

Status of Geography Education in the United States

A Report for the National Geographic Society Education Foundation

Prepared by:
Carmen P. Brysch
2013-14 Grosvenor Scholar
National Geographic Society
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*“As the world grows smaller and more interdependent daily,
our country’s future absolutely depends on our ability to
see the connections between ourselves and our global neighbors.”*

Gilbert M. Grosvenor



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Executive Summary

This report was prepared to examine the nature of geography as a school subject in the K-12 United States education system. Major goals for this project included:

- maintaining a level of continuity between past reports completed by Geographic Education National Implementation Project (GENIP), National Geographic Education Foundation interns and personnel, and the Grosvenor Center for Geographic Education;
- determining how geography as a school subject fares with respect to curriculum standards, course requirements, assessment, and teacher licensure requirements;
- offering suggestions where more research is needed on the nature of specific components in this report.

Effective teaching and learning of geography, as a school subject, is critical to ensure that the U.S. has a globally informed citizenry equipped with the necessary geography concepts, knowledge, and skills needed in order to make well-informed decisions. While geography standards and concepts are represented in all 50 state's social studies standards, only 10 states require a geography course for graduation at the high school level, and 17 states require a geography course at the middle school level (Grosvenor Center 2013). Efforts have been undertaken to remedy the issue of acquiring consistent funding for geography education initiatives and projects, however, geography remains a named core academic subject with no dedicated federal funding stream since the passage of No Child Left Behind in 2001. While assessment in geography is deficient, efforts by the National Assessment of Educational Progress: Geography, continued monitoring of state social studies assessments, and the Advanced Placement Human Geography exam are critical to determine progress. The launch of *Geography for Life: National Geography Standards, Second Edition* (Heffron and Downs 2012) and the National Science Foundation funded *Road Map for 21st Geography Education* also provide a unique opportunity for continuing efforts in advancing geography education in the United States.

I. Introduction

Many issues inhibit the proper teaching and learning of geography, including but not limited to the school geography/university geography divide, lack of funding, a decade-plus emphasis on literacy and science, technology, engineering, and math (STEM) initiatives in the U.S., the complicated nature of pre-service social studies and geography teacher preparation, geography's image, eclectic nature, and the general misunderstanding of the subject by the public, lack of research on effective geography teaching and learning, issues pertaining to alignment and assessment, geography's relationship with the social studies, and the relatively small geography education research and practice community. Nevertheless, numerous support structures are in place to deal with these issues and include but are not limited to the following:

- **Geographic Education National Implementation Project (GENIP):** a consortium of geography organizations committed to improving geography education in the United States. Member organizations include the Association of American Geographers (AAG), the National Council for Geographic Education (NCGE), the National Geographic Society (NGS), and the American Geographical Society (AGS).
- **National Geographic Society's Network of Alliances for Geographic Education:** a partnership between K-12 schools and teachers and university geography and education professors, the principal goal of the Alliance Network has been to increase teacher knowledge of geography, and improve pedagogy through carefully planned and executed summer institutes and workshops while also disseminating a multitude of resources (Brysch 2014).

- **Teaching Geography is Fundamental Act:** first introduced in 2005 and most recently in the 113th Congress in 2013, National Geographic Society and educators have joined with legislators in both the House of Representatives and the Senate in an effort to provide legislation that will fund efforts to increase the quality and quantity of geography education in the United States. TGIF continues to garner bipartisan support and as of May 15, 2014, 21 co-sponsors have signed on in the Senate and 69 co-sponsors have signed on in the House (see speakupforgeography.org).
- ***A Road Map for 21st Century Geography Education:*** outlines a decade long plan for increasing research capacity and challenging geography educators to carry out significant research agendas to improve teaching and learning. See individual reports on research (Bednarz, Heffron, and Huynh 2013), assessment (Edelson, Shavelson, and Wertheim 2013), and instructional materials and professional development (Schell, Roth, and Mohan 2013).

Research Methods

The information used to generate this report is based on public K-12 and university school systems and was obtained from various sources, including, numerous government agency websites, state department of education websites, and personal communication with different individuals associated with these organizations, such as state social studies and curriculum specialists, the Council of State Social Studies Specialists, and Alliance Coordinators from the Alliance Network. Previous GENIP reports, National Geographic Education Foundation Reports, and The Gilbert M. Grosvenor Center for Geographic Education reports were perused in an attempt to obtain source information in an effort to maintain continuity between reports.

Personnel, research assistants, and graduate students from the Grosvenor Center at Texas State

University, partnering with this researcher, also provided valuable information pertaining to the state geography standards and revisions cycles, and geography course requirements that appear in this report.

Previous reports provide a strong background that provides the opportunity to track trends on a longitudinal basis. It is important to note, however, that the education system, at all levels, is in constant flux and standards and assessment requirements, for example, are prone to change at any given point in time; different priorities often impact state assessments, standards, and graduation requirements, especially for social studies, and for geography, in particular. Also, issues that arise during the data collection, reporting, and changes of definition process may impact the results that are presented in the report.

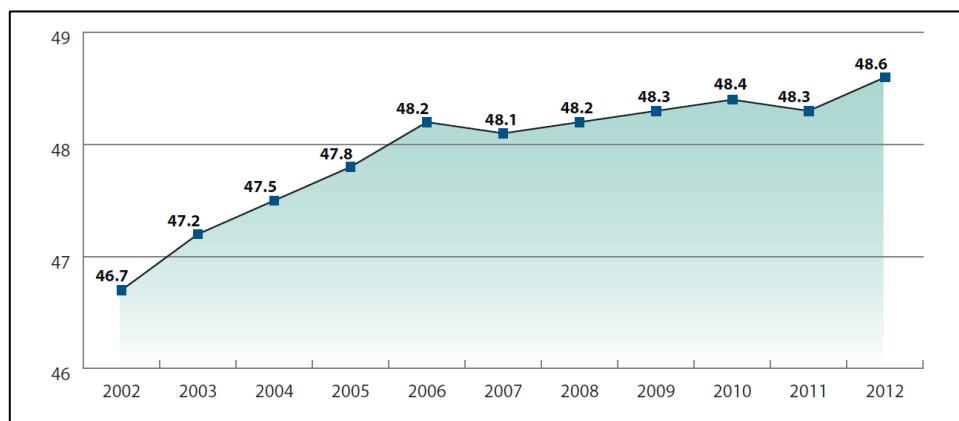


Figure 1. Public school enrollment (in millions) fall 2002 through fall 2012 (Source: MDR 2013, p. 4).

II. Student Enrollment

Nearly 50 million students enrolled in the U.S. education system must be prepared to deal with issues regarding sustainability, globalization, and changes in technology (National Research Council 2006; National Research Council 2010). An increasing demand also exists for individuals who are qualified to serve in industries related to geospatial technology (Boston

Consulting Group, Inc. 2012; Oxera 2013). Student enrollment trends at the K-12 level continue to rise (Figure 1) and numbers of students enrolled in the K-12 public education system (Figure2/Appendix A) are depicted below in an attempt to demonstrate overall trends in enrollment and provide a backdrop for the number of students who could be better served by an increase in the number of geography course requirements at all levels.

Enrollment numbers for the largest 25 school districts, plus Washington D.C., are also presented (Table1, Figure3), and these high enrollment school districts, consist of a large percent of public school enrollment in the United States. Research has begun into the geography concepts, knowledge, and skills, as identified in the social studies, as well as science curriculum, that are taught in these large school districts in an attempt to focus our efforts and reach a significant number of students with focused geography education projects and initiatives.

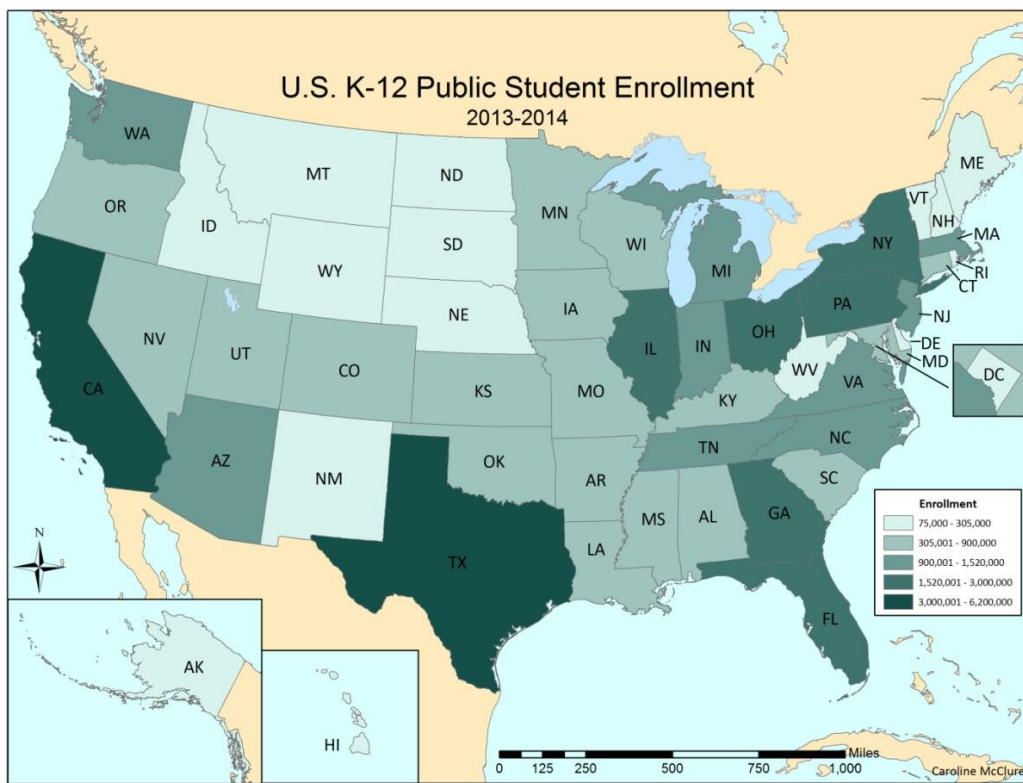


Figure 2. K-12 public school enrollment data 2012-2013 (Source: MDR 2013, p. 20).

Table 1. Twenty-six largest school districts in the U.S. by student enrollment (2013-2014) (Source: Proximity 2013).		
School District	State	Enrollment
1. New York City Public Schools	NY	993,903
2. Los Angeles Unified School District	CA	655,455
3. Chicago Public Schools	IL	402,655
4. Miami-Dade County Public Schools	FL	354,236
5. Clark County School District	NV	311,238
6. Broward County Public Schools	FL	260,234
7. Houston Independent School District	TX	202,842
8. Hillsborough County Public Schools	FL	200,287
9. Hawaii Public Schools	HI	183,251
10. Orange County Public Schools	FL	183,021
11. Fairfax County Public Schools	VA	180,616
12. Palm Beach County School District	FL	179,494
13. Gwinnett Country Public Schools	GA	164,600
14. Dallas Independent School District	TX	158,570
15. Wake County Schools	NC	149,336
16. Montgomery County Public Schools	MD	148,780
17. Charlotte-Mecklenburg Schools	NC	141,061
18. School District of Philadelphia	PA	137,020
19. San Diego Unified School District	CA	130,271
20. Duval County Public Schools	FL	125,662
21. Prince Georges County Public Schools	MD	123,571
22. Memphis City Schools	TN	113,571
23. Cypress-Fairbanks Independent School District	TX	109,449
24. Cobb County School District	GA	107,681
25. Baltimore County Public Schools	MD	106,927
26. Washington D.C.		45,557
Total		5,869,288

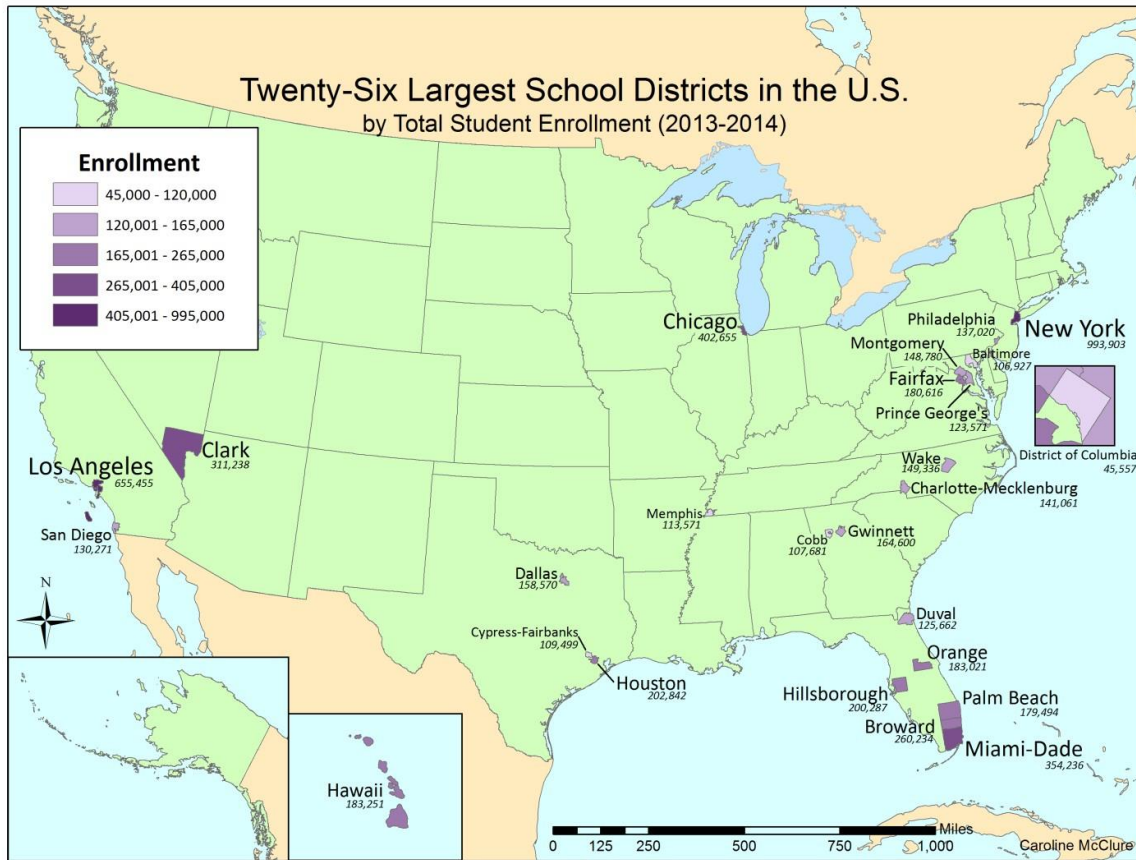


Figure 3. Twenty-six largest school districts in the U.S. by student enrollment (2013-2014) (Source: Proximity 2013).

State of Geography Standards and Course Requirements

This portion of the research project continues The Gilbert M. Grosvenor Center for Geographic Education’s investigation into state middle school and high school (6th through 12th grades) geography standards and course requirements (Grosvenor Center 2013). Grosvenor Center personnel also investigated geography and social studies revision cycles for all 50 states plus D.C. As previously noted, while the continuation of this research provides beginning steps in longitudinal data analysis, direct comparisons between years and reports can be difficult at times as definitions change and different personnel report and handle the data. The findings, however, are consistent with previous reports in that on average about 15 states require

geography at the middle school level and about 8 require geography at the high school level (Grosvenor Center 2010, Grosvenor Center 2012, Grosvenor Center 2013). Geography standards and strands are also represented in all 50 state's social studies or geography specific standards.

Course Requirements

It was determined that states either: 1) require a stand-alone geography course, 2) do not require a stand-alone geography course, or, 3) allow local school districts to decide on course requirements. The survey found that 17 states require a stand-alone geography course at the middle school level (five states have a combined geography and history course), 11 states do not have a required geography course at the middle school level, and 23 states are local control states, therefore, local school districts mandate course requirements (Grosvenor Center 2013) (Figure 4).

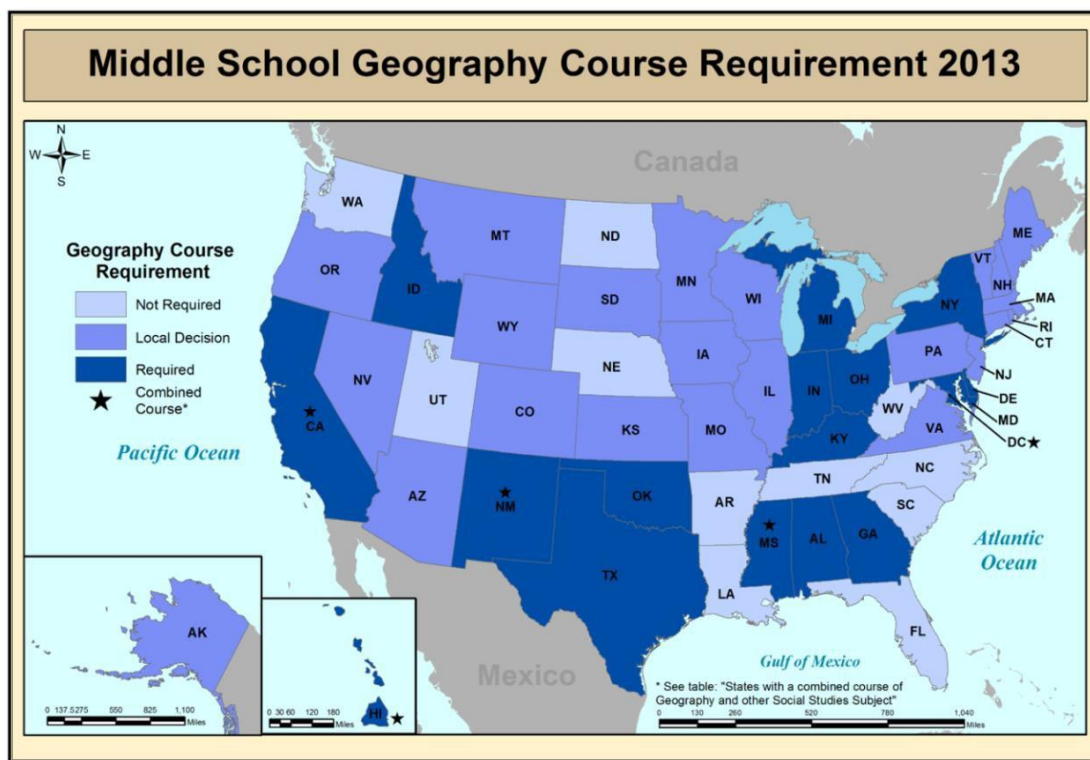


Figure 4. Middle school geography course requirements (Source: Grosvenor Center 2013).

