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Perspective on geographical education in the 21st century

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Abstract

The 2012 Congress of the International Geographical Union and Symposium of the Commission on Geography Education (IGU-CGE) attracted geographical educators from many countries. For the past five decades the IGU-CGE has served as a main international venue for geography education. The current paper uses the frequency of scientific presentations as empirical evidence to categorize major topics at the 2012 IGU-CGE. The assumption is that the major directions in geography education internationally are reflected in the topics represented by participants to the congress and symposia. The evidence suggests that traditional interests of geography educators continue to prevail in the categories such as pedagogy and teacher preparation. Interest in the use of geospatial technologies is on the increase, as are the topics of spatial thinking and sustainable development. The United Nation's attention to sustainable development and the general engagement of geographers in the topic is reflected in the increased attention to sustainability. Geography as a discipline and geography education in practice display deep roots in its human-environment traditions, which include sustainability.

Keywords: Trends in Geography Education, International Geography Education, Sustainable Development

1. Introduction

Teaching geography is one of the oldest of the academic disciplines to be included in a liberal or general education. It was perhaps due to the close proximity of geography and essential life skills that brought geography to the forefront of practical intellectual information and skills. In early times the common person needed to be knowledgeable regarding the seasons of the year, the response of vegetation and other biota to temperature regimes, and the general tempo of life. Many of the applied aspects of survival were closely associated with environmental conditions by virtue of the interaction between people and the environment. Survival was dependent upon knowing place based geography, that rich knowledge of the locale, its water, soil, resources, and opportunities as well as being curious as well as cautious about the groups of people that occupied adjacent territories. With time the place based nature of geographic knowledge expanded to include more distant places. The nature of geography as a discipline and its structure became much more inclusive of people and the global environment. Among those

changes was the increased accommodation that the discipline had for using crosscutting information from other subjects in the humanities, social, and physical sciences. From the earliest times, geography has been viewed as essential knowledge for the general citizenry as well as for the members of academy.

In this paper I will focus on developments in contemporary geography education internationally. I will do this by completing a critical analysis of the major topics in geographical education during the 2012 Congress of the International Geographical Union. The IGU Congress provides geographic education with a sampling of the discipline's international stature in the school curriculum and teacher preparation institutions. In this review, I will first reflect on the teaching of geography internationally through the prism of the 2012 Pre-Congress Symposium of the Commission on Geographical Education in Freiburg, Germany. I will follow that analysis with a review of the 2012 IGU Congress Sessions in Cologne, Germany, including the sessions organized by the European Association of Geographers (EUROGEO). While not as thorough as a country by country survey of the status of geography education, the combined topics and presentations among the three venues in 2012 does provide a sampling of international geography education from among bellwether activities sponsored by the discipline.

2. The International Geographical Union: Commission on Geographical Education

The Commission on Geographical Education (CGE) is the longest standing, formally recognized group within the International Geographical Union (IGU). Initially chartered as the Committee on the Teaching of Geography in 1952 at the Washington, DC IGU, the Commission has consistently served two purposes. First, it has been the international voice and advocate for geographical education when curriculum decisions are being made within countries. This is particularly true for the technologically and economically emerging countries. There are other organizations that have also had a strong influence on geography education. For example, the Geographical Association of the United Kingdom has had major influences on the British Commonwealth countries as curricula were revised and renewed since the 1950s as part of post independence geography education initiatives. UNESCO has also played a significant role in the development and structure of geography education internationally through the publication of resource materials devoted to the subject (Graves, 1982; UNESCO, 1965).

