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Geographic Literacy Among College Students: An Analysis of Sport Fandom in US State Identification

Jacob Augustin and David Hodge

Abstract: The examination of geographic literacy among the nations' youth is important from both the perspective of social studies education and society in general. In considering geographic literacy of the United States of America among college students, the identification of States is viewed as a base level of knowledge, commonly taught in early elementary education. This paper views this concept from a new angle. It was hypothesized that outside the lens of general education, sport fans would be better equipped to identify the States of the United States of America as compared to non-sport fans due to the knowledge of where professional and college sport teams are located. As such, surveys were administered to 1,428 students from five universities in the United States that tasked college students with labeling each State. Results show that the overall geographic knowledge is lacking among undergraduate students, and that gender is the most impactful predictor variable for geographic literacy of the United States. Implications of this research on both higher education and K-12 education are discussed as well as directions for future research.

Colleges and universities often have in their mission statement that they strive to produce well-rounded graduates. This is often stated to be accomplished by having students complete their major and minor academic programs, as well as the general education core. This general education core typically contains courses that spread throughout multiple content areas, with the intent of reinforcing the notion of a student being well-rounded in their academic pursuit. The general education

core often amounts to nearly thirty percent of the required credits toward an undergraduate degree (Latzer, 2004). Traditionally, there are requirements for history, social studies, and/or geography-related courses through the general education curriculum.

Geographic literacy is a concept that pertains to an individual's ability to use geographic knowledge in their decision-making (National Geographic Society,

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2023). In this article, it will specifically relate to the level of knowledge of identifying the states of the United States of America. While identification of US states is not indicative of an individual's overall geographic literacy, it does represent a baseline of knowledge related to the concept. This project began when the researcher became aware that his undergraduate students upon hearing that he was from Illinois did not know where this State existed within the United States. It seemed as if this lack of domestic geographic knowledge could serve as a disadvantage to students and contributing members of American society. For example, if one is discussing a current event that is taking place in Appalachia, it may be beneficial for that person to know of the Appalachia region, where it is, and what states are included in the region. As colleges and universities aspire to produce well-rounded academic graduates, the general education curriculum was also questioned for its fulfillment of social studies education. Therefore, the following research questions for this study consisted of the following:

RQ1: What is the current level of geographic knowledge of the United States among college students?

RQ2: Are there differences in geographic knowledge of the United States among college students across demographic variables?

It was then posited that students who were self-identified sport fans of either a collegiate or professional team of a domestic sport league would have a

greater level of geographic literacy than would non-sport fans. In essence, it was thought that a fan of a sport league would be able to identify the States that hold teams in the respective league. For example, a self-identified fan of the NBA would be able to locate the State of Utah due to the Utah Jazz being in the State. Additionally, a self-identified fan of College Football would be able to locate the State of Alabama due to the University of Alabama being in the State. Through this, the third research question was formed:

RQ3: Is there a difference in geographic knowledge of the United States among college students between self-identified sport fans and non-sport fans?

Review of the Literature

General Education in Higher Education

While accrediting bodies in higher education require general education curriculum to be presently, there are no explicitly laid out standards of what content should make up this curriculum (Warner & Koepfel, 2009). In viewing the general education requirements across the country, it was found that humanities, math, history, and foreign language requirements all differed greatly amongst institutions, however generally found that larger universities had significantly more course offerings for students to choose from. The larger number of course offerings were viewed as positive for students to find a topic of interest within the general education curriculum, but also as a negative as

students may only stay within the content that they feel comfortable with and not expand their knowledge.

A study done by Latzer in 2004 examined the content of General Education requirements at fifty colleges across the country. The fifty universities in this sample were among the most prestigious academic universities, including universities from the Ivy League, the Seven Sisters, and the Big Ten. The results showed that at many of these universities courses in composition, American government, history, economics, foreign language, literature, math, and natural science are not required among the general education requirements for graduation. Half of the universities in the sample required two or fewer of these subjects in their general education core.

The general education core requirements in higher education across the country have been changing for decades (Brint et al., 2016). Since the 1970's there have been many general changes to the curriculum, most that have included adding additional required content areas while subtracting from the traditional general education content areas. One of the most prevalent of these newer required content areas are those of basic academic skills. Many universities now hold required general education courses that are in some way an introduction to college. The other two more prevalent of the newer content areas being added to requirements of the general education core are diversity and inclusion courses, and social studies courses pertaining to non-Western cultures.

