



Critical Review of Geographic Illiteracy in the United States: A Multifaceted Analysis

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ABSTRACT

This paper explores the concept of geographic illiteracy in general, and specifically in the United States over the last several decades. The researcher sets out by placing geographic literacy concerns and challenges within the context of the broader literacy challenges raised in the United States in the last quarter of the previous century via the 1983 published landmark education report, *A Nation At Risk*. Geography illiteracy, also called 'geo-illiteracy' is demonstrated from reports and statistics comparing geographic achievements internationally among nations in certain cohorts, and the state of geographic education nationally, is examined. The importance of geography education-literacy is highlighted, and the researcher explores several authoritative sources including organizations, scholars, and writers on the subject, and then from an analysis of the extant literature, devises "Five Theses" as to the causes of geographic illiteracy (culture value thesis, curricular thesis, corporate-economic value thesis, and perceptions of geography thesis). The consequences of geographic illiteracy are then examined under "Five Themes" referred to as 'challenges' (environmental-sustainability challenge, economic challenge, national competitiveness challenge, threat to national security challenge, and well-being and happiness challenge). Finally,

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the researcher presents several recommendations for improving geographic literacy across the United States, noting that a public policy effort by the federal and state governments must ultimately be the most viable solution to improving the geographic knowledge and skills of American citizens.

Keywords: *Culture value; environmental sustainability; geography education; geographic illiteracy; geoliteracy; public policy.*

1. INTRODUCTION

Literacy challenges in the United States have been the subject of extensive focus ever since the publication of the 1983 report, *A Nation At Risk: The Imperative for Educational Reform* by President Ronald Reagan's National Commission on Excellence in Education. This landmark publication brought the challenges of American literacy to the forefront of national policy and priorities, and materialized the long-needed debate on literacy challenges and their impact on national competitiveness. As the report stated then, "Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world" [1]. It has been 35 years since the publication of *A Nation At Risk*, and it seems the risk still lingers in various forms and fields. One of these forms is geographic illiteracy and one of these fields is deficiency in geography education.

The term geography as a general descriptive term refers to discourse about the earth as evident from its Latin origins where *Geo* means the "earth" and *Graphie* means "to discourse" [2]. As such we can simply describe geography as the description of the earth in its various forms or elements and contents [2]. Given this understanding, geographic illiteracy refers to the lack of knowledge in geography as a discipline. Americans are regarded as deeply lacking in geographic knowledge about the world in general, and disconcertingly and specifically, about their own country. For example, in *The National Geographic-Roper 2002 Global Geographic Literacy Survey*, where 3,000 18-24-year-olds in Canada, France, Germany, Great Britain, Italy, Japan, Mexico, Sweden and the United States were polled, "Sweden scored highest; Mexico, lowest. The U.S. was next to last" [3]. Approximately 17 years later, in 2019, 75% of American students were described as falling short of proficiency in geography [4]. Therefore, geographic illiteracy, also called ge-illiteracy remains a major challenge, and is seen as both a threat to American competitiveness and security on a global scale [4].

The subject of geography literacy in the United States seems to have been laid to rest by both geography scholars and educators alike over the past several years. A search of the existing literature on the subject via Google Scholar mainly yields articles related to the subject up to 2007 and earlier. A search within chronological or date demarcations after that time period yields but little results specifically focused on "geography literacy" as a general subject, but rather provides more results related to subjects such as digital literacy, rethinking map literacy, geography of United States poverty, young people's information literacy beliefs and practices in the United States, Improving disaster knowledge within high school students through geographic literacy, and less specific materials actually tackling geographic literacy as a major general challenge across American schools and communities. Given this dearth of literature on general geographic literacy post early 2000s, it is as if the subject matter has been exhausted or simply laid to rest like so many problems which have been identified and debated in modern academic literature. This 'sense' of where the subject matter of geography literacy is has resulted in some journals and reviewers seeing the subject matter as one no longer needing research, recall, or review, and leads to what has amounted to ignoring an important problem whose lack of resolution still poses significant consequences on individual-personal, community, and national levels owing to the place that geography plays as a discipline in modern life and its intimate interrelationship with so many activities and practices ranging from our uses of technology to transportation, urban life, and politics, etc.

