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Using Technology to Develop Global Teachers: An Innovative Model

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Abstract

This article describes the development of a study seminar and travel program that teams Brazilian and U.S. teachers and experts together, focusing on the education, environment, and culture of Brazil. Today's students live in a rapidly changing world in which a new global society is emerging. It is essential that educators become participating members in this developing global network, maximizing knowledge to better communicate with students.

The use of technology has recently become an important tool, connecting of teacher participants, administrators and experts in both Brazil and the U.S. The groundwork is now in place for the expansion of technology capabilities in the future for both teachers and students in each country. Research possibilities are limitless and can have application for similar programs in other countries. This Brazil-U.S. project is sponsored by North Carolina State University in cooperation with the Instituto Sangari, Sao Paulo Brazil.

Introduction

The world in which today's students live is rapidly changing, growing significantly smaller in scope as a new global society emerges. As educators, it is essential we become active, participating members in this developing global network, maximizing our own knowledge so that we are better able to communicate with students. We must be collaborative members of the world community, cooperating with other teachers to educate the leaders for today, tomorrow, and the future.

Amazing changes in technology, as well as new software programs, allow educators to utilize and incorporate new people, new places, and new ideas into the curriculum. This article creates a framework for developing an international experience enhanced through the use of new technology. Teachers can communicate via internet telephony, a computer-based tool that allows many people to converse on a free conference call. As a result of new technology and the aid of an interpreter, teachers from Sao Paulo, Rio de Janeiro, Alaska, and Texas can talk together about a specific topic, compare the

type of weather they are experiencing, and pass on a topic their students would like to discuss in a monthly E-letter. Up to ten individuals may participate in a conference call. Students will be able to look at video clips, see each other's drawings, and listen to each other's music if a microphone is in the classroom. They will be able to propose different strategies to solve problems. Unbelievably, it is all free. This is "living education," and it has infinite applications and implications for all educators and their students.

Never in my wildest dreams could I have imagined sitting in plastic chairs on the upper deck of a small boat motoring on the Rio Negro in the Amazon (see Figure 1). Suddenly, in the middle of this river stretching from horizon to horizon, with no other boats within sight, a phone rings. It belongs to one of the Brazilian educators traveling with us. She tells a family member in Sao Paulo about a dance we have just seen and how we joined the native Indians in their ritual. Farther up river, another phone rings. The Brazilian educator tells the caller we have just left a river community, where the children are picked up by boat and taken to school. Teachers aboard this small boat could communicate with their families, thanks to technology unheard of in the world of yesterday.



Figure 1. Boat on river in the Amazon

Changes in Technology

Both the use and the access to technology have changed significantly over the past four years, both in Brazil and for those from the U.S. who participate in our programs. In 2004, participants shared a computer in the hotel lobby or had to take turns in the computer room with about six computers. No one brought a laptop computer with them. In the summer of 2007, computers were available for each individual; additionally, wireless connections for laptops were available at our hotel in Sao Paulo. This allowed each participant e-mail access and free telephony with home contacts, alleviating the sharing of rented computers (formerly, a significant cost to the program). In 2007, several participants took their laptops to the Pantanal. Although web-access was

difficult to find and not always available, journaling, photo collection, and activity development could be continued. In one outlying *pousada*, there was wireless access within the office area; this was a pleasant surprise! The safety of laptops in rough terrain can now be better maintained with our larger bus transport; consequently, participants will be asked to bring their own laptops for the 2008 sessions.