The undergraduate students at the University of Oklahoma were surveyed to examine the student perception and knowledge of the university general education requirements (Thompson, Eodice, & Tran, 2015). The survey of these students found that less than a quarter of the students knew how many general education credits were required by the university, and even fewer knew what courses were included in those requirements. The majority also stated that they do not find value in the general education courses. Over half the subjects stated that they would not enroll in general education courses if they were not required to do so.

Social Studies Teacher Education

Instructors must have a comfortability with and a deep knowledge of the content that they cover in order to be most effective in their teaching. In examining pre-service social studies teachers for their own social studies content knowledge, it was found that overall, the level of knowledge was low (Journell, 2013). In this study, it was found that politics in particular was a subject within social studies that pre-service teachers scored the lowest on. Amongst the findings were that over ten percent of the subjects could not identify the current vice president of the United States. Another study surveyed pre-service social studies teachers on their knowledge of historical figures (Sanchez, 2010). This study found that these future teachers had a lower level of knowledge surrounding key figures of American history than they did with those of world history. These results were not promising

as instructors who do not have a good base of knowledge in their content area tend to rely solely on rote memorization teaching strategies, which are not ideal for all students to follow.

Pre-service elementary school teachers were the subjects of a study that was conducted to examine both the knowledge level of social studies content and the effectiveness of a university social studies teaching methods course (Hughes, Diego-Medrano, & Nix, 2016). This study utilized a pre-post test design and found that overall pre-service teachers did not have an adequate level of knowledge in social studies content. The study also found that the college-level social studies methods course held little value as no significant growth was found between the pre and post-tests. A similar study also found that pre-service elementary education teachers had a very low level of geography knowledge, with subjects scoring an average of 60 percent on a geography knowledge survey (McKinney, et. al, 1989).

Geographic Literacy

To analyze the geographic literacy of undergraduate students, Bein (1990) employed a test on over three thousand undergraduate students in the state of Indiana. The geography test included subtopics of place-name identification, physical geography, map skills, and human geography. The mean results from each subtopic ranged from 58 percent to 75 percent, which shows a general lack of geographic literacy among undergraduate students. This study found however that

males scored significantly higher than females, and that upper-class students (juniors and seniors) scored on average higher than did freshman and sophomore students. Another variable that was found to be significant was college major, where students studying the Arts and Sciences scored higher than those studying in other areas, such as business or education.

This trend of undergraduate students lacking in geographic literacy may not only pertain to the United States, as one study found similar results in the undergraduate population in Ethiopia (Mekonnen, 2020). In this study 452 undergraduate students were tested on their geographic knowledge and were found to be lacking in this content area. In the study, the only demographic that scored above the given acceptable rate were students who were geography majors. These results show that perhaps there is an international trend in the decreasing perceived value in social studies related education.

The geographic literacy of American students in the eighth grade has been analyzed to determine what factors lead to significant differences among students (Solem & Vaughan, 2023). The study found that students who come from families and school districts that have higher income levels significantly outperform those who come from families who are closer to or below the poverty level. Other factors that were found to be significant in raising geographic literacy among eighth graders were having taken geography prior to eighth grade, and having greater access to computers and

technology in the classroom in first to seventh grade.

This study aims to extend the work for Bien (1990) in order to explore the geographic literacy specific to the individual states of the United States of America among undergraduate students. In this study, demographic variables will also be analyzed for any differences among the sample within their respective geographic knowledge. The variables of gender and age will be of importance as to the significance of these variables in Bien's study.

Methodology

Participants

Approval was gained by the researchers from the Internal Review Board of the researchers' university prior to conducting surveys. All guidelines and protocols related to data collection were followed throughout the research process. Surveys were administered to undergraduate students at five small and mid-sized universities in five states across the Midwest and Northeast regions of the United States. There were 1,437 surveys administered, and in total, 1,428 students fully completed the survey. The administration of the surveys was completed by the researchers where students were given 20 minutes to complete the survey. These surveys were all conducted during undergraduate courses, where the researchers read the IRB consent form for human participants in research to the students prior to the survey administration.

Data Collection and Analysis

The first portion of the survey asked students to provide the following self-identifying information: Gender, age, race, ethnicity, rank in higher education, Greek life membership, cumulative GPA, college major/s, prior social studies courses that were completed at the university level, and whether or not they considered themselves a sports fan. These demographic variables of gender, age, race, ethnicity, rank in higher education, Greek life membership, sports fandom, and cumulative GPA were all collected via multiple-choice answer questions. The variables of college major and prior coursework questions were collected with open-response questions, where students wrote in their answers.