The CGE IGU also has several publications that lay the groundwork and suggest the means to address the issues that confront geography teaching in the international context. They provide a widely agreed upon rationale for teaching the subject using criteria that meet CGE-IGU specifications. The first and best known is the International Charter on Geographical Education (Haubrich, 1992). The UNESCO publications and the charter and other Commission position publications have become the trademark, guiding principles of the CGE-IGU and UNESCO for the past four decades (Gerber, 2003; Gerber and Lidstone, 1996; UNESCO, 2005, 1965). The publications have been influential in the development of rigorous human and physical geographic content in international education. They have enabled geography educators to influence public policies regarding education within their countries by aligning the national curriculum as closely as practical with the recommendations of the CGE-IGU and other international positions on geographical education.

The IGU CGE Symposium in Freiburg, Germany, in 2012 continued the traditions of representing geography education internationally. The eclectic nature of the discipline with it wide range of topics and issues addressed in geographic research was reflected in the geography education topics presented in the symposium. The fundamental recognition that geography education implies two converging interests – geography and education – that are represented by distinct theories, methodologies, and philosophical underpinnings makes it a challenging, but enticing field of endeavor. Geography educators arrive at the research and teaching focus from both ends of

the spectrum – the academic geography terminus and the classroom teaching terminus. This convergence is similar to merging the ideas of Guido of Pisa and Maria Montessori in order to focus on the capacity of students to learn and apply geography. The 2012 Symposium covered a substantial range of topics representing geography education. I have categorized the papers and posters presentations at the Symposium in Freiburg by topic in Table 1 (Falk et al., 2012).

Category	Number of presentations	Category	Number of presentations
Pedagogy	13	Uses of Geography	2
Teacher Preparation	11	Natural Hazards	2
Technology in Teaching	8	Geography Curriculum	2
Knowledge and Assessment	8	Philosophy of Teaching	1
Sustainability and Geography	3	Textbooks	1
Primary and Secondary School	3	Standards in Geography	1
World and Regional View	2	Total number categorized	57

Table 1. Categorization of Papers and Posters presented at 2012 CGE-IGU Symposium.
Source: Falk et al., 2012.

There are several different ways to group and categorize the topics from the Freiburg Symposium, but my intent is to use the categorizations to reflect the major points of interest among the international community. My criteria were derived from the key terms and words used in the titles of the presentations. When there was doubt, I referred to the printed short paper for further details regarding the appropriate category.

There was a preponderance of interest in pedagogy and teacher preparation among the papers and posters in 2012. This reflects the traditional interests of many professionals in the field, since we are mainly from teacher education programs where we promote the best classroom practices in order to present the content of geography. Both pedagogy and teacher education reflect the merging of geographic education with content, methods, and materials used in teaching. While basic and applied research tends to focus directly on content or education, their integration in the classroom is a main concern as we consider the types of geographic education that is best for students in the 21st century context.

There was also considerable attention to technology in teaching at the Freiburg Symposium. This was demonstrated by papers that focused on using Geographic Information Systems (GIS) in the classroom for mapping and analysis of patterns and distributions of geographic data on the surface of Earth. Other technology included the use of smart phones for geographic study outside the classroom. In an era when many students have access to smart phones, it is important we begin studying the educational advantages of Geographic Positioning and data retrieval capabilities of smart phones and their utility and usage in geographic study. Professional geographers are using such devices in data collection and retrieval, so they should be usable in geography education at the school as well as the university level. The challenge is to make the transition from using the smart phone as a purely communications device to a geographic device. While cellular phones of nearly every vintage are useful for communications and social networking, the discussion in Freiburg opened the possibility for geographical networking. It represents a new research and classroom application challenge for geography education. There is perhaps no greater academic or skills application for smart phones than in geography education.

A fourth category, knowledge and

assessment, was a continuing interest among the presenters of papers in Freiburg. The two topics, while often presented separately, were categorized together. The rationale was that since if knowledge is a measurable goal, then it takes a clearly defined means of assessing the knowledge to measure it. There is a strong academic and research tradition within this category among geography educators and it ranges from national assessments to classroom based assessment.