At the high school level, 10 states require a stand-alone geography for graduation (seven are a combined history and geography course), 25 states do not require a geography course for graduation, and 16 states are local control states, therefore, local school districts mandate graduation requirements (Grosvenor Center 2013) (Figure 5).

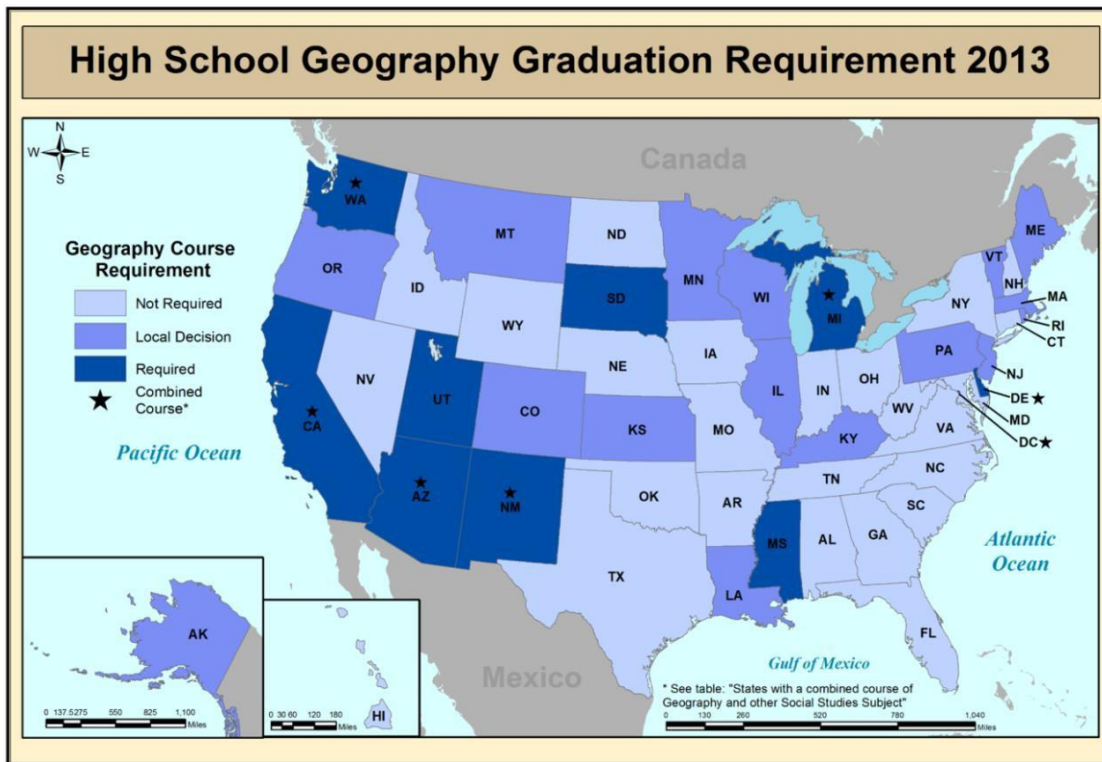


Figure 5. High school geography course requirements (Source: Grosvenor Center 2013).

Standards

Identifying what students should know and be able to do in geography are either represented as separate geography standards or geography strands as part of the social studies subject standards. At the middle school level, 41 states have geography strands within social studies standards, 5 states have separate geography standards, and the remaining states have both separate geography standards and geography strands within social studies standards (Figure 6).

At the high school level, 30 states have geography strands within social studies standards, 12 have separate geography standards, and 9 have both separate geography standards and geography strands within social studies standards (Figure 7). A survey of state social studies revision schedules was also conducted in an effort to allow geography education stakeholders an opportunity to be proactive in efforts to increase the representation of geographic knowledge, concepts, and skills throughout geography and social studies standards frameworks (Table 2).

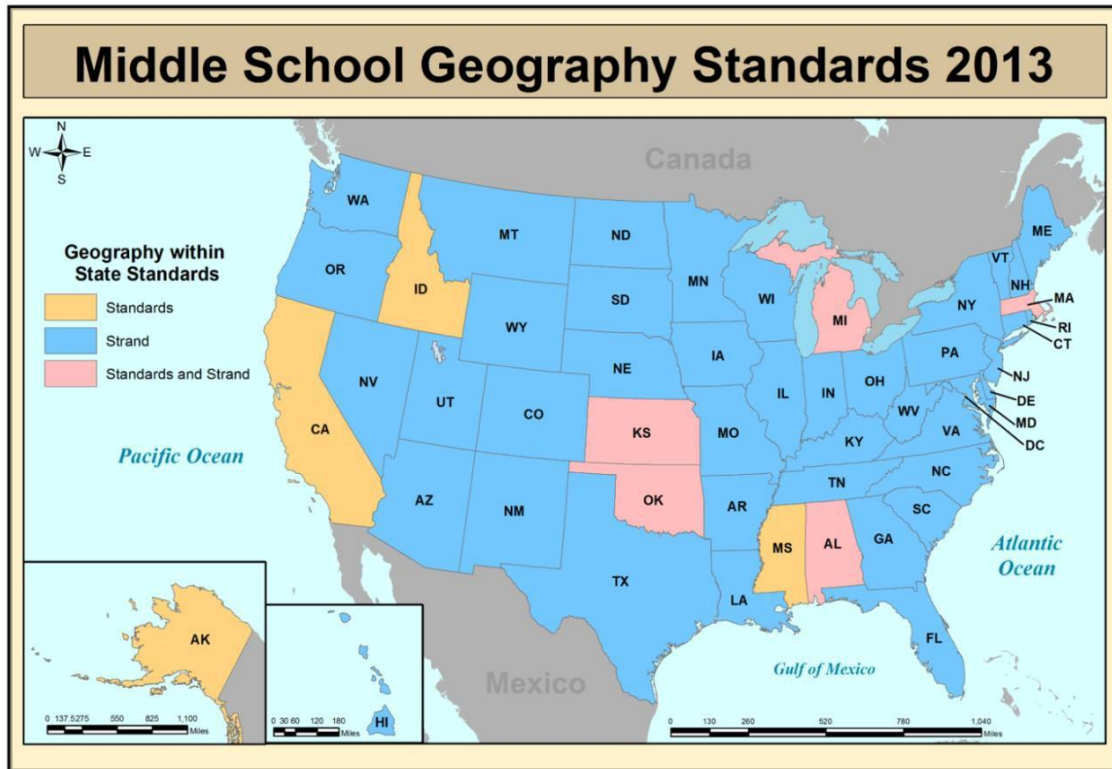


Figure 6. Presence of geography within middle school geography standards (Source: Grosvenor Center 2013).

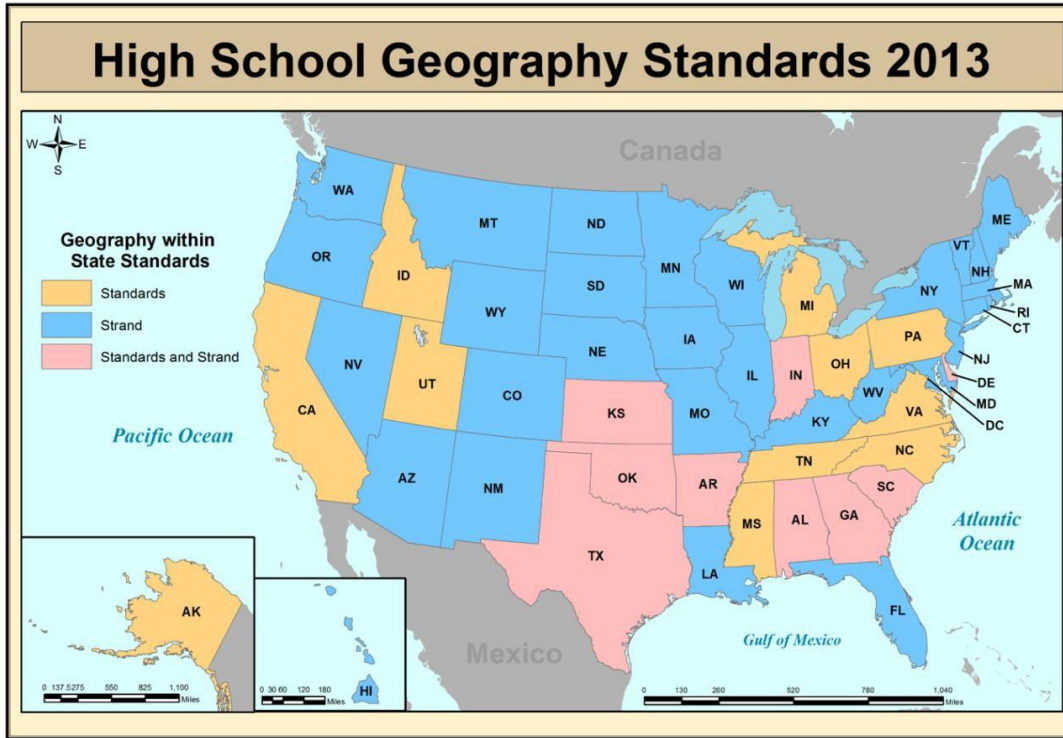


Figure 7. Presence of geography within high school geography standards (Source: Grosvenor Center 2013).

2013-2014	2015-2016	2017-2018	2019-2020	None Scheduled
Alabama Connecticut Georgia Indiana Iowa Kentucky Louisiana New Jersey New York North Dakota Utah Vermont Virginia Wyoming	Idaho Maine Mississippi Nevada New Hampshire South Dakota	Colorado Nebraska Oklahoma Oregon South Carolina Texas	Kansas Minnesota	Alaska Arizona Arkansas California Delaware District of Columbia Florida Hawaii Illinois Maryland Massachusetts Michigan Missouri Montana New Mexico North Carolina Ohio Pennsylvania Rhode Island Tennessee Washington West Virginia Wisconsin

State of Geography Teachers

Long-regarded as the “bête noire,” “geographic education faces serious shortcomings based on its failure to create and maintain strategies for effective pre-service teacher education” (Boehm, Brierley, and Sharma 1994). Therefore, many geography teachers enter the teaching profession with a significant lack of background knowledge in the subject (Boehm, Brierley, and Sharma 1994; Bednarz, Stoltman, and Lee 2004), are often certified with little to no previous coursework in geography (Schell, Roth, and Mohan 2013), and usually hold a social studies composite teaching certificate. Stoltman (1997, 139) furthers, “teachers with no training in geography [are unable to] engage students in the syntax of the discipline that is necessary to build [the] geographic perspective.”

Mandates and Minimum Requirements

Guidelines for teacher certification in geography are multi-faceted and stem from many levels including university requirements and state and federal mandates. Since the passage of the No Child Left Behind Act of 2001, mandates for highly qualified teachers (USDOE 2004) in their subject area require that teachers:

- Hold at least a Bachelor’s Degree and is certified, endorsed, or authorized to teach the subject, and has one of the following:
 - Major in the content/subject (or equivalent of 30 semester credit hours); or
 - Passed a rigorous state test in the content/subject; or
 - Completed a state approved High Objective Uniform State Standards of Evaluation (HOUSSE); or
 - Holds National Board Certification in the content/subject.

Individual states, also define standards and minimum requirements that pre-service teachers must achieve in order to be certified in specific subject areas and grade levels. Universities also

comply with state and federal requirements while also having their own individual requirements for certification in order for teachers to be approved for endorsement and certification exams.

- In order to be endorsed for certification, states often require:
 - Endorsement for certification.
 - Meet university requirements to take these exams—must be from approved teacher preparation programs.
 - Minimum requirements are met at the state level, federal level, and so on.

Taking these recommendations and mandates a step further, GENIP outlined a position statement for “highly qualified” geography teachers in order to ensure that teachers are best prepared to teach geography. GENIP recommends that:

- High school teachers should have successfully completed course work or the equivalent to a content major in geography (at least 30 credit hours).
- Middle school teachers should have successfully completed course work or the equivalent to a content minor in geography (at least 15 credit hours).
- Elementary school teachers should have completed course work or the equivalent of a minimum of three content courses (9 credits) introducing Earth’s physical and human systems.

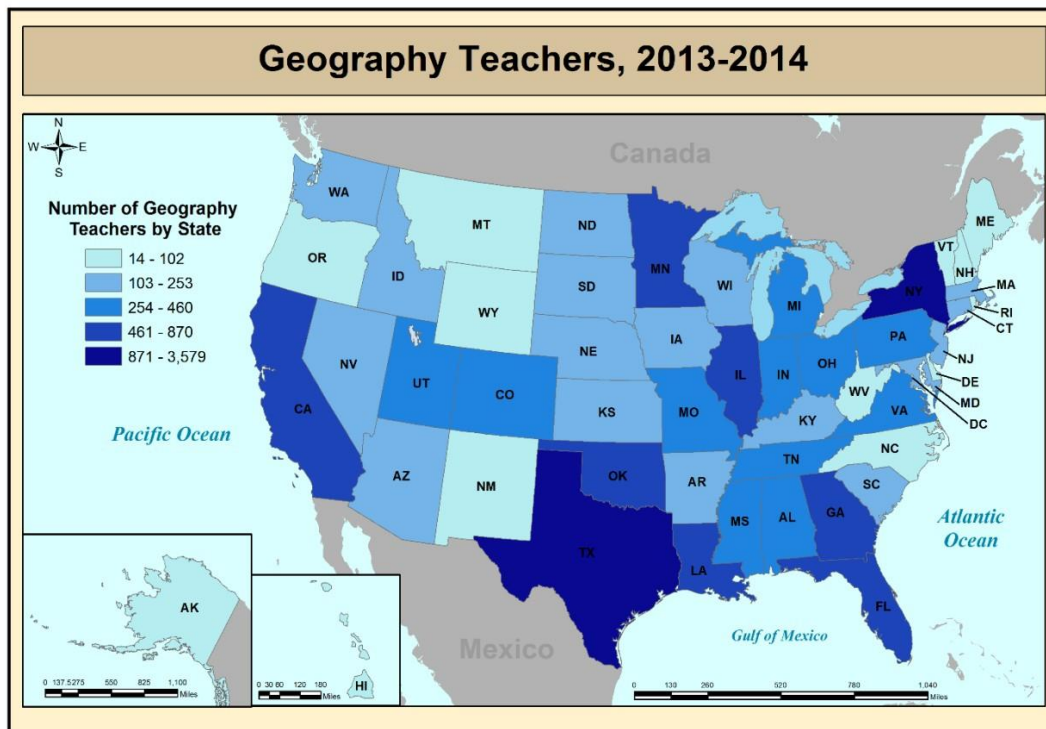


Figure 8. Geography teachers in the U.S., 2013-2014 (Source: MDR 2013).

Geography and Social Studies Teachers—The Numbers

Currently there are 18,567 geography teachers (Figure 8) and 145,568 social studies teachers (Figure 9) teaching in public, county, state, and private schools in the United States (see Appendix B). Top states for geography teachers include Texas (3,579), New York (3,189), and California (870). Top states for social studies teachers include Texas (19,195), California (9,432), and Florida (8,581). It is important to note that these states also have a significant student population, therefore, a need for more teachers. The only state with more geography teachers than social studies teachers, as reported in previous years, is Utah with 351 geography teachers and 123 social studies teachers. Only demographic information provided for these teachers was male/female ratios. Currently, about 10,000 males and 7,000 females teach geography, and 60,000 males and 80,000 females teach social studies.

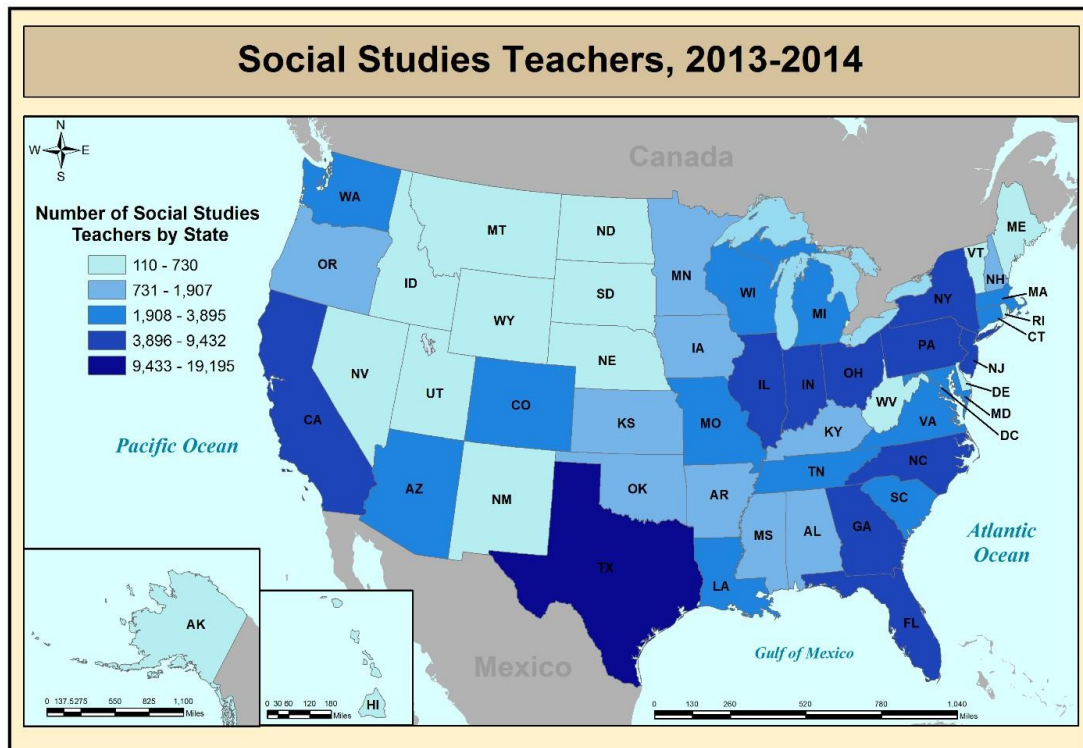


Figure 9. Social studies teachers in the U.S., 2013-2014 (Source: MDR 2013).

