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## A Report Card on the Status of Geographic Education

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UNIVERSITY HONORS PROGRAM

SENIOR PROJECT - APPROVAL

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PROJECT TITLE: A Report + Card on the Status  
of Geographic Education

I have reviewed this completed senior honors thesis with this student and certify that it is a project commensurate with honors level undergraduate research in this field.

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Comments (Optional):

**A Report Card on the Status of Geographic Education in the United States**

**Sylvia D. Arriaga**

**July 29, 2004**

**Senior Honors Project**

The United States scored eighth of nine countries in a geographic literacy poll in 2002, just above Mexico. The National Geographic-Roper Global Geographic Literacy Survey questioned over 3000 young adults ages 18-24 in nine nations: Canada, France, Germany, Sweden, Italy, Great Britain, Mexico, Japan, and the United States. The study revealed an overall lack of knowledge about important geographic areas and key current events. For example, 83 percent of young Americans could not locate Afghanistan on a map. Only half of those surveyed could identify New York on a U.S. map. Important population centers like China and India also proved difficult for many young Americans to recognize. Such a survey should be important to educators because as John Fahey, president of the National Geographic Society pointed out, “ If our young people can’t find places on a map and lack awareness of current events, how can they understand the cultural, economic, and natural resource issues that confront us?” Americans, however, are not alone in their lack of geographic knowledge. Three in ten young adults worldwide could not locate the Pacific Ocean, and not one of the nine countries received a mark of excellence. The importance of the discipline of geography is overlooked worldwide. The United States has recognized its deficits in the area of geography and taken initiatives to encourage geographic awareness among its citizens. These initiatives have greatly affected the way geography is taught in American schools. Geographic education in the U.S. has undergone huge changes in the last quarter of the twentieth century and continues to remain an important issue in education. (Trivedi, 2002)

Implementation of the National Geography Standards, the creation of state geographic alliances, integration of technology in the classroom, and a new Advanced Placement Human Geography course are all initiatives intended to improve geographic

awareness in America's youth. The new No Child Left Behind Act put forth by President George W. Bush has also influenced the teaching of geography in public schools. The federal government is scrutinizing the qualifications of teachers as well as the curriculum they teach. One positive outcome of the No Child Left Behind legislation is that geography has been identified as core academic subject, meaning that teachers who teach geography must be highly qualified in that area. A history of the discipline of geography will explain the changes the discipline has been through in the last century.

### **History of Geography**

In the early American school system, geography was often lumped together with other disciplines like history and government to create a broad area of what is now called "social studies" (Rosenberg, 1997). Geography was lost in this sea of social studies for several decades. American schools did not see geography as an essential school subject like reading, writing, or arithmetic. Unlike many European countries where geography was and is a "foundation subject" and compulsory from grades 1-9 ("Geography Education across the Atlantic," Kerski, 2003), American students were exposed to geography only through the lens of "social studies." Important geographic skills and concepts were lost in this geographic pedagogy because teachers were often unqualified and untrained in the subject. Students were leaving school without proper geographic awareness of the world around them or geographic skills that enable them to be prosperous and contributing citizens of the world. The lack of geographic knowledge of American students was brought to the nation's attention through the 1989 Gallup poll of America's young people (Rosenberg, 1997). The results of the geographic literacy survey were embarrassing for the U.S. Educators and geographers realized that schools

were slighting geography. “If geography is not in the curriculum, it is not tested- and that says to the students that it is not valued,” said Roger Downs, one of the authors of *Geography for Life*, the book of national geographic standards (Trivedi, 2002). The survey set the wheels in motion for a change in geographic education.

