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Academic and Clinical Preparation in Speech-Language Pathology and Audiology: A Global Training Consortium

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There is an increasing need for students in speech-language pathology and audiology to develop cross-cultural competence in the assessment and intervention of individuals with communication disorders. There are a number of developments that contribute to this need to function effectively within a "shrinking world." Battle (2012) noted that technology, including the Internet, online telepractice, and Skype, connects people globally and adds to the notion that the world is getting smaller, as aptly reflected in Thomas Friedman's

ABSTRACT: **Purpose:** To describe a research-based global curriculum in speech-language pathology and audiology that is part of a funded cross-linguistic consortium among 2 U.S. and 2 Brazilian universities.
Method: The need for a global curriculum in speech-language pathology and audiology is outlined, and different funding sources are identified to support development of a global curriculum. The U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE), in conjunction with the Brazilian Ministry of Education (Funda-cao Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior; CAPES), funded the establishment of a shared research curriculum project, "Consortium for Promoting Cross-Linguistic Understanding of Communication Disabili-ties in Children" for East Tennessee State University and the University of Northern Iowa and 2 Brazilian universities (Universidade Federal de Santa Maria and Universidade de São Paulo-Baurú).
Results: The goals and objectives of the research-based global curriculum are summarized, and a description of an Internet-based course, "Different Languages, One World," is provided
Conclusion: Partnerships such as the FIPSE–CAPES consor-tium provide a foundation for training future generations of globally and research-prepared practitioners in speech-language pathology and audiology.

KEY WORDS: cross-cultural, graduate training, international practices, international collaboration, Fund for the Improve-ment of Post-Secondary Education (FIPSE)

(2007) book, *The World Is Flat*. The increase in the number of people throughout the world who speak and understand more than one language also contributes to the need for development of cross-cultural competencies. Grech and McLeod (2012) reported that a number of factors highlight the importance of multilingualism, including the "media, mobility, international economics, global literacy initiatives, progress in information technology, [and] the drive for lifelong learning" (p. 120). Cheng (2007) noted that the future will bring more cultural and language diversity, increased insight into the culture of poverty, and awareness of challenges for world literacy. She argued that the impact of culture is crucial to our understanding of the world around us, and we need to prepare our students to deal with these diverse thoughts, concepts, and experiences.

The purpose of this article is to describe the development of a global curriculum that was funded by the U.S. Department of Education's Fund for the Improvement of Post-Secondary Education (FIPSE) U.S.–Brazil Higher Education Consortia Program to two U.S. universities, and co-funded by the Brazilian Ministry of Education (Fundacao Coordenacao de Aperfeicoamento de Pessoal de Nivel Superior; CAPES) to two Brazilian universities. The goals of the project will be described, as will the development of a shared research curriculum to train the next generation of clinical scientists to address the social and communicative needs of children with speech, language, and hearing impairments.

Rationale for a Global Curriculum

There are a number of factors motivating the need for a global curriculum in speech-language pathology and audiology. First, the majority of the world's children speak more than one language (Grech & McLeod, 2012). According to the U.S. 2010 census, almost 20% of people speak a language other than English in the home (U.S. Census Bureau, 2011). This statistic is relevant to speech-language pathologists (SLPs) who work with bilingual children who have a communication impairment. In a survey by Skahan, Watson, and Lof (2007), 48% of primarily school-based SLPs reported that they had nonnative English speakers on their caseloads. Clearly, there is a need for SLPs and audiologists (AUDs) to adapt their practices to reflect a global perspective.

A second factor contributing to the need for cross-cultural and cross-linguistic preparation in our academic programs is the significant increase in the number of international adoptions. During the decade from 1995 to 2005, the number of international adoptions more than doubled, from 8,987 in 1995 to 22,728 in 2005 (U.S. Department of State, 2006). Correspondingly, there has been an increase in referrals for speech and language services, which is complicated by the fact that SLPs have limited training and guidelines to determine if a delay or disorder exists in children learning two or more languages (Glennen, 2007; Glennen & Masters, 2002; Mason & Narad, 2005). Limited information regarding typical and atypical language development in this population of children has resulted in high referral and intervention rates, which may not be indicated for many of these children (Glennen, 2007; Williams & McLeod, 2012).

