# Internationalization of Research

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Strategies used by institutions of higher learning for the internationalization of research represent a new reality in their operations. Universities actually use a variety of strategies to achieve some degrees of campus internationalization and their activities are limited to exchanges of students, faculty, and academic staff. Few institutions include in their academic missions indications about strategies for internationalization of research. There are also barriers precluding these activities, mainly related to conceptual, cultural, and curriculum approaches that faculty and university leadership holds in their own institutions. Two cases for the internationalization of research were discussed and analyzed. In addition, a model was developed in an effort to facilitate the internationalization of research. A process was outlined and the steps to follow were discussed. The literature related to the internationalization of research activities is limited and more research is needed in this area.

*Keywords:* Internationalization of research strategies; higher education; leadership models; cases on international research activities.

Ways of knowing and making science are intellectual activities with no borders. Just like human beings can engage themselves in creating an idea to produce or improve something, would not need permission from the established authorities in a given location; similarly research activities can be undertaken freely. Clearly though, people are also aware how nations regulate ways in which their people interact and live together under some definition of a good life, but it is unlikely, they would be able to norm ways in which human minds get involved in thinking systematically to produce innovations, change or any other human betterment or improvement.

The point being made is that given current conditions for scientific development, collaboration and cross-cultural initiatives are indeed defined as conspicuous needs we must attempt to address through the internationalization of research. As a precondition for this action, it seems appropriate to hope that the world over would appreciate activities conducive to development and happiness. In this light, today we are witnessing how globalization is impacting international markets and the economy of nations. On the other hand, the same conditions are calling for an integration of nations and the appropriate use of technology in a myriad of forms and shapes.

As a consequence and guided by the purpose to explore ways in which universities and other educational institutions are currently internationalizing campuses and their research activities, a systematic analysis of current strategies and literature will be undertaken. It is expected this endeavor will generate models and approaches proven successful and highly useful to internationalize research. Today, technology has promoted the use of sophisticated devices to facilitate communication at all levels of social and economic development. These innovations can serve as paramount solutions to be incorporated into research. Site selection based on a research purpose or problem is always a case in point. It is not easy for any researcher to find friendly and cooperative places to be used for the implementation of research projects.

Precisely in this work, some of the author experiences will be used to uncover practical ways to develop and cultivate appropriate networking considered effective due to its outcome and benefits. A review of the related literature will be used to determine how research is being internationalized and to develop a model and strategies for the internationalization of research activities.

## Defining the Case for Internationalization of Research

Research is a passion based undertaking. Producing an idea can be a joyful activity filled with powerful motivational forces requiring its producer the development of a desire for testing it through a systematic research process. This produces a willingness on the part of the researcher to engage in searching for resources and support to launch the research project: "In recent years strategies for developing international activities have been seen as important within universities" (Sugden, 2004, p. 114).

It is well known universities themselves represent major sources for the development of research activities. Scholars who are working in many different fields can collaborate not only on the development of the projects but also in helping to find resources to conduct it. Academic staff and students also represent tremendous resources available to collaborate in research. Recent experiences show that in Europe for instance a multinational web was created to internationalize research through studies of international connections and small business networks. The idea here was to implement research through scholars and students and then learn from the process.

Similarly, research emphasis placed by a private university located in South West Texas, is teaching us that by connecting communities and institutions through some collaborating instrument or strategy produces highly desirable outcomes. More scholars get involved in research, graduate and doctoral students have greater opportunities to participate in research activities. And as a consequence, publications and dissemination of research have become a central academic activity.

The writer has been working in international research projects related to the development of number sense in preschoolers and on the followership within a leadership process. These experiences had taught us many interesting things. Nations and communities not only represent opportunities but also challenges.