Future networking with Brazilian participants becomes easier each year. Each state in Brazil approaches their technology differently, and as in the U.S., this step-by-step approach results in different technology availability for each state's educational system. It is difficult to make blanket statements, as the variability is great. Brazil is a country about the size of the U.S., and many different scenarios exist which are similar to ours. In Sao Paulo, for example, teleconferencing centers have been established throughout the city. Teacher in-training programs are disseminated through these centers, requiring that teachers go to these centers to participate. Teachers and administrators in the public schools have access to computers, but there are few computer labs for students. Many, but not all of the private schools have computers and internet connections. Instituto Sangari reported that in Brazilia, fewer than 10% of the public school classrooms have white boards, and only about 25% of the schools there have internet connections. In Brazil, Geographic Information Systems (GIS) software is more difficult in application than in the U.S. (Gioppo, personal communication, 2007), where GIS software is free for educators. Gioppo was a participant in many early GIS workshops in Raleigh, NC (Stubbs, Devine, & Hagevik, 2002).

We view the advance of technology with teachers and students of Brazil as an opportunity to do the following: ground our own knowledge, purposely develop the technology capabilities of our teachers as they travel to a foreign country, share our knowledge and programs with others, learn about other programs, and plan future endeavors between both Brazilian and U.S. teachers and students. Developing networks between teachers and students will have a profound effect upon the globalization of both present and future citizens. This activity is slow in initial planning and design; however, after a baseline is in place, we anticipate a surge forward, and we are preparing our teachers to be ready for it.

Why Plan an International Professional Development Experience for Educators?

Teachers with firsthand experience through international adventures can speak personally and passionately to students about their discoveries, as they share photographs, anecdotes, and videos of indigenous people, cultural traditions, native ecosystems, and local schools. Such teachers are also more likely to share their knowledge with peers and to become leaders in disseminating scientific information and global perspectives to varied audiences. In, *The Middle Mind, Why Americans Don't Think for Themselves*, Curtis White (2004) states that

the imagination is not only about creation; it is also about how we see and how we experience. We cannot create in a fresh and lively way while looking at our world from a

stale (even if familiar and comforting) perspective. So, before the productive work of the imagination can begin, we must be outside of the familiar (p. 2).

Exploration of countries and cultures different from their own, forces teachers to stretch their knowledge, experience, and understanding. Teachers who bring the trusted results of their own hands-on experience and discovery to the classroom are confident and well-grounded. They will create classroom activities that match their interests and improve their analytical skills, as well as stimulate students to explore new lines of questioning. Studies have shown that experiential learning in new environments can stimulate teachers to collaborate in professional development activities which exponentially expand knowledge and skills (Howe & Stubbs, 1998). We have found that teachers respond most effectively to educational and professional development models that inspire and motivate them. When they design their own teaching activities and curricula based on their individual understanding of new material, they learn more. They teach these activities well, and they are more likely to share with others (Howe & Stubbs, 2003). These educators want to learn about new developments directly from the experts, researchers, and scientists doing the work.

Why a foreign country?

"We have to teach our kids what it is to live and work in a global society. By the time they join the work world, they'll be working not only with people from other countries, but businesses from other countries, whether they are in marketing or engineering or furniture making." — John Black, North Carolina Principal of the Year.

First, you must be convinced you need to globalize your work. Choose and work with the country most important for you and your participants. We had connections in the country we were collaborating with. Without the support and infrastructure of the foreign country, our project would not be the project it is. We developed our focus and a rationale for why this would be important for educator participants.

There are many locales in the western and eastern hemispheres that could provide interesting educational opportunities. Brazil's educational system and environment were of major interest to us (see Figure 2). Brazil was selected for our adventure because of its broadly diverse geographical, commercial, cultural, and environmental elements, as well as its interconnections with the United States. Brazil is among the top ten countries in the world in terms of breadth of cultural diversity, with its colorful music, rich drama, bold art, textiles, intriguing cuisine, and diverse traditions in religion, spirituality, and ceremonial activities.



Figure 2. Brazilian riverfront

Learning firsthand from foreign teachers, scientists, and community members, the K-12 science educators from the U.S. understood how human activities affect both the biological and physical systems of our planet (see Figure 3). Simultaneously, the foreign teachers learned about education in the U.S. Directly shared experiences of teachers raises the awareness of local plant and animal diversity, natural history, cultural differences, and how students learn in other countries. When excited by inspired teachers, students are more likely to consider international connections as they move toward college.