A third factor motivating the need for a global curriculum in speech-language pathology and audiology is that many more SLPs and AUDs are participating in international outreach and development activities (Wilkinson & Skinder-Meredith, 2008). Based on interviews with 11 SLPs and three AUDs with international outreach and development experience, Wilkinson and Skinder-Meredith (2008) found that the continents visited most frequently were Asia and South America, followed by Africa and Europe. The speech-language pathology and audiology professionals and students who were interviewed participated in education and training of caregivers, hospital staff, medical students, orphanage workers, health care workers, and teachers who worked with diverse populations, including those with hearing and visual impairments, developmental and language delays, and cleft lip and/or palate. Based on the interviews, Wilkinson and Skinder-Meredith recommended that educational preparation should include information about cultural attitudes toward child rearing, communication, communication disorders, and the language; and that it is important to have informal tools for assessment and intervention. Additionally, visiting SLPs and AUDs need to be aware of the existing services and training that may be occurring within a country in order to support collaboration with existing SLPs and AUDs (D'Antonio & Nagarajan, 2003).

Finally, there is an increased call for international collaboration and networking of researchers, specifically in the standardization of clinical procedures. A clear example of this is the Eurocran organization (http://www.eurocran.org/content.asp?contentID=1213), which includes a number of researchers and clinicians throughout Europe who are standardizing the assessment of children with cleft lip and/or palate. Eurocran is focused on the advancement of international collaborative research into best practices for the treatment and prevention of craniofacial anomalies, as well as on development of a critical mass of clinical researchers and basic scientists (Shaw, 2004; Trindade, 2006). Standard procedures for transcription and assessment of cleft palate speech have been developed as a result of this international collaboration.

Similarly, Henningsson et al. (2008) expressed the need to standardize speech measurement procedures across cultures and languages so that meaningful comparisons of treatment outcomes can be made internationally through multicenter studies to improve the standard of cleft care globally. Trindade (2006) recommended that international collaboration include training for clinical teams in modern research methodology and study designs that are based on the clinical needs of patients, human resources, and infrastructure in order to support the sustainability of future generations of clinical scientists in speech-language pathology. Through collective action and improved networking of existing research centers, scientific advancement can be accelerated to achieve mutual gains for all affected populations. This perspective aligns with the American Speech-Language-Hearing Association's (ASHA's) strategic plan for future directions of the professions (Dublinske & Lemke, 2008); specifically, to increase members' access to research and integration of scientific evidence in clinical practice (Strategic Objective 4).

As cultural diversity within the United States continues to increase, an important focus of ASHA and its professionals is to become more culturally competent. This focus is reflected in ASHA's strategic plan, which outlines the future direction of the Association (Schill & Dublinske, 2005). Specifically, in 2004, ASHA's Legislative Council approved a strategic plan that outlined future directions for action by the Association that would help ASHA, professionals, universities, and students develop and involve themselves on a more global level. The following recommended actions were specified in "Designing ASHA's Future" (Lemke & Dublinske, 2010):

- "Encourage academic programs to include elements related to the practice of speech-language pathology and audiology globally." (p. 33)

- "Provide opportunities for faculty and students to visit developing countries and provide practicum to facilitate global practices in speech-language pathology and audiology." (p. 33)

- "Promote collaboration with the international research community, focusing on clinical practice research needs." (p. 35)

- "Strengthen our advocacy for the rights of people with disabilities around the world." (p. 35)

Collectively, ASHA's strategic plan and the factors summarized above reflect the diversity of cultures and languages that create challenges for practitioners in communication disorders. Therefore, it is important to redefine education so that the next generation of SLPs and AUDs can meet the increasing need to serve the changing population of children with communication disorders, as well as the complex interaction of linguistic, social, emotional, and educational factors that are impacted (cf., Stockman, Boult, & Robinson, 2004).

