faculty members to do observations at schools for the deaf and their faculty members teach there for some special situations. However there was little other indication that schools for the deaf are regarded as "experts" in the field except in sign language.

In at least one case there was contact between high school teachers and college faculty members for discussions of curriculum, teaching, and the like. There was no mention of contact between faculty and pre-college mainstream programs or teachers. Such interactions might prompt some interesting discussions and sharing.

Educate society regarding students' skills and abilities. As mentioned previously in this report, faculty members had an additional responsibility to educate society regarding the abilities and skills of deaf individuals.

Summary. It is on the "frontline" level that education is truly implemented. It was clear from the interviews with faculty and with students that most faculty members are motivated, dedicated, and perceived as well qualified. The majority were anxious to learn new ideas and to share experiences with colleagues. Faculty members have a multitude of roles and responsibilities, many beyond the expectations for most college faculty. Their roles included: self-improvement in many areas; offering services to enhance education; soliciting feedback and considering how to respond both personally and for the college; and, helping students to find employment. The vast majority of faculty members seemed very willing to assume those roles. There are a number of areas in which improvement could occur, but it is clear that in most areas positive changes are well underway.

Students, besides being learners are expected to take the responsibility to communicate with the faculty and provide feedback. In some colleges students take an active role as sign language experts and teacher evaluators, and work through student government to provide input to faculty and administration regarding their education.

Parents' Role

Parents determine whether a deaf child will go to high school or not. When asked if it would be good to have the brightest students go to a central location for high school education, the reply from one of the college administrators was, "…whether a student goes to another city for high school depends on mainly what the parents wish their child to do…"

Parents are intimately involved in decisions about what major their child would take. In talking about the reasons that one college closed its mechanical engineering major, the college administrator explained that "the parents of deaf children strongly object[ed] to their children enrolling in this program. One year we had only one deaf student apply for the major. In China, parents of deaf children do not wish their children to learn complicated or science and technology programs. The parents want children to choose an easier subject or easier specialty to study." Further, a deaf community leader when speaking about the closing of this same program noted that, "When I asked the teachers why the program is closed, the teachers said many parents of deaf children do not want their children to choose this major. They think it's very dirty. They think computer is a job that's more comfortable."

Since college entrance exam score is the only admission standard, parents emphasis getting the highest possible score on that test and do not necessarily focus upon their child developing comprehensive skills across a wide range of disciplines. For example, one college administrator commented that,

> If your ability is high but your score is low the parents won't be very happy. Our society needs the students to have all kinds of ability not just the ability to take examination. But the parents wanted the children to have high scores, better test result so that they are able to go to college. I heard deaf parents would not like their children to study dance or painting. They only like their children to study and study everyday. The only future is for them to enter [college].

Once a deaf son or daughter enters college, it is reported that parents are very supportive of their learning and are very appreciative of the college's role in offering their son or daughter a chance to study. A comment by a college administrator is illustrative of this point, "We are greatly touched by the parents of deaf students. Parents of deaf children have great expectation for their children and for this college. We have to work hard so we won't let them down."

Conclusions and Recommendations

China has placed great value on bringing people who are deaf into society and the country is moving very quickly to make this a reality. With each 5 year plan ambitious goals are set as regards expected progress. China is facing all the challenges that have been faced around the world in the education of people who are deaf, but the country is dealing with the challenges on a much larger scale.

China is striving diligently to find solutions to these challenges which are in harmony with its culture and society. The country has displayed a refreshing willingness to explore solutions implemented in other countries in an effort to systematically determine which are appropriate for adoption or adaptation in China.

This report chronicles the myriad creative suggestions for improving postsecondary education for people who are deaf in China that were gleaned from interviews with administrators, faculty members, government and CDPF officials, deaf students, and deaf community members. It also includes a few relevant suggestions and ideas offered by the two authors of this report.

The two authors of this report were most impressed with the number of interesting and creative ideas being discussed and implemented in China as it strives to offer postsecondary education to people who are deaf. The following is a summary of the recommendations contained throughout this report. These authors realize that, once this report is subject to wide scrutiny, some recommendations will be adopted as is, others will be adapted and still others will be rejected.