Figure 3. Participating educators in Brazil

It is important to focus on the particular country which you intend to visit. Learn as much as you can about the people, the culture, research information about the country, and whatever you intend to specialize in – and plan your visits!

What does the Home Institution Provide? What are the Nitty-gritty Things that Must be Done?

Timetable. A timetable, or work plan, can be designed on a spreadsheet, indicating tasks and activities, expected dates of completion, and the part played by both the Home Institution and the Cooperating Institution. We included information regarding the following: Steering Committee meetings, trip (design, travel, evaluation, next year plan), participants (selection, information sent, applications, notification, presentations), public relations (journal announcements, newsletters, listservs, web-site development, presentations), evaluation (formative, summative, recommendations, follow-up), and the Final Report.

Agreements. There are essential agreements that must be in place prior to an international trip. For example, what are the legal ramifications of a program such as this? What types of agreements need to be in place for the Home Institution and the Cooperating Institution, with agreements from legal entities within each organization?

Announcing professional development experience. Both Institutions must disseminate information about opportunities for educators within that country. This is both involved and time-consuming. The announcement, dissemination, and public relations phase include the following activities: updating web-site information, sending mailings to appropriate organizations and individuals, distributing e-mails to organizations requesting the posting of information on web-sites or listservs, communicating announcements in publications, and developing brochures to distribute at different meetings.

Nitty-gritty. The Study Abroad Office at North Carolina State University (NCSU) has provided information about their pre-planning and experiences working with college students who travel abroad. We have been guided by their suggestions and protocols which were developed for students. Although we are working with teachers, many similar items must be addressed: application forms, visas, passports, university credit, payment, immunizations, health forms, insurance, safety issues, State Department advisories, and waiver forms. Many of these are country specific, and must be addressed yearly since they are subject to change. For example, we supply a letter to each participant to be presented when they request a visa for Brazil. Each year, the letter has been unique to that specific year. Making certain the participant's application form has everything that is needed is a challenge.

These forms are now available on the web, and the application process has been shortened significantly with these technological changes. Should the applicant not have computer access, forms can be printed out and submitted. To be certain that all necessary information has been submitted in a timely fashion, providing a checklist of necessary items with submission dates is helpful. An example of such as checklist can be seen in Figure 4 below.

Have you:

1. Made Your Reservation? Send application form + fee by this date ____

to:

2. Made Payment? Full payment is due to: __ by __ , or at the time of reservation if you book fewer than 90 days prior (if space is available). Make your payment by electronic transfer (handled by your personal bank) to:

3. Booked Your Flight? Travel costs to and from ____ are not included in the workshop fee. Make your travel arrangements with any travel agency, or book with _____

4. Have You Requested University Credit? Request for education credit must be made at the time of registration. Attach credit form found on website ____.

Figure 4. Checklist of necessary items.

Within the foreign country. There are steps we take within the foreign country. For example, we supply travelers' names and information, specific dates, and purpose to the U.S. Embassy in the country in which we are traveling by e-mail. Safety and security issues have become more important in today's world. Each country has specific guidelines and suggestions for participants. Each participant has a cell phone, knows how to work it, and stores the following numbers in his or her phone: number of his or her embassy, the Cooperating Institution, home emergency numbers, airline phone number, and contact numbers of other members of the traveling group.

What does the Cooperating Institution in the Foreign Country Provide?

Implementing the entire 15-day experience is the responsibility of the Cooperating Institution. Following the planning and organization of the schedule, putting the ideas into action is a feat. Taking care of the small details is an enormous challenge. We want the participants to be pleased with the outcomes. We work together with the Cooperating staff for optimum results.

