

PEN-International:
A Worldwide Change Agent for Postsecondary Deaf Education

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Abstract

In 2001, The Nippon Foundation of Japan entered into a partnership with officials from the National Technical Institute for the Deaf (NTID) at Rochester Institute of Technology, Rochester NY, USA, to establish a worldwide university network to serve and empower deaf students as they prepare for careers in a rapidly changing technological society.

This ambitious project, called the Postsecondary Education Network International (PEN-International), was created to technologically link universities around the world that serve deaf and hard-of-hearing students, primarily those in developing countries. Using the combined expertise of faculty and staff members from its host institution, NTID, and other world renowned educational experts, PEN-International has helped these universities develop state-of-the-art instructional technologies, improve their technical curriculum, and update their instructional computer hardware and software. Generous opportunities for cross-cultural exchanges and faculty professional development and training have become additional cornerstones of the program's efforts.

This paper reports on the successes to date of PEN-International's collaboration with Tsukuba College of Technology (TCT), Tsukuba, Japan; Tianjin Technical College for the Deaf of Tianjin University of Technology (TUT), Beijing Union University (BUU), and Changchun University, all in China; Bauman Moscow State Technical University (BMSTU), Russia; De La Salle University-College of St. Benilde, Philippines; Charles University, Czech Republic; and Ratchasuda College of Mahidol University, Thailand.

PEN-International's two key goals are to create professional faculty development models and training plans, and to design and construct instructional multimedia computer labs on the campuses of its partner institutions. Training efforts are based upon a professional development model that begins with a needs assessment, the creation of workshops that are objective-based, Web-based workshop resources, and a formative and summative evaluation of effectiveness.

The ultimate goal of the entire effort is to improve student learning at partner universities. A secondary objective is to create an exponential “ripple effect” in participating countries, through which faculty members who have been trained share their newfound expertise with colleagues from other colleges and universities within their countries.

PEN-International has already improved teaching and learning for thousands of students in Japan, China, Russia, the Philippines, the Czech Republic, and Thailand by establishing relationships with selected institutions in these countries. Since 2001, PEN-International has constructed a network of eight universities that teach more than 1,250 deaf students, and have more than 150 faculty members who teach deaf students, many of whom have attended PEN workshops or benefited from local and regional training. Six Multimedia Learning Labs, have been designed, constructed, and are used almost constantly for teaching and learning at partner sites. The PEN network continues to expand in partner countries and new countries are being examined for inclusion in the network.

Introduction

In June, 2001, Rochester Institute of Technology's National Technical Institute for the Deaf (NTID), Tianjin University of Technology (China), Bauman Moscow State Technical University (Russia), Tsukuba College of Technology (Japan), and The Nippon Foundation of Japan joined forces to create an international network supporting the technical education of postsecondary deaf students from around the world. The partnership's goal is to support the sharing of expertise among technological universities teaching science and technology to deaf students worldwide, particularly in developing countries.

The program, called Postsecondary Education Network International (PEN-International), works closely with faculty, staff and students at NTID, where it is based, to facilitate sharing NTID's nearly 40 years of academic experience and expertise in postsecondary deaf education with its international partners.

PEN-International Goals

PEN-International is a first-of-a-kind international partnership. Its main components--faculty training, online learning technology, information technology, and instructional technology--are being used to:

- Improve teaching and learning
- Increase the application of innovative instructional technology
- Expand career opportunities for deaf and hard-of-hearing people.

PEN-International already has met its goal to work in multiple countries. The recent addition of affiliate colleges in Thailand and the Czech Republic, combined with existing partnerships in Japan, China, Russia, and the Philippines, brings to six the total number of countries represented. Additional partnerships are constantly being explored.

PEN-International's current partners are Tsukuba College of Technology (TCT), Tsukuba, Japan; Tianjin Technical College for the Deaf of Tianjin University of Technology (TUT), Beijing Union University (BUU), and Changchun University, all in China; Bauman Moscow State Technical University (BMSTU), Russia; De La Salle

University-College of St. Benilde, Philippines; Charles University, Czech Republic; and Ratchasuda College of Mahidol University, Thailand.

One of the project's significant goals is to encourage a successful "ripple effect" among its partner institutions. The hope is that, eventually, individuals and the colleges they represent will develop the ability to export what has been learned through the project to other programs serving deaf and hard-of-hearing students in their home countries and then to other countries around the world.