Indeed, Lynch and Hanson (2011) advocated that it is essential for clinicians in a multicultural society to develop skills in interacting with clients from a variety of cultures who come to us with a multitude of cultural and linguistic factors. In particular, it is important for students and faculty to clearly understand the cross-linguistic factors that impact effective assessment and intervention for these populations of children with communication disorders. The importance of a global curriculum was summarized by Grech and McLeod's (2012, p. 132) statement that "communication and culture are intertwined so that cultural differences, beliefs, and attitudes affect assessment, diagnosis, and intervention by SLPs." As Edward T. Hall (1959) claimed more than 50 years ago, "Culture is communication, communication is culture."

Funding Mechanisms to Develop a Global Curriculum

To support academic and clinical training programs in speech-language pathology and audiology in developing a global curriculum, a number of funding mechanisms can be used to implement ASHA's strategic plan for increasing global awareness in speech-language pathology and

audiology. The Fund for the Improvement of Post-Secondary Education (FIPSE) international program has four different grant programs to establish consortia of institutions of higher education and promote international collaboration with specific countries. These include the U.S.–Russia Program, the Program for North American Mobility in Higher Education (cooperative student-centered higher education and training activities between the United States, Canada, and Mexico), the European Union–U.S. Atlantis Program, and the U.S.–Brazil Higher Education Consortia Program. Each of these programs supports multi-institutional collaboration, student exchanges, faculty cooperation and exchange, shared and common curricula, mutual recognition of credits, and acquisition of host country languages. These grant programs are cofunded with foreign government partners to support curriculum development and exchange between U.S. and foreign institutions. A unique feature of the FIPSE international programs is the dissemination of innovative curricula and projects completed by institutions of higher education (IHE) that have received funding. The link to the FIPSE website for additional information on these programs is http://www2.ed.gov/print/about/offices/list/ope/fipse/welcome.html.

The U.S. Department of Education's Office of Postsecondary Education includes a number of funding mechanisms through the International Education Programs Service (IEPS). The Title VI and Fulbright-Hays programs are two of the competitions within IEPS that support infrastructure building of international studies at U.S. colleges and universities to ensure a trained workforce with expertise in less commonly taught languages, world areas, and transnational trends. The Title VI programs provide domestically based language and area training, research, and outreach, and the Fulbright-Hays programs support on-site opportunities to develop these skills. Of the seven programs supported under Title VI, those that may have the most relevance to academic programs in speech-language pathology and audiology include the Undergraduate International Studies and Foreign Language Program, Language Resource Centers, and American Overseas Research Centers. The four overseas programs under Fulbright-Hays include Fulbright-Hays Training Grants—Doctoral Dissertation Research Abroad, Faculty Research Abroad, Group Projects Abroad, and Fulbright-Hays Seminars Abroad—Bilateral Projects. Additional information on these programs can be found at http://www2.ed.gov/about/offices/list/ope/iegps/index.html.

Finally, the Fogarty International Research Collaboration—Behavioral and Social Sciences Research Award is a limited competition that funds collaborative behavioral and social sciences research between scientists. It is supported by the National Institutes of Health (NIH) and investigators in low- and middle-income countries (LMICs). This program gives special consideration to projects that address significant global health problems, particularly those of high relevance to an LMIC or region, and that include research capacity building as a major aim of the proposed project. The link to this funding source is http://grants.nih.gov/grants/guide/pa-files/PAR-11-036.html.

To summarize, a number of factors are motivating the need for development of a global curriculum in speech-

language pathology and audiology to train culturally competent clinicians to provide services to a diverse client population. This need is addressed in ASHA's strategic plan for professionals, universities, and students to be more involved on a global level. The following sections describe the development of a global curriculum that addresses the goals of increasing cultural competence and research competence of speech-language pathology and audiology students. Increasing research competence of practitioners addresses another ASHA strategic objective (Strategic Objective 4: Increase accessibility and use of research). Thus, the long-term goals of this curriculum are twofold: (a) training of research and culturally competent practitioners and (b) sustainability of international research collaborations.