Depending on the country in which you work, directions from the airport may be given to take a cab, bus, or metro to the hotel where you will be meeting. In our case, staff pick up participants. It is wonderful to get off a flight in a strange country and be met by someone who knows exactly what to do, where to go, and how to get there. The hotel, meals, living arrangements, and participant assignments are made by the Cooperating Institution. A separate room to hold meetings and a place where speakers will come must be arranged prior to arrival. A list of supplies necessary for the experience is sent to the Cooperating Institution in advance. Computers, one per person, are available for participants' use. In 2008, each individual will bring their own laptop with specified software already installed. Meals are scheduled throughout the week; representative places are chosen so that different places and different foods can be experienced.

Transportation. The Cooperating Institution schedules drivers, vans, cars, or buses as the need arises. A first aid kit travels with us at all times. Cell phones connect leaders and transport.

Speakers. Advance notice to the speakers must be made. Speakers need to know what is expected, how long to speak, what to offer the participants, whether the presentation will be in English with a translator, or whether the presentation will be made in the language of the country. We have found it most helpful if the speaker presents verbally, incorporating overheads, PowerPoint presentations, and graphics in English. A CD is given to each participant, along with a printed copy of the presentation, facilitating further understanding. Providing these technology components facilitates the teaching and learning process.

Staff from the cooperating institution. It is helpful if the staff understands English and can communicate easily with the participants. This is sometimes a difficult task. Likewise, the participants must understand that just because someone nods in agreement, it does not mean the person fully understands the implications of the comments! The additional myriad of details, from providing stamps, telephone calls, passport copies, money exchange – all are a part of the cooperating organization's support. At times, these tasks seem endless.

What are your Objectives?

There are many reasons for participating in an international experience. If you are planning such an adventure, have your objectives in mind; otherwise the reasons for your trip may become obscured. You also run the danger that you will not reach your objectives by the time the trip is completed.

It is relatively easy to sign up for a travel tour to any country. However, our project is unique in its educational foci on the culture, education, and ecology of another country (see Figure 5). We believe that international experiences are essential for professional development of educators. At the present time, there are many private and public colleges and universities that insist their students should have at least one international experience before graduation. How are we as educators preparing our students for such experiences? Do we ourselves know anything about other countries? For many years, we have run a residential week-long workshop for educators in the mountains, where they study a unique ecosystem. Educators from different countries come together with teachers from different states. Their evaluations indicate that the exchange of ideas from those of different backgrounds was most important; these educators are adamant that this experience changed their outlook and approaches.



Figure 5. Participants explore a unique ecosystem on the Amazon

In order to foster the success of each individual participant attending the workshop, it is important to meet challenges, allow time for self-exploration, and to incorporate new and different knowledge by developing their own classroom activities (Howe & Stubbs, 1998). We were convinced that factors important for non-residential workshops could be the same for residential workshops. Many of the teacher participants reported the mountain experience was transformative. What were the reasons for this? Was living, working, and traveling together significant for the educators? Was getting away from their home environment important, freeing them from regular responsibilities? We wanted to test several different approaches with this international experience:

- Could we travel to a different location and have an international experience for educators?
- Could we team with teachers from that country? Would that make the experience more valuable for the participants?
- Would this experience provide challenges for the participants? Would they return from the experience so excited that they would incorporate what they learned into what they taught their students?
- Could we use the SCI-LINK method (Anderson, 1993)? Educators would develop their own activities to teach upon their return to the classroom, providing a mechanism for increasing self-knowledge.
- Would there be an ongoing relationship between participants of the different countries?
- Would this experience benefit the students of the participants?
- Could there be a connection between students of the educators?

We are just beginning to answer these questions as we enter the project's fifth year. We would be most interested in the results that any others who have engaged in these experiences may wish to share.

How Did these International Experiences Develop?

When you design an international experience, the circumstances of each individual will be different. These experiences involve many individuals and organizations. It takes time for connections to be established prior to the actual experiences. Chance meetings and serendipity all play a part.