- **Improve the quality of education**—China has achieved great success in assuring that most deaf children receive compulsory education and the country is establishing secondary schools and tertiary programs very rapidly. There is now a need to emphasize ways to improve the *quality* of this education.

    o Continue upgrading teacher qualifications. A number of programs are raising the academic qualification for new faculty members. However there are other important qualifications that respondents felt should be encouraged or required.
        - Encourage increased/enhanced levels of content area knowledge of faculty members.
        - Explore systematic ways for faculty members to update their content knowledge, such as professional organizations, workshops, and the like.
        - Provide more autonomy for administrators to hire the best qualified faculty members.
        - Strongly encourage and arrange for faculty members to increase their knowledge of deafness, including deaf culture taught by deaf persons.
        - Improve communication skills of faculty members by establishing policies and support structures.

- Create teacher training courses for deaf individuals.
- Consider hiring fully qualified deaf people as faculty members and provide educational and advancement opportunities for them.
- Many faculty and students have asked for simplified textbooks made for deaf students. Others warn that there is a significant risk of reducing the quality of education as well as eliminating important content. These authors strongly suggest that simplification of content is not a very productive approach. However, finding alternative approaches, including allowing for greater time to cover content, providing support services, utilizing new teaching approaches, and the like has allowed deaf students to learn the same material as their hearing peers.

o Encourage collaboration among faculty members and teachers, and between institutions in a search for effective and efficient ways to teach. There are a number of approaches being tried in China. There needs to be as much sharing and discussion as possible between faculty members regarding these approaches.
- Encourage and establish exchanges and workshops between colleges within and outside China, mainstreamed high schools serving deaf students, schools for the deaf, and rehabilitation centers.
- Explore creative ways to teach via visually oriented approaches (particularly when teaching abstract concepts) and use educated deaf adults to help develop such approaches.
- Explore creative ways of using existing and new instructional technologies.
- Collaborate with successful deaf adults, including members of the Chinese Association of the Deaf, to develop new ideas for teaching approaches.
- Undertake research to test new teaching methods.

o Increase flexibility since a "one size fits all" approach does not meet the educational needs of many students. More individualization currently is being considered and this should continue. Entering students might be offered courses that make more efficient use of their time. Further, policies and procedures that negatively impact upon flexibility should be examined.
- Some colleges require extra writing activities such as journal writings based on the demonstrated needs of most incoming deaf students. However, this should not be required for students who do not need such work.
- Entrance requirements might be expanded beyond an exam alone to include other measures, such as portfolios. Exams could also be made more comprehensive and standardized. At one college incoming students are given an exam to determine which level of Chinese courses is appropriate for an individual student. Several levels are offered.
- Increase the amount of time students can use the internet so that they can more readily access content in their fields of study.

- o Establish high expectations as regards students' developing and utilizing their abstract thinking abilities. Research and experience has shown that deaf persons are very able to comprehend and work with abstract concepts if there is clear communication and effective teaching.

- **Diversify and increase numbers of majors beyond art and computers**—Almost every deaf individual interviewed expressed the desire for a greater choice of majors, noting in particular that there are students who might be very talented in areas other than art and computers. Some deaf students have gone to other countries so they could receive an education in a variety of fields not available to them in China.

  - o Consider ways to provide deaf students access to mainstream programs. This would automatically increase the choice of majors.
  - o Increase the knowledge of faculty, students, parents, high school teachers, and employers regarding the successful careers held by deaf people.
  - o Work with employers to open new employment opportunities for deaf graduates.
  - o Continue to find productive ways to educate society at large regarding the abilities and successes of deaf individuals

- **Create access to mainstream courses and programs**—A number of individuals interviewed thought that deaf students could succeed in mainstream courses and programs, including distance learning, if there were ways to overcome the barriers and obstacles to access within these programs. Limited resources and lack of accommodations were cited as barriers.

  - o Examine existing structures for modifications that would make it easier to access the mainstream.
  - o Consider creating transition programs to prepare students to attend bachelor's level mainstream programs if they are not initially prepared to do so.
  - o Conduct a review of successful mainstream programs around the world to determine what features of these could be of use in China. It would be particularly useful to review a WWW site in the USA that provides suggestions for effective mainstreaming—http://www.rit.edu/~classact/.
  - o Consider implementing accommodations that could foster mainstreaming such as:
    - Qualified and skilled interpreters in classrooms
    - Voice-to-text recognition programs
    - Employing hearing students as note takers.
    - Establish tutoring centers where deaf students can obtain help on a variety of topics, not only from hearing individuals but also from deaf peer tutors.