Description of Cross-Linguistic Consortium

The FIPSE-CAPES project, "Consortium for Promoting Cross-Linguistic Understanding of Communication Disabilities in Children," is a 4-year collaborative project (2010–2014) that was designed to support student exchange and establish a research alliance among two U.S. and two Brazilian institutions. Specifically, the project funds development of a collaborative for instructional and research projects, student and faculty exchanges, and outreach to international partners in community and hospital clinics. The U.S. partners include East Tennessee State University (ETSU) as the lead institution and the University of Northern Iowa (UNI) as the U.S. partner institution. The Brazilian partners include Universidade Federal de Santa Maria (UFSM) in Rio Grande do Sul as the Brazilian lead institution and Universidade de São Paulo-Baurú (USP) in the state of São Paulo as the Brazilian partner institution. Through this partnership, U.S. and Brazilian students are provided with comprehensive, in-depth clinical research training in the cross-linguistic assessment and treatment of children with communication disabilities, including speech sound disorders, hearing impairment, cochlear implants, and cleft lip and/or palate.

Consortium Partners

A brief description of each of the partner institutions is provided to highlight the distinctive aspects of the training opportunities as well as the regional context in which each program resides. The exchange of knowledge and training among the four partners in these diverse regions provides unique opportunities to improve the training of students in communication disorders by enhancing the curriculum to address the cross-linguistic and cultural issues of high-prevalence conditions in children.

The ETSU Department of Audiology and Speech-Language Pathology (ASLP) is located in the rural southern Appalachian region of the United States, which provides unique opportunities for students to work with a large number of children and families who live in poverty. The ETSU Speech, Language and Hearing Clinic houses specialty clinics in cleft palate and phonology, which have both conducted NIH-funded clinical intervention studies. The ASLP department also offers a clinical doctorate in audiology (AuD), which is a joint program between the ASLP department and the Veterans Administration Audiology Program at Mountain Home, TN.

The UNI Department of Communication Sciences and Disorders offers both undergraduate and graduate degree programs in communication sciences and disorders. Students have the opportunity to work with a wide variety of populations, including children from Bosnia and Mexico. The department operates a large study-abroad program. Through this program, students have traveled to Chile, Peru, New Zealand, Greece, and Nicaragua. During the last 5 summers, ~20 students annually have studied communication disorders on international service-oriented study-abroad trips in Nicaragua, where they worked with children in orphanages, special education schools, and schools for children who live in and around large city dumps. These trips typically have included students from UNI, as well as professionals, faculty, and students from several other universities.

In Brazil, UFSM is well known for its clinical research in the treatment of severe speech sound disorders in children. The faculty conduct critical research in the comparison of treatment efficacy of a number of intervention models, which has been presented and published internationally and has contributed to the knowledge base in this area. UFSM includes clinics in hearing impairment, voice disorders, language and speech sound disorders, oral sensory and motor disorders, and audiology. The UFSM Speech, Language and Hearing Department offers a graduate program in human communication disorders, with master's and doctoral degrees.

USP includes the Hospital de Reabilitação de Anomalias Craniofaciais (HRAC-USP), where the greatest number of cleft palate surgeries are performed in Brazil. HRAC-USP provides treatment for >20,000 patients with craniofacial anomalies each year, with approximately eight new cases and 25 surgeries performed each day (Trindade, 2006). These statistics contribute to the recognition of HRAC-USP by the World Health Organization (WHO) as a center of reference (Shaw, 2004). One of the unique features of the USP program in communication disorders is its participation as a co-investigator in a large-scale NIH clinical trial with a number of European researchers in a project that is evaluating the timing of palate surgery on speech outcomes. USP also conducts extensive research on instrumental and perceptual assessment of cleft palate speech.