To illustrate the circuitous route this international experience took, consider this: A graduate student from another country insisted our faculty attend a conference. Five of us went. The following year, as a result of that conference, Stubbs became the first Visiting Scholar at a public, non-profit organization of that country. Local individuals took Stubbs to many different places during her stay in this very large urban area. This experience was an important firsthand orientation to the culture of the area and important in future planning of professional development programs between the two countries.

During the subsequent three years, projects were undertaken and facilitated by long-standing relationships between the entities in the foreign country and the university in the U.S. With the strong support and the extensive connections of the Instituto Sangari (Cooperating Institution) Advisory Board members, and the support of our Department of Mathematics, Science and Technology Education and administration at NCSU (Home Institution), we have been able to pilot these efforts on a small but successful scale.

Foreign faculty and students visited our workshops in the U.S. The following year, American educators traveled to the foreign country, examining culture, pedagogy, and a specific ecosystem. Teachers, science education administrators, science librarians, and two teaching scientists learned from experts and scientists who presented up-to-date research findings related to the ecological environments and educational practices of the foreign country.

In 2005, teachers and school administrators from the two countries teamed together and the results were extraordinary. Teaming a teacher from one country with a teacher from another country is an important difference from any of our other professional development workshops. Teachers found ways to communicate and share the experience with one another even when translators were not present. These teaming experiences, in one of the largest cities in the world between both countries' teachers, added a new dimension to our vision of what could happen in the future.

Why is it Important to Cooperate and Coordinate with an Organization within the Other Country?

We have found that local connections are essential to bring richness and breadth of knowledge to the project. This project is a two-way project, demanding cooperation, coordination, and flexibility on the part of both the Home Institution and the Cooperating Institution. In truth, little of our project would have been successful without the positive support of Ben Sangari of the Instituto Sangari.

Some important benefits of working with an organization with local connections, and the subsequent impact on teacher experiences are as follows:

- The success of the project is dependent upon the infrastructure, cooperation, and support from entities within that country. Key personnel, staff, and Board Members of the Cooperating Institution provide a unique source of expertise in many different capacities.
- Effective translators are critical to the trip's success. Local translators are provided by the Cooperating Institution. The translator is an essential part of the experience and can either "make or break" the experience. We have learned: how and when to translate so that the audience is not bored and remains "on-task"; when translators are needed; how many translators to have within a traveling group; and, the type of background translators needed to optimally communicate with educators on different topics. We will spend more time in the next trip, delineating our requirements for translators beforehand.
- Orientation of the project staff from both countries is essential to prepare all trip leaders in effective facilitation techniques, safety and security issues, expectations for development of classroom activities by teachers, maintenance of group cohesiveness, and in cultural differences and expectations of staff in sharing knowledge and dealing with any problems that may arise.

How Do you Plan a Professional Development Experience Like This?

The Project Director, in conjunction with Cooperating Institution staff members, decided what was important and how the program could be orchestrated. Staff worked with a local travel agency to learn about possibilities, timing, and local contacts. They also planned the specific ecosystem adventure; communication between parties was essential. The schedule was changed innumerable times. We all learned to be flexible. We arrived at an overall schedule with the assumption that we could make changes as the need arose. We could react immediately to daily evaluations, so if participants were over-tired, we could have a later breakfast or even cancel a particular activity. A readjustment could also be made to the schedule due to weather. Instead of doing an outdoor activity in pouring rain, participants could visit an indoor museum. In addition, time was scheduled to research and develop individual activities and to write in daily logs on computers.

We estimated the percentage of time to be spent on education, the environment, and the culture of the country. We considered the need for a varied schedule including:

speaker presentations that were evenly spaced, breaks during the day; activities ranging from listening, to participation, to group work, to individual work, and time to work on computers.

Upon arrival, each participant received a daily schedule. It delineated each 30 minutes of time in the program. Preparations for such intensive and diverse adventures require extensive pre-trip planning, coordination, and oversight of multiple personnel in both countries. As many who have undertaken these types of experiences in the past report, such an experience requires dedication on the part of all those involved (Emmett Wright, personal communication, December, 2005).