### **Standards**

During the 1990s, the standards movement of educational reform was popular in the U.S. The country wanted stronger accountability of teachers and schools. Reformers saw educational standards as a way to “help teachers to decide what to teach, at what grades to teach it, and what to expect of students as a result. They give students rigorous but realistic benchmarks for which to strive” (Geography for Life, 1994). The discipline of geography was not to be left out of this movement. Geography in particular has always had to define itself as a discipline and explain its relevance and importance. Implementing national standards of geography would lend credence to the discipline and help secure its place in school curriculums. The National Geography Standards were a part of the *Goals 2000: Educate America Act* that established six goals for American students. The standards are a part of goal three that require competency of students in grades 4, 8, and 12 in subject areas including geography (Wood, 1992). This meant that geography would now be a testable subject by the National Assessment of Educational Progress (NAEP).

In 1994, the United States National Geography Standards were published. The eighteen standards are titled *Geography for Life* and divide the subject of geography into six essential elements. Each of the eighteen standards corresponds to a certain element. The six essential elements outline what a geographically informed person should know

and understand: the world in spatial terms, places and regions, physical systems, human systems, environment and society, and the uses of geography (Geography for Life, 1994). The standards are a part of an effort by the government and private institutions like National Geographic Society to “ensure that geography in America will be ‘well-taught and well-learned’” (Geography for Life). The standards have been met with both optimism and criticism, and several barriers have affected their implementation in school curriculum.

Although the standards have been generally well accepted, their incorporation by state curriculums has been slow and uneven (Bednarz, 2003). Many geographers and educators have been reluctant to adopt the eighteen standards over the five tried and true themes of geography established in 1984 by the Joint Committee on Geographic Education. The five themes laid out in Guidelines for Geographic Education, location, place, human-environment interaction, movement, and region, helped the growth of geography in the 1980s. Implementation of the standards has also been impeded by the lack of educational materials that supports their implementation into school curriculums (Bednarz, 2003). Textbook suppliers have been slow in providing essential classroom materials for students and teachers that incorporate the new geography standards. In states where the standards are tied to state-mandated curricula, implementing the standards is much easier because they are often tied to standardized tests.

Despite these barriers, the standards remain an important method for improving geographic education. The National Geography Standards presented in *Geography for Life* form the foundation of many geographic education reforms. The notions of adding a new AP Human Geography course and implementing GIS in high schools are built upon

principles laid out in *Geography for Life*. Educational reformers are increasingly looking to teachers as the agents of change that will implement the National Geography Standards and other reforms in geography.

### **State Geographic Alliances**

The fifty state geographic alliances are affiliated with the Geographic Education Program of the National Geographic Society. The *Nation at Risk* report published by the National Commission on Excellence in Education in 1984 revealed serious inadequacies in the American school system, including deficits in geographic education.

A small number of state geographic alliances, including Tennessee's, were established as pilot alliances in 1986 by Gilbert Grosvenor, Chairman of the Board of the National Geographic Society, to help address these deficiencies (Butefish, 2000). Within a decade, all fifty states had established state geographic alliances with similar goals to improve geographic education in each state.

The mission of the Tennessee Geographic Alliance is to “assist in creation of an informed citizenry by improving the stature of Geography in the curriculum and empowering teachers and students at all levels with knowledge and performance capabilities that enhance lifelong learning” (Butefish, 2000). The Tennessee Geographic Alliance, like most state alliances, provides training to teachers of all levels through summer workshops, institutes, and in-service training. The Alliance also provides teachers with free materials to use in their classroom to promote geographic awareness. When established in 1986, the Tennessee Geographic Alliance decided to emphasize the “geographic perspective” in its educational endeavors, which focuses on the essential elements of geography and not place name memorization.



The Alliances promotes and supports Geography Awareness Week, state GeoFests, and other events and resources to help teachers excel in teaching geography. Membership in many of the alliances is free, but some state alliances charge a small due. The alliances receive funding from the National Geographic Society Education Foundation and usually receive additional funds from grants, individuals, corporations, state departments of education, and a state university. A 2002 study to assess the impact of state geographic alliances on student performance by the National Geographic Society in 2002 found that “overall, students of teachers who have been involved in the NGS Alliance program have statistically significantly higher levels of achievement when compared with students of similar demographic backgrounds from a NAEP sample” (Englert and Barley, p.1). The alliances have been successful in their mission to improve geographic education for American students. The state alliances play a key role in training inservice teachers in new technologies such as Geographic Information Systems, addressing the geography content standards, and providing teaching material to enhance geographic education.