Geography literacy still matters as lack of geographic knowledge affects disaster preparedness and response [5], and map and thematic literacy of citizens relevant to environmental and organizational management [6]. One of the last notable reports on geography literacy in the United States is "A road map for 21st century geography education" [7] (Bednarz, Heffron, & Huynh, 2013) as published by the Association of American Geographers in 2013 as

a collaborative effort of four national geography organizations in the United States: the American Geographical Society (AGS), the Association of American Geographers (AAG), the National Council for Geographic Education (NCGE), and the National Geographic Society (NGS). Beyond this point, the literature on geography literacy being dealt with in academia becomes really scant, and explains one major reason why sources in this conceptual paper seem rather dated. In 2007, publishing in the *Journal of Geography in Higher Education*, Murphy [8] looks at renewed interest in geography in higher education and geography literacy stemming from what he describes as “heightened public interest in geographical issues, expanding awareness of geography in other disciplines, the geotechnology revolution, the growing job market for geographers, and improvement in geography education in some primary and secondary schools” (p. 121). However, this so-called resurgence has not created what can be called a geographically literate American public or citizenry, especially in regard to general geography knowledge in relation to the United States, and even less regarding the geography of other lands, cultures, and people, or the world. Therefore, geography literacy must remain a priority on the national education and country-strategic agendas.

2. GEOGRAPHY LITERACY IN PERSPECTIVE

Geography has been part of U.S. education since the 17th century and was considered very integral in the 18th century, with several states mandating geography for schools in the 1830s [9]. Many U.S. educators considered geography an important subject in the early 20th century, but by the second and third decades of the 20th century geography was integrated into social studies, affecting its status as an independent powerful discipline [9]. Schoenfeldt [9] argues that the social studies curriculum that emerged relegated geography to map skills and regional descriptions, and in some cases completely excluded the discipline from teaching and learning. Since then, geography as a major and its value and importance have been sidelined, leading to the dearth of geography knowledge characterizing Americans today.

Understanding what geography is about becomes important in communicating the need for geography literacy. According to the Canadian Council for Geographic Education

(n.d.) [10], “Geography is the study of places on Earth and their relationships with each other” (p. 1). Being geographically literate means having significant and useful factual knowledge and understanding about these places and their relationships, and furthermore, understanding how people interact with their environment and with each other from place to place [10]. Furthermore, through geography, we are able to understand regions and the complex world in which we live. In a global world where culture and values have met at many crossroads and where travel, trade, products, technology and work have cut across borders and nations, understanding regions and terrains and the complex natural and human world become important to our success.

In the United States, testing has constantly revealed a deficiency in the geographic knowledge of Americans regarding their own country and environment, as well as well the world in general [11]. Winship notes that various surveys assessing geographic knowledge have demonstrated time and again the geographic ignorance of Americans [11], and this continues to be a major poverty of American culture and society today. Geography literacy describes the level of knowledge individuals possess regarding fundamental or basic geography in reference to the Earth, people, places, cultures, and the world. The term geography literacy is often used to mainly describe what Winship [11] refers to as “Place location knowledge (PLK), or the ability to locate places on a map, [and] is perhaps the most researched aspect of geographic knowledge” (p. 2), and which Marran [12] and Torrens [13] view as essential in providing the foundation upon which geography as a systematic body of knowledge or study is rooted. Dikmenli [14] states that, “Geographic literacy could be defined as the competence of turning understanding and comprehension of geographical knowledge into a skill because literacy consists of solving problems, reasoning, critical and creative thinking processes” (p. 1). Salter [15] believes that geographic education should go far beyond simply pinpointing locations on maps and using rote memory to record such locations.

A specific area in which geographic literacy is deficient is geographic information. Miller, Keller, and Yore [16] define geographic information literacy (GIL) as “the possession of concepts, abilities and habits of mind that allow an individual to understand and use geographic

information properly” (p. 243). We are living in an information society where our information is coming from many national sources, cultures, and diverse sources, and geographic information skills are required to be literate in an information society [16].