Activity Development by Participants

Participants use computers at the hotel in which they are staying to keep their journals, develop activities, and communicate with those at home. Although we hope to have access to computers as we travel, this is not always feasible. It is important to develop an e-mail list for future connections.

Findings from early SCI-LINK workshops indicate that between 96% to 100% of the teachers who developed their own activities in a workshop setting, taught their activity (Howe & Stubbs, 1998). Also, 69% of the participants used the activity two or more times, and 67% of the participants used new scientific knowledge presented in the workshop in their activity development. Additionally, 91% to 94% of the teachers shared ideas with colleagues, and 80% to 88% of the participants shared the resource materials provided in the workshops with their colleagues.

Participants are provided a suggested activity format developed by teachers, used in other SCI-LINK workshops. Activities developed by the participants may be placed on a web-site for others to view and use (Stubbs & Anderson, 1995).

Why is the Evaluation Component Important?

Following Dr. Ann Howe's (1998; 2003) formative and summative evaluation design based on previous work, daily evaluations were reported. Immediate changes could be made by the project's leaders; based on participants' feedback, planned activities were adjusted. Using a final external assessment of the project objectives and activities, the second year's structure was modified to accommodate many of the participants' recommendations from the first year: not enough reflection time; too much time in buses and cars; more personal time with foreign participants; participants needed rest time; and, all wanted access to individual computers for journaling, project tasks, and research.

Daily evaluations. We are developing an on-line evaluation form to be returned daily to the home office for tabulation. This will save major time commitments of the staff in 2008. Additionally, the final evaluation will be administered via computer.

Brainstorming sessions. Teachers from each country further shared what they had learned about themselves. One teacher stated, “I’ve learned to know my limits and to live with different cultures.” Another teacher said, “I have learned that I can do anything that I want with patience and determination,” while another teacher learned “to accept and understand the differences of people.” One teacher learned that “people are similar all over the world.” When asked what they had learned about others, responses included statements like, “We learned from differences.” A different teacher said, “That no matter what the dynamics of a group are, we can all learn to help each other and form a bond of trust and friendship.” For many, this was a first time for various experiences: traveling alone, exploring a jungle and learning to survive with minimal support in an unfamiliar environment; and flying in an airplane. All participants stated that it was the first time that they shared such an experience with members of another country, a different culture, and those who spoke a different language.

Follow-Up and dissemination. It is essential to follow-up with participants for further evaluation and suggestions. Is there a lasting influence of the experience? We are just beginning to receive results; enough time has not yet elapsed for us to evaluate changes for the 2007 experience. For example, one 2007 Brazilian participant, Anna, reported that she had spent a few hours on Google Earth and was actually able to locate the satellite image of one of our *pousadas*. She even made a copy of the picture so that she could use it in her teaching, presentations, or future writing. She found a cattle drive in the Pantanal, similar to one we had to drive through, watching the cowboys, or *pantaneiros*, lash out with their metal whips. Anna will begin teaching a new elective class spring semester at her middle school, focusing on the environmental problems noted both locally and in Brazil, and include the biodiversity of *flora* and *fauna* in the Pantanal. She will incorporate many of her digital photographs and video clips taken on the trip. She will report results after this experience.

Some educators will participate as future teachers-on-staff and share their specific expertise. Having gained confidence from facing new experiences, they will present at local, state, regional, national, and international conferences. They may present using new technologies; they may contribute articles or be involved with further dissemination of important information and curricula. For some examples, please see <http://www.ncsu.edu/scilink> (NCSU, n.d.) and www.institutosangari.org.br (Instituto Sangari, n.d.). We are eager for each participant to present their findings and their results in a follow-up article.

In just a few short years, the world of our students will change from the world we once knew. It is essential that educators participate in the developing global network, maximizing our own knowledge so we can communicate with our students, the future work force in this emerging global society.