### **Geographic Technology in the Classroom**

Technology has grown exponentially in the past decade and as society becomes more technology-based, schools struggle to keep up. Increasingly, schools are introducing students to new hardware and software at earlier ages. In the area of geography, one particular innovation has influenced how geographic skills are taught in the high school classroom: Geographic Information Systems (GIS).

A Geographic Information System as defined by the National Science Foundation is “a computer-based system for capture, storage, retrieval, analysis and display of spatial

(locationally-defined) data.” GIS allow geographic analysis previously done by hand on paper maps to be performed on a computer, often adding an interactive element to the map. Implementing GIS is tied not only to the national geography content standards, but also technology and science standards. GIS can be used as an analysis tool in geography classrooms as well as science classrooms. Educators focus on the power and potential of GIS because it is part of a growing educational trend of “inquiry-based” instruction that utilizes hands-on learning and research (Kerski, 2003). GIS allows students to formulate their own conclusions about data they have mapped. Being able to ask and answer geographic questions by acquiring, organizing, and analyzing geographic information is key to raising geographic awareness of students (NCGE.org), and GIS helps educators teach these geographic skills in a more relevant and real world way. Many educators see GIS as a means to implement educational reform, but despite the interest in GIS, the technology has been adopted by less than two percent of American high schools (Kerski, 2003).

One problem that has prevented implementing GIS in high school classrooms is money. GIS software is expensive and so is the hardware required to run it. Despite the expense, some high schools do own copies of software like ArcView, Idirisi, and MapInfo GIS. However, they total less than five percent of American high schools, and only about half of the teachers who have access to GIS software use it (Kerski, 2003). Geography teachers are not the primary users of GIS. Science teachers more frequently use the technology than geography teachers by a margin of two to one (Kerski, 2003). Joseph Kerski’s research on the implementation and effectiveness of GIS in high schools found several reasons for the slow growth of GIS in school curriculums.

On a survey of teachers with access to GIS software, many teachers named “lack of time to develop GIS-based lessons, little support for training and implementation, and the perceived complexity of software” as the main challenges in using GIS in their classrooms (Kerski, 2003). Teacher training in GIS is an important part of expanding use of the technology. Most teachers receive GIS training during inservice experiences because preservice teachers often do not learn GIS in their teacher-training program. At the University of Tennessee, the teacher education program requires a major or minor to teach in a particular subject area. Therefore, preservice geography teachers often complete a GIS course as part of their major. However, teachers in other disciplines such as science, business, and history will usually not be exposed to the technology during their teacher education program. Learning to use and implement GIS in a short one or two-day inservice workshop is usually not very effective for practicing teachers.

Even when teachers have been trained in GIS through their teacher education program or through inservice opportunities, they still must overcome other challenges to use GIS in their classroom. Many teachers lack the time to develop their own GIS-based lesson plans, and “most GIS-based lessons are not widely available or easily used, inhibiting the speed of GIS diffusion throughout secondary education” (Kerski, 2003, p. 131). One textbook, *Mapping Our World*, was published in 2002 to offer educators lessons using GIS, and this new publication may increase the use of GIS by secondary teachers in the future.

Some educators have questioned the effectiveness of using GIS to teach geographic analysis skills. When compared to students using paper maps and other printed materials, Kerski found that students who used GIS on the same lessons

“demonstrated a better ability to synthesize, identify, and describe reasons for human and physical patterns” (2003, p.133). Tests of the lessons administered to students revealed that students using GIS scored significantly higher in four out of nine tests than students using traditional print materials. In particular, GIS appears to help average and below average students improve their geographic content knowledge and skills more than above-average students on end of course testing. Using GIS did not significantly increase students’ geographic skills as measured by the national geography standards more than traditional methods.