Implementation Strategy

Each partner works with PEN-International to create a professional faculty development model and training plan and to design and construct an instructional multimedia computer lab with videoconferencing capability. Descriptions of these components of PEN-International follow.

Training

PEN-International training is based upon a professional development model that includes a comprehensive needs assessment, the subsequent creation of workshops that are objective-based, creation of Web-based workshop resources, and a formative and summative evaluation of effectiveness. The ultimate goal of the entire effort is to improve student learning at partner universities.

The training model is based upon the successful NTID Instructional Technology Consortium (<http://www.rit.edu/~ntiditc>) faculty development paradigm. The NTID Instructional Technology Consortium (ITC) is a collaborative, faculty-driven initiative for enhancing teaching and learning with deaf and hard-of-hearing students through the use of technology and related innovative teaching strategies. PEN-International depends upon these teachers to teach other teachers about proven strategies for use with postsecondary deaf students. (The key component of PEN-International's training is the experienced NTID faculty and staff who are willing to share their experience with their colleagues from around the world.)

Multimedia Computer Laboratory

PEN-International partners work with individual institutions to establish multimedia computer laboratories with videoconferencing capabilities to support student learning and faculty-developed technology-based teaching solutions. To design these labs, PEN-International officials bring teachers and technical experts from each partner university to NTID to meet with technical experts and to see firsthand the various multimedia classroom configurations that have proven successful for educating American deaf students.

Labs built at partner institutions offer faculty a teaching/learning environment with the latest instructional technology. When not used for classroom instruction, the labs are generally available to deaf students for independent work. Videoconferences can also be scheduled in the labs for seminars and instruction.

Each PEN-International partner institution has a multimedia lab on its campus. During the 2003 International Technology Symposium held at NTID, videoconferencing technology using these labs proved to be a highlight of the program. During two consecutive evenings, video seminars on the topic of "Using Technology" joined nearly 75 conference participants in Rochester with participants at PEN Multimedia Labs in China and the Philippines.

Evaluation

PEN-International activities and outcomes are assessed using both a formative and summative evaluation approach. The overall PEN-International evaluation plan addresses the attainment of project goals, level of satisfaction by partner administrators and faculty, and improvement in student performance as a result of PEN interventions. Additionally, the role of each partner organization as regional and national leaders will be addressed.

The evaluation of faculty development is central to PEN-International goals and as such is a critical component of the evaluation plan. Ongoing evaluations of workshop, seminars, and training sessions are conducted following the professional development evaluation model developed by Thomas Guskey (Guskey, 2001). Guskey specifies five critical levels of evaluation of the impact faculty training as: Level 1. Participants'

Reaction; Level 2. Participants' Learning; Level 3. Organization Support and Change; Level 4. Participants' Use of New Knowledge and Skills; and Level 5. Student Learning Outcomes.

Participants' Reaction

At Level 1, evaluation looks at the participants' initial reaction to the experiences. Questions such as: did participants like the experience, did the material make sense to them, was the information useful, was the presenter knowledgeable and helpful, and was the room the right temperature, were asked.

Participants' Learning

Level 2 examines the knowledge and skills that participants gained from the workshops, seminars, and training sessions. The focus is to determine if participants acquired the intended knowledge and skills. Indicators of successful learning reflected in the evaluation also can function as a basis to design the content, format, and organization of the future workshops.

Organization Support and Change

According to Guskey, "Lack of organization support and change can sabotage any professional development effort, even when all the individual aspects of professional development are done right." For this reason, evaluations must include information about organization support and change. At Level 3, evaluation focuses on organization characteristics and attributes necessary for success. Was implementation advocated, facilitated, and supported? Were sufficient resources made available, including time for sharing and reflections?

Participants' Use of New Knowledge and Skills

At level 4, evaluation looks at the questions of whether participants effectively apply the new knowledge and skills in their professional practice and if the new knowledge and skills that participants learned make a difference.

Student Learning Outcomes

Level 5 addresses "the bottom line": how the workshop training affects students or "What is the impact on students?" Measures of student learning include cognitive

indicators (student performance and achievement), affective outcomes (attitudes and dispositions) and psychomotor outcomes (skills and behaviors).

Unlike Levels 1 and 2 where information is mostly gathered through questionnaires distributed at the end of a professional development activity, enough time must be given before conducting evaluation for levels 4 and 5. It takes time for participants to effectively apply new ideas and practices to their home settings because the implementation of such knowledge and skills is a gradual process.