Analysis of University Teacher Training Program Requirements

This portion of the report examined teacher education requirements for social studies and geography teachers. First, the top ten teacher producing universities', as identified by the USDOE Office of Postsecondary Education (USDOE 2013a), course requirements were analyzed (Please see Appendix C for course requirements for social studies certification for these top ten universities). Next, university requirements for the top 16 social studies, social science, and geography teacher producing universities, as identified by the USDOE's Title II Report (USDOE 2013b), were analyzed (Please see Appendix D for course requirements for social studies certification for these sixteen universities). Using degree plan and program information obtained from these universities' 2012-2016 course catalogs and information on department websites, this research focused only on undergraduate certification programs at institutes of higher education (IHE) at the early childhood, elementary, middle school, and secondary levels. Both of these analyses provide an idea of the priority and variety of preparation routes for social studies and geography teachers in these universities.

Finally, selected model teacher preparation program outlines for early childhood and elementary, middle school, and high school certification are presented that geography education stakeholders should take note of when revising or determining the design of certification routes in geography.

Top Ten Teacher Producing Universities in the U.S.

The top ten traditional teacher producing universities in the U.S. are responsible for preparing approximately eleven and a half percent of the teachers in the U.S. in this program route (Table 3). These universities are located in the states of Arizona, New York, Michigan,

Illinois, Pennsylvania, and Texas; the top two universities offer online courses which contributes to their high enrollment numbers (USDOE 2013a).

Table 3. Top 10 traditional teacher producing universities in the U.S. (Source: USDOE 2013a).		
University	State	Total Enrollment
Grand Canyon University	Arizona	18,997
University of Phoenix	Arizona	13,509
CUNY Queens College	New York	7,665
Wayne State University	Michigan	5,172
Arizona State University—Mary Lou Fulton Teachers College	Arizona	5,062
Illinois State University	Illinois	5,004
Indiana University of Pennsylvania/Main	Pennsylvania	4,667
Prairie View A&M University	Texas	4,582
Kean University	New Jersey	4,535
University of Texas—El Paso	Texas	3,791

Early Childhood and Elementary Levels

A social studies specialization route to certification is not offered among these top ten universities at the early childhood (EC) level and most offer generalist routes to teacher certification. The breakdown below lists required social studies methods courses all taught in departments of education (curriculum and instruction courses) and required geography content courses. The total number of course requirements may be larger than ten because multiple program requirements qualified in multiple categories.

- Required Social Studies Methods Courses
 - Six require pre-service EC teachers to take at least one social studies methods course.
 - One university requires two social studies methods courses.
 - One university offers an optional social studies methods course.
 - Three universities have no required social studies methods course.
 - Two universities have no required social methods courses (but do require one world geography course).

- Required Geography Courses
 - One university requires one world geography content course.
 - Two universities require a geography course as part of the general education core curriculum.
 - The remaining universities do not require geography content courses for certification.

Not much difference was seen at the elementary level regarding social studies methods courses and a generalist route to certification continues to dominate. A slight increase in number of social studies methods courses were required; eight universities required at least one social studies methods course for graduation taught in departments of education. One university offers an optional social studies methods course to pre-service teachers and one university offers no social studies methods course but does require pre-service teachers to take one world geography course, therefore, limited geography content courses are required at the elementary level as well.

Middle and High School Levels

Middle and high school program plans were combined because many offer certification routes that cover middle school and high school (grades 6-12). Middle school (5-8) and high school only (8-12) certification routes, however, are also reported where grade level specific programs are offered. Therefore, the total number of degree plans described exceed ten when accounting for universities with multiple degree plans at different levels. On the other hand, one university did not offer a social studies specialization route at the middle or high school level and one university's degree plans varied by state (University of Phoenix) which made it difficult to determine any specific plan to social studies teacher certification. Further analysis revealed that five universities offer a social studies certification route for grades 6 through 12, three universities offer a social studies certification route (grades 8 through 12) but with a history major focus and limited to no coursework is required in geography. Three universities offer a

middle school level social studies specific route (grades 4 through 8) to certification and one university offers a combined social studies and English language arts composite route to certification (grades 4 through 8). Geography course requirements ranged from zero to a major equivalent in geography.

Only two of these eight universities do not require at least one social studies methods course for certification at the middle school or high school levels. One university requires two social studies methods courses, one university requires three social studies methods courses, one university requires one social studies methods course and one geography methods course, and one university requires two geography methods courses. Examples of methods courses are listed below:

- Methods Courses taught in Departments of Education
 - Instructional Teaching Methodologies: Language, Math, Science, Social Studies, and the Arts
 - Teaching Social Studies in Elementary School
 - Curriculum, Methods, and Assessment: Social Studies
 - Social Studies Methods in Middle School
 - Methods of Teaching Social Studies in Middle and High School
 - Teaching of Social Studies in Secondary Schools
 - Methods and Materials of Instruction: Secondary Social Studies
 - Social Studies Instruction and Assessments
 - Social Studies and Current Issues
 - Teaching the Interdisciplinary Knowledge of Social Studies
 - New Perspectives in Social Studies Education
- Methods Courses taught in Departments of Geography
 - Teaching Social Science in a Geographical Context
 - Teaching Geography/Earth Science
 - Teaching Geography Standards

Table 4. Top social studies, social science, and geography teacher producing universities in the U.S., listed alphabetically (Source: USDOE 2013).	
1.	Appalachian University (North Carolina)
2.	Arizona State University-Mary Lou Fulton Teachers College
3.	CUNY Queens College
4.	Dowling College (New York)
5.	Grand Canyon University (Arizona)
6.	Grand Valley State University (Michigan)
7.	Illinois State University
8.	Indiana University of Pennsylvania (Main)
9.	Kean University (New Jersey)
10.	Mississippi State University (Mississippi)
11.	National University (California)
12.	North Georgia College and State University
13.	Olivet Nazarene University (Mississippi)
14.	Prairie View A&M University (Texas)
15.	Southern Illinois University, Edwardsville
16.	Texas A&M University
17.	Texas State University
18.	University of Central Florida
19.	University of Houston-Downtown (Texas)
20.	University of Phoenix (Arizona)
21.	University of South Florida-Tampa
22.	University of Southern California
23.	University of Texas-El Paso
24.	University of Wisconsin, Milwaukee
25.	Wayne State University (Michigan)
26.	Western Michigan University

Top Sixteen Social Studies, Social Science, and Geography Teacher Producing Universities

Next, program curriculum requirements from the top sixteen social studies, social science, and geography teacher producing universities in the U.S. were analyzed (Table 4).

These universities are responsible for training a significant portion of the social studies teachers in the United States. It was presumed that these preparation programs would provide ideal

avenues to social studies certification and therefore, entail strong degree requirements ensuring properly trained social studies teachers ready to deal with K-12 social studies instruction.

Early Childhood and Elementary Levels

At the EC level, only two universities provide a route with a specific social studies emphasis; once again, most certification routes at this level lead to acquiring a generalist teaching degree. Eight of the universities, however, require pre-service teachers to take at least one social studies methods course, largely taught in education departments. A further breakdown of these methods course requirements is as follows:

- Six universities require only one social studies methods course (taught in education departments).
- One university requires one social studies methods course and two geography methods courses (these courses are geographic in nature but not taught in geography departments).
- One university requires one social studies methods course and offers an optional second social studies methods course.
- Seven universities do not require pre-service teachers to take a social studies methods course (but three require one geography content course).

At the elementary level, three universities offer a social studies specialization option for certification. The remaining universities offer generalist or interdisciplinary certification routes. Thirteen programs require pre-service teachers to take at least one social methods course (largely taught in education departments) and a breakdown of these requirements is as follows:

- Eleven universities require only one social studies methods course (taught in education departments).
- One university requires one social studies methods course and two geography methods courses (these courses are geographic in nature but not taught in geography departments).
- One university requires one social studies methods course and offers an optional second social studies methods course.
- Three universities do not require pre-service teachers to take a social studies methods course (but all three require one geography content course).

Middle and High School Levels

Reporting for middle and high school degree program plans were also combined here for analysis because a majority of universities offer plans for a social studies certification route for grades 6-12. Middle school (5-8) and high school only (8-12) certification routes, however, are also reported where grade level specific programs are offered. Therefore, the total number of degree plans described exceeds sixteen when accounting for universities with multiple degree plans at different levels. Again, however, some universities only offer middle school generalist degree plans which may or may not include any social studies or geography content or methods courses. Further breakdown of program offerings indicates nine universities have a social studies certification route for grades 6 through 12, four additional universities offer grades 6 through 12 social studies certification but are largely history content focused with limited to no geography content coursework, eight universities offer a combined social studies and another subject (or two subject areas) middle school level social studies certification route (grades 4 through 8), four universities offer a high school certification route (grades 8 through 12), however, two of these universities have strong geography course content requirements and two are history focused with limited to no geography content course requirements.

Regarding methods courses, thirteen of the sixteen university plans required at least one social studies methods course, largely taught, with the exception of a few universities who offered a geography methods course, in education departments. Further breakdown of methods

courses includes four universities that require two social studies methods courses, one university requires three social studies methods courses, and four universities require one geography methods course taught in a geography department. Only three universities did not require pre-service teachers to take a social studies methods course, however, one university did require one geography content course. Examples of methods courses are listed below:

- Methods Courses taught in Departments of Education
 - Social Studies in the Elementary School
 - Elementary and Middle School LA/SS
 - Social Studies in the Middle Grades
 - Field Work in the Middle School
 - Teaching High School Social Studies
 - Teaching Social Studies
 - Strategies for Social Studies Teachers
 - Methods of Teaching Social Studies
 - Introduction to the Teaching of the Social Studies

- Methods Courses taught in Departments of Geography
 - Fundamental Themes in Geography
 - Concepts and Strategies in Teaching Geography
 - Earth/Space for Elementary Teachers (Department of Chemistry and Geological Sciences)
 - Environment/Technology/Society for Teachers (Department of Chemistry and Geological Sciences)
 - Teaching of Geography
 - Concepts in Geographic Education
 - Perspectives on Geography

Findings

Methods Course Requirements

Because a large majority of these universities do not offer a social specialization route at the EC and/or elementary levels, it was beneficial to see that the overwhelming majority did require at least one social studies methods course. More social studies methods courses were required at the middle school and high school level; largely typical as certification routes begin to be more focused and subject specific at these levels. It should be noted, however, that a social studies route to certification at the middle school level was more prominent among the top ten universities compared to the top sixteen universities; surprisingly, the top sixteen universities comprised of more combination routes to social studies teacher certification (social studies certification combined with ELA, science, or even math). With the exception of a few programs, at least one social studies methods course was required among all 26 university's program plans, largely taught in departments of education. For the top 16 in particular, a geography methods course was often required for high school certification, and it was encouraging to see a larger scope of geography methods courses among these top sixteen universities. In some cases, however, no methods course was required but geography content course(s) were required. Multiple requirements, however, for social studies methods courses and combined social studies and geography methods courses indicates the importance of methods courses in combining pedagogic knowledge, content knowledge, and pedagogic content knowledge. Further analysis should include perusing course syllabi in order to obtain information on class topics especially general social studies methods courses. This will provide a glimpse into how much course time is dedicated to geography content and methods.

Geography Course Requirements

Another focus of the research was to determine the amount of geography content courses in these degree plans. Course requirements among these universities varied, especially in terms of social studies composite certification routes, and history continues to dominate social studies pre-service programs. Significant requirements for geography courses, or the option of a major or minor equivalent in geography for social studies certification, generally hinge on the strength of the geography department on university campuses (e.g., Texas State University). Often for a social studies composite route to certification, the number of geography courses (outside a major or minor in geography) was relatively low.

Overall, many teachers graduate from these social studies preparation programs with content coursework requirements ranging from a major equivalent in geography to as little as no required geography content courses. Generally only a three hour credit hours in geography is required; usually fulfilled by a world geography course. Typically required courses included world geography, cultural geography, physical geography, a techniques course requirement, and required and elective regional geography courses. These “geography” courses are also sometimes taught in departments other than geography; so, are the core components of geographic thinking and reasoning left out?

This analysis revealed that geography course (methods and content) requirements are often low which may result in a lack of understanding among teachers into the nature of geography and what best techniques can be put in place to teach the subject. The top ten universities are, without a doubt, preparing social studies teachers and degree plans revolved around majors in social studies, social science, or history. On the other hand, the top sixteen universities do provide some well-placed and effective models for strong geography specific

teacher preparation at the middle school and high school level but also maintain an emphasis on preparing social studies teachers with the goal of obtaining a social studies composite degree.

This makes the work of the Alliance Network so critical in terms of geography teachers having the opportunity to acquire, through in-service training and workshops, necessary pedagogic knowledge, content knowledge, and pedagogic knowledge to effectively teach geography concepts, knowledge, and skills.

Recommendations

Elementary Social studies teacher certification at the EC and elementary level should require at least three hours of geography content coursework and a social studies methods course. The option for additional geography content coursework should be provided for these teachers. Two model elementary programs with listed course requirements are provided below.

Grand Valley State University (Michigan), Elementary Education

- Option to choose social studies as a teaching major, and elementary certification as a teaching minor: http://www.gvsu.edu/cms3/assets/18FB597A-9B8F-F6AC-C940CACB896B0C17/teachable_majorsminors.pdf
- Required EDU Strategies for Social Studies Teachers
- Required Physical Geography and World Regional Geography
- Required additional 12 hours: Regional courses to include Geography of the U.S. and Canada, Geography of Michigan; choose one additional course from Geography of Russia and its Neighbors, Geography of Africa, Geography of Latin America, Geography of Globalization of Asia, Geography of Southwest Asia (The Middle East), Geography of Europe, or Farmers, Crops, and Our Challenging Agricultural World

Western Michigan University, Elementary Education

- Required World Geography Maps course
- Required EDU Social Studies Multicultural Education
- <http://www.wmich.edu/teaching/academics/elementary.html>;
<http://www.wmich.edu/education/advising/docs/graduation-plans/elem-ed.pdf>

Middle School A social studies specific specialization route at the middle school level would be the most beneficial for social studies or geography teachers. By and large, this route to certification will require social studies methods course(s) and potential exists for multiple

geography content courses that will provide adequate background knowledge in the subject. Two model middle school programs with listed course requirements are provided below.

Illinois State University

- Middle Level Teacher Ed.; Social Science Content Area, BS in Education
- Required World Geography (Global Studies) Course
- Required 6 other content course electives (can choose from geography)
- Required EDU Social Studies Methods Middle School
- <http://findyourmajor.illinoisstate.edu/downloads/PDF/4Year/middle.pdf>
- <http://illinoisstate.edu/majors/details.php?f=middle.xml&p=%2Fmajors%2Fcoe%2F>

Texas A&M University

- Middle Grades Language Arts and Social Studies (4-8), Required GEOG Earth System Sci (Intro. To Physical Geography), Economic Geography, Intro. To Human Geography, Global Village (Intro. To World Regional), Geography of the U.S., Geography of Texas, Cultural Geography, The Middle East
- Required GEO Concepts in Geographic Education
- http://tlac.tamu.edu/sites/tlac.tamu.edu/files/ms_ens_135_136_TCCNs.pdf

High School A major equivalent in geography while following a social studies composite degree route would be most effective at the high school level to ensure that teachers receive a sufficient amount of geography background knowledge. Methods course(s) taught in departments of geography would also be most helpful in ensuring the obtainment of pedagogical content knowledge. Two programs, both requiring a major equivalent in geography for social studies certification are offered and detailed below.