The second portion of the survey tasked students with identifying and labeling each US State from a map that showed the State lines and numbered each state, which can be found in Table 1. Students were then tasked with writing the names of the individual states on the survey as identified by their respective numbers on the map provided. A copy of the survey can be found in Appendix B. The results were then analyzed using descriptive statistics regarding the overall and individual state results, as well as comparing scores across the demographic variables.

Results

To address the first research question relating to the current level of geographic knowledge among undergraduate students,

the average score of the total number of US States correctly identified served as an indicator.

In our sample of 1,428 undergraduate students, the average total number of US States that were correctly identified was 27.68 States per undergraduate student. When viewing individual States, the three most correctly identified US States among the entire sample were Florida, California, and Texas, respectively. Conversely, the three least correctly identified US States were Connecticut, Delaware, and New Hampshire, respectively. The complete breakdown of the results for each state by their percentage of being correctly identified in the sample can be seen in Table 2.

Our second research question asked if there are differences in the geographic knowledge of the United States among college students across demographic variables. The mean knowledge scores, being the number of US States identified, were compared across each of the demographic variables that were collected. The means for each group were compared using one-way ANOVA testing and the demographic variables collected, and three were found to be statistically significant across the groups of the demographic variable, those were gender, age, and cumulative GPA.

The gender variable had the largest difference between groups, where reported female undergraduate students averaged

38.82 States correctly identified each and reported male undergraduate students averaged 22.31 States correctly identified each. Results from the age variable showed that younger undergraduate students were able to identify more US States than the older undergraduate students. Ages were collected by how many years old the subject was at the time of the survey, with options of 18, 19, 20, 21, 22, and 23 or older years of age. Average scores across the age variable were the following respectively beginning with 18-year-olds, 32.86, 33.15, 28.47, 25.06, 22.13, and 22.87. In viewing the mean groups across the cumulative GPA variable, results were as expected as students who self-reported higher cumulative GPA's identifying higher total numbers of US States correctly.

In addressing the third research question, as to whether or not there would be a difference in geographic knowledge in undergraduate students between self-identified sport fans and non-sport fans, there was no statistically significant difference in geographic knowledge present in the sample. It is important to note however, that analysis for addressing this question was made difficult by the makeup of the sample, where the majority of subjects reported being a sports fan (90.89%).

Discussion

The results of this study were alarming as to the lack of overall geographic literacy

of the United States among college students. While both interesting and concerning, the average number of US States that were correctly identified among international students (n=63) was 29.43 States, as compared to American students whose average was 27.68 States. This lack of knowledge should be addressed within the education system, particularly at a more advanced grade level, including the general education requirements in post-secondary education. Many students learn the States early in elementary school and then do not revisit this directly throughout their formal education.

The view of American higher education producing well-rounded academic graduates is questioned if graduates cannot identify the States of their own nation. The general education core at many institutions of higher learning is meant to provide students with expanded learning opportunities outside of their own academic major programs. The movement towards highly elective courses and “in-demand” courses in the general education curriculum brings with it questioning of the academic value of these courses for undergraduate students. In the scope of this study, many students had identified having taken prior college level courses that fulfilled their version of a social studies general education requirement. Many of these were courses that seem to be highly elective, some of which were mythology, ancient and world history, social history, history of technology, legal history, and early civilizations.

This study was conducted without

limitations. The sample of this study came from five small-sized private colleges and universities, and thus may not be generalizable to student populations from larger public institutions. While the sample of this study comes from colleges and universities in five States, this does not encompass the entire country, and any potential State by State differences in educational policies and practices. Further, the sample from this study limited the analysis of the data across multiple demographic variables due to a skewed sample, as was the case with Greek Life membership, academic major, and self-identified sports fandom.

Further study is needed in order to examine why such a large difference was found across the gender variable. Specifically, as the findings from this study across both the gender and age demographic variables contrasted those of Bein’s 1990 study. Future research should aim to include a more comprehensive view of geographic literacy, whereas this research focuses solely on baseline geographic knowledge. In addition, future analysis should be done as to how to incorporate geographic literacy more effectively within both the K-12 and Higher Education curriculum. Future research should also aim to study the effectiveness and value that the general education core curriculum holds at the undergraduate level, including both student and faculty viewpoints on the matter.