A strength of this consortium is the international collaboration that is already in existence among the faculty both between and among the university partners. For example, ETSU and UFSM have collaborated in the area of intervention models for children with severe speech disorders, ETSU and USP have collaborated in the areas of craniofacial and hearing research, and UNI and ETSU have collaborated in child speech disorders. UNI has a strong international emphasis in communication disorders, including participation in the 2011 annual meeting of Brazil's national association for professionals in communication disorders, which builds on the existing ties between the national organizations of the two countries.

As these existing and diverse affiliations suggest, this consortium is a natural alliance of partners who are

familiar with each other's research and teaching interests and who have a long history of collaboration with one another. These institutions also represent countries with the world's first and second largest professional training programs in communication disorders (International Directory in Communicative Disorders; Bleile, 2006); therefore, they can have a significant impact on expanding the cross-linguistic training of all students and faculty in communication disorders.

Research-Based Curriculum

The goal of the consortium is to foster student exchange and curriculum development as well as promote language and cultural skills among U.S.–Brazil speech-language pathology and audiology students. Students in the program have the opportunity to (a) learn the social and cultural differences that exist in working with families from an ecological model of child development (Bronfenbrenner & Ceci, 1994), (b) understand communication disorders from a holistic perspective, and (c) assess the impact of communication disabilities within the unique sociocultural contexts of families and communities that exist in the two countries. The theoretical framework of the *International Classification of Functioning, Disability and Health* (ICF) by the WHO (2001) and the subsequent release of the children and youth version (ICF-CY) in 2007 provides the theoretical framework for the global research curriculum. The ICF-CY is particularly applicable to a global curriculum as it emphasizes the strengths of children and takes into consideration the environmental and personal factors that might act as barriers to their participation.

The ICF framework has been endorsed by ASHA in the *Scope of Practice in Speech-Language Pathology* (ASHA, 2007) and the *Scope of Practice in Audiology* (ASHA, 2004), as well as by a number of other international professional associations, including the Royal College of Speech and Language Therapists, the Canadian Association of Speech-Language Pathologists and Audiologists, and Speech Pathology Australia. The ICF has been used as a framework for practice for working with clients who have different communication disorders, which has been published by a number of authors (Eadie, 2001; McLeod, 2004, 2006; McLeod & Bleile, 2004; Simeonsson, 2003; Threats, 2000, 2006, 2007; Threats & Worrall, 2004; Washington, 2007; Worrall, 2001).

The consortium incorporates a research-based curriculum that spans both academic and clinical training activities. Research modules were developed to address the following three primary objectives of inquiry:

1. Investigate the association between communication disorders in children and limitations to life activities within the theoretical framework of the ICF-CY.
   - Families
   - Social
   - Educational
   - Differences related to culture
2. Understand the social and cultural aspects of intervention for children with communication disorders across

different etiologies (e.g., cleft lip/palate, language impairment, hearing impairment, central auditory processing disorders, etc.).
   - Models of intervention
   - Barriers to access or implementation
   - Practitioners' and parents' perceptions regarding assessment and intervention services
3. Explore and identify resilience and risk factors in the different social and cultural contexts across different subgroups of communication disorders from a strength-based approach.

To fulfill these objectives, a series of review and research studies have been and are being conducted and organized within the following areas of investigation:

Research Review Studies
- Prevalence of different communication disorders in American and Brazilian children (Objective 1 and 3)
- Theoretical framework of ICF-CY to examine the intervention models for treating communication disorders in children (Objective 1 and 2)
- Application of ICF-CY framework to compare/contrast specific assessment and intervention models relative to social/cultural contexts of the United States and Brazil (Objective 2)
- Systematic review of intervention studies with regard to social/cultural dimensions of activities and participation for children with communication disorders (Objective 1 and 2)