Southern Illinois, Edwardsville

- Secondary Education, B.A. or B.S., Teacher Certification 6-12 (Geography is one major area of study)-Major in Geography with minor Social Science teacher certification.
- Required: World Regions, Human Geography, Physical Geography, Cartography, GEOG quantitative techniques
- Required 18 credit hour geography electives choose from Population, Economic, Urban, Development, Cultural Landscape, Food, Political, Topics in Human,
- Required Physical Geography (2 courses required) choose from Physical Geology, Petrology, Geomorphology, Biogeography, Snow and Ice Processes, Soils, Hydrology, Groundwater Hydrology, Environmental Geochemistry, Floods, Animal Geography, Conservation Biogeography, Storm Chasing, Special Topics;
- Required Regional Geography (1 course required) choose from Europe, CIS, Africa, Asia, Latin America, North America, Special Topics;

- Required Techniques (1 course required) choose from Air Photo, GIS, Thematic Cartography, Interactive Cartography, Digital Elevation Modeling, Remote Sensing, Computer Mapping, Vector GIS, Raster GIS, Topics in Techniques;
- Required GEOG Teaching of Geography
- http://www.siu.edu/artsandsciences/geography/undergraduate_program.shtml

Texas State University

- Geography Major, History or political science minor (depending on minor the other becomes third field), B.S., (7-12):
- Required Cultural Geography, World Regional Geography, Physical Geography, Economic Geography, Geography of the U.S. and Canada, Natural Resource Use and Management or Environmental Management, Geography of Texas, Fundamental Themes in Geography (methods course)
- Required choose one regional course (3 hours) from: Europe, Latin America, North Africa/Middle East, South/Southeast Asia, China/Japan, Russian Realm
- Required one technique course (4 hours) from: Fundamentals of GIS, Maps and Mapmaking, Principles of Remote Sensing, Field Methods
- One additional geo course (3 hours)
- <http://www.geo.txstate.edu/degrees-programs/undergraduate>

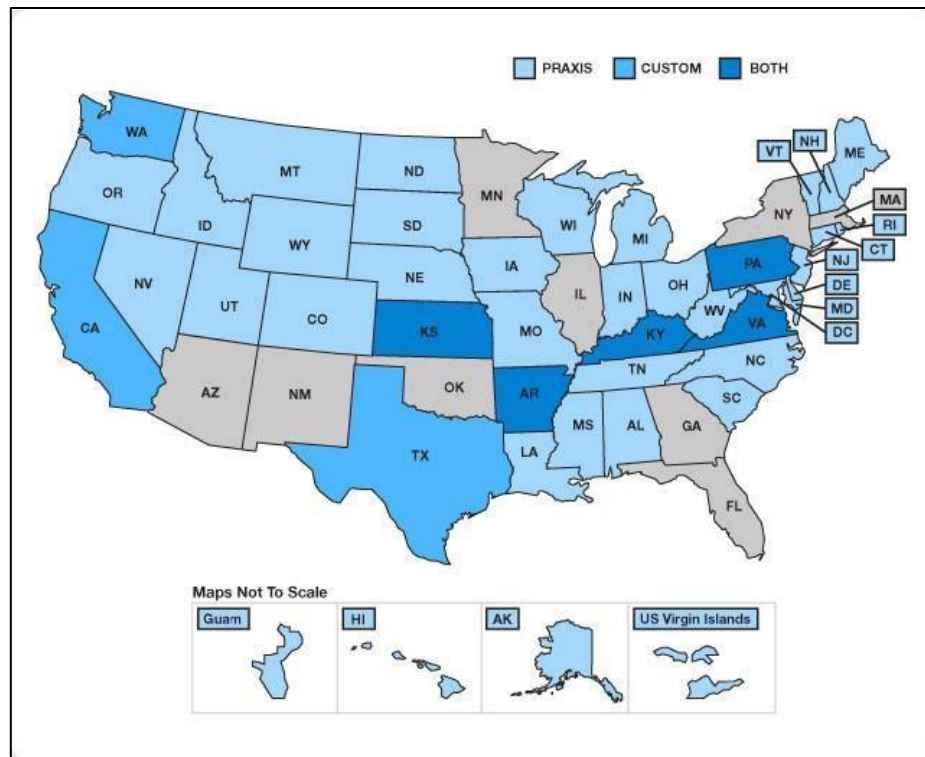


Figure 10. States administering teacher credentialing examinations by exam type (Source: ETS 2013a).

Teacher Licensure and Credentialing Examinations

Teacher licensure and credentialing examinations were examined to determine where these exams are given, at what grade and subject these exams are administered, and minimum passing requirements for certification. Currently, 41 states plus D.C. make use of Praxis licensure and certification exam series. Thirty-three states plus D.C. use Praxis exams, three states use Custom State Assessment exams, and five use both Custom and Praxis exams (Figure 10). Nine states do not use Praxis exams for educator licensure and certification; these include Arizona, Massachusetts, New Mexico, New York, Oklahoma, Minnesota, Illinois, Georgia, and Florida (ETS 2013a).

Minimum passing scores by exam, as well as the associated test code, are listed below for each state plus D.C. that require educators to take and pass Praxis exams (ETS 2013b). At the elementary level, 15 states require a minimum passing score for the Social Studies Subtest. Minimum scores on the Middle School Social Studies test are required by 29 states plus D.C., and only one state, Arkansas, requires a minimum passing score on the Middle School Multiple Subjects: Social Studies Subtest. At the secondary level, 10 states require a minimum passing score for both the Social Studies Content Knowledge and Geography exams. Maryland, Montana, and Tennessee require a minimum passing score for the Geography exam but do not require a Social Studies Content Knowledge exam. Twenty-nine states plus D.C. require a minimum passing score on the Social Studies Content Knowledge exam, but seventeen of those twenty-nine do not administer a Geography exam. Twenty-two states require no minimum passing score on the Geography or Social Studies Praxis exams.

- Elementary Education Multiple Subjects (5031): Social Studies Subtest (5034)
 - Minimum required by 15 states; average score: 155, highest score: (CT-166), lowest score: (AL-142)
- Middle School Social Studies (0089/5089)
 - Minimum required by 29 states plus D.C. ; average score: 153, highest score: (VT-165), lowest score: (TN-140)
- Middle School Multiple Subjects (5141): Social Studies Subtest (5142)
 - Minimum required by 1 state; AR - 142
- Social Sciences: Content Knowledge (0951)
 - Minimum required by 3 states; average score: 156, highest score: (AK-161), lowest score: (IA-147)
- Social Studies: Content and Interpretation (0086/5086)
 - Minimum required by 7 states; average score: 154, highest score: (LA-160), lowest score: (AR, KY, LA, MD, NH, SC, VT-153)
- Social Studies: Content Knowledge (0081/5081)
 - Minimum required by 25 states plus D.C. ; average score: 154, highest score: (CT, RI-162), lowest score: (SD-146)
- Geography (0921)
 - Minimum required by 13 states; average score: 151, highest score: (MD-168), lowest score: (IN, SD-138)

Elementary Education Multiple Subjects (5031):
Social Studies Subtest (5034)

<u>State</u>	<u>Minimum Score</u>	<u>State</u>	<u>Minimum Score</u>
AL	142	ME	155
AR	155	NH	155
CT	166	NJ	155
DE	155	RI	155
HI	155	UT	155
ID	155	VT	155
IN	155	WV	155
KY	155		

Middle School Social Studies (0089/5089)

<u>State</u>	<u>Minimum Score</u>	<u>State</u>	<u>Minimum Score</u>
AK	147	MO	154
AL	149	MS	149
AR	149	NC	149
CT	160	ND	152
DC	155	NH	153
DE	164	NJ	158
HI	152	NV	148
IA	152	RI	160
ID	149	SC	150
IN	156	SD	145
KS	155	TN	140
KY	149	VA	160
LA	149	VT	165
MD	154	WV	151
ME	153	WY	153

Middle School Multiple Subjects (5141):

Social Studies Subtest (5142)

<u>State</u>	<u>Minimum Score</u>
AR	142

Social Studies:

Content Knowledge (0081/5081)

<u>State</u>	<u>Minimum Score</u>	<u>State</u>	<u>Minimum Score</u>
AK	150	MS	150
AL	153	NC	158
CO	150	ND	153
CT	162	NJ	157
DC	155	NV	152
DE	157	PA	157
HI	154	RI	162
IA	155	SD	146
ID	150	UT	159
IN	156	VA	161
KS	158	WI	153
ME	157	WV	148
MO	152	WY	148

Social Sciences:
Content Knowledge (0951)

<u>State</u>	<u>Minimum Score</u>
AK	161
IA	147
PA	160

Social Studies:
Content and Interpretation (0086/5086)

<u>State</u>	<u>Minimum Score</u>
AR	153
KY	153
LA	160
MD	153
NH	153
SC	153
VT	153

Geography (0921)

<u>State</u>	<u>Minimum Score</u>
AK	151
AL	145
IA	160
ID	153
IN	138
MD	168
MT	155
ND	140
SD	138
TN	149
UT	159
WI	153
WY	157

* Pennsylvania:

Pennsylvania Grades 4-8 Core Assessment (5152)

Pennsylvania Grades 4-8 Subject Concentration: Social Studies (5157)

PA – 150

Assessment in Geography Education

This report examines assessments at the state and national levels, a critical issue in geography education as it is in every subject in the United States. Assessments examined include high school social studies comprehensive and End-of-Course (EOC) exams, the National Assessment of Educational Progress (NAEP): Geography, and the Advanced Placement Human Geography (APHG)

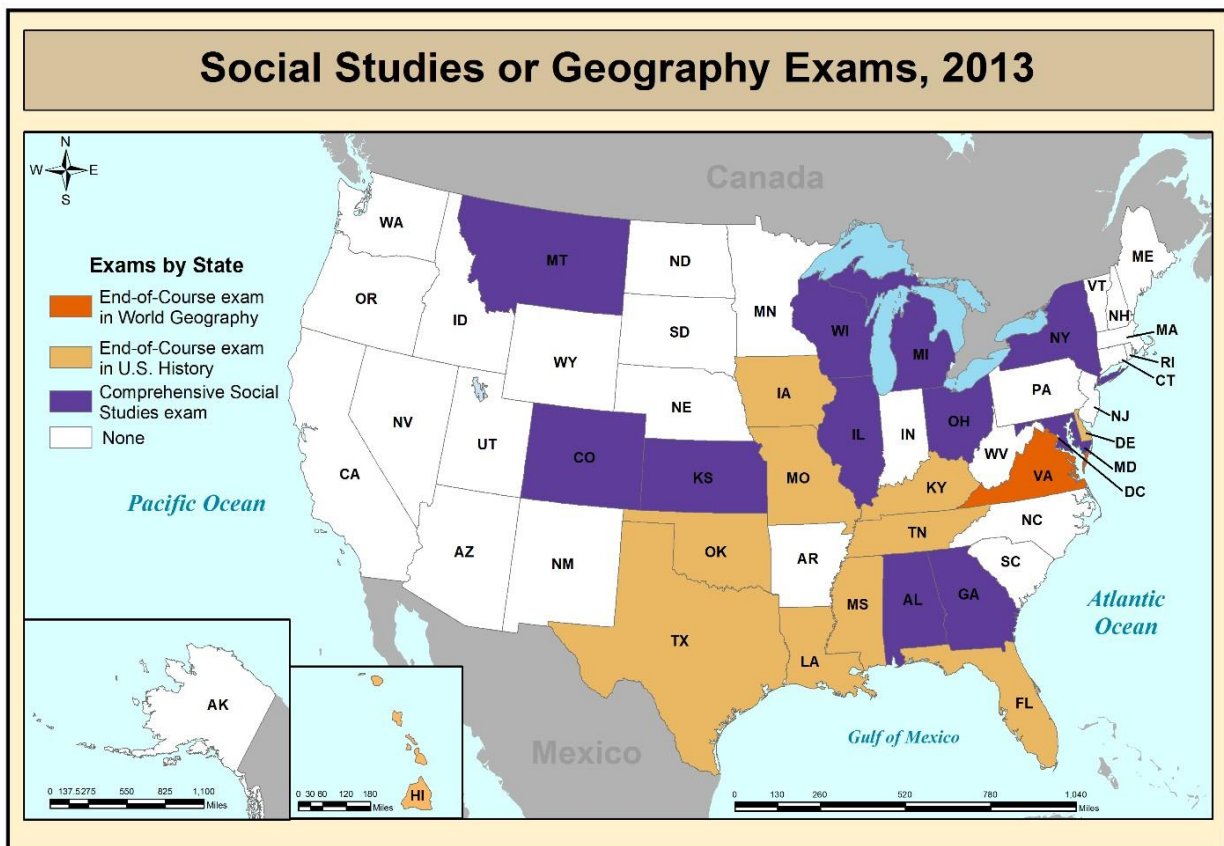


Figure 11. Social studies exams by state.

High School Social Studies Assessments

Comprehensive and EOC exams are the most commonly administered forms of assessment at the state level (Figure 11). Data on social studies assessments was gathered for all

50 states and information was acquired for states from the Center on Education Policy's *State High School Exit Exams: A Policy in Transition* (CEP 2012), as well as state's Department of Education webpages.

In total, 11 states administer social studies comprehensive exams at the high school level (bold indicates students must pass the exam to qualify for graduation):

- **Alabama**
- Colorado
- **Georgia**
- Illinois
- Kansas
- **Maryland**
- Michigan
- Montana
- **New York**
- **Ohio**
- Wisconsin

Administration of EOC exams continues to increase, however, a majority of states administer a U.S. History EOC and some states administer an EOC in U.S. Government. The only state that administers an EOC in geography is Virginia. In total, 12 states administer EOCs in U.S. History (bold indicates students must pass the exam to qualify for graduation):

- Delaware
- Florida
- Hawaii
- Iowa
- Kentucky
- **Louisiana**
- **Mississippi**
- Missouri
- **Oklahoma**
- Tennessee
- **Texas**
- **Virginia**

This assessment piece provides a snap-shot into state assessment in social studies and geography (Figure 11). Unfortunately, only one state, Virginia, has a subject specific EOC exam in geography. Further research, therefore, should examine the content of these exams, both of social studies comprehensive and U.S. History EOC exams, to determine how much and what kind of geography is represented. Of additional importance are other social studies benchmark exams as many states assess social studies at the elementary and middle school levels.

National Assessment of Educational Progress (NAEP): Geography

Last assessed in 2010 to 4th, 8th, and 12th grade students, and currently being administered in 2014 to 8th grade students with results to be released in 2015, the National Assessment of Educational Progress (NAEP): Geography aims to measure student's knowledge of geography in three content areas; space and place, environment and society, and spatial dynamics and connections (National Assessment Governing Board). While influenced by the *Guidelines for Geographic Education* (Joint Committee on Geographic Education 1984) and *Geography for Life: National Geography Standards* (GESP 1994), this framework is not directly aligned to either of these documents which should make the geographic education community cautious of interpreting major findings.

Results are presented on average and indicate student achievement on three different levels, 1) *basic*: partial mastery of knowledge and thinking skills, 2) *proficient*: solid academic performance and competency over challenging matter, and 3) *advanced*: performance that is equal to that expected of top students in other industrialized nations (NCES 2011, 2). The 2010 results indicate that students made progress at grade 4, but not at grades 8 and 12 (Figure 12), however, lowest-performing students' scores increased at all levels (NCES 2011). Additional findings include: male students continue to score higher than females, an increase occurred in the

percentages of fourth and eighth graders who scored above the basic level, only about one-fourth of students achieved the proficient level, students performing at the advanced level for grades 4 and 8 decreased, and the ethnic score gaps narrowed at grades 4 and 8. For a complete breakdown see a summary of the results for the Nation’s Report Card: Geography 2010 (NCES 2011) available at: <http://nces.ed.gov/nationsreportcard/pubs/main2010/2011467.aspx>. For all NAEP: Geography reports visit <http://nces.ed.gov/pubsearch/getpubcats.asp?sid=031#043>.

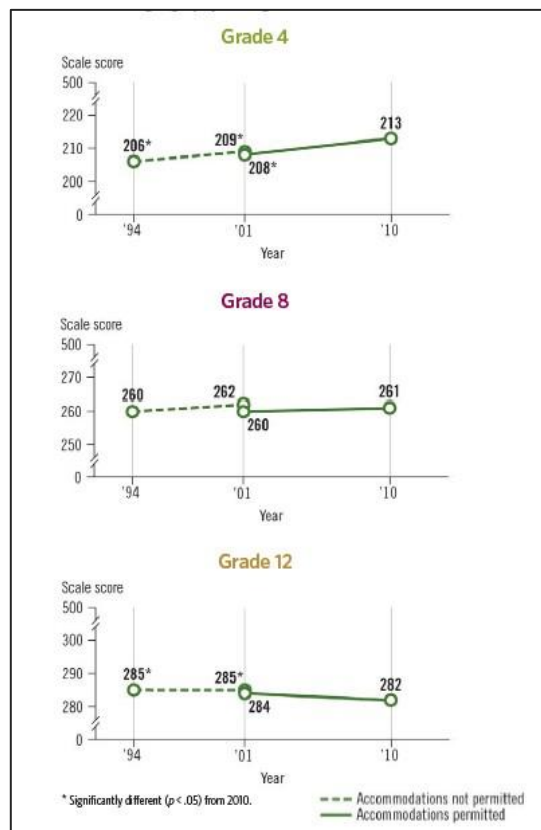


Figure 12. Trends in fourth, eighth, and twelfth average scores (Source: NCES 2011).

While assessment at the national level is a sign of progress, because of the low sample size for NAEP: Geography where approximately 510 schools and 7,000 students—Grade 4; 480 schools and 9,500 students—Grade 8; and 500 schools and 10,000 students—Grade 12 took the exam in 2010, and no location information is given, it is difficult to make any real connections to

states or schools to determine if any real progress in geography teaching and learning has occurred.

Advance Placement Human Geography (APHG)

The number of students taking the Advanced Placement Human Geography (APHG) exam and the number of schools participating has increased steadily since 2001 (Lanegran 2011) with well over 1,000 schools and 100,000 students participating (Figure 13). APHG enrollment remains relatively high (Figure 14), especially when compared to other AP exams, and test administration continues to rise. Turning our attention to test results reveals that APHG mean scores remain among the lowest of all administered exams and only 53 percent of test takers score a 3 or higher (College Board 2013). Mean scores, however, increased slightly from 2012 to 2013 (Figure 15) and mean scores also vary by state (Figure 16).