The definition of geography literacy for our global century must be a broad one despite the tendency to focus on people and places as evident in the foregone definitions and in how Saarinen and MacCabe [17] define geography literacy as “knowledge of world and places” (p. 197). Agreeing upon the need for a more expansive definition of geographic literacy are Bein [18] and Donovan [19] who both argue that ‘place location knowledge’ (PLK) and ‘knowledge of world places’ (KWP) are both not sufficient to grasp the scope of geographic literacy. Perhaps a more expansive definition of geography literacy is one provided by Eve, Price and Counts [20], who define geography literacy as “the ability of individuals to demonstrate map reading skills, knowledge of spatial locations of places, and understanding of peoples and cultures associated with various regions” (p. 408). This is more like it, as geography is diverse in its studies and presentations. What is certain about geography literacy is that it is evidenced by three elements as communicated by the National Geographic Education Foundation [21], and that most Americans are not competently possessing of these: 1) basic proficiency in map reading skills, (2) good knowledge of place locations, and (3) sufficient understanding of human systems, society, and the physical environment.

2.1 What is the Literature Showing on Geography Literacy?

The state of geography literacy has been dealt with extensively across the literature in terms of verification of its existence as a problem and challenge to its many stakeholders [4]. However, what has not been satisfactorily addressed is its impact and consequences on individuals, communities, and nations alike. However, the arrival of the 45th President of the United States and his administration, policies, and their influence on many American’s perspectives regarding other nations and the world – knowledge about and of the earth itself, nations, peoples, and cultures of the world – have added emphasis on geography illiteracy as a challenge, with President Donald Trump himself being regarded as geographically-challenged with regard to basic knowledge about places and

people, as well as fundamental geopolitical and geo-economic understanding. This is so much the case as to lead Dr. Derek Alderman, Professor of Geography at the University of Tennessee and President of the American Association of Geographers to write an article titled, “Time for a Radical Geographic Literacy in Trump America”, commenting extensively on President Trump’s designation of countries such as Haiti, El Salvador, and African nations as “shithole countries.” Alderman (2019) argues that President Trump’s maligning of certain parts of the world runs directly contrary to the American Association of Geographers’ core values regarding scientific knowledge, international collaboration, support for developing regions, human rights, and anti-racism. It is also seen to reflect a challenge in Americans’ appreciation of the diverse themes of geography as a subject highly based on the study of other cultures and people. Additionally, Alderman [22] believes that such a characterization of other countries erases consideration of socio-spatial processes and the difficult decisions that make migration a necessity for many people. Furthermore, such a statement disregards the very real contributions that immigrants from such denigrated nations have made and continue to make in the United States (Alderman, 2019).

In putting forward the above arguments on the U.S. President’s remarks and its consequences, Professor Alderman points to the damage to what he calls “geographical ethics” (Alderman, 2019). By “geographical ethics” Professor Alderman (2019) is referring to the “intellectual and moral obligation to develop a sophisticated global understanding, to represent the world in just terms, to care about and develop an empathy for others” (para. 7). Geography literacy demands such ethics, especially as we seek to educate people about the world around them and the world in which they live; it is not a world of one nationality, culture, ethnicity, people, weather or climatic system, but a world of variety and diversity concerning these and other subjects of geography. Thus, geography literacy requires this fundamental acknowledgement and recognition.

The need for geography education has been a longstanding challenge and one which many institutions and educators including the American Association of Geographers have been advocating. However, this challenge is being made more complicated and hard-fought by the Trump Administration’s stance on the rest of the

world and how it characterizes and regards other nationalities, places and cultures. As Alderman (2019) remarks, "This challenge from the White House, while clearly indicating the need for increased advocacy for geographic education, comes at a difficult time in the discipline" (para 13). A difficult time in the discipline because geography is still not where it needs to be in school curriculum, individual and community lives, and education.

Charles F. Gritzner, Distinguished Professor Emeritus of Geography at South Dakota State University, has lamented on the geographic knowledge deficiency of Americans in a profound way:

Never has a nation's people possessed more information, or been in command of more sophisticated means of acquiring, disseminating, and analyzing data, than do contemporary Americans. In addition to traditional resources, during recent decades GPS, GIS, satellite imagery, computer mapping, the wonderful resources of the Internet, and other technological advances have vastly expanded our knowledge of Earth's surface. Yet given these tremendous resources for enhancing our geographic awareness and global understanding, most Americans -- living in a Global Age -- continue to possess little more than a Stone Age awareness of the world about them (Gritzner, n.d., para 1).