**Planning International Research Projects**

Overcoming obstacles to research activities in this globalized world has become a paramount challenge to faculty and researchers who undertake international research projects. During the last two years, the time frame of this work, these researchers and other supporting staff, have been involved in conducting a study on the explicit names of numbers in Mexico and Bolivia. It is precisely, to share such an experience, the purpose of this work. In this interest, the context and sites of the study will be described, the intent and operational activities of the research effort will be presented and analyzed, and it will end with an attempt to capture the main problems which were encountered, how they were resolved and some meaningful recommendations for future research undertakings.

**Initial Planning of the Study**

The number names research was begun in 2003 with an investigation of the correlation between performance on international tests in mathematics and science and the level of explicitness of the numbering systems in languages of the participating countries. "In this study, explicitness was quantified by the number of new words or word-parts a child must learn in order to count from 1 to 100. The new-word counts were then used to find correlations with results on recent international tests involving students who spoke the major languages used in the Americas and three Asian languages for comparison" (Beauford, 2005, p. 185 ). A significant negative correlation was found between the number of new words used to count from 1 to 100 and the results to the 1999 Third International Mathematics and Science Study and to the 2000 Program for International Assessment.

In the fall of 2004, a pilot study was begun in a small private school in San Antonio, TX, USA. In their first formal introduction to counting, children were taught to use explicit base-ten names for two digit numbers rather than the traditional number names of English and Spanish. For example, 26 was read "two ten six" rather than "twenty-six" or "veintiseis." In 2007 a study including a larger sample and a control group from a public school in Texas showed positive results in the explicit names group (Browning, 2008). The researchers were ready to expand the study to a larger group. The assumptions were that, if the use of explicit number names aids in learning mathematics, the benefits should be apparent in any language, culture, and curriculum.

**Mexico as a Research Site**

The research team was enlarged to include a scholar with ties to schools in Central and South America and research assistants to help with assessment and analysis. In early 2008, the researchers traveled to Saltillo, Coahuila, Mexico, to introduce the project to the faculty of a large private elementary school. The study was implemented that spring with approximately 180 Pre-kindergarten and Kindergarten students in a bilingual school. As the time for assessment neared, the researchers planned to return to Saltillo to train personnel in the assessment protocol and to assist with assessment. Sadly, international struggles with crime and disease made the return trip less feasible. Instead, school personnel who would

carry out the assessment were invited to San Antonio for a three day research seminar. Training and practice with children from the area contributed to consistency in assessment protocol between sites. Assessment materials were standardized and translated to meet appropriate site differences. Personal relationships were strengthened as well.

Bolivia as a research site

The case of Bolivia presents now an interesting political situation. As a result of a social movement, the government is composed by original ethnic groups and it is led by an indigenous leader who was elected as president during the last national election. One might think that educational activities and research projects could be promoted given the obvious need to educate the marginal population and conduct scientific endeavors that would serve the political interest. It seems like that is not the case. Our experience indicates that while Bolivian nationals can do their regular or normal activities, international visitors are affected by an array of problematic events such as flight suspensions and declarations of insecurity. These actions precluded the normal development and implementation of the research project activities. As a result, our research team was reduced to a minimum.

Travel to Bolivia to further expand the project was planned for the fall of 2008. Shortly before the travel date, relations between USA and Bolivia darkened. The US Ambassador and Peace Corps were expelled from Bolivia and US travelers were advised to cancel any unnecessary travel to the country. Only one member of the research team had a Bolivian passport that would ensure personal safety. He met with persons from private schools in Santa Cruz and Cochabamba to initiate their participation in the research project which was implemented in March of 2009. At the end of the academic year, another research seminar was conducted in San Antonio to train a new research team member in assessment of Bolivia as a research site.