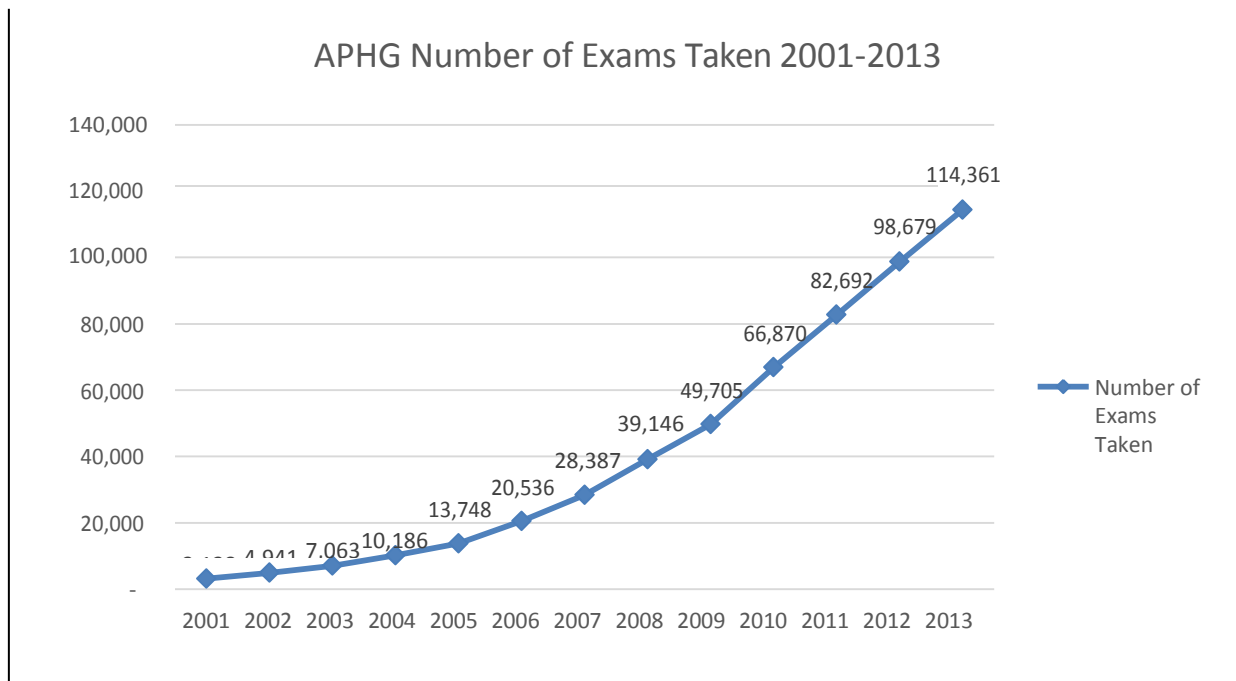


Figure 13. APHG numbers of exams taken: 2001-2013
(Source: College Board 2013; Crain 2012).

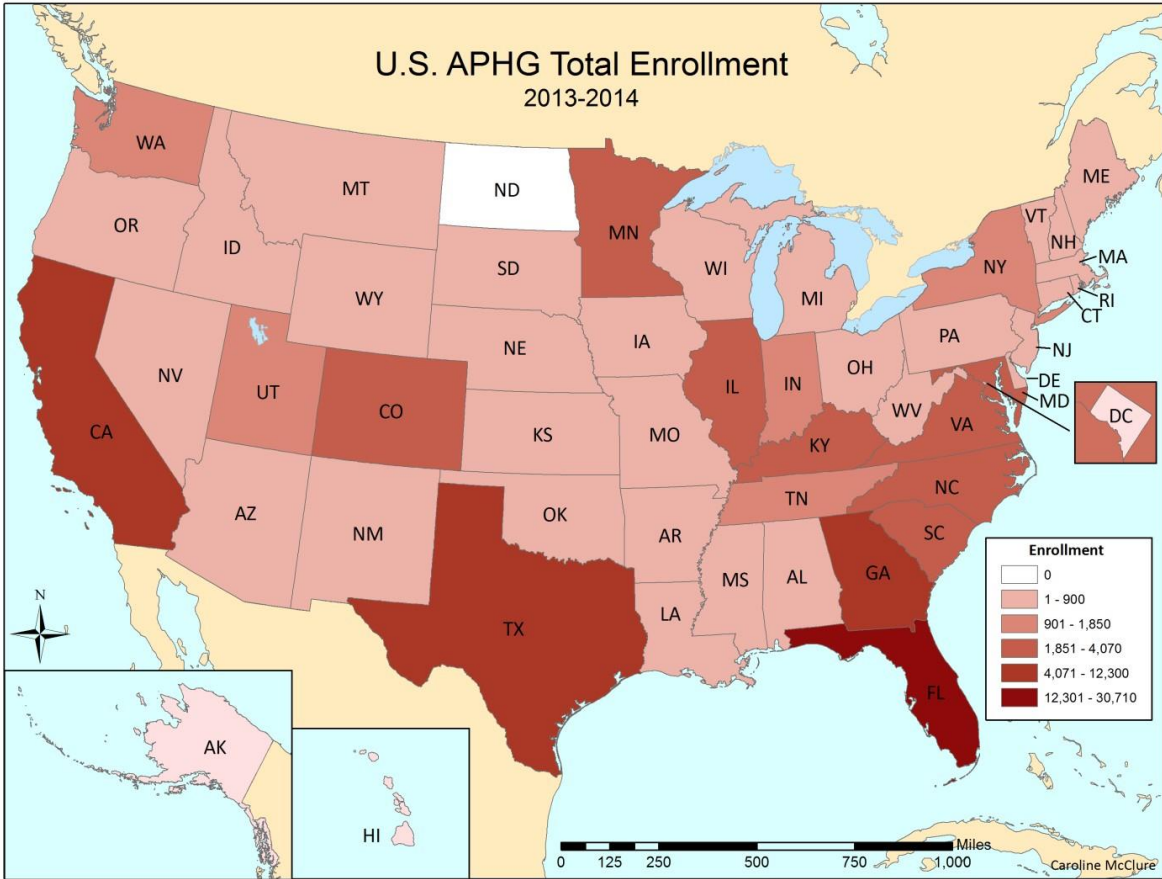


Figure 14. APHG enrollment by state (Source: College Board 2012).

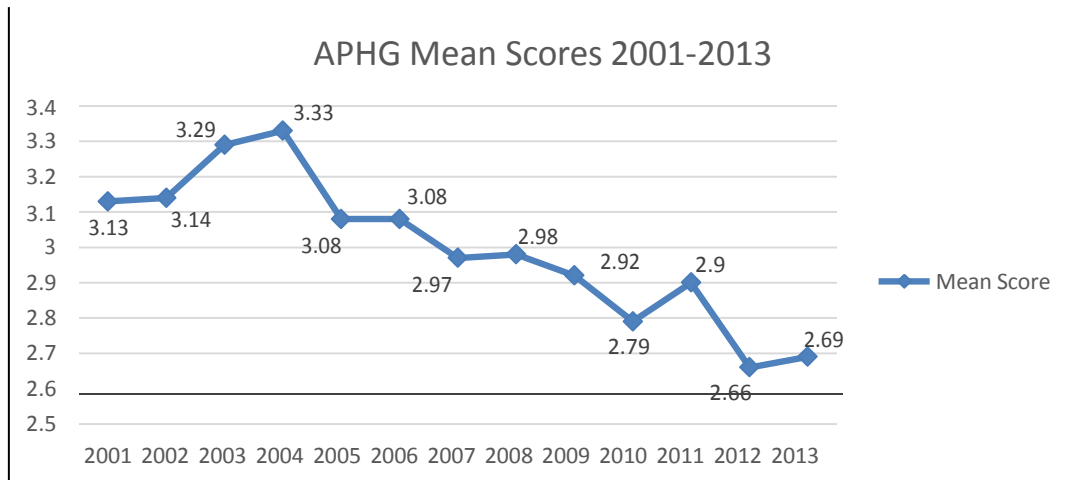


Figure 15. APHG mean scores 2001-2013 (Source: College Board 2013; Crain 2012).

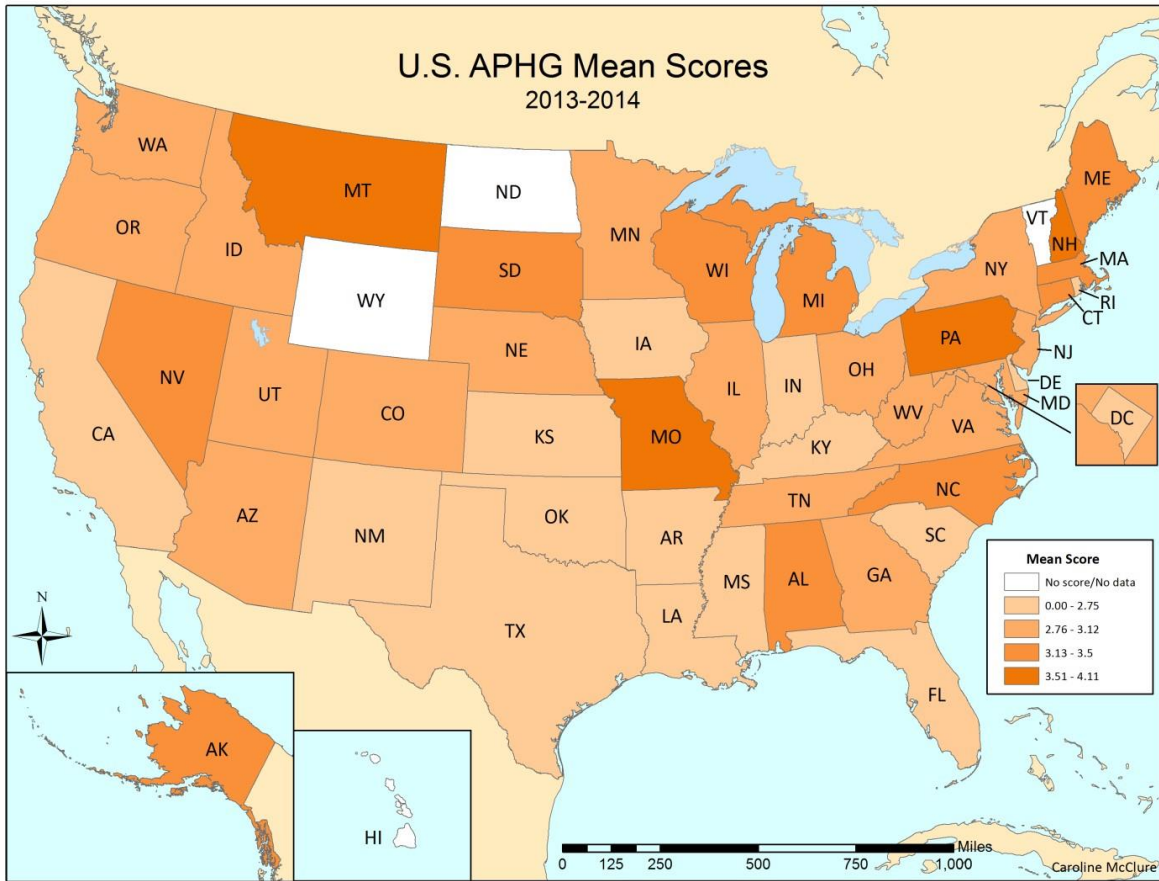


Figure 16. APHG mean scores by state (Source: College Board 2013; Crain 2012).

Conclusions

This report is an analysis of the status of geography education in the U.S. in terms of requirements, standards, assessments, and pre-service training programs at the K-12 level. Since the mid-1980s, because of the leadership of Mr. Gilbert M. Grosvenor, and the efforts of the National Geographic Society, geography’s curricular position in the U.S. has reached new heights.

We now have geography standards in every state and while only a small number of states require geography courses at the middle school and high school levels, the geography education movement continues in the face of more than a decade long emphasis on literacy and STEM

initiatives. Geography teacher training programs remain the *bête noire* of geographic education (Boehm, Brierley, and Sharma 1994), however, written over 20 years ago, “it is axiomatic, that if all we do is provide in-service training in geography for teachers then we institutionalize the continual need for further in-service teacher training in geography” (Boehm, Brierley, and Sharma 1994, 9)! A review of state social studies assessments, comprehensive and EOC exams, must also be embarked upon to guarantee that geography is represented accordingly. Although there are concerns regarding scores and administration at the ninth and tenth grade levels, Advanced Placement Human Geography (APHG) enrollment continues to arise. More and more teacher training institutes and workshops are also being formulated and conducted to help teachers prepare students for APHG. While the teaching and learning of geography continues to be plagued by issues of alignment and steady assessment protocols, this should not be a barrier in efforts to measure progress.

The information found in this report also provides an opportunity for the geography education community to remain proactive, rather than reactive. For example, knowing state social studies standards revisions schedules allows key geography education stakeholders the opportunity to organize and ensure that geographic concepts, knowledge, and skills are represented. While there is much more work to be done, many have chosen to accept the charge of the seemingly daunting task of making sure that every student is ensured a world class geography education.

Appendix Section

Appendix A

K-12 Public School Enrollment Data 2012-2013

(Source: MDR 2013, p. 20)

STATE	Enrollment
ALABAMA	737,774
ALASKA	130,411
ARIZONA	1,083,682
ARKANSAS	474,541
CALIFORNIA	6,165,763
COLORADO	842,627
CONNECTICUT	553,033
DELAWARE	128,972
DISTRICT OF COLUMBIA	78,186
FLORIDA	2,228,526
GEORGIA	1,687,664
HAWAII	182,049
IDAHO	277,444
ILLINOIS	2,037,129
INDIANA	1,005,274
IOWA	487,285
KANSAS	478,387
KENTUCKY	700,129
LOUISIANA	607,900
MAINE	183,198
MARYLAND	842,851
MASSACHUSETTS	963,750
MICHIGAN	1,516,469
MINNESOTA	797,307
MISSISSIPPI	503,013
MISSOURI	658,719
MONTANA	141,606
NEBRASKA	304,465
NEVADA	438,379
NEW HAMPSHIRE	190,092
NEW JERSEY	1,394,803
NEW MEXICO	190,092
NEW YORK	2,851,576

NORTH CAROLINA	1,495,130
NORTH DAKOTA	98,207
OHIO	1,811,701
OKLAHOMA	687,644
OREGON	549,596
PENNSYLVANIA	1,743,223
RHODE ISLAND	143,842
SOUTH CAROLINA	742,311
SOUTH DAKOTA	127,816
TENNESSEE	989,430
TEXAS	4,987,021
UTAH	578,841
VERMONT	85,891
VIRGINIA	1,216,738
WASHINGTON	1,018,478
WEST VIRGINIA	285,227
WISCONSIN	852,657
WYOMING	90,290
Total	48,560,134

Appendix B
 Number of Geography and Social Studies Teachers by State
 (Source: MDR 2013)

State	Geography	Social Studies
AK	47	309
AL	301	1,551
AR	117	1,496
AZ	122	2,285
CA	870	9,432
CO	297	2,459
CT	108	2,290
DC	14	183
DE	17	542
FL	521	8,581
GA	661	6,229
HI	31	421
IA	215	1,326
ID	123	345
IL	520	6,149
IN	460	5,658
KS	162	1,367
KY	120	1,907
LA	593	3,895
MA	253	3,559
MD	124	3,048
ME	65	724
MI	343	3,665
MN	636	1,667
MO	386	2,539
MS	440	1,906
MT	62	382
NC	71	5,780
ND	165	257
NE	159	704
NH	92	1,036
NJ	149	5,344
NM	47	730
NV	157	538
NY	3,189	7,556
OH	271	5,613

OK	560	1,428
OR	102	1,419
PA	387	5,977
RI	46	485
SC	195	3,067
SD	208	340
TN	382	2,767
TX	3,579	19,195
UT	351	123
VA	367	3,557
VT	24	414
WA	149	2,243
WI	222	2,436
WV	41	534
WY	46	110
Total	18,567	145,568

Appendix C
Top Ten Traditional Teacher Preparation Program Requirements
in the U.S. by Enrollment

1. Grand Canyon University (Arizona) (Social Studies)

- a. <http://www.gcu.edu/>
- b. General Ed CORE Requirement:
 - i. Global Awareness, Perspective and Ethics (10-12 hours BA, 6-8 hours BS); Course options: Themes in U.S. History, Psychology in Everyday Life, and Everyday Sociology – does not offer any specific geography courses
 - ii. <http://www.gcu.edu/Documents/Academic-Catalog/Academic-Catalog-2014-Spring.pdf>
 - iii. <http://www.gcu.edu/Current-Students/Academic-Catalog.php>
- c. Education Programs: <http://www.gcu.edu/degree-programs/#Teaching-Education-Administration>
- d. B.S. Early Childhood Ed. EC-3
 - i. Required EDU Instructional Teaching Methodologies: Language, Math, Science, Social Studies, and the Arts
 - ii. <http://www.gcu.edu/degree-programs/bachelor-of-science-in-early-childhood-education>
- e. B.S. Elementary Ed. (Choose emphasis in English, Math, or Science), (also have Elementary Ed. And Special Ed), no social studies option, 4-6
 - i. Required (for all emphases) EDU Curriculum, Methods, and Assessment: Social Studies
 - ii. <http://www.gcu.edu/College-of-Education.php>
- f. B.S. Secondary Ed (Various subject emphasis (Biology, Business Education, Chemistry, English, Math, Physical Education) but none in social studies.), 7-12
 - i. Other than global awareness core, no other social studies/geography courses required for these certifications
- g. Certifications: Early Childhood Ed.; Elementary Ed.; Secondary Ed
- h. Contact: coe@gcu.edu

2. University of Phoenix (Arizona) (online) (Social Studies)

- a. <http://www.phoenix.edu/>
- b. CORE: Various by program/state
 - i. <http://www.phoenix.edu/programs/degree-programs/associates-and-bachelors-general-education-requirements.html>
- c. Education Programs: http://www.phoenix.edu/colleges_divisions/education.html
- d. B.S. Education/Elementary Teacher Education
 - i. Required EDU Elementary Methods-Social Studies
 - ii. <http://www.phoenix.edu/programs/degree-programs/education/bachelors/bsed-e.html#tab=courses>
- e. Certification: Various

- f. (Note: I was only looking at Bachelor's degrees; University of Phoenix offers a MA in EC, Elementary, and Secondary education; probably where the high numbers come from.)
- 3. CUNY Queens College (New York) (Social Studies)**
- a. <http://www.qc.cuny.edu/Pages/home.aspx>
 - b. CORE:
 - i. Required World Cultures and Global Issues
 - ii. <http://gened.qc.cuny.edu/pathways/>
 - c. Education Programs:

<http://www.qc.cuny.edu/Academics/Degrees/Education/SEYS/Programs/Pages/SocialStudiesEducation.aspx#SS%20PRO>
 - d. Elementary and EC Education (1-6)
 - i. Required EDU Teaching Social Studies in the Elementary School
 - ii. <http://www.phoenix.edu/programs/degree-programs/education/bachelors/bsed-e.html#tab=courses>
 - iii. <http://www.qc.cuny.edu/Academics/Degrees/Education/Elementary/Pages/default.aspx>
 - e. Social Studies Adolescent Education, Secondary Education (7-12)
 - i. History and Social Studies Focus, Major or Minor, Initial cert.: Complete a major (30 credits) of at least 30 credits in either Anthropology, History, Economics, Political Science, or Sociology
 - ii. Subject area requirement: 21 credits in history and geography; at least 2 courses must be in non-history, (6 credits must be in U.S. history), potential for 15 credits in geography
 - iii. Required EDU Methods of Teaching Social Studies in Middle and High School
 - iv. Required EDU Curriculum and Assessment in Teaching Social Studies
 - v. <http://www.qc.cuny.edu/Academics/Degrees/Education/SEYS/Programs/Pages/SocialStudiesEducation.aspx#SS%20PRO>
 - f. Certifications: EC 1-6; Secondary Social Studies 7-12
 - g. Contacts: David Gerwin, David.Gerwin@qc.cuny.edu, 718-997-5159, John Gunn, John.Gunn@qc.cuny.edu, 718-997-5165, Jack Zevin, Jack.Zevin@qc.cuny.edu, 718-997-5163 (SS Adolescent Education); eece@qc.cuny.edu (Elementary and EC Education)
- 4. Wayne State University (Michigan) (Social Studies)**
- a. <http://wayne.edu/>
 - b. CORE:
 - i. Basic Social Science Requirement (1 course): Option to take GEOG World Regional Patterns, Intro. To Urban Studies, or Geography of Europe among over 20 other courses.
 - ii. <http://catalogue.usc.edu/undergraduate/usc-core/>
 - c. Geography Courses: <http://www.bulletins.wayne.edu/ubk-output/index.html>
 - d. Education Programs: <http://coe.wayne.edu/ted/sse/>
 - e. Elementary ED K-8

- i. Required World Regional Patterns
 - ii. Required Geography of Michigan
 - iii. Required EDU (6 hours), may choose EDU Teaching Social Studies: K-8, among about 10 other courses
- f. Secondary Ed – Social Studies Major, 6-12, major in either economics, political science, or history, minor in other; major comprised of economics, political science, history, and geography)
 - i. Required World Regional Patterns
 - ii. Required Geography of Michigan
 - iii. (Group Major, min. 36 Credit hours) Required World Regional Patterns and Geo of Michigan
 - iv. (Comprehensive Major min. 50 credit hours) Required World Regional Patterns and Geo of Michigan, plus Intro. To Urban Studies.
 - v. Required EDU 2 courses in major, and 1 course in minor
 - 1. EDU Methods and Materials. of Instruction: Secondary Social Studies
 - 2. EDU Teaching the Interdisciplinary Knowledge of Social Studies
 - 3. EDU New Perspectives in Social Studies Education:
- g. Certifications: Upon completion of Bachelor’s degree in SS Education with a major in SS or a major or minor in economics, history, or political science, certified to teacher those subjects 6-12.
- h. Contacts: Bob Pettapiece, pettapiece@wayne.edu, 313-577-0260 (Social Studies Education (Elem. And Secondary))

5. Arizona State University—Mary Lou Fulton Teachers College (Arizona)

- a. <http://education.asu.edu/>
- b. CORE: Natural Science (12 hours) requirement: option to take Physical Geography, Intro. To GIS, Intro. To Climatology, among about 30 courses
- c. EC & EC Special Education
 - i. Required United State and Arizona Social Studies
 - ii. Required World Social Studies
 - iii. <https://webapp4.asu.edu/programs/t5/roadmaps/ASU00/TEECSEBAE/null/ALL/2013>
- d. Elementary Ed. (1-8)
 - i. Required World Social Studies
 - ii. Required United State and Arizona Social Studies
 - iii. Required EDU Social Studies in Elementary Schools
 - iv. <https://webapp4.asu.edu/programs/t5/roadmaps/ASU00/TEEEDBAE/2012>
- e. B.A.E. Secondary Education major (7-12) (content focus: Geography, major 33-48 hours)
 - i. Required Introduction to Human Geography, Intro. To Physical Geography, World Geography

- ii. Required additional 3 hours choose from: Intro. To Economic Geography, Geo of the U.S. and Canada, Population Geography, or Urban Geography
- iii. Required additional 3-4 hours choose from: Society and the Environment, Landform Processes, Intro. To Meteorology (includes lab), or Global Change
- iv. Required EDU Special Methods of Teaching Social Studies
- v. GEOG Teaching Geography Standards
- vi. <https://webapp4.asu.edu/programs/t5/roadmaps/ASU00/EDGCUBAE/2012?init=false&nopassive=true>
- vii. Certifications: Early Childhood, Elementary Education, Geography
 - 1. <http://www.azed.gov/educator-certification/az-ed-exams/>
- f. Contact: Elementary: <http://education.asu.edu/programs/view/bachelor-of-arts-elementary-education>; Secondary: <http://education.asu.edu/programs/view/bachelor-of-arts-in-education-for-secondary-education>

6. Illinois State University (Social Science)

- a. <http://illinoisstate.edu/>
- b. CORE:
 - i. Required up to 12 hours could choose: Quantitative Reasoning in the Geosciences, Human Geography, Evolution of the Earth, Natural Disasters, Earth's Dynamic Weather, World Geography, or Geography of Emerging Areas
 - ii. http://illinoisstate.edu/catalog/pdf/gen_ed.pdf
- c. Education: <http://illinoisstate.edu/catalog/pdf/ci.pdf>
- d. Geography: <http://illinoisstate.edu/catalog/pdf/geo.pdf>
- e. Elementary Education
 - i. Required Global Studies course (could be World Geography)
 - ii. Required EDU Teaching Social Studies in Elementary School
 - iii. http://findyourmajor.illinoisstate.edu/downloads/PDF/4Year/elementary_education.pdf
 - iv. <http://illinoisstate.edu/majors/details.php?f=early.xml&p=%2Fmajors%2Fcoe%2F>
- f. Middle Level Teacher Ed.; Social Science Content Area, BS in Education
 - i. Required World Geography (Global Studies) Course
 - ii. Required 6 other content course electives (can choose from geography)
 - iii. Required EDU Social Studies Methods Middle School
 - iv. <http://findyourmajor.illinoisstate.edu/downloads/PDF/4Year/middle.pdf>
 - v. <http://illinoisstate.edu/majors/details.php?f=middle.xml&p=%2Fmajors%2Fcoe%2F>
- g. Geography Teacher Education Major (Secondary), (9-12)
 - i. Required Earth Science Systems, World Geography, Human Geography, Doing Geography, Living in the Environment, Cartography
 - ii. Techniques Requirement, Cartography

- iii. Capstone Requirement, Seminar in Geography
- iv. Regional elective (3 hours) choose from United States, Illinois, Africa, Geography of Emerging Areas, Our National Parks
- v. Advanced Social Science Electives (9 hours) choose from Field Geography, Energy & Sustainability, Cultural Geography, Political Ecology, Urban Geography, Economic Geography
- vi. Required GEO Teaching Social Science in a Geographical Context
- vii. Required GEO Teaching Geography/Earth Science
- viii. http://geo.illinoisstate.edu/geography/teacher_ed/,
<http://illinoisstate.edu/catalog/pdf/geo.pdf>
- h. Certifications: Elementary Education (K-9), Secondary Education (6-12), Geography (Secondary)
- i. Contacts: Jill Freund Thomas, (309) 438-8403 (Secondary Geography)

7. Indiana University of Pennsylvania (Main) (Social Studies)

- a. <http://www.iup.edu/>
- b. CORE:
 - i. Required Social Science 9 hours: May choose Geography: Human Environment Interaction, Geo of the U.S. and Canada, Global Cities: Issues in Planning and Development, World Geography: Global Context, among 17 (total) courses
 - ii. <http://www.iup.edu/registrar/catalog/>
- c. All Programs: <http://www.iup.edu/teachereducation/programs/default.aspx>
- d. Geography Courses: <http://www.iup.edu/geography/courses/default.aspx>
- e. EC Education and Special Education
 - i. Required GEOG course choose from Introduction to Geography: Human Environment, Geography of the U.S. and Canada, and Geography of the Non-Western World
 - ii. Required course EDU Social Studies for all Pre-K to Grade 4 Learners
 - iii. <http://www.iup.edu/page.aspx?id=95293>
- f. Middle-Level Education 4-8, Social Studies Specialization
 - i. Required Cultural Geography
 - ii. EDU Social Studies Instruction and Assessment
 - iii. <http://www.iup.edu/page.aspx?id=95294>
- g. Social Studies Education (Geography Track), (7-12)
 - i. Required Cartography, Cultural Geography, U.S. and Canada
 - ii. Required EDU Teaching of Social Studies in Secondary Schools
 - iii. Required Environmental Geography: choose one course from: Climatology, Physiography, Fresh Water Resources, Biogeography, Conservation

- iv. Required Human Geography: choose one course from Economic Geography, Population Geography, Urban Geography, Trade and Transportation I
- v. Regional Geography: choose one from Geo of PA, Geo of Latin America, Geo of Europe, Geo of Soviet Sphere, Geo of Africa, Geo of South and Southeast Asia
- vi. <http://www.iup.edu/majors/geography-education-social-science/default.aspx>
- h. Certifications: EC-4, PreK-4 Module 2: Language, Social Studies, Arts (8007); Middle School Social Studies-teachers are allowed to teach all general subjects in grades 4-6 and to be the teacher of record for Social Studies in grades 7 and 8, Subject Concentration- Social Studies (5157); 7-12 Social Studies certificate, Social Studies: Content Knowledge (0081/5081)
- i. Contacts: Dr. Sue Rieg (srieg@iup.edu) or Dr. Joann Migyanka (migyanka@iup.edu) (EC-Special Education PK-4); Dr. Susie Fello, at sfello@iup.edu (Middle-Level 4-8, SS); Email contact form: <https://iup.askadmissions.net/emtinterestpage.aspx?ip=generalinquiry>

8. Prairie View A&M University (Texas) (Social Studies)

- a. <http://www.pvamu.edu/>
- b. CORE:
 - i. Other Behavioral Sciences one course requirement may choose Cultural Geography, among 19 other courses
 - ii. <http://catalog.pvamu.edu/>
- c. Education Programs: <http://www.pvamu.edu/education/curriculum-and-instruction/degree-plans/>
- d. EC-6 Generalist
 - i. Required World Regional Geography
 - ii. Required 3 hour behavioral or social science elective may choose Cultural Geography, among about 20
 - iii. Seems as if the world geography course is counted as a methods course.
 - iv. <http://www.pvamu.edu/PDFFiles/edu/Degree%20plans%204/2013/EC-6%20Generalist%20Degree%20Plan%20Revised%20Sp%202013.pdf>
- e. 4-8 Generalist
 - i. Required World Regional Geography
 - ii. Required 3 hour behavioral or social science elective may choose Cultural Geography, among about 20
 - iii. <http://www.pvamu.edu/PDFFiles/edu/Degree%20plans%204/2013/4-8%20Generalist%20Degree%20Plan%20Revised%20Sp%202013.pdf>
- f. 4-8 Social Studies
 - i. Required World Regional Geography
 - ii. Required 3 hour behavioral or social science elective may choose Cultural Geography, among about 20

- iii. Seems as if the world geography course is counted as a methods course.
 - iv. <http://www.pvamu.edu/PDFFiles/edu/Degree%20plans%204/2013/4-8%20Social%20Studies%20Degree%20Plan%20Revised%20Sp%2013.pdf>
- g. **HS-History** or Political Science major with Teacher Certification minor (not offered in Geography because it only has a minor program), high school
 - i. Required Introduction to Geography
 - ii. No required social studies or history methods course
 - iii. <http://www.pvamu.edu/swbps/degree-programs/>
 - h. Certifications: Generalist EC-6, Generalist 4-8, Social Studies 4-8, Social Studies Composite 8-12
 - i. Contacts: Dr. James T. Jones III, jtjones@pvamu.edu (History Department)
- 9. Kean University (New Jersey)**
- a. <http://www.kean.edu/>
 - b. CORE:
 - i. Required World Geography to fulfill Social Sciences 9 hour requirement.
 - ii. http://www.kean.edu/admin/uploads/UndergraduateCatalog_2013-2014.pdf
 - c. B.A. EC Education (Dual Certification: P-3 and K-8)
 - i. Required World Geography (Core)
 - ii. No additional geography or social studies/geography methods requirements.
 - iii. <http://www.kean.edu/KU/Degree-Requirements-Early-Childhood-and-Family-Studies>
 - d. B.A. Elementary Education K-5
 - i. Required World Geography (core)
 - ii. EDU Social Studies and Current Issues
 - iii. No social studies specialization.
 - iv. <http://www.kean.edu/KU/Degree-Requirements-Elementary-Bilingual-Education>
 - e. B.A. Elementary Ed. K-6 with Middle School Certification 5-8
 - i. No geography content specialization available at 5-8 level.
 - ii. Required World Geography
 - iii. Required EDU Social Studies and Current Issues
 - iv. No social studies specialization.
 - v. <http://www.kean.edu/KU/Degree-Requirements->
 - vi. <http://www.kean.edu/KU/Middle-Secondary-Education>
 - f. Secondary (History with teacher certification)
 - i. No certification specialization in geography at secondary level.
 - ii. Required World Geography
 - iii. **Required advanced 3000-4000 major electives, 12 hours**, must include remaining 3 world areas of African, Asian, Latin American, Middle Eastern History.
 - iv. Required EDUC 3240 Social Studies K-12
 - v. <http://www.kean.edu/KU/Degree-Programs-Department-of-History>

- vi. <http://www.kean.edu/KU/Middle-Secondary-Education>
- g. Certifications: Elementary School Teacher K-6; Middle School 5-8
- h. Contact: Dr. Gilda Del Risco, gdelrisco@kean.edu (Elementary, MS, and HS Education)

10. University of Texas—El Paso (Texas)

- a. <http://www.utep.edu/>
- b. CORE:
 - i. Optional Physical Geography course among 23 to fulfill Natural Sciences (6 hours) requirement. Optional Cultural Geography course among 8 to fulfill Social and Behavioral Sciences (3 hour) requirement.
 - ii. http://catalog.utep.edu/preview_program.php?catoid=8&poid=974
- c. Elementary Education EC-6 Generalist
 - i. Optional Cultural Geography to fulfill 3 hour Social/Behavioral Science requirement.
 - ii. Required EDU Social Science Education in Elementary Schools
 - iii. http://coe.utep.edu/ted/images/academic_programs/undergraduate/degree_plans/EC-6_Generalist.pdf
- d. Middle Grades Generalist 4-8
 - i. Required Cultural Geography.
 - ii. Required EDU Social Studies Ed./Middle Grades
 - iii. http://coe.utep.edu/ted/images/academic_programs/undergraduate/degree_plans/4-8_GeneralistFINAL%282012%29.pdf
- e. Middle Grades 4-8, ELA, Reading, SS Composite
 - i. Required Cultural Geography
 - ii. No social studies methods course requirement.
 - iii. http://coe.utep.edu/ted/images/academic_programs/undergraduate/degree_plans/4-8_EngLAREDSociFINAL%282012%29.pdf
- f. Secondary (Minor in Secondary Education, Major History/Social Studies Composite w/ESL, (8-12)
 - i. Choose either History/Secondary Ed. plan or Social Studies Composite/Secondary Ed. Plan
 - ii. Required Cultural Geography
 - iii. Required Physical Geography
 - iv. Did not list requirement for social studies/geography methods course.
 - v. <http://www.academics.utep.edu/Portals/1799/documents/ActionPlanSocialStudies120Color.pdf>
 - vi. <http://www.academics.utep.edu/Default.aspx?tabid=63150&submenuheader=0>
- g. Certifications: EC Generalist, 4-8 Generalist, 4-8 ELA, Reading, Social Studies, Social Studies Composite 7-12
- h. Contacts: Education education@utep.edu; Geography mail@geo.utep.edu

Appendix D

Top Sixteen Social Studies, Geography, and
Social Science Teacher Producing Universities in the U.S. (alphabetical order)

1. Appalachian State University (North Carolina) (Social Studies)

- <http://www.appstate.edu/>
- CORE:
 - Historical and Social Perspective (6-9 hours required) optional GEO Intro. To Human Geography among about 50 courses
 - Required Aesthetic Perspective (6-9 hours): may choose “Local to Global Perspective;” 2 themes include Regions in a Global Context and Global Resources, both include GEO 1020 World Regional Geography
 - Local to Global Perspective (6-9 hours required) optional GEO Energy Issues and Technology, World Regional Geography, Intro. To Physical Geography among about 50 courses
 - Science Inquiry Perspective (8 hours required) optional GEO Global Climate Change, Global Change of the Biosphere, Water: Mountains to Sea among 30 courses
 - <http://generaleducation.appstate.edu/sites/generaleducation.appstate.edu/files/genedmodel.html#>
- Programs: <http://www.appstate.edu/academics/majors.php>
- Elementary Education (B.S.):
 - Required Geography of North Carolina OR History of North Carolina
 - Required CI Social Studies in the Elementary School
 - <http://www.appstate.edu/academics/majors.php>
- Middle Grades Concentration in ELA and Social Studies:
 - Required CI Social Studies in the Middle Grades
 - Social Studies concentration requirements: GEO World Regional Geography
- Middle Grades Concentration in (either Math or Science) and Social Studies:
 - Required CI Social Studies in the Middle Grades
 - Social Studies concentration requirements: GEO World Regional Geography
 - For all Middle Grades program links:
<http://programsofstudy.appstate.edu/programs/departments/nid/44>
- Geography
 - Have a strong geography department but no associated teacher certification route.