- **Improve pre-college education**—Underdeveloped pre-college programs were often cited as a serious limitation to the success of deaf students in college. However, there are few upper secondary school options available for deaf students. Irrespective, available middle schools are working very hard to prepare deaf students for college as students often go directly to college from these schools. It is important to note that most faculty and administrators at the postsecondary level could not visualize how to be helpful in improving pre-college education other than by raising entrance requirements and providing guidance and practice for the entrance exams. Nonetheless, there were some suggestions generated and these are noted below:

    o Continue government efforts to establish upper secondary schools for deaf students.
    o Create broader, more comprehensive entrance exams which could encourage pre-college programs to offer a broader curriculum.
    o Explore ways in which colleges can help with the improvement of pre-college education. For example, there has been discussion regarding establishing a preparatory year at colleges. This is a potentially very productive approach. In addition, colleges can also make use of pre-college teachers as experts in: teaching methods, communication, knowledge of deafness, and information regarding educational successes of deaf students.

- **Establish partnerships with employers**—Almost every respondent was deeply concerned about employment of graduates. The concerns, set in a context of high competition for jobs throughout the country, included: the lack of opportunities for deaf students to acquire work experience, the pressure in industry for efficiency and production, and the gap in information and skills between what colleges teach and what employers need.

    o Establish opportunities for deaf students to obtain work experience while in school.
    o Encourage employers to provide mentoring to young people as an investment in the future. Perhaps some incentives to do so could be built into government policies.
    o Consider ways to involve potential employers in discussions about curriculum in postsecondary educational. This could help reduce the gap between schooling and the needs of industry.
    o Educate employers regarding the abilities of deaf students, through individual contacts or through workshops.
    o Explain to employers how barriers to successful employment can be overcome. For example, DeCaro, Mudgett-DeCaro and Noble (1994) provide suggestions in this regard.
    o Market deaf graduates to employers on the basis of their abilities to do the job and not on the basis of sympathy.
    o Maintain ongoing contact with employers and graduates regarding successes and difficulties on the job and offer to act as a facilitator to help resolve difficulties that arise in the workplace.

- Undertake more research regarding graduates' experiences on the job and document successful approaches to problem resolution.
- Bring alumni to the college to share their successes and to discuss the challenges they encountered in obtaining jobs and keeping them.

- **Increase opportunities for student leadership development** —Currently, student leaders appear to have minimal responsibilities in college. There is a focus primarily upon arranging social events and passing on ideas to teachers and administrators. Several suggestions for increasing student leadership were suggested:

    - Put deaf students in charge of arranging school-related activities instead of having hearing faculty do it for them.
    - Use faculty members as mentors to facilitate leadership development.
    - Encourage deaf students to take significant roles in educating hearing faculty and students about deafness, rather than having hearing faculty perform this role.

- **Improve communication competencies**—Each college approached communication differently. None has a communication policy and there was a desire for more guidance from the central government concerning the complex issues related to sign communication. It is significant that most hearing individuals, administrators and faculty, considered the sign skills of faculty to be "good enough." However, almost every deaf student interviewed felt that faculty sign communication skills need to improve.

    - Establish communication policies at each college.
    - Offer and require formal sign language training for faculty
    - Offer enhanced opportunities and encouragement for hearing students to learn sign.
    - Work toward national guidelines concerning sign language, being sure to involve fluent deaf signers in the discussions and decisions.
    - Hold in-depth discussions with deaf students and faculty regarding the best way to improve classroom communication.
    - Involve deaf students, deaf faculty, and deaf teachers in sign proficiency evaluations

- **Work to change perceptions as regards deaf persons**—One of the most challenging undertakings over the past several decades in the USA has been the effort to change attitudes and perceptions as regards people who are deaf. The struggle continues today. In China, real strides are being made in this regard as deaf graduates enter society and the workplace and demonstrate their abilities to be successful but more work needs to be done.

Respondents in this study made suggestions that are relevant and important to changing perceptions because deaf individuals were not often spoken of as people with valuable experience that could be used to the benefit of colleges.

- o Make sure to focus upon what deaf people 'can do' and use successful deaf graduates as role models to illustrate what deaf people 'can do.'
- o Establish formal structures for alumni feedback. Many faculty members and teachers, especially deaf faculty/teachers, keep in contact with some graduates for program feedback. Some colleges have ongoing discussions with current students with regard to what they want at school, and with the Chinese Association of the Deaf. The CDPF also makes contact with members of the deaf community to assess needs and make recommendations. Nonetheless a more systematic and comprehensive approach is warranted.
- o Use successful deaf graduates as advisors to educate both deaf and hearing people in society about deafness.
- o Utilize successful deaf graduates as expert advisors to colleges from which they graduated since they have experience in overcoming barriers in education, society and the workplace that can be helpful to colleges.
- o Establish strong relationships with the Chinese Association of the Deaf (CAD) and seek its feedback and advice.
- o Increase dialogue with deaf individuals since the opinions and goals of deaf respondents in this study were often different from those of hearing respondents.
- o Be very careful not to use only those individuals who have significant residual hearing as role models. Profoundly deaf individuals whose primary language is sign language are excellent role models.

Addressing all the recommendations listed above would be a very daunting task indeed. The resources required to do everything suggested here would be enormous to say the least. In addition, achieving some recommendations will be dependent upon the achievement of other prerequisite recommendations. For example, as the quality of education is improved, as more graduates who are deaf are successful in the workplace and as teacher preparation programs for deaf people are established, a critical mass of deaf experts and of teachers will become available to colleges.

The recommendations presented here need to be reviewed and those that are most important and/or are prerequisite for the achievement of other recommendations, or are easiest to accomplish could be given immediate attention. Others will need to be prioritized for future longer term planning purposes.

These authors strongly recommend that a review and prioritization process include, and take into account the needs of, employers, deaf individuals, the deaf community, faculty, administrators and policy makers. This will help assure that the needs of Chinese society are appropriately addressed.

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Appendix A

Interview Protocols

PEN Interview Guidelines: College Administrators

History and context:

The first deaf college of special education was established at Changchun University and then 4 more followed in Tianjin, Beijing, Nanjing, and Shanghai.
- Why was (your place) chosen?
- Do you suggest more places?

You have _____ programs which admit deaf students.   How or why were those specific programs established?
- What makes those programs good for deaf students while other programs are not appropriate?
- Do you suggest more programs?   (Why? What programs? Or why not?)

How do the 5 year plans, national and municipal, get implemented at the program level? (classroom level?)
- How does the coordination actually work with "every office working jointly together to accomplish the goals"?
- How successful has implementation been?
    a. What are the barriers if any?
- What happens if a goal is not met?

Do you have any suggestions for how this process of implementation could be improved between the national, local, and program levels? (classroom level?)

Program/college:

How is your program unique from the others?
- What are the strengths and weaknesses of your specific program?
- What are your ideas on how it could be made better?

How do students get admitted to the program?
- How is their entrance exam different from hearing students'?
- Do you have any suggestions for how to improve the process?

Teaching
        Can you tell me why or how you got into education for deaf students?
            o Did you have a prior connection to deaf people?

- What are the (your) most important goals for teaching deaf students?
- What are the (your) biggest challenges in teaching deaf students?
- What are the (your) most successful method(s) of teaching deaf students?

- What are the characteristics of the students?
    1. What are the student's strengths as a whole?

  2. Weaknesses as a whole?
- <u>Do you have any suggestions for how to take advantage of these strengths or improve their weaknesses?</u>
  1. <u>Who could/should do that?</u>
<u>Do you have suggestions for how the teaching for deaf students can be improved?</u>

Are there any partnerships or transition programs?
- With other university programs for deaf students?
- With local or regional secondary programs to help students get ready?
- With any local or regional employers regarding job transition?
- With local or national deaf or disability organizations?
- With rehabilitation centers?
- <u>Do you see any such partnerships coming? Would they be valuable? Would you recommend setting something up?</u>

Do you have a research mandate as a part of your program?
- What research topics are you exploring?
- <u>Is there some research that you would recommend be done, either by your program or others?</u>

Jobs:

Do the students get jobs in their area of training?
- <u>What are the barriers/limitation that need to be overcome (students themselves, faculty, and society levels).</u>
  o What is "access" at work? <u>What needs to be changed?   Any suggestions how?</u>
  o Has the goal been reached so far for amount of work placement as well as numbers?

Faculty:

- What kind of education are faculty required to have to teach in the program?
  o Degree in the content area?
  o Courses in education?
  o Courses in deaf education?
  o Sign language courses?

  <u>What are areas for improvement?</u>

Overall:

In general, what would you like to recommend/suggest for the next 5 year plan to help college education for deaf students to improve?

Are there any areas for improvement that we did not cover?

PEN Interview Guidelines: Alumni

<u>**History and Context:**</u>

First, what schools did you attend before you came to college?
- School for the deaf?
- Mainstream public school
- Another college program?

What languages do you feel comfortable using? (Speaking, Signed Chinese, Chinese Sign language?)
  - Which one do you feel you understand the most from?

The first deaf college of special education was established at Changchun University and then 4 more followed in Tianjin, Beijing, Nanjing, and Shanghai.
  - Why or how did you choose this college?
  - <u>Do you suggest there should be more places?</u>

<u>**Program/college:**</u>

Which program/major did you study?
Which degree did you receive (BA, etc)?
- Would you pick that same major again if you started over?
- Would you recommend that other students take that major?
- Was that your goal/dream to have that major?
    o If not, what barriers stopped you from your goal?

What makes some programs good for deaf students while other programs are not appropriate/suitable?
  <u>Do you suggest more programs?   (Why? What programs? Or why not?)</u>

Looking back on your college education,
- What were the strengths /weaknesses of your program?
    o Academic quality?
    o Teacher interest/motivation?
    o Majors offered?
    o Social life and activities?

- Did you ever have difficulties understanding the classes or courses?
    o If yes, how did you solve that problem?
        ▪ Tutoring? By whom, how did you get it?
        ▪ Communication in general?
        ▪ Other help?
- Can you recommend any changes or improvements that would make it better/easier for future college students to learn?

Jobs:

What is your work now?
- Is your work related to your education?
- Are you happy so far with your job?
  - Work itself
  - Access at work to information?
  - Communication with co-workers?
- How did you get your job? Process?
- Are there any barriers or limitations to jobs for deaf people?

Community:

Do you interact much with the local Deaf community?
- Active in the Association of the Deaf?
- Talk with others, social or other?
- Direct contact or internet ?(Local or National)
- If yes, then from the Deaf community perspective
  - What does the Deaf community want to see in college programs?
  - Is the deaf community satisfied with the college education for deaf students?
  - Does the Deaf community have much contact with colleges with deaf students?

Do you meet/interact with other deaf people who are college graduates?
  - Do you ever discuss college experience?

Do you have a chance to talk with administrators and faculty still?
  - Do you discuss ways to improve the programs?
  - What influence can deaf alumni or the deaf community have in helping to improve college education for deaf students
  - As an alumni can you serve as a link/bridge between the deaf community and the college program to exchange ideas and wishes?

Overall:

In general, what would you like to recommend/suggest for the next 5 year plan to help college education for deaf students to improve?

Are there any areas for improvement that we did not cover?

PEN Interview Guidelines: Faculty

History and context:
You have _____ programs which admit deaf students.   How or why were those specific programs established?
- What makes those programs good for deaf students while other programs are not appropriate?
- Do you suggest more programs?   (Why? What programs? Or why not?)

Program/college:

How is your program unique from the others?
- What are the strengths and weaknesses of your specific program?
- What are your ideas on how it could be made better?

Teaching
- What are the (your) most important goals for teaching deaf students?
- What are the (your) biggest challenges in teaching deaf students?
- What are the (your) most successful method(s) of teaching deaf students?

- What are the characteristics of the students?
  3. What are the student's strengths as a whole?
  4. Weaknesses as a whole?
- Do you have any suggestions for how to take advantage of these strengths or improve their weaknesses?
  1. Who could/should do that?

Do you have suggestions for how the teaching for deaf students can be improved?

Are there any partnerships or transition programs?
- With other university programs for deaf students?
- With local or regional secondary programs to help students get ready?
- With any local or regional employers regarding job transition?
- With local or national deaf or disability organizations?
- With rehabilitation centers?
- Do you see any such partnerships coming? Would they be valuable? Would you recommend setting something up?

Jobs:

 Do the students get jobs in their area of training?
- What are the barriers/limitation that need to be overcome (students themselves, faculty, society levels).
  o What is "access" at work? What needs to be changed?   Any suggestions how?

- o Has the goal been reached so far for amount of work placement as well as numbers?

Overall:

In general, what would you like to recommend/suggest for the next 5 year plan to help college education for deaf students to improve?

Are there any areas for improvement that we did not cover?

PEN Interview Guidelines: School for the Deaf Administrators

<u>**History and context:**</u>

How did it happen that this site was chosen for a school for the deaf?
- <u>Do you suggest more places?</u>

How do the 5 year plans, national and municipal, get implemented at the program level? (classroom level?)
- How does the coordination actually work with "every office working jointly together to accomplish the goals"?
- How successful has implementation been?
    a. <u>What are the barriers if any?</u>
- What happens if a goal is not met?

Do you have any suggestions for how this process of implementation could be improved between the national, local, and program levels? (classroom level?)

<u>**Program**</u>:

Do all the high schools for the deaf offer the same education?
- Courses?
- Textbooks?

How does this education differ from the high school education received by hearing students?
- Courses?
- Textbooks?

What do you see as the strengths and weaknesses of the overall system of deaf education?
- <u>What are your ideas on how it could be made better?</u>

How do students get admitted to the high school?
- How is their entrance exam different from hearing students?
- <u>Do you have any suggestions for how to improve the process?</u>

Teaching
   Can you tell me why or how you got into education for deaf students?
       o Did you have a prior connection to deaf people?
- What are the (your) most important goals for teaching deaf students?
- What are the (your) biggest challenges in teaching deaf students?
- What are the (your) most successful method(s) of teaching deaf students?

- What are the characteristics of the students?
    5. What are the student's strengths as a whole?
    6. Weaknesses as a whole?

- Do you have any suggestions for how to take advantage of these strengths or improve their weaknesses?
  1. Who could/should do that?
  Do you have suggestions for how the teaching for deaf students can be improved?

What average percentage of your students might go to college?
- What is their main barrier?
- Do you have any ideas about how to increase this number?

Are there any partnerships or transition programs?
- With university programs for deaf students?
- With high schools for hearing students?
- With any local or regional employers regarding job transition?
- With local or national deaf or disability organizations?
- With rehabilitation centers?
- Do you see any such partnerships coming? Would they be valuable? Would you recommend setting something up?

Jobs:
Overall what are the students' chances of getting a job after graduation?
- What jobs are common?
- How do they find jobs usually?
  1. school personnel?
  2. parents?
  3. disability organizations?
  4. employment agency?

- What are the barriers/limitation that need to be overcome (students themselves, teachers, society levels).
  o What is "access" at work? What needs to be changed?   Any suggestions how?

Teachers:
- What kind of education are teachers required to have to teach in the program?
  o Degree in the content area?
  o Courses in education?
  o Courses in deaf education?
  o Sign language courses?

  What are areas for improvement?

Overall:
In general, what would you like to recommend/suggest for the next 5 year plan to help college education for deaf students to improve?

Are there any areas for improvement that we did not cover?

PEN Interview Guidelines: Students

History and context:

First, I would like to have a little background about you.
What schools did you attend before you came to college?
- School for the deaf?
- Mainstream public school
- Another college program?

What languages do you feel comfortable using? (Speaking, Signed Chinese, Chinese Sign language?)
- Which one do you feel you understand the most from?

The first deaf college of special education was established at Changchun University and then 4 more followed in Tianjin, Beijing, Nanjing, and Shanghai.
- Why or how did you choose this college?
- Do you suggest there should be more places?   For what level of study?
- Are there enough prepared deaf students to have more advanced programs or should there be more colleges of vocational study?

Program/College:

Which program are you studying?
Which degree are you working towards?
- Would you pick that same major/program again if you started over?
- Would you recommend that other students take that major/program?
- Was that your goal/dream to have that major/program?
  - If not, what barriers stopped you from your goal?

What makes some programs good for deaf students while other programs are not appropriate? Or do you think all programs are good for deaf students?
- Do you suggest more programs?   (Why? What programs? Or why not?)

You are a student leader.
- What are your functions as a leader?
- What are the issues and concerns that students have?
  a. Are they about academic things
  b. Are they mostly about social things?
  c. Are they about communication?

- How do you try to deal with those concerns? Solve these problems?
  a. Do you talk with faculty or the administration?
  b. Do you organize activities? For example?

Looking at your college education,
- What are the strengths /weaknesses of your program?
    - Academic quality?
    - Teacher interest/motivation?
    - Majors offered?
    - Social life and activities?

- Did you ever have difficulties understanding the classes or courses?
    - If yes, how did you solve that problem?
        - Tutoring?   By whom, how did you get it?
        - Communication in general?
        - Other help?

- Can you recommend any changes or improvements that would make it better/easier for future college students to learn?

Community contacts:

Do you meet/interact with deaf people who are other college graduates?
- Do you ever discuss college experiences?
- Do you discuss how college could be improved/better for deaf students?

Do you interact much with the local Deaf community?
- Active in the Association of the Deaf?
- Talk with others, social or other?
- Direct contact or internet ?(Local or National)

Overall:

In general, what would you like to recommend/suggest for the next 5 year plan to help college education for deaf students to improve?

Are there any areas for improvement that we did not cover?

Appendix B

Discussion of Validity

Validity in Qualitative Research

Qualitative research involves interacting with people in their own language, and on their own terms. It seeks to understand the way in which others perceive and understand the real events and characteristics of their lives. Therefore, qualitative investigation must allow for unpredicted interpretations of events to emerge, interpretations that the researcher might not have suspected or considered. Since each individual participating as interviewees introduce new ideas or interpretations, the interviews must remain at least partially "open-ended" to allow for 'discovery of the new.'

Validity in qualitative research is critically important, as it is with all research methodologies. Internal validity examines the match between the researcher's categories and interpretations and the patterns that actually exist. External validity refers to the ability to apply these results to other settings. Both are described below.

Internal validity, the concern with the accuracy of a researcher's interpretations, is threatened by a number of factors which must be minimized. These threats are: the selection of subjects (usually called respondents), maturation effects, attrition of subjects, individual histories, and experimenter bias as the instrument through observations or interviews.

There are critical steps that were taken in this research to minimize these threats and these are briefly described below:

- Respondents need to be selected who can be expected to have knowledge of the topic being discussed. In this study, administrators, faculty members, students, government officials, and members of the deaf community were interviewed. Both deaf and hearing individuals participated in the study. The goal was to obtain as many different perspectives on a similar topic as possible. Unfortunately, distance, cost, and time, limited the respondents to two cities and two colleges with the exception of administrators. Since each individual was only interviewed once, there was less concern over maturation, and there was no attrition of respondents.
- Qualitative research typically requires much longer for data gathering than does quantitative research. The researcher must make every effort to understand the context surrounding the research effort. In the case of this study, it meant a literature review and in-depth and ongoing discussions with Chinese individuals concerning Chinese culture and beliefs, history, and government. It also meant extensive checking of assumptions and interpretations with Chinese individuals, both deaf and hearing. There are some possible maturation effects in that some changes occurred over the course of the research, however constant consultation with Chinese individuals helped to highlight changes that had taken place.
- Very detailed notes must be taken regarding the environment in which observations and interviews are conducted. This is referred to as "thick description" or "fully detailed fieldnotes". In this study, after each interview, the

interview team members noted their observations and interpretations of events related to each interview.

- Every step in the research methodological must be carefully delineated and rationalized. This allows the reader the reader of the resultant findings to ascertain exactly how the study was accomplished and follow the same procedures should they desire.
- The ideal qualitative research involves observing or interviewing individuals in their natural setting. In the current study this was not always possible. Some respondents were interviewed at a conference, others by teleconference, and still others on a visit to the United States.
- Peer review (debriefing) refers to the constant check of validity of the researcher's methodology and interpretations from the data, by opening it up to qualified peers for frequent critique. In this study this was accomplished through frequent checks with deaf and hearing Chinese colleagues in the United States and in the PRC.
- Verbatim quotes from interviews are used extensively to illustrate interpretations. In this study there are two possible errors in quotes that could have been made due to translations; between Chinese and English, and between Chinese and American sign languages. In an effort to minimize this type of error the researchers checked with the respondents, and utilized audio and videotapes against which statements were verified.
- It is important to remain as open as possible to critique based upon possible bias, and for this reason researchers need to explain their background and their beliefs with regard to the research.
- When interpretations of patterns seem to be firming up, it is important to look through the data to deliberately search for cases that do not fit or that contradict the perceived patterns. When such disconfirming cases are discovered, they must be reported and explained. The interviews from certain groups often provide differing perspectives or interpretations of the same events.

External validity refers to the ability to apply the findings of a study elsewhere. Since the interpretations given come from specific situations that can never be replicated exactly, external validity means giving enough detail about the methodology, data, categories, analysis, and findings that the readers can decide for themselves whether research results might be relevant in a different setting. That is, by receiving in-depth descriptions of all phases of the research, the reader can examine their own setting and determine whether there is sufficient similarity to warrant the possibility that the results might be relevant.

For further detail regarding issues of validity and reliability in qualitative research the reader is referred to Kirk & Miller (1986).