**Conducting the Studies**

During the implementation phase there are many problems related to site coordination, resources, scheduling, transportation, as well as the amount of time required at every site. These conditional aspects have an impact on the conduction of the studies. To overcome these obstacles an appropriate planning is required. Figure 1 presents a    model that can be followed during the planning phase of the research

projects. The model exhibits several events, decisions, and action points. The strategic matching, refers to the need to review and analyze the goals of the research projects and determine if they match the missions of the participating international institutions. If there is some similarity the projects might be considered and realized

Figure 1.
A Model for the Internationalization of Research
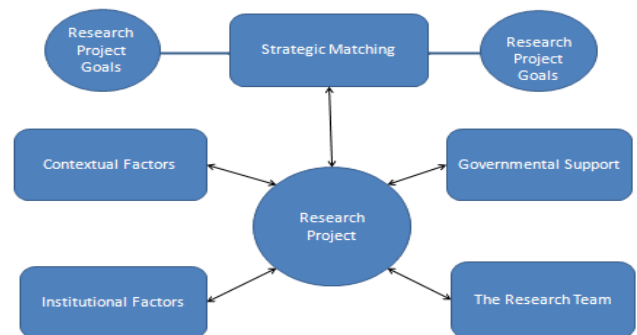


Contextual factors, refers to site access, data availability, basic research infrastructure, perceived value of research, and field of studies. The institutional factors refer to institutional access, resources, location, institutional mission and strategic orientation, role of faculty, technology availability, faculty research agenda and personal interests, and faculty experience conducting research. The research team refers to the faculty involved in developing, conducting, and evaluating the research projects. It includes among other things, planning, coordinating, and administration of the research activities. Government support refers to the need to consider the type and quality of the governmental relations between and among participating countries. Political issues, internal social conditions, cultural aspects, security, and political stability are important factors impacting the level and degree of support and collaboration that can be rendered to research activities.

**Additional supporting words.** Efforts to integrate countries and internationalize higher education are common themes in this era of globalization. In the Americas, however this effort is reduced to talks with little action. This was the conclusion arrived at by an international conference held in Guadalajara, Mexico by a group of more than

300 higher education administrators, faculty, and education specialists who met to promote inter-American collaboration among universities.(Lloyd, M., 2009). In Europe, prominent research universities are launching efforts to promote greater internationalization and competitiveness through the role of the State. It is argued that global rankings of universities are based on research. In addition, the internationalization of research universities' student population is also arranged to enhance research capacity. This finding is further reinforced by a positive association between the internationalization of the academic staff and the internationalization of the student population; being this association particularly strong with the doctoral student population. (Horta, H., 2009).

Matching strategic orientations of universities with research goals represent a challenging task. South-American countries are complex and sophisticated societies having political debates about the control and development of their common and higher education institutions. Many students who study abroad pick generally Europe and the United States. However, "Latin America has the lowest rate of student mobility in the world, according to the Organization for Economic Cooperation and Development, a group of the world's 30 most industrialized nations. The few students who do go abroad tend to head to Europe or north of the Rio Grande. Still, Latin Americans account for just 10 percent of the foreign college students in the United States each year. In addition, scholarly exchange and research collaboration in the Americas is also extremely low. However, there are some signs of progress. Some 80 universities and international agencies met in Panama last year to discuss creating a Latin American academic coalition, with unified accreditation and credit-exchange systems" (Lloyd, 2009).

Curriculum development and implementation is usually at the heart of university role. This is not the case when dealing with the internationalization of research. And even though, it is located at the center of the discussion on higher education, the economic aspects of it seem to dominate this discussion. "Both at national and institutional levels, in many countries, internationalization strategies are being stated to be an educational goal. However, the dominant discourse on the internationalization of higher education in research and research-based discussions tends to be framed by political, economic and organizational perspectives,

rather than informed by educational considerations" (Svensson & Wihlborg, 2010).

Study abroad programs are popular in the United States specially, short-term types of less than a semester. A study looked at students' cultural sensitivity changes among students of Spanish descent through participation in such programs. The study measured students' cultural sensitivity before and after a six week study abroad program and found a small but significant increase in students' cultural sensitivity, with time spent interacting with native speakers while abroad predicting such increases. However, students' skill in oral Spanish, motivation, and relationship with a host family did not predict improvements in cultural sensitivity. These findings imply that there may be an optimal amount of time required for interactions with native speakers for gaining cultural sensitivity for students abroad (Martinsen, 2011).