Research Studies
- Investigation of parent and SLP/AUD perspectives regarding assessment and intervention for children with different communication disorders (Objective 2)
- Long-term outcomes of intervention for children with communication disorders relative to social and educational activities (Objective 1 and 2)
- Phenomenological analysis of interviews conducted with U.S. and Brazilian SLPs/AUDs and families related to barriers to access to services (Objective 2 and 3)
- Phenomenological analysis of interviews conducted with U.S. and Brazilian SLPs/AUDs related to implementation of intervention models for communication disorders (Objective 2)

A matrix of the research modules that were developed for Year 1 is presented in Table 1. These modules include collaborative research teams of faculty across the university partners that share similar research interests. Each team includes four students from the universities of the faculty in the collaborative team. Each study follows a progression of research inquiry that is aimed to achieve the three primary objectives listed earlier. To accomplish these objectives, a series of review and research studies were proposed, with each team conducting two research projects per year: one research review study and one data-based research study. The research reviews and syntheses

Table 1. Matrix of the research modules that were developed in Year 1 by the collaborative research teams consisting of faculty and students from East Tennessee State University, University of Northern Iowa, Universidade Federal de Santa Maria, and Universidade de São Paulo-Baurú.

Team 1		Team 2		Team 3		Team 4	
Review	Research	Review	Research	Review	Research	Review	Research
Prevalence of CLP in U.S./Brazil; models of intervention for CLP in U.S./Brazil	Investigation of parent/SLP perspectives regarding intervention for CLP in children	Prevalence of SSD in U.S./Brazil; models of intervention for SSD in U.S./Brazil	Investigation of parent/SLP perspectives regarding intervention for SSD in children	Theoretical framework of ICF-CY to examine intervention models for treating CLP in children	Survey of SLP practices for CLP	Prevalence of HI in children in U.S./Brazil	Investigation of parent/AUD perspectives regarding audiological services for children with HI
4 students	4 students	4 students	4 students	4 students	4 students	4 students	4 students
Descriptive synthesis; Review literature; Interpret studies; Identify implications for future research; Write paper	Design questionnaire; Collect parent/SLP data; Data entry/coding into statistical software; Interpret results; Relate to existing literature; Identify implications for future research; Write paper	Descriptive synthesis; Review literature; Interpret studies; Identify implications for future research; Write paper	Design questionnaire; Collect parent/SLP data; Data entry/coding into statistical software; Interpret results; Relate to existing literature; Identify implications for future research; Write paper	Descriptive synthesis; Review literature; Interpret studies; Identify implications for future research; Write paper	Design questionnaire; Collect parent/SLP data; Data entry/coding into statistical software; Interpret results; Relate to existing literature; Identify implications for future research; Write paper	Descriptive synthesis; Review literature; Interpret studies; Identify implications for future research; Write paper	Design questionnaire; Collect parent/AUD data; Data entry/coding into statistical software; Interpret results; Relate to existing literature; Identify implications for future research; Write paper

Note. CLP = cleft lip palate; SLP = speech-language pathologist; SSD = speech sound disorder; ICF-CY = International Classification of Functioning, Diability and Health Children and Youth Version (World Health Organization, 2007); HI = hearing impairment; AUD = audiologist.

followed a qualitative–quantitative continuum including narrative reviews, descriptive reviews, best evidence syntheses, and meta-analyses (see Dunst & Trivette, 2009, 2012). As summarized in Table 1, the research review studies in Year 1 addressed the three primary objectives by completing descriptive syntheses of prevalence and intervention studies, which were framed within the theoretical framework of the ICF-CY. The prospective research studies in Year 1 also addressed the objectives by designing questionnaires to collect data on perceptions and practices from parents and SLPs/AUDs related to intervention for children with specific communication disorders.

A core activity that runs through all of the consortium activities is an Internet-based course called "Different Languages, One World." This Internet-based course is maintained in an online format of Wikispaces and is offered every semester in all four universities using asynchronous interactive learning modules. The course focuses on the social, cultural, and linguistic interface of working with families and children who have communication disorders. It is also designed to highlight the similarities among urban, rural, and international health care delivery models.