What would I conclude to summarize the state of geographic education derived from the 2012 Symposium proceedings? Two observations are apparent in terms of what researchers and practitioners reported. First we are remaining engaged in research and practice in pedagogy and teacher education. The rationale for this disciplinary posture is perhaps the belief that sound geography education begins with quality, rigorous experiences in the classroom. The belief is that the best way to accomplish that quality and rigor is by certificating teachers with adequate content knowledge and models of classroom practice to enable them to attain success. Second, geography educators must pursue the most recent technologies that are applicable to the teaching of the discipline both inside and out of the classroom. Our students arrive in our classes as digital natives in the 21st century. They have never known a time without the Internet, WiFi, blogging, and texting. These technologies are becoming as common as printed maps, atlases, and field studies were for prior generations of geography students. The papers at the Symposium reported that teachers and researchers are taking steps to both use digital devices in their teaching as well as their activities to research the effect on learning, active engagement with the content of geography, and the uses of social networking to gain information about the world.

One important component in geography education was not well represented in the Freiburg Symposium? That topic was represented by just two papers focusing on curriculum development designs and research. In most subjects, including geography, it is the curriculum that is the fabric holding together the knowledge, methods, and skills represented by the discipline as a coherent process. A geography curriculum widely accepted and clearly researched for its beneficial effects on learners is an important means to prevent disciplinary slippage in the overall national, state, or local curriculum during times of revamping of educational priorities. This type of revamping occurs with regularity in many countries, and the best protection for the curricular "territory" of geography is a well researched, clearly articulated and outcomes demonstrated significance derived from the inclusion of the curriculum in the schooling process (Lambert, 2011).

3. The Commission on Geography Education at the Cologne IGU Congress in 2012

The papers presentations at the International Geographical Congress in Cologne were vetted by committees of international geographers prior to their acceptance. The vetting process was necessary due to the large number of papers submitted to the Congress and the plan by the organizers to feature particular foci for the research and practice in geography education. Therefore, the initial categorization in the call for submissions was set to be consistent with the overall theme of the IGU Congress, *Down to Earth*, and is used here. The categorization of papers is presented in Table 2 (International Geographical Union, 2012).

The presentations on geography education at the Cologne Congress represented increased attention during recent years to sustainable development. What is the explanation for this large number of papers? While the CGE had proposed topics such as education for economic development in prior decades, it was the United Nations Decade of Education for Sustainable Development (UNDESD) that extended the opportunity for geography education to collaborate in the international program (UNESCO, 2005). There is a consensus among geographers that sustainable development is well within the disciplinary interests and responsibilities of geography. The affirmation of CGE's commitment to sustainable development has been affirmed by Professor Carol Harden, an

eminent American geographer.

"To not embrace sustainability, to ignore the future, or, even worse, to intentionally support unsustainable practices connotes unenlightenment, greed, poor management, and bad manners. How could a thinking person or caring society choose to intentionally reduce the resources and opportunities available for future generations?" (Hardin, 2009).

Category	Number of presentations	Category	Number of presentations
Education for Sustainable Development & Global Learning	11	State of the Art in Geography Education	8
Examples of Best Practice in Geography Education and Teacher Preparation	11	Higher Education	4
Spatial Thinking	8	Innovative Learning – New & Traditional Media	4
Standards, Concepts and Experience	8	Preconceptions in Geography and Geography Education	4
		Total number of presentations	58

Table 2. Categorization of Papers presented at 2012 IGU Congress – Cologne.
Source: International Geographical Union, 2012.

The introduction of sustainable development as an agenda for CGE began in earnest in 2006. The UNESCO sponsorship of a decade (2005-2014) dedicated to education for sustainable development provided a larger goal, but the immediate initiative was carried out by active members of the CGE, namely Professor Hartwig Haubrich, Dr. Sibylle Reinfried, and Dr. Yvonne Schleicher. Their initiative for geography and sustainability resulted in the publication of the *Lucerne Declaration on Geographical Education for Sustainable Development* (Haubrich, Reinfried and Schleicher, 2007), which has become a key policy statement for geography educators globally.