Summary: The Proof is in the Pudding

These journeys laid the groundwork for future developmental experiences that have a broader impact than expected. One science teacher, a 2005 participant, together with

her social studies teacher cooperatively developed an entire unit to teach the following year, using an on-site created notebook with many activities, web-sites, and resource materials. Another teacher developed a power point presentation with amazing photos and video to use in his classroom and to share with others in his local community. Dr. William Cunningham, Scientist on Staff of the 2004 trip, included sections in his environmental science textbooks. Cunningham shared that it has taken time to understand the immensity and significance of his experience in Brazil. He has included a Brazilian case study in his new text for high school and college students (Cunningham, Cunningham, & Saigo, 2007).

Michael Tally, Science Supervisor in a large metropolitan school district, wrote:

I was honored to have been part of the delegation to Brazil in 2004. This international educational experience has helped me refine my interest in global education. It has helped me organize and manage innovative science teaching methods learned from others and other cultures. The professional colleagues I met there will be remembered for the rest of my life. The visit there awakened my desire to explore the world. It gave me the commitment to improve my relationships with my peers and Brazilian educators. When one takes a trip, you see things that you have only seen in books or movies. You truly understand more about this small world. It changed the way I thought about the U.S. and the world. We do not have all of the answers. The collective thought of all of us does. I have always said, 'The way to evaluate anything, is - after it is over, ask yourself, would I do that again? My answer is a resounding yes.' I will visit Brazil again and soon.

Prior experience of the investigators has shown that experiential learning in new environments can stimulate teachers to collaborate in professional development activities that exponentially expand knowledge and skills (Howe & Stubbs, 1998). This type of experience can be *transformative* for the participants. It can be informative for the community as well, by engaging experts with preK-16 educators. These educators are the foundation, where students are first exposed to science, research, the environment, and to the opportunities for exciting, fulfilling careers which can impact the very global communities their teachers reveal to them.

Finally, these experiences have proved a pilot study, to delineate techniques, strategies, and methodologies to be used in the future, as this type of professional development reaches larger and larger audiences. We know what works; we know what does not work. We believe this model can be scaled up to larger numbers of traveling teachers. This model can be exported to the study of other countries' education, environment, and culture. This model can thus promote subsequent transfer to students through development of the "global teacher." We can follow the lead of Thomas Friedman (2005), who says to his own children,

... the world needs you to be forever the ... generation of strategic optimists, the generation with more dreams than memories, the generation that wakes up each

morning and not only imagines that things can be better but also acts on that imagination each day (p. 169).

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About the Author



Harriett S. Stubbs, Ph.D. is an Associate Professor Emerita, member of the Department of Mathematics, Science and Technology Education since 1988, and located in the Office of Professional Development at North Carolina State University. She is Director of the SCI-LINK/ GLOBE-NET Projects, author of books and articles, presenter of methodologies and strategies for professional development of educators and environmental topics of interest for teaching and learning. In the past five years, she has developed and coordinated international professional development experiences for educators in Brazil and for more than 25 years in the USA.

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White, C., (2004). *The middle mind; Why Americans don't think for themselves*. San Francisco, CA: Harper Collins Publishers.

Other helpful information in planning an international trip:

Guidebooks. It may be difficult to locate guidebooks or identification guides in English. This situation is changing as new books are published or web-sites are established. If not available, then obtain books, pamphlets, and articles from the country you are visiting and make these available to the participants. More and more language dictionaries and CDs of different programs become available each year.

Websites. Websites specifically referred to in this article are:

SCI-LINK www.ncsu.edu/scilink

Instituto Sangari www.institutosangari.org.br

Helpful in designing and planning an international experience are the web-sites of the specific country, sites such as New York Times travel destinations, local travel agencies of the country, government publications (national and state), in both the Home country and Cooperating country. Films, literature, culture (foods, customs, holidays, clothing, music, dances) are all of interest to teachers and students. **Be sure to check the CDC, Embassy, and State Department sites in the U.S.**