- Geography programs:
<http://programsofstudy.appstate.edu/programs/codes/242A>
- General Geography:
<http://programsofstudy.appstate.edu/programs/codes/242A>
- History-Social Studies Education (9-12)
 - Required CI Teaching High School Social Studies
 - Required choose two of the following: GEO World Regional Geography, Psychology: Historical, Social, & Scientific Foundations, The Sociological Perspective
 - <http://programsofstudy.appstate.edu/programs/codes/116A>
- Certifications: Elementary K-6 (Exam: Elementary Education: Instructional Practice and Applications), Exam: Middle School Social Studies, Social Studies (Comprehensive, Secondary) (Exam: Social Studies: Content Knowledge)
- Contact: Dr. Kathleen Lynch-Davis, Coordinator Elementary Education, lynchrk@appstate.edu, Dr. Laurie Ramirez Coordinator Middle Grades, ramirezla@appstate.edu

2. Dowling College (New York) (Social Studies)

- <http://www.dowling.edu/>
- **CORE:**
 - Nature of the Universe requirement (6 hours), courses in biology, chemistry, Earth science, marine studies, natural science, and physics- does not offer any geography courses specifically
 - <http://www.dowling.edu/wp-content/uploads/2014/01/2012-2014-Undergraduate-Catalog.pdf>
- School of Education: <http://www.dowling.edu/school-education/undergrad.shtml>
 - B.A. EC Education
 - No social studies/geography requirements.
 - <http://www.dowling.edu/academics/becedu.shtml>
- B.A. Elementary Education
 - Required EDU Teaching Social Studies
 - <http://www.dowling.edu/academics/baelem.shtml>
- Middle Childhood (5-9)
 - No requirements for social studies/geography
 - Catalog: pg. 48-50 for course requirements:
<http://www.dowling.edu/catalog/undergrad/2012-2014%20Undergraduate%20Catalog%2011%2015%2013.pdf>
- Secondary Teacher Certification (7-12) (Social Studies)

- Broad option, or BA in economics, history, political science, or sociology-anthropology (major in one), may lead to social studies certification
- must demonstrate knowledge in social studies subjects including geography
- Required political science course in U.S. political geography, ECO economic geography; “geography” courses are not in a geography department
- B.A. in Social Sciences (Broad Option) is recommended for certification. (pg. 49 of course catalog).
- <http://www.dowling.edu/academics/undergraduate-studies/ba-social-sciences/>
- Certification: (pass NYSTCE: LAST, CST, ATS-W), Childhood Education (Pk-6, 1-6), Middle Childhood 5-9 (Generalist), Social Studies 5-9, Social Studies 7-12

3. Grand Valley State University (Michigan) (Social Studies)

- <http://www.gvsu.edu/>
- General Ed CORE Requirement:
 - Natural Science (2 courses 7-8 hours), one from physical science, one from life science
 - Social and Behavioral Science (two courses from two disciplines)
 - Do offer various geography courses that qualify:
 - http://catalog.gvsu.edu/preview_program.php?catoid=38&poid=5057
 - <http://catalog.gvsu.edu/index.php>
 - http://catalog.gvsu.edu/content.php?catoid=38&navoid=1431#Gen_ed_
- Social Studies program: <http://www.gvsu.edu/socstudies/>
- Elementary Education
 - Have the option to choose social studies as a teaching major, and elementary certification as a teaching minor.:
 - http://www.gvsu.edu/cms3/assets/18FB597A-9B8F-F6AC-C940CACB896B0C17/teachable_majorsminors.pdf
 - Required EDU strategies for social studies teachers
 - Required physical geography and world regional geography
 - Required additional 12 hours: Regional courses to include World Regional Geography, Geo of the U.S. and Canada, Geography of Michigan; choose one additional course from Geography of Russia and its Neighbors, Geography of Africa, Geography of Latin America, Geo of Globalization of Asia, Geography of Southwest Asia (The Middle East), Geo of Europe, or Farmers, Crops, and Our Challenging Agricultural World
 - Teaching Major-Elementary Certification
 - (Group Social Studies)
 - Required EDU Strategies for social studies teachers
 - Teaching Minor-Elementary Certification

- <http://www.gvsu.edu/acad-view.htm?pdfId=04755C36-B77C-AC34-6E413BDE315570FA>
 - Secondary Education
 - Teaching major social studies, Geography teaching minor, (7-12)
 - Required Physical Geography, Cultural Geography,
 - Required EDU Strategies for Social Studies Teachers
 - Required 12 hours Regional course to include World Regional Geography, Geo of the U.S. and Canada, Geography of Michigan; choose one additional course from Geography of Russia and its Neighbors, Geography of Africa, Geography of Latin America, Geo of Globalization of Asia, Geography of Southwest Asia (The Middle East), Geo of Europe, or Farmers, Crops, and Our Challenging Agricultural World
 - Required Methods/Techniques course (3 hours) choose from Computer Cartography, Intro. To Computer Mapping/GIS, Intro. To City and Regional Planning, Intro. To Remote Sensing, Resource Measurement and Maps
 - http://www.gvsu.edu/cms3/assets/18FB597A-9B8F-F6AC-C940CACB896B0C17/teachable_majorsminors.pdf
 - http://www.gvsu.edu/cms3/assets/026B8A96-A932-3852-AE1EC91536DEAEA4/social_studies_secondary_education_13-14.pdf
 - B.A. or B.S. in Social Studies – does not list teacher certification route but looks like composite program (pg. 2984 of course catalog).
 - Certification: Michigan K-8 Teacher Certification; Michigan K-8 Teacher/Administrator Certification; Early Childhood (General and Special Education) ZS Endorsement, Elementary Education (103), Geography (008), Social Studies (Secondary) (084)
 - For further information about the Group Social Studies program, go to the History Department website at www.gvsu.edu/history or call the History Department office at (616) 331-3298.

4. Mississippi State University (Social Studies)

- a. <http://www.msstate.edu/>
- b. CORE:
 - i. Option to fulfill 6 hour behavioral/social science requirement; Introduction to World Geography and Cultural Geography listed among 25 listed courses.
 - ii. <http://www.catalog.msstate.edu/academicpolicies/degreesdegreerequirementsandscheduling/generaleducationrequirements/>
- c. All programs: <http://www.provost.msstate.edu/academicunits/>
- d. Geography courses: <http://www.geosciences.msstate.edu/geography.htm>
- e. Elementary Education (must choose either Early Childhood or Middle School), K-6, 4-8, middle school requires 21 credit hours in two academic areas (English, science, social studies, or math)
 - i. Required Intro. To World Geography

- ii. Required one additional social studies elective can choose geography course
- iii. http://cise.msstate.edu/pdf/undergraduate/elementary/ElementaryEducation_Curriculum.pdf
- f. Secondary Social Studies Education, (7-12)
 - i. Required World Geography
 - ii. EDU Secondary Social Studies Education
 - iii. EDU Methods of Teaching Social Studies
 - iv. One other required geography elective course
 - v. Optional three additional courses in geography
 - vi. http://cise.msstate.edu/pdf/undergraduate/secondary/social_studies_curriculum.pdf
- g. Certification: Elementary Ed K-6; Elementary Ed 4-8; Social Studies 7-12
- h. Contacts: Merrion Johnson mjohnson@colled.msstate.edu (Elementary and Middle School Coordinator); Susie Burroughs Susie.burroughs@msstate.edu (Social Studies Coordinator)

5. National University (California)

- a. <http://www.nu.edu/>
- b. CORE:
 - i. No listed geography requirement but the course, “Global Issues and Trends” is an option in the Lifelong Learning and Self Development requirement (4.5 hours) among 7 other courses.
 - ii. <http://www.nu.edu/OurPrograms/Catalog.html>
- c. School of Education, Teacher Education:
<http://www.nu.edu/OurPrograms/SchoolOfEducation/TeacherEducation.html>
- d. B.A. Major in EC Development with a CA Preliminary Multiple Subject Teaching Credential
 - i. No social studies or geography requirements
 - ii. <http://www.nu.edu/OurPrograms/SchoolOfEducation/TeacherEducation/Programs/BAECD.html>
- e. B.A. Major in Interdisciplinary Studies with a CA Preliminary Multiple Subject Teaching Credential
 - i. Required EDU Hist/Social Science Methods
 - ii. <http://www.nu.edu/OurPrograms/SchoolOfEducation/TeacherEducation/Programs/BAISwithCredential.html>
- f. B.A. in Interdisciplinary Studies
 - i. Required fulfill 4.5 hours in natural science: Geography is an option

- ii. <http://www.nu.edu/OurPrograms/CollegeOfLettersAndSciences/SocialSciences/Programs/Bachelor-Arts-Interdisciplinary-Studies.html>
- g. B.A. Social Science (Secondary) with a Preliminary Single Subject Credential (focus: world history, U.S. history, and California History) (available online)
 - i. Required Geography course
 - ii. Required EDU Methods of Teaching Social Science
 - iii. <http://www.nu.edu/OurPrograms/SchoolOfEducation/TeacherEducation/Programs/BachelorofArtsinSocialSciencewithaPreliminarySingle.html>
- h. Certifications: EC Development Multiple Subject, Social Science (Secondary Single Subject)
 - i. <http://www.ctc.ca.gov/credentials/requirements.html>
- i. Contact: School of Education, soe@nu.edu;

6. North Georgia College and State University (Georgia)

- a. <http://www.northgeorgia.edu/>
- b. CORE:
 - i. Option to fulfill core 6 hour core requirement by taking human or regional geography.
 - ii. Option to fulfill 11 hours natural science, math, and technology requirements by taking intro. to physical geography, Intro. To Weather and Climate (and lab).
 - iii. <http://ung.edu/academic-affairs/uploads/files/UNGCore.pdf>
- c. B.S., EC Education (PK-5)
 - i. Required EDU Teaching Social Studies
 - ii. http://ung.catalog.acalog.com/preview_program.php?catoid=12&pid=1218&returnto=254
- d. B.S. Middle Grades (4-8)
 - i. (choose two teaching field concentrations) Math, Science, Social Studies, Language Arts, Reading
 - ii. 12-16 hours for each (with 3-4 hours at the 2000-level in Field 1), and 6 hours in secondary teaching area
 - iii. http://ung.catalog.acalog.com/preview_program.php?catoid=12&pid=1774&returnto=254
- e. Secondary (6-12) and P-12 Teacher Education Programs
 - i. Major in history, English, biology, chemistry, math; P-12-art, music, physical education.
 - ii. http://ung.catalog.acalog.com/preview_program.php?catoid=12&pid=1776&returnto=254
- f. B.A. History major with Teacher Certification, high school
 - i. No geography courses required

- ii. EDU Methods and Materials (not clear if this is history or social studies methods course)
- iii. http://ung.catalog.acalog.com/preview_program.php?catoid=12&pooid=1449&returnto=254
- g. Certification: GACE,
- h. Contacts: EC Education Test I, EC Education Test II, Middle Grades Social Science, Social Science Test I, Social Science Test II, History Test I, History Test II

7. Olivet Nazarene University (Mississippi)

- a. <http://www.olivet.edu/>
- b. CORE:
 - i. Optional Global Natural Resources, The Developing World, Global Issues, or World Regional Geography to fulfill International Culture Course (2 courses) requirement, among 21 courses
 - ii. <http://www.olivet.edu/academics/>
- c. Education programs: <http://education.olivet.edu/advising/guides.htm>;
<http://education.olivet.edu/undergrad/programs.htm>
- d. EC Education:
 - i. Required GEOL Earth/Space for Elementary Teachers and
 - ii. Required ENVI Envir/Tech/Society for Teachers
 - iii. Required EDU EC LA/SS methods
 - iv. <http://web.olivet.edu/reg/pdf/ECED.pdf>
- e. Elementary Education
 - i. Required GEOL Earth/Space for Elementary Teachers ENVI
 - ii. Required ENVI Envir/Tech/Society for Teachers
 - iii. Required EDU Elementary and Middle School LA/SS
 - iv. <http://web.olivet.edu/reg/pdf/ELED.pdf>
- f. Social Science (Teaching) (middle and secondary)
 - i. Required Physical Geography
 - ii. Required World Regional Geography
 - iii. No required social studies/geography methods courses
 - iv. <http://web.olivet.edu/reg/pdf/SSSED.pdf>
- g. Certification: Social Science: Geography, Early Childhood Education
- h. Contact: Dr. William Dean (Social Studies), wdean@olivet.edu, Prof. Lori Fulton (Social Studies), lfulton@olivet.edu

8. Southern Illinois University, Edwardsville

- a. <http://www.siu.edu/>
- b. CORE:
 - i. Physical and Life science 7-8 hour requirement, may choose among a range of geography courses among chemistry, math and statistics, and physics.
 - ii. Social and behavioral science 9 hour requirement, may choose among a range of geography courses among anthropology,

- biological sciences, environmental sciences, and kinesiology and health education
 - iii. <http://www.siue.edu/registrar/pdf/siue-undergraduate-catalog.pdf>
- c. Education Programs: <http://www.siue.edu/education/>
- d. Geography courses: <http://www.siue.edu/artsandsciences/geography/courses.shtml>
- e. Early Childhood Education (birth –grade 3), B.S., Teacher Certification (Birth-grade 3):
 - i. Required Introduction to Geography
 - ii. <http://www.siue.edu/education/ci/undergrad/earlychildhood/early-childhood-under-overview.shtml>
- f. Elementary Education K-9, B.S., Teacher Certification K-9
 - i. Required Introduction to Geography
 - ii. <http://www.siue.edu/education/ci/undergrad/elementary/elementary-education-under-curriculum.shtml>
- g. Secondary Education, B.A. or B.S., Teacher Certification 6-12 (Geography is one major area of study)-Major in Geography with minor Social Science teacher certification.
 - i. Required: World Regions, Human Geography, Physical Geography, Cartography, GEOG quantitative techniques
 - ii. Required 18 credit hour geography electives choose from Population, Economic, Urban, Development, Cultural Landscape, Food, Political, Topics in Human,
 - iii. Required Physical Geography (2 courses required) choose from Physical Geology, Petrology, Geomorphology, Biogeography, Snow and Ice Processes, Soils, Hydrology, Groundwater Hydrology, Environmental Geochemistry, Floods, Animal Geography, Conservation Biogeography, Storm Chasing, Special Topics;
 - iv. Required Regional Geography (1 course required) choose from Europe, CIS, Africa, Asia, Latin America, North America, Special Topics;
 - v. Required Techniques (1 course required) choose from Air Photo, GIS, Thematic Cartography, Interactive Cartography, Digital Elevation Modeling, Remote Sensing, Computer Mapping, Vector GIS, Raster GIS, Topics in Techniques;
 - vi. Required GEOG Teaching of Geography
 - vii. http://www.siue.edu/artsandsciences/geography/undergraduate_program.shtml
- h. Certifications: EC Education, Elementary Education, Social Science: Geography
- i. Contact: Social Science Certification, Dr. James Hanlon, jhanlon@siue.edu, 650-2943; New Majors and Minors, Dr. Susan Hume, shume@siue.edu, 650209; Other: Dr. Gillian Acheson, gacheso@siue.edu, Phone: 618-650-5281

9. Texas A&M University

- a. <http://www.tamu.edu/>
- b. CORE:
 - i. Natural Sciences (8 hours required) optional GEOG 203/213 Planet Earth w/ Lab among 12 courses
 - ii. Humanities (3 hours required) optional GEOG Geography of the Global Village, Geo of the U.S., Geo. Of Texas, The Middle East, Geo of Africa, Geo of Latin America, Geo of Europe among over 100 courses
 - iii. Social and Behavioral Sciences (3 hours required) optional GEOG Intro. To Human Geography, Economic Geo, Intro. To Urban Geo, Cultural Geography, Resources and the Environment, Political Geo, Geo of Terrorism, History and Nature of Geography among over 75courses
 - iv. International and Cultural Diversity (6 hours required) optional GEOG Intro. To Human Geography, Geography of the Global Village, Geo of the U.S., Geo. Of Texas, Intro. To Urban Geo, Cultural Geography, The Middle East, Geo of Africa, Geo of Latin America, Geo of Europe, Interpretation of the Cultural Landscapes among over 150 courses
 - v. http://catalog.tamu.edu/pdfs/13-14_UG_Catalog.pdf
- c. All programs: <http://admissions.tamu.edu/majors>
- d. Geography Course listings:
<http://geography.tamu.edu/courses/undergraduate-courses>
- e. Early Childhood Education EC-6 (Can choose major emphasis area Social Studies):
 - i. Required Geography of the Global Village (Intro. To World Regional Geography)
 - ii. Required Intro. To Human Geography 1302;
http://tlac.tamu.edu/sites/tlac.tamu.edu/files/pk6_135_136_TCCNs.pdf
- f. Middle Grades Language Arts and Social Studies (4-8)
 - i. Required GEOG Earth System Sci (Intro. To Physical Geography), Economic Geography, Intro. To Human Geography, Global Village (Intro. To World Regional), Geography of the U.S., Geography of Texas, Cultural Geography, The Middle East, Concepts in Geographic Education
 - ii. http://tlac.tamu.edu/sites/tlac.tamu.edu/files/ms_ens_135_136_TC_CNs.pdf
- g. Accelerate Online-Online Program for Secondary Certification 7-12, offer Social Studies Composite
 - i. Required Intro. To Human Geography, Global Village (Intro. To World Regional), Earth System Sci. (Intro. To Physical Geography), Concepts in Geography Education