Course modules focus on current information across a range of clinically and professionally pertinent topics, including the following:

- research design and methodology, including literature searches, asking answerable questions, research designs, and data analysis
- the ICF-CY (WHO, 2007) as a framework for consideration of children with communication disorders by SLPs and AUDs
- working with children and families from an ecological perspective; social and cultural issues that affect clinical service delivery
- evidence-based practice that addresses the triad of factors of current best available evidence; clinician factors; and client/families' needs, values, and preferences
- practice-based evidence that incorporates the scientific method of inquiry to address questions that develop from practitioners' experiences in real-world clinical service delivery.

A focal point of the Internet-based course is a monthly webinar in which seminars are delivered in real time, or

synchronous learning, using Adobe Connect. The webinar transmissions are available at all four institutions and include the four project directors and project staff from each university as well as invited international guest lectures from other speakers that address specific topics related to the course. These monthly webinars include question and answer sessions, which allow the students to get to know the faculty in the partner institutions and to practice their language skills. The webinars are developed by the four lead investigators and are supplemented with guest speakers on specific topics. Examples of topics for the interactive web-based modules include cross-linguistic aspects of communication development, cross-linguistic transcription and analysis of speech sound production, language and culture, and working with translators.

Additional teaching modules for the Internet-based course include student presentations about their exchange and learning experiences, which include discussion of ongoing faculty–student research projects; presentation of cases within different clinical populations, such as speech sound disorders, craniofacial disorders, and hearing impairment; and presentation of service learning projects, such as remote area medical, which provides speech, language, and hearing screenings, and hearing aid dispensing in northeastern Tennessee.

The innovative format of combined asynchronous (Internet-based course) and synchronous (webinar) learning environments promotes a strong international forum of students and faculty from ETSU, UNI, UFSM, and USP, along with a number of allied partners, for the discussion of global issues in the assessment and treatment of communication disorders in children. The incorporation of a research-based curriculum can be sustained after the funding period ends, which permits the sharing of curricula to be continued long after the grant is completed. It is hoped that this project will be replicated by other university programs in communication disorders.

Student Exchange

As part of this project, each U.S. university will host 16 Brazilian students over the course of 3 years (eight students from UFSM and eight students from USP). The Brazilian students exchange during the U.S. spring academic terms as part of their "estágio" period, which is an assigned clinical practicum outside of their coursework during their last semester of a 10-semester program. Similarly, a total of 16 U.S. students will exchange to the Brazilian universities (eight students from ETSU and eight students from UNI) over the 3-year period. Due to the once-a-year course offerings of the U.S. communication disorders curriculum, American students will take classes and do clinical training at the Brazilian universities during the U.S. summer, which will not prolong their time to graduate. The target population of American students is second-year graduate students in the speech pathology program or audiology students in their third year of the AuD program. The target Brazilian student population is third- or fourth-year undergraduate students in speech-language pathology and audiology.

Students register at their home institution for the equivalent courses they plan to take at the host institution. The number of credits awarded is based on each institution's academic credit policy pertaining to study abroad. Students pay tuition and fees (when required) at the home institution and are not assessed any fees at the host university. A travel and housing stipend per student allowed by FIPSE and CAPES is provided for the student exchange, which also includes the cost of professional liability insurance, health insurance, and language tutoring. The international programs and services at each university are an integral part of this project. All of the university partners are committed to providing an array of services to the exchange students, including assistance with admission procedures, visa documentation, pre- and post-arrival orientation, and advisement and general support while the students are studying at the host institution.

Development of adequate language and cultural competence skills. U.S. students who are accepted into the consortium program are required to take Portuguese lessons provided by a Portuguese language tutor. Rosetta Stone programs in Portuguese are purchased for each student to complete as independent study to supplement their formal lessons. The language training is tailored to build a core vocabulary of terminology to facilitate students' ability to function well in the clinical and curricular programs of the host country. Although a proficiency criterion was not established, students are expected to be able to handle successfully a limited number of interactive, task-oriented, and social situations. Pre- and post-exchange assessment of students' language skills are completed. In addition, attention is paid to developing the students' competencies in cross-cultural interactions by focusing on the development of skills and strategies for working with interpreters/translators during assessment and intervention.