Here, Professor Gritzner painfully points to how the explosion in technology, knowledge tools and information systems, tools capable of exploring and learning more about the earth and its people more than ever before, have not contributed to increased geographic literacy among Americans, and he finds it rather distressing, if not completely baffled by this, and such to the point that he simply and without political correctness refers to Americans as "geographic illiterates" (Gritzner, n.d., para 3). Perhaps no one has communicated the problem of American ge-illiteracy or geographic illiteracy more succinctly and emphatically than Professor Gritzner as he writes,

Most Americans lack a well-developed "mental map" of Earth's surface, with its varied mosaic of physical and human conditions. To these geographic illiterates, our planet assumes the image of a vague, fragmented, and incredibly confusing hodgepodge of meaningless phenomena that are randomly scattered about on an all but bare tabula rasa. There is a world

inhabited by faceless peoples whose cultures lack a proud heritage, bonding institutions and customs, feelings and values, tools and technologies, and essential dimensions of space and time. Places, to the geographic illiterate, are meaningless. They have no grasp of those unique physical and human features that give each spot on Earth's surface its own distinctive character, from which each draws its identity and importance. And the spatial sorting of features into similar and dissimilar places using the geographer's concept of region holds little meaning or relevance to those who are unaware of their location, nature, and significance. Their world is composed of vague physical features and life-sustaining environmental systems for which they lack valid mental images, appropriate terminology, or an understanding of their nature, origin, and importance. Those who are ignorant of basic geographic principles also have little knowledge of environmental potentials and limitations. Under these circumstances, how can they possibly be expected to make enlightened decisions relating to the use and sustainability of our finite global natural endowment? (para 3).

Gritzner [23] believes that Americans know very little about the world of cultures and nations in which we live. Ottati [24] notes that Americans' geographic illiteracy has been a disturbing trend and nothing recent, and associates this with not just poor curriculum and instructions, but what may amount to a general lack of interest by Americans in other places and people. Gritzner [25] views the challenge in geography literacy as one present across different organizations and institutions at many levels and one deserving more actions and attention, not just from individuals, but from key organizations and government as geographic literacy affects national well-being.

2.2 Comparison of Geography Literacy – Nation vs. Nation

Geographic literacy is perceived to be an important element in national competitiveness among nations, especially in the broader realm of literacy and its impact on the competitiveness and future of nations. When it comes to geographic literacy on a country-country level, there is little current statistical data to presently draw upon since the last significant survey on comparative geoliteracy of countries was administered by the National Geographic/Roper Poll (2006), which found that half the 18–24-year-old Americans surveyed could not locate

New York on a map of the United States, and nearly 6 in 10 could not locate Ohio [26]. In the same survey, it was reported that 33% of young adults could not tell on which continent the Amazon rainforest is located [27].

While studies go as far back as to the 1990s and 2000s on comparative geographic literacy among nations, in all tests, Americans scored significantly lower than almost all their counterparts or competitor nations. In the 2006 study, comparing geographic literacy among 18-24 years old from Canada, France, Germany, Great Britain, Italy, Japan, Mexico, Sweden and the United States, the United States was second-to-last. The most current and significant study close to geoliteracy was conducted in 2016 in global affairs by National Geographic, and 90% of American youth surveyed incorrectly identified China as the United States' largest trading partner [28]. There is a need for more current statistical data on comparative geographic literacy to better inform U.S. policymakers and educators on the real state of geographic illiteracy in the United States.

3. THE IMPORTANCE OF GEOGRAPHY EDUCATION-LITERACY IN THE 21ST CENTURY

Lukinbeal and Craine [28] find geographic illiteracy a paradox in today's world where we have so many tools and information available to learn about the world. As they note, "In a media saturated world of globalization, information flow and knowledge economies, an interesting paradox exists: geographic literacy appears to be on the decline while geographic information is on the rise" [28]. The problem must therefore be related to individuals and systems that promote and affect educational and knowledge pursuit.

One of the challenges in appreciating and understanding geography as an important discipline and body of knowledge might be modernism and urbanization. Both have led to decline in the rural lifestyles that once acclimatized and bound many Americans to nature-environment via agrarian livelihood and culture where morning and waking were attuned to the cockerel's crow, and where one's knowledge of nature, its resources including soil, water sources, forests and their wildlife, agricultural practices and methods, were essential to survival and happiness. This can be deduced from the resulting impact of urbanization and modernism on traditional land

use [29]. Land use for nature-related and agricultural practices have decreased and continue to decrease with urbanization.