Institutions of higher education in Norway will see in the near future major emphasis on institutional competition. Internationalization policies and practices are still to come. But given the perceptions of these Norwegian institutions, their purposes are not related to economics of the institutions, they are rather, embedded in academic rationales for internationalization (Frolic, 2006).

Major research universities are in transition to an emergent global model. These universities share the following characteristics: mission, research intensity, new roles for professors, diversified funding, worldwide recruitment, increasing complexity, new relationship with government and industry, and global collaboration with similar institutions. (Mohrmana, K., Mab, Wanhua, & Baker, D., 2008). This new reality sets the stage for discussions on the leadership, control and influence of governments and campus leaders.

The internationalization of research has motivated changes in the roles of faculty. A study examined women academics' perceptions of barriers to, facilitators of, and career benefits of pursuing international projects. (Arthur, N., Patton, W., & Giancarlo, C.) Thirteen women participated in semi-structured interviews that illuminated six core themes: the benefits of international roles, influences on motivation, enablers and barriers, expanded personal and academic world views, and ways of gaining international competencies.

Other studies have looked up to governance on parents of internationalization of research balancing two words of change, leadership and faculty. Results empirically substantiate that internationalization of

academic staff tends to be a balancing act between these two worlds of change. It is also argued that most universities formulate strategies for internationalization, but research behavior of faculty members seems weakly associated with them. Additionally, collaboration in international research among academic staff is best explained by positional level. And that internationalization of research is an outcome produced by collaborative strategies between faculty members and university administration (Trondal, 2010).

Internationalization of research is becoming a strategic direction of universities across the world. But most researchers indicate that there is no evidence suggesting the nature and extent in which these strategies are integrated into the mission of individual institutions (Maringe,2009).
According to Maringe, "there exist a range of distinct barriers working against the full integration of the concept into the institutional cultures. These include: conceptual and structural deficiencies in the organization of institutional internationalization; over emphasis on human exchange initiatives over cultural integration efforts and increasing undercurrents of feelings among staff and students of local neglect at the expense of global attention" (p. 553).

## Conclusion

The internationalization of research is an existing reality among institutions of higher learning. Universities use a variety of strategies to achieve some degrees of campus internationalization and the activities are limited to exchanges of students, faculty, and academic staff. Few institutions include in their academic missions indications about strategies for internationalization of research. There are also barriers precluding these activities, mainly related to conceptual, cultural, and curriculum approaches that faculty and university leadership hold in their own institution. Two cases for the internationalization of research were discussed and analyzed. In addition, a model was developed in an effort to facilitate the internationalization of research. A process was outlined and the steps to follow were discussed. The literature related to the internationalization of research activities is limited and more research is needed in this area.

**Author Bio**

**ABSAEL ANTELO** comes from a family of educators who have devoted effort, time, and resources to help people to get a quality education. During his college years, he attended several American universities. He obtained his B.A. in Education and the M. A. in School Administration from New Mexico Highlands University. His doctoral work was done at the University of Utah in Salt Lake City. He obtained his Ph.D. in Educational Administration from this university. During his professional life, Dr. Antelo has held several leadership positions. He has worked as President of the Bolivian Private University and of the Franz Tamayo University. He was also a School Superintendent for the Educational Corporation Eagles' School. Dr. Antelo worked also as a Vice President for Academic Affairs and Director of Graduate Studies respectively at North Eastern University. Dr. Antelo worked also as a Professor of the University of Texas at San Antonio and currently he is an Associate Professor of the University of the Incarnate Word. He also serves as a Coordinator of the Higher Education Concentration of the Ph.D. Program in Education in the Dreeben School of Education of the University of the Incarnate Word in San Antonio, Texas. Dr. Antelo has written and published several articles and a book on leadership, intercultural learning, followership, and school administration. His research interests are the study of followership within an organizational leadership process, intercultural learning, and the effects of explicit name of numbers in preschool students' number sense development. In addition, Dr. Antelo is interested in developing new approaches for engaging doctoral students in their learning process.

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