The attention among the presentations at the Cologne Congress to sustainability was significant. The combined topics of sustainability and global learning were represented by eleven presentations, with eight of those focusing specifically on sustainable development. The attention to sustainable development came from different countries and regions, signifying it international importance as a topic. It was apparent that the UNESCO (UNDESD) program provided considerable attention to the topic, that the CGE-IGU *Lucerne Declaration* on the role of geography education, and the human-environment traditions of the discipline all contributed to the preponderance of presentations.

The Cologne CGE presentations also reaffirmed the concern for pedagogy and best practices in teaching geography. Eleven presentations were dedicated to the topic. The range of presentation subtopics was large within best practices and the availability of empirical data was abundant. The strength of the pedagogy and best practices topic was the inclusion of evidence, since reports of research and practice were generally based on having field tested in the classroom a specific teaching methodology or geography materials. Both the Freiburg Symposium and the Cologne Congress provided evidence that pedagogy and best practices, instructional methodology, teaching techniques and other topics that fall within this larger field of research interest are among the most common concerns of geographic educators. Again, the reason for this interest rests with its proximity to the work that may geography educators do in their professional responsibilities – the preparation of teachers who will enter teaching equipped with the best possible means to assure their students successful study and engagement with geography.

Three topics received nearly equal attention during the Cologne CGE presentations. They were spatial thinking (8 papers), standards, concepts and experience (8 papers), and state of the art in geography education (8 papers). Spatial thinking is a relatively recent focus of geography education, but not of the discipline of geography. Geography is often referred to as the spatial science (Geographical Sciences Committee, 2006). The reorientation to the use of the term spatial has been in response to gaining prestige for geography as a discipline that focuses on one of the important ways of thinking about and acting within Earth's space. In some countries geography's traditional role as a core subject has been infringed upon as a result of greater focus on other disciplines, such as mathematics and language. In other countries the multidisciplinary approach to the social studies subsumed geography and made it less visible in as a subject within the curriculum.

The attention to the spatial attributes of geography gives it two advantages. First, the focus on spatial analysis implies a high level, rigorous academic endeavor. Geographic Information Science (GIS) has provided the opportunity for not only geographers, but for many other disciplines to engage in the rigor of using spatial data and producing specialized maps addressing particular issues. The maps made the spatial analysis of those data possible for non-geographers. Second, brain research over the past several decades has identified areas of the brain that process maps, photograph, and chart information – all spatial in their form – as opposed to other areas of the brain that process other types of stimuli, such as reading narratives. The basic research that is necessary to determine the type of spatial information that is most readily learned and the ways it can be presented is of considerable interest within geography education. The brain research is in its infancy in geography, more advanced in psychology, and quite advanced in cognitive sciences. It is an area of research with considerable importance to geography, but that geographers are not well equipped to pursue without either specialized training or collaboration with colleagues in disciplines that are engaged in researching spatial thinking.

Standards, concepts and experience as a topic was represented by eight papers in the Cologne CGE. The question of national standards for the teaching of geography and design of the geography curriculum takes on two points of view. The first is the philosophical discussion regarding the effect of standards on the creative, innovative role of teachers. There is a belief that standards stifle good classroom teaching and instructional design. The second point of view is that standards clearly define the content and skills that all students should know and be able to produce at carefully considered benchmarks in their schooling. Standards assist in the development and implementation of national curricula, in national assessments of student proficiency in geography, and in making the transition from school to school for migratory or transient students less problematic. As the number of countries adopting content and skills standards increases, the necessity for detailed research on their effects – both positive and negative – should be a component of geography education investigations.