- ii. Required Additional 3 hours choose from Economic Geography, Urban Geography, Cultural Geography, or Political Geography
- iii. Required Additional Regional course (3 hours) choose from GEOG Geography of the U.S., Geography of Texas, Geography of the Middle East, Geography of Africa, Geography of Latin America, Geography of Europe, Geography of South Asia
- iv. Required Additional 6 hours from: up to three hours from GEOG Economic Geography, Urban Geography Urban Geography, Geography of Energy, Cultural Geography, Global Climatic Regions, Resources and the Environment, Thematic Cartography, Pattern and Process in Biogeography, GPS in the Geosciences, GEOG Principles of GIS
- v. Required additional (at least) three hours from: GEOG Geomorphology, Natural Hazards, Remote Sensing, Arid Lands Geomorphology, Political Geography 401, Historical Geography, Spatial Thinking, Perception and Behavior, Geographic Perspectives on Contemporary Urban Issues, Geography of Terrorism, Environmental Justice, Hydrology and Environment, Principles of Plant Geography, Field Geography, Adv. Topics in GIS, including GEOG Spatial Topics in...
- vi. <http://accelerate.tamu.edu/>;
http://accelerate.tamu.edu/sites/accelerate.tamu.edu/files/Accelerate_Online/Documents/Social%20Studies%207-12%20FieldPlan.pdf; <http://geography.tamu.edu/courses/teaching-geography>
- h. Certifications: Social Studies Composite 7-12; EC-6 Generalist, 4-8 Generalist
- i. Contact: Sarah Bednarz, s-bednarz@tamu.edu, 979.845.3651

10. Texas State University

- a. www.txstate.edu
- b. CORE:
 - i. Required Natural Science (7-8 hours) optional GEO Meteorology among 20+ courses
 - ii. Required Social/Behavioral Science (15 hours) optional World Geography among 6 other courses
 - iii. <http://www.txstate.edu/curriculumservices/catalogs/undergraduate/catalogs/2012-14.html>
- c. Edu C&I catalog:
<http://www.txstate.edu/curriculumservices/catalogs/undergraduate/catalogs/2012-14.html>
- d. Geography Major with teacher certification requirements:
<http://www.geo.txstate.edu/degrees-programs/undergraduate.html>

- e. EC-6 Generalist, major in Interdisciplinary Studies, B.S.
 - i. Required World Geography
- f. 4-8 Generalist, major in Interdisciplinary Studies, B.S.:
 - i. Required GEO 4340 Fundamental Themes in Geography,
 - ii. Required Social science elective choose from World Geography, Intro. To Psychology, or Intro. To Sociology;
 - iii. Required 3 hours additional advanced level social science course choose from geography, history, political science, economics, sociology, or anthropology
- g. 4-8 ELA/Social Studies Composite, major in Interdisciplinary Studies, B.S.:
 - i. Required one course choose from world geography, anthropology, economics, psychology, sociology (all intro. Courses)
 - ii. Required GEO 4340 Fundamental Themes in Geography
 - iii. Required one advanced GEO elective
- h. Geography Major, History or political science minor (depending on minor the other becomes third field), B.S., (7-12):
 - i. Required Cultural Geography, World Regional Geography, Physical Geography, Economic Geography, Geography of the U.S. and Canada, Natural Resource Use and Management or Environmental Management, Geography of Texas, Fundamental Themes in Geography (methods course)
 - ii. Required choose one regional course (3 hours) from: Europe, Latin America, North Africa/Middle East, South/Southeast Asia, China/Japan, Russian Realm
 - iii. Required one technique course (4 hours) from: Fundamentals of GIS, Maps and Mapmaking, Principles of Remote Sensing, Field Methods
 - iv. One additional geo course (3 hours)
- i. Certificates: EC-6 Generalist, 4-8 Generalist, 4-8 ELA/Social Studies Composite, Secondary Social Studies Composite 7-12
- j. Contact: Brock Brown, bb09@txstate.edu, 512-245-3202 (Geography)

11. University of Central Florida (Social Science 6-12)

- a. <http://www.ucf.edu/>
- b. CORE:
 - i. Science Foundation 6 hours required, may choose Physical Geography
 - ii. <http://catalog.ucf.edu/Content/Documents/Archive/UCFUGRDCatalog1314.pdf>
- c. EC Development and Education, B.S.
 - i. No social studies/geography requirements.

- ii. http://education.ucf.edu/prog_page.cfm?fid=61425956745341447F750D05031666435F5178740B0000
- d. Elementary Education, B.S. (this is the largest program in the college)
 - i. Required EDU Teaching Social Science in the Elementary School
 - ii. http://education.ucf.edu/prog_page.cfm?fid=61425956745341447F750D05031666435F5178740B0001
- e. Social Science Education, (6-12)B.S.
 - i. Required EDU Social Science Instructional Analysis
 - ii. Required World Political Geography
 - iii. Required EDU Programs in Teaching Social Science
 - iv. http://education.ucf.edu/prog_page.cfm?fid=61425956745341447F750D05031666435F5178740B0302
- f. Certifications: Elementary Education K-6, Social Science 6-12
- g. Contacts: Judith Levin, judith.levin@ucf.edu, 407-823-4615 (EC Development and Education); Robert Everett, Robert.everett@ucf.edu, 407-823-5788 & Karri Williams, karri.williams-fjeldhe@ucf.edu, 321-433-7922 (Elementary Education); Scott Waring, scott.waring@ucf.edu, 407-823-1766 (Social Science Education)

12. University of Houston, Downtown (Social Studies Composite with History Focus)

- a. <http://www.uhd.edu/>
- b. CORE:
 - i. Option to fulfill core Humanities requirements (6 hours) with World Geography course among 10+ courses
 - ii. http://global.dt.uh.edu:8080/catalog/20132014/2013_2014_Undergraduate_UHD_Catalog.pdf
- c. Education Programs:
<http://www.uhd.edu/academic/colleges/publicservice/urbaned/secondary.html>
- d. B.A. EC-6 Grade Elementary Generalist
 - i. Required EDU Teaching Social Studies in the Elementary Classroom
 - ii. Preparatory requirements (3 hours) for the PD component
 - 1. Option to choose from EDU Critical Social Studies Education, or World Geography among 8 courses
 - iii. Generalist 4-8
 - 1. Required EDU Teaching Social Studies in the Elementary Classroom
 - 2. PD (6 hours) requirement
 - a. Option to choose Critical Social Studies Education among 7 courses
 - 3. Social/Behavioral Science (3 hours) requirement
 - a. Option to choose World Geography among 5 courses.

- iv. Secondary – B.A. with major in History and concentration in Secondary Education, (7-12)
 - 1. Optional World Geography general education requirement.
 - 2. No listed social studies/geography methods courses.
- v. Certifications: EC-6 Generalist, 4-8 Generalist, Social Studies Composite 7-12

13. University of South Florida—Tampa (Social Science)

- a. <http://www.ugs.usf.edu/>
- b. CORE:
 - i. Required 3 hours of Physical Science Courses: option to take Intro. To Physical Geography or Intro. To Earth Systems among 22 other courses
 - ii. <http://www.ugs.usf.edu/gec/fkl/FKLrequirements.html>
- c. EC Education (B.S., M.Ed., M.A., Ph.D.)
 - i. Required EDU Integrated Curriculum: Social Science/Humanities & Art
 - ii. http://www.coedu.usf.edu/main/departments/ce/early_childhood/bachelors.php
- d. Elementary Ed, *B.S. M.A. M.A.T.*
 - i. Required EDU Teaching Elementary (K-6) Social Studies
 - ii. [.http://www.coedu.usf.edu/main/departments/ce/elementary_education/](http://www.coedu.usf.edu/main/departments/ce/elementary_education/)
- e. Social Science Ed, B.S. M.Ed. M.A.T.(middle and high school, secondary 6-12)
 - i. Required World Regional Geography
 - ii. Required EDU Teaching Middle Grades Social Science
 - iii. Required EDU Teaching Secondary Grades Social Science
 - iv. Required EDU Teaching Social Science Themes
 - v. Required advanced level social science course; could be fulfilled with geography course
 - vi. http://www.coedu.usf.edu/main/departments/seced/SSE/SSE_HomePage.html
 - vii. http://www.ugs.usf.edu/pdf/cat1314/FINAL_CATALOG.pdf
- f. Certifications: Elementary Education K-6, Social Science 6-12
- g. Contacts: (Advisors) Jamie Mcgaha, mcgahaj@usf.edu (EC and Elementary Education); Lynne Carlson, lynnec@usf.edu, & Aaron Holland, arhollan@usf.edu (Secondary Education)

14. University of Southern California (Social Science)

- a. <http://www.usc.edu/>
- b. CORE:
 - i. Geog Environment and Ethics is one of over 100 courses that falls under the Social Issues general education requirement. Other geology courses include Energy Systems, Earthquakes, Crises of a

- Planet, Earth History: A Planet and Its Evolution, and Climate Change.
- ii. <http://catalogue.usc.edu/undergraduate/usc-core-general/>
- iii. <http://catalogue.usc.edu/undergraduate/usc-core/>
- c. Masters education (MAT) online programs:
<http://rossier.usc.edu/programs/online-hybrid-programs/>
- d. Master of Arts in Teaching and Teaching Credential
 - i. Elementary Education-Multiple subject emphasis
 - ii. Required EDUC Integrating ELA and Social Sciences
 - iii. No listed requirements for social studies/geography:
<http://rossier.usc.edu/programs/masters/mat/overview/programs-of-study/>
 - iv. Secondary Education (Social Science-single subject emphasis):
Required EDUC Teaching Social Studies in Secondary Classrooms
<http://rossier.usc.edu/programs/masters/mat/overview/programs-of-study/>; History and Social Science Certification Exam
- e. Unclear as to what other degree course requirements are.
- f. Certifications: (Elementary: Multiple Subjects, Subtest 1: Reading, Language, and Literature, history and Social Science, Subtest 2: Science, Mathematics, Subtest 3: Physical Education, Human Development, Visual and Performing Arts; Secondary: Single Subject Teaching Credential: Social Science, Subtest 1: World History, Geography, Subtest 2: U.S. History, Geography, Subtest 3: Civics, Economics, California History
- g. **Online**, on campus; master's degrees only in teaching

15. University of Wisconsin—Milwaukee (Social Studies)

- a. <http://www4.uwm.edu/>
- b. CORE:
 - i. Natural Sciences (6 hours required) optional Our Physical Environment, Intro. To Environmental Geography, Intro. To Caved and Caving, Natural Hazards among 25+ courses
 - ii. Social Sciences (6 hours required) optional Intro. To Human Geo, The World: Peoples and Regions, European Roots of America, Geography of Race in the U.S., Our Urban Environment: Intro. To Urban Geo, Political Geo, Geo of Asia, Geo of Islam, The Human Impact on the Environment, Conservation of Natural Resources, Honors Seminar: Geography among 25+ courses
- c. School of Education programs: <http://www4.uwm.edu/soe/academics/>
- d. Geography
 - i. Undergrad programs:
<http://www4.uwm.edu/letsoci/geography/undergrad/>
 - ii. Courses: <http://www4.uwm.edu/letsoci/geography/courses/>

- e. Early Childhood (certification, Bachelor's, Master's):
 - i. Required social science elective-may choose geography
 - ii. Required EDU Teaching of Social Studies in Early Childhood
 - iii. <http://www4.uwm.edu/soe/academics/currins/early-childhood-program.cfm>
- f. Middle Childhood through Early Adolescence (certification, Bachelor's, Master's):
 - i. Choose between ELA or social studies as a minor
 - 1. For social studies minor: Required GEO Intro. To Human Geography (The World: Peoples and Regions)
 - ii. Required EDU Teaching of Social Studies
 - iii. <http://www4.uwm.edu/soe/academics/currins/mcea-materials.cfm>
- g. Early Adolescence through Adolescence-Social Studies Education (certification, Bachelor's, Master's), (6-12):
 - i. (Students must complete 36 hours in one social studies field, 12 credits in a second social studies field, and 12 credits in a third social studies field.) – choose from geography, economics, history, psychology, political science, and sociology
 - ii. Required choose from CES Introduction to Conservation and Environmental Science or GEOG Conservation of Natural Resources
 - iii. Choose Geography Major:
 - 1. Required Conservation of Natural Resources, Introduction to GIS
 - 2. Required intro. Course to Human Geography: The World: Peoples and Regions, Our Physical Environment
 - 3. Required choose 2 courses from: Nationalities and Nations of the World, Geography of Latin America, Geography of South Asia
 - 4. Required choose one technique course: Remote Sensing: Environmental and Land Use Analysis, Cartography, GIS, Spatial Analysis
 - 5. Required GEO Perspectives on Geography
 - 6. Required EDU Intro. To the Teaching of Social Studies
 - 7. Required EDU Teaching of Social Studies: Secondary
 - 8. Required EDU Field Work in Middle School
 - 9. <http://www4.uwm.edu/soe/academics/currins/ea-social-studies-materials.cfm>

- iv. Certifications: EC-Elementary Education Content Knowledge, MS-Middle School Content Knowledge Exam, Social Studies: Content Knowledge #10081 (Score of 153 required)
- v. Contacts: College of Education: Maggie Kaczmarek (EC), 414-229-4814, kaczarm@uwm.edu, Nikki Krubsack Early Adolescence through Adolescence-Social Studies Education; Kristin Roosevelt (Middle Childhood through Early Adolescence), currinsadvising@uwm.edu; Geography: Linda McCarthy, 414-229-6405, lmccarth@uwm.edu

16. Western Michigan University (Social Studies)

- a. <http://www.wmich.edu/>
- b. CORE:
 - i. Required Other Cultures and Civilizations course (3-4 hours), may choose GEOG Culinary Tourism, South America, Mexico and the Caribbean, Geo of Africa, Monsoon Asia, China, Japan, and Korea: Lands and Cultures, or Egypt-Civilization and Geology among about 50 courses
 - ii. Required Natural Science with Lab (4-5 hours), may choose Physical Geography among 26 courses (do offer geology courses)
 - iii. Required Natural Science with Technology course (3-4 hours), may choose GEOG World Ecological Problems and Man, Intro. To Geospatial Technologies, Climate Change: Atmospheric Perspectives, or Conservation and Environmental Management
 - iv. <http://wmich.edu/registrar/pdf/catalogs/wmu-undergrad-catalog.pdf>
- c. Education Programs:
 - http://www.wmich.edu/teaching/academics/early_childhood.html (elementary);
 - <http://www.wmich.edu/teaching/academics/secondary/index.html> (secondary)
- d. Early Childhood Education BS:
 - i. Same as Elementary Education (K-8) requirements
- e. Elementary Education K-8 BS:
 - i. Required World Geography Maps course
 - ii. Required ED Social Studies Multicultural Education
 - iii. <http://www.wmich.edu/teaching/academics/elementary.html>; <http://www.wmich.edu/education/advising/docs/graduation-plans/elem-ed.pdf>
- f. Middle Level Major is under review
 - i. Required World Geography Maps and Economic Geography courses,
 - ii. Choice requirement between Michigan History or Geography of Michigan

- iii. <http://www.wmich.edu/education/advising/docs/program-guides/elem-ed-major-social-studies.pdf>
 - g. Elementary/Middle School Social Studies Minor has been discontinued
 - i. <http://www.wmich.edu/education/advising/docs/program-guides/elem-ed-minor-social-studies.pdf>
 - h. (Secondary Education BA, BS) -- Geography BS Teaching of Geography: Secondary Education Major
 - i. Required Physical Geography, Human Geography, Introduction to Geospatial Technologies, Geographic Inquiry, U.S. and Canada, Intro. To Meteorology and Climatology (4 hours)
 - ii. Required GEO Concepts and Strategies in Teaching Geography
 - iii. Physical Science Emphasis (8 hours) choose from: World Ecological Problems and Man, Fundamentals of GIS, Conservation and Environmental Management, Water Resources Management, Contemporary Issues in Resources Management, Environmental Impact Assessment, Intermediate GIS, and Remote Sensing of the Environment
 - iv. Social Science Emphasis (12 hours) choose from: World Ecological Problems and Man, Economic Geography, Fundamentals of GIS, Geography of Michigan, South America, Mexico and the Caribbean, Geography of Europe, Geography of Africa, Monsoon Asia, China, Japan, and Korea: Lands and Cultures, and Studies in Economic Geography
 - v. <http://www.wmich.edu/geography/docs/majors/un-education.pdf>
 - i. Teaching of Geography: Secondary Education Minor
 - i. Required Physical Geography, Human Geography, Introduction to Geospatial Technologies, Geographic Inquiry, U.S. and Canada, Intro. To Meteorology and Climatology (4 hours)
 - ii. Required GEO Concepts and Strategies in Teaching Geography
 - iii. Physical Science Emphasis (8 hours) choose from: World Ecological Problems and Man, Fundamentals of GIS, Conservation and Environmental Management, Water Resources Management, Contemporary Issues in Resources Management, Environmental Impact Assessment, Intermediate GIS, and Remote Sensing of the Environment
 - iv. Social Science Emphasis (12 hours) choose from: World Ecological Problems and Man, Economic Geography, Fundamentals of GIS, Geography of Michigan, South America, Mexico and the Caribbean, Geography of Europe, Geography of Africa, Monsoon Asia, China, Japan, and Korea: Lands and Cultures, and Studies in Economic Geography
 - v. <http://www.wmich.edu/geography/docs/minors/un-ed-minor.pdf>
 - j. Certification: Michigan K-8 Teacher Certification; Michigan K-8 Teacher/Administrator Certification; Early Childhood (General and

Special Education) ZS Endorsement, Elementary Education (103),
Geography (008), Social Studies (Secondary) (084)
k. Contacts: Dr. Joseph Stoltman joseph.stoltman@wmich.edu , Dr. Lisa
DeChano-Cook lisa.dechano@wmich.edu (Undergraduate Advisor)
(Geography)

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