To evaluate intercultural competence, the Intercultural Development Inventory (IDI v. 3; Hammer, 2007) is administered to the students. The IDI is a 71-item paper-and-pencil instrument that measures stages within a developmental model of intercultural sensitivity that progress through ethnocentric orientations to ethnorelative orientations. The IDI measures cognitive structure rather than attitudes, which makes it a more stable and generalizable test that is less susceptible to situational factors. The IDI is given to students before and after the exchange experience to examine changes in intercultural competence. Data are examined to determine factors that contribute to expanding intercultural awareness. Additional evaluation methods include an end-of-year survey; key informant interviews; and focus groups with students and teachers to assess program reactions, make suggestions for improvement, and report on the steps taken to achieve the outcomes.

During the first year of the consortium, the project directors and key project faculty at each university developed plans that addressed financial sustainability beyond the funding period, student recruitment and selection, the student language preparation program, and faculty and curricular development. Partners at each university also formalized agreements with regard to the financial commitments made by each institution to the project, as well as the academic credit transfer and recognition of student tuition and fees.

Dissemination Activities

An important component in achieving replication of our project by other university programs in communication disorders is to make the outcomes of the project highly visible. To accomplish this, a number of activities are planned to disseminate the project results in a variety of forums, including publication in refereed journals and presentations at state and national annual conferences (e.g., ASHA, American Craniofacial-Cleft Palate Association, and state association conventions). Additional activities and resources for dissemination are listed in Table 2.

Concluding Thoughts and Future Directions

There has been a call for additional resources to support development of a more globally trained and aware professional workforce within speech-language pathology and audiology. Our consortium seeks to foster a global perspective in our academic and clinical training programs through a research-based curriculum. We believe that a research focus will not only lead to a longer, more intensive interaction among the faculty and students within the partner universities but will also have a greater potential for building research capacity and sustainability beyond the funding period.

A research focus further creates a "community of practice" among professionals in different countries, which allows knowledge to be integrated, incorporated, contextualized, and generated as part of an inquiry process (cf. Englert & Rozendal, 2004; Wenger, 1998). This approach represents an equal position among collaborators. Stated differently, when we engage in communities of practice, effective change can occur with joint participation in which each group brings a different perspective, knowledge, and experience to the learning and development process. In this fashion, faculty, students, and clinicians across countries engage in generating questions, testing assumptions, and sharing the results of their inquiry and activities to improve clinical practice. This collaborative venture supports inquiry that respects the contextual settings of all of the participants.

Our FIPSE-CAPES consortium is the first step in what we plan to be an ongoing collaboration in training a more globally and research-prepared generation of SLPs and AUDs. This project extended existing connections and collaborations among the faculty in the different partner universities, which has recently resulted in additional funding opportunities through the Fogarty International Research Collaboration grant (NIH R03). Our consortium combined the departmental goals of each university to develop a more global curriculum for our students, with our fundamental emphasis on research as the basis for preparing students to be lifelong learners and critical consumers of research. The consortium was a natural extension of those two goals.

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Table 2. Global training consortium dissemination activities.

Activity	Description
Project website	Description of the project activities and resources, presentations, and publications are provided at the project website (http://www.etsu.edu/crhs/fipse/ for United States and http://www.ufsm.br/fonoaudiologia_projeto for Brazil).
Conference presentations	State and national presentations will be given that include mentored student demonstration and service learning projects.
Research publications	Faculty and student research collaborations among all university partners will be developed into manuscripts and will be submitted to peer-reviewed journals in both the United States and Brazil.
Local media	Via the Office of University Public Relations at all partner institutions, public awareness and support for the project were developed in a variety of media outlets, including local and state newspapers, television, radio, and university-wide web services.
International Directory of Communication Disorders	Information regarding this project consortium will be listed in the directory, with contact information provided for all partner institutions.

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