While rapid modernization and urbanization have brought with them more than adequate opportunities and challenges for geographic study and exploration from the density of urban settlements to urban sprawl, transportation systems, human settlement challenges, transformation in industries via agrarian to manufacturing and tertiary production systems, among other themes, the 'distancing' from nature and natural environments precipitated by technology and city life might have contributed to decline in geography as the discipline stood decades ago, mainly as a study of the subdiscipline we label as physical geography. Geography remains important despite the decline as a major in colleges and universities and its marginalization in American education and curricula [30]. The Canadian Council for Geographic Education (n.d.) believes that geography is highly needed in a global world where trade, travel, and cultures are internationalizing at a rapid pace and where economic opportunities via technology and globalization of markets demand knowledge of other places, cultures, and people. As the Council notes, "Well-planned geographic education at all grade levels will help to make us more aware of other countries and cultures" (p. 2), and therefore, better prepare our citizens and nation to take their part and play a greater role in the world.

The Canadian Council for Geographic Education (2019) has given ten (10) important reasons why we need to study geography as a nation:

1. To understand basic physical systems that affect everyday life (e.g., earth-sun relationships, water cycles, wind and ocean currents).
2. To learn the location of places and the physical and cultural characteristics of those places in order to function more effectively in our increasingly interdependent world.
3. To understand the geography of past times and how geography has played important roles in the evolution of people, their ideas, places and environments.
4. To develop a mental map of your community, province or territory, country and the world so that you can understand the "where" of places and events.

5. To explain how the processes of human and physical systems have arranged and sometimes changed the surface of the Earth.
6. To understand the spatial organization of society and see order in what often appears to be random scattering of people and places.
7. To recognize spatial distributions at all scales — local and worldwide — in order to understand the complex connectivity of people and places.
8. To be able to make sensible judgements about matters involving relationships between the physical environment and society.
9. To appreciate Earth as the homeland of humankind and provide insight for wise management decisions about how the planet's resources should be used.
10. To understand global interdependence and to become a better global citizen (p. 1).

These reasons should resonate with individuals and citizens regardless of their nation and nationalities as geography's value and importance cut across all borders. As James Bryce, [Viscount Bryce of Dechmount, Member of the British Parliament, Regius Professor of Civil Law at Oxford, Professor of Jurisprudence at Owens College, Manchester, British Ambassador to the United States, and an academic, jurist, and historian] noted over 100 years ago in his address, "The Importance of Geography in Education" as delivered on January 15, 1902 at the Annual Meeting of the Geographical Association, "The place of geography in education may be considered under three aspects...Geography in one aspect of sense of the gateway to the physical sciences; in the second aspect it is the key to history; and in the third it is the basis of commerce" [31]. This is the value, importance, and power of geography that many seem to forget today.

4. CAUSES OF GEOGRAPHIC ILLITERACY

The causes of geographic illiteracy are many and difficult to address, especially those embedded in collective and individual cultural values and interests. When a people collectively lacks appreciable interests in learning about the world; other nations, peoples, and cultures, it can take significant effort to change this mental frame of mind and prevailing worldview. A powerful paradigm shift is needed at the highest level of

authority and leadership to effectuate such a culture-value orientation. From the 1980s geographic illiteracy started to receive major attention [32] (Salholz, Katz, & Wright, 1988) and this interest continued into the 1990s [18,33,19] and then resurfaced strongly in the 2000s [9,3] as national competitiveness considerations bearing on literacy across the board once again came into the media. The various causes of Americans being such "geographic illiterates" (Gritzner, n.d.) are explored from several perspectives below.

4.1 Culture Value Thesis

Is American culture favorable to geographic knowledge as a value?