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APPENDIX A

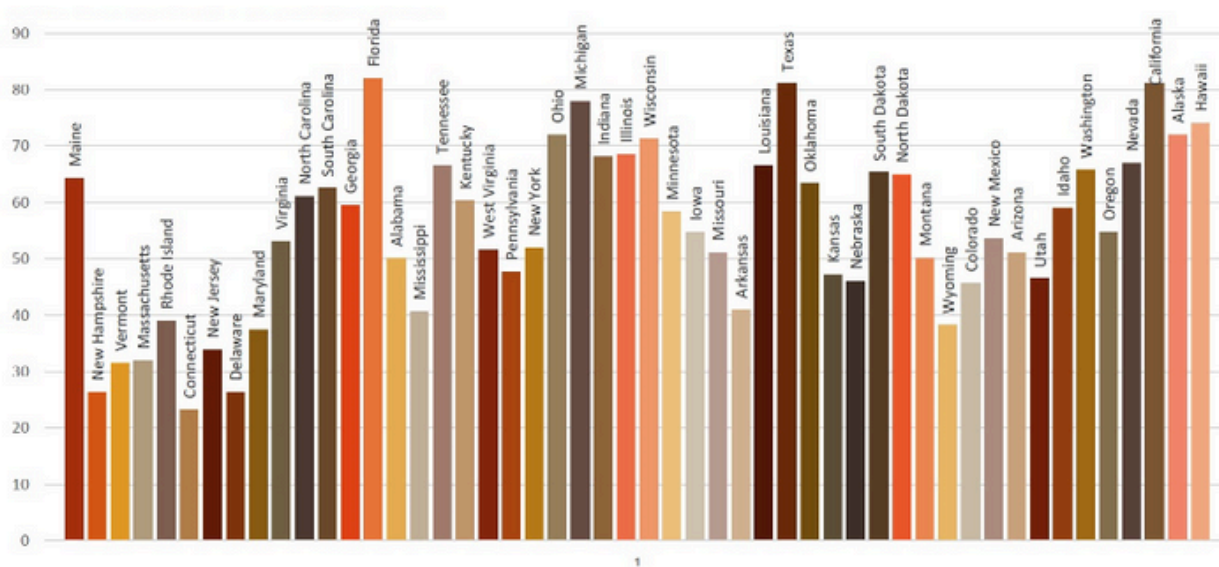
Table 1

US State identifying map used from survey



Table 2

US State by percentage correct



APPENDIX B

Survey Instrument

Institutional Review Board

CONSENT FORM FOR HUMAN PARTICIPANTS IN RESEARCH

Project Title: Geographic Literacy among college students: An analysis of sport fandom on US State identification

Researcher: [REDACTED]

The primary purpose of this study is to examine the geographic literacy of the United States within upcoming college graduates. As a participant in this research, you will be asked to take a survey regarding national geography. Surveys will be administered and coded for analysis by the researchers. You will be asked to complete a survey in which you will be asked a series of questions. The surveys will each take approximately 10-15 minutes. You will not be required to provide your name. This will ensure that your identity remains anonymous and confidential. Only the researcher will have access to and will be examining the individual responses. All surveys will be stored on the lead researchers' hard drive.

There are no foreseeable risks associated with participation in this study. You will not benefit directly from their involvement in this case study. Indirect benefits include furthering the current research regarding higher education efficacy.

Participation is voluntary. You may decide not to participate in this study and if you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, please complete the questionnaire if you would like to participate in this research. By completing the questionnaire, you will give us permission for your participation. You may keep this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact [REDACTED]

1. What is your gender?

Male

Female

Other

2. What is your age?

18

19

20

21

22

23+

3. What year of college are you in currently?

1

2

3

4

5

6+

4. Are you currently an active member of a fraternity or sorority? Yes No

5. What is your current marital status?

Single

In a relationship

Married

Divorced

6. What is your overall collegiate GPA?

0-1.0

1.1-2.0

2.1-3.0

3.1-4.0

7. What race/ethnicity do you identify as?

Caucasian

Hispanic/Latino

African-American Asian/Pacific Islander

Mixed

Other

8. Would you identify yourself as a sports fan? Yes No

9. What sport/s do you identify yourself as a fan of?

10. List all social studies courses that you have completed at the university level (history, geography, economics, government, etc.) in the form of (Title, University)

11. What is your college major?

12. What is your college minor? If none, leave blank.

You will now view a map of the United States of America. To the best of your knowledge, please identify and label each State within the map. If unknown, leave blank.



1. _____
3. _____
5. _____
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Thank you for completing this survey. Please turn your survey into the researcher.