Kerski suggests that it is not technologic factors that are preventing implementation of GIS in secondary schools but rather factors such as teacher training in GIS, teacher’s philosophy of teaching, and other social, educational, and even political factors. Kerski recognizes that the teachers who are implementing GIS in their classrooms are innovators, but they need the support of school administration, other teachers, curriculum materials, and additional training to succeed and continue to teach the technology. The benefits to students of using GIS in conjunction with the National Geography Standards are significant and have great potential for increasing the status of geographic education in American schools: “The methods that GIS uses to understand the world make GIS attractive to those advocating educational reform...for GIS to be effective, schools must build an environment of curiosity about investigating the world” (Kerski, 2003, p. 135).

### **Advanced Placement Geography**

Geographic educators have long awaited the addition of an Advanced Placement (AP) Geography test and course to the list of College Board exams administered for high

school students to potentially earn college credit in certain subject areas. Many geographers pointed to an advanced placement course in geography as a means to secure the reestablishment of geography in American high schools (Sharma, 2002). An AP Geography course is a way to introduce high ability students to geography, hopefully sparking the interest of college bound students with college credit in the subject and wetting their appetite for more geography courses in the future. The process of getting an advanced placement course added by the College Board took about five years, and many questions had to be answered and problems conquered before the AP exam debuted in 2000.

In 1995, the College Board hosted a meeting of geographers and educators to discuss developing an AP geography exam. Many questions were raised about such a course. One of the first questions that arose from discussions among geographers was about the content of the geography exam: would it be physical, world regional, or human? After gathering opinions and information through surveys and forums at national meeting, the Board decided that the AP course would be an introduction to human geography. The College Board had other questions: would there be a strong enough demand to sustain a geography exam? Would colleges and universities accept the AP credit (Sharma, 2002)? After carefully assessing these concerns, the College Board agreed to commission an Advanced Placement Exam in Human Geography.

The addition of AP Human Geography is an “unparalleled opportunity” (Sharma, 2002) for the discipline of geography, but several challenges face the new course before it is accepted unconditionally. High school curriculums are very tight as teachers actually compete to get students to enroll in their AP course. Introducing a new AP geography

course in an already tight curriculum will inevitably draw students away from other AP courses, and this siphoning can create problems within schools. The qualifications of teachers who will teach the new course are likely to be much lower than their counterparts in other subject areas such as history, math, and science who have degrees or advanced degrees in the content area (Sharma, 2002). Providing AP teachers with training and supplemental material is important to the success of the advanced geography course and the teachers who teach them. If the Advanced Placement Human Geography course is indeed successful, it will mean those students will be entering universities with more geographic skills and knowledge, and the universities will have to adjust their introductory geography courses accordingly. It is now the college and university's responsibility to "nurture the interest and enthusiasm of students who have arrived with high expectations of continuing their study of geography" (Sharma, 2002, p. 43). The "golden opportunity" of the AP Human geography exam must not be wasted, and the students produced from these courses can become the greatest advocates of improving geographic education.

## **Conclusion**

Content standards, state alliances, new technology innovations, and the addition of an AP Human Geography course in high schools have been a part of the "renaissance of geographic education" in the last few decades. The negative attention from surveys such as the Roper Poll of 2002 can actually positively affect the status of geographic education and induce educational reform. For example, the heavily publicized Roper Geographic Literacy Poll of 1988 had similar results as the 2002 poll and changes were implemented to increase geographic awareness. Despite the fact that the United States

ranked eight of nine countries on the survey, reform and change has been successful as measured by the poll. The 2002 Roper Geographic Survey showed the number of young Americans who have taken a geography course has risen from 30 percent to 55 percent since the 1988 geographic survey, and those students who had taken a geography course fared better on the survey (Trivedi, 2002). Geography has found its place in high school curriculum after several decades of work by educators, geographers, legislators, and private corporations like the National Geographic Society. The “renaissance of geographic education” needs to continue, and implementing the national geography standards, new technologies like GIS, and using the AP Human Geography test will ensure that geography stays an important part of the secondary school curriculum.

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