Above in his challenge to broaden literacy about other nations and the world, Professor Alderman points to a longstanding attitude that may be a cultural barrier of Americans to geography literacy; one of undervaluing diversity and other people and cultures. This is perhaps what sociologists and anthropologists refer to as American ethnocentrism. As Professor Alderman (2019) points out, there is "a tradition among journalists and even some educators of framing African people and places largely in terms of disaster without carrying out a full and responsible historical and geographic analysis and depiction of the region" (para 12). A culture that is open to learning more about other places and people will certainly be more geographically literate as they value and make more efforts both individually and collectively to learn more about others and their worlds and living conditions. This longstanding cultural bias that precludes Americans from having higher interests in other nations, peoples, and cultures, and learning more about the world, has contributed to the geographic illiteracy of many Americans as Professor Alderman further notes regarding high school students' Human Geography AP exams: "AP essays contain[ing] damaging stereotypes about Africa along with clear elements of racism, sexism, and classism" (para 12).

4.2 Curricular Thesis

Is American educational curricula the major reason why Americans are not as geography literate as their counterparts?

Alderman (2019) argues that, "We are in a time in which some states are cutting or diluting geography within public school curriculum—a baffling decision given the international

challenges and uncertainties facing us” (para 14). The lack of geography in curriculum across schools and colleges has been a longstanding concern of geography advocates and educators alike. This problem seems not to be solely an American one, but also one reflected in other nations. For example, the Canadian Council for Geographic Education (n.d.) has written on “The Importance of Geography in the School Curriculum” as way of encouraging greater geography opportunities for literacy. In the United States, Alderman (2019) believes that there is a curriculum challenge and an ethical challenge to geography literacy, both reflected in the lack of the subject across schools and universities and the negative attitude toward many subjects of geography as reflected in the recent controversial statements by the Donald J. Trump, the 45th President of the United States, and one to which many of his followers submit.

When a subject is lacking in a nation’s educational curriculum, it should not be surprising that its citizens treat this subject as unimportant or fall short of knowledge and literacy in such a subject. Some view geography illiteracy as stemming from the lack of valuable place it holds in our nation’s schools’ curriculum, and its actual marginalization in curriculum and our definition of modern literacy. As Johnston [30] notes, geography seems to be marginalized in such a way that very few Americans ever graduate college with a course in geography. Bednarz and Bednarz [34] believe that more progress and emphasis are needed in geography education in schools, and that this must begin with research to understand the status of geography education as an academic subfield of geography, especially with regard to spatial thinking and reasoning skills. De Blij [35] believes that a lack of geographic literacy has contributed to more insular perspectives and inability of many college and university students across the American classrooms and landscapes to engage more extensive and sustainable levels of academic discourse in even introductory courses.

One side of geographic illiteracy that De Blij [35] points out, is that of educators and administrators. De Blij [35] argues that “geographic illiteracy infects many educators at all levels” (p. 26) including even college and university deans [35]. Thus, geography illiteracy becomes even more challenging to deal with on a curricular level when those who are in charge of curriculum and changes are themselves

geographic illiterates as Gritzner (n.d.) describes them. According to Roehl (2013) there are factors that have been identified as the cause of geographic illiteracy to include the lack of exposure in the school system and failure of public school curriculum and education to make the subject an important one, and to emphasize skills germane to geography such as map reading skills, and knowledge of relief features across the globe.

4.3 Governmental and Public Policy Thesis

Is the American Government doing enough to ensure that geography literacy becomes a national priority?

In the United States, both state and national-federal governments can exercise some power over education via funding and legislation, though states have more say in the education of their citizens. Despite this, the efforts from both state and national government toward geographic literacy in the United States have been minimal. In 2015, under an act known as Every Child Achieves Act (ECAA) via U.S. Senate’s legislation reauthorizing the Elementary and Secondary Education Act (ESEA) known as No Child Left Behind (NCLB), the national government authorized grants for subjects of focus, and geography was identified as one of those key areas for which competitive awards were provided [36]. Unlike in some nations where governmental ministries of education play a key role in mandating subjects in curriculum and determining what students learn, this is not the case in the United States, as the U.S. Department of Education plays more of a financing role nowadays. Additionally, political agenda and private interests affect any concerted efforts geared toward central management and directives on curriculum components and inclusion of such subject as geography as a universalized requirement. This could be easily managed however through funding allocation and requirements restrictions by the national government and states. Until the United States government truly recognizes the risks to national security and global competitiveness caused by the geographic illiteracy of Americans, no great efforts will be made in geographic literacy advocacy, and we must remain dependent on key associations such as the Association of American Geographers, American Geographical