Eight papers were presented about status of geography education in different countries. They join a long standing tradition for reporting on the changing conditions and stability for geography as a school subject. The studies tend to focus on single countries, but sometimes present a comparison among several countries. Those research studies provide a discourse on the opportunities and challenges that the discipline faces in national education contexts. While the methodology and data vary, the cumulative results of such research reveal global or regional patterns that are worth noting. The continued interest in status studies suggests that a global study of the status of geography should be completed under the auspices of the CGE-IGU during the next several years.

4. EUROGEO at the IGU in Cologne

The presentations in the sessions sponsored by the European Association of Geographers were focused large on Europe or Europe in the World. Technology in the teaching of geography was the research topic presented most frequently (Table 3). It represented the major interest in and

developments with the uses of technology in European classrooms. While the use of technology in teaching geography was well represented during the CGE Symposium in Freiburg, technology was the focus of just 4 presentations at the CGE in Cologne, while EUROGEO included 7 presentations. The possible explanation may be the greater commitment within the European regions for technology in geography, such as Geographic Information Systems and Geographic Positioning Systems, within the formal curriculum. In the United States in general, geospatial technology used by geography students is normally part of the informal curriculum rather than the formal curriculum, but that is gradually changing. Individual teachers and possibly students who are inclined to introduce geospatial technologies in the classroom and through field work do so at their own initiative rather than through an educational policy or curriculum expectation. It appears from the presentations at the 2012 IGU that Europe has considerable activity in using technology to teach geography, or at least promoting the use of technology. That said, it is also necessary to note the large proportion of European colleagues who participated in the IGU Symposium and Congress and may over represent the overall use of geospatial technology.

Category	Number of presentations	Category	Number of presentations
Technology and Teaching Geography	7	Sustainability	2
World and International Views	3	Total presentations	12

Table 3. Categorization of Papers presented at EUROGEO Sessions 2012 IGU Congress – Cologne. Source: Dohnert, 2012.

5. Conclusions

This paper is based on the premise that the presentations on geography education during the 2012 CGE-IGU were representative of the leading topics in geographical education research and practices internationally. Granted, not all countries or larger regions of the world were represented at CGE-IGU events. However, those attending do represent a global sample of current activity in geography education. The 2012 CGE-IGU was more heavily attended by colleagues from Europe due to geographical proximity. However, there was representation from North America and Asia. South America and Africa were less well represented. Therefore, the data must be viewed in terms of its bias towards Europe, Asia, and North America. This bias is not equally proportional, and Europe led both in the number of papers and participation in the Congress sessions associated with CGE.

The IGU Congress and Symposium of the Commission on Geography Education have significance for geographical education internationally. They bring geography educators together to reflect on the diverse array of topics that we include in our discipline? I believe this occurs for two reasons. The first is the belief among geography educators that a practical knowledge of Earth, its environment and people are essential to becoming a responsible citizen at the local place where one resides. International understanding and the ability to responsibly consider the points of view of other people from different countries and groups are also tangible benefits from knowledge of geography. As an IGU and a Commission the larger goals are the exchange of scientific knowledge, increasing interactivity among geographers, and enhancing international understanding among people. Each of these outcomes is important to 21st century citizenship.

Secondly, the Commission through its activities is the advocate for furthering the

international foundations of the discipline through our flagship documents. I suggest that geography educators internationally ground their research and teaching within the recommendations of the *International Charter on Geography Education*, the United Nation's Charter on Human Rights and a long term inquiry into the ways in which we address sustainability issues and the outcomes. This will require continued attention to the scientific contributions of the discipline as well as the reservoir of humanistic and arts traditions that geography brings to education. For example, the landscape paintings by Giovanni Costa of the Tuscan and Umbrian countryside are deeply geographic and filled with the emotion that draws viewers to appreciate and learn geography from encounters with the arts. Geography education as reflected by the 2012 Symposium and Congress topics in Freiburg and Cologne embraced the theoretical, applied and eclectic attributes of the discipline, while realizing the important preparation of students for the practical encounters with geography in the 21st century.

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