Currently, PEN-International is conducting evaluations at the participants' reactions and learning levels, Level 1 and Level 2 of Guskey's evaluation guidelines. Follow up evaluation information will be collected through questionnaires, participants' written reflections and portfolios, and the performance and achievement records of their students, as stated in the project "Evaluation Plan".

In addition, evaluation at Levels 3, 4, and 5 will occur in future extensions of the project as each partner institution exports what they learn to other institutions in their country.

About Our Partners

Japan's Tsukuba College of Technology (TCT) for deaf and visually impaired people was the first and "lead" partner in the PEN-International effort. Tsukuba College was modeled after NTID when it was founded in 1987. Tsukuba's Division for Hearing Impaired offers state-of-the-art programs in design, mechanical engineering, architectural engineering, electronics, and information science. It was the first of its kind in all of Asia and has proven in a very short period of time to be a leader in the technical education of people who are deaf and hard of hearing

China's Tianjin Technical College for the Deaf of Tianjin University of Technology (TUT), the first technical college for the higher education of people who are deaf in China, was PEN-International's next partner. Established in 1991, the college enrolls more than 125 deaf students who study technical disciplines that prepare them for productive membership in Chinese society. The college is the lead PEN-International partner in China and coordinates all activities in the country.

China's Beijing Union University (BUU), founded in 1985, is a multidisciplinary institution offering humanities, science, social science, natural science, technological science, and management science programs to 12,000 students. The University's College of Special Education was created in 1999 and serves more than 125 deaf students who study art design, decorating and advertisement, gardening, and office automation.

China's Changchun University's Technical College for the Disabled was established in 1987. It is the oldest and largest postsecondary program for disabled students in the People's Republic of China. The college currently enrolls more than 200 deaf and hard-of-hearing students who study in the college's fine arts and graphic design programs. Graduates of the college are competing successfully in the workplace.

Russia's Bauman Moscow State Technical University's Center on Deafness has been educating deaf students since 1934. In the early 1990s, the university administration expanded its programs and services for deaf students and established the Center on Deafness. Presently, approximately 250 students study in various programs across the university as well as in compensatory programs at the Center on Deafness.

The Philippines' De La Salle University-College of St. Benilde's School of Deaf Education and Applied Studies in Manila is a leader in education for deaf students in that country through its academic programs, international linkages, and unique commitment to empower its citizens by preserving deaf heritage and nurturing Filipino deaf culture. The college offers a bachelor's degree in Applied Deaf Studies, the first of its kind in that country. Established in 1991, initially as a small program for deaf students, it has evolved into a formal program with 26 faculty members and 120 students

The Czech Republic's Charles University in Prague is the oldest university in the Czech Republic and the oldest university in central Europe. Founded in 1348 by King Charles IV, the University enrolls 41,000 students at the bachelor's, master's, and doctoral levels. Among the University's population are 120 students with special needs, including 24 students who are deaf. The University's world renowned Language Resource Centre, which teaches English to deaf and hard-of-hearing students, is a collaborative effort with several international experts, including NTID.

Thailand's Ratchasuda College of Mahidol University is the first and only education institution in Southeast Asia dedicated to providing tertiary education for deaf

students. The College, created in 1991, consulted with worldwide leaders in education of deaf students in formulating its curriculum. Ratchasuda College enrolls 89 students who are deaf.

Impact

It is widely understood that deaf and hard-of-hearing students have unique educational needs. PEN-International provides faculty training using successful strategies developed at the National Technical Institute for the Deaf over the past four decades. PEN-International not only offers workshops and training for faculty members from partner institutions, but also for professional educators all around the world.

Faculty members, at the PEN partner sites, have been provided technological training and teaching/learning workshops not only to strengthen their instructional skills, but also to prepare them to disseminate what they have learned to faculty at other institutions within their respective home countries. The benefit to deaf students is clear; better trained faculty offer better educational experiences to students.

Collaborative Spirit

Collaboration, an appreciation for cultural differences, and the mutual desire to technologically empower college-age deaf students worldwide are the characteristics that guide the efforts of PEN-International. Using years of accumulated experience in educating deaf students, all professionals involved with the PEN-International project are finding satisfying ways of bringing 21st century technology to students who are deaf. This project is a unique opportunity for education and technology to bridge cultural, social, and political boundaries and strengthen deaf education for thousands of people worldwide.

References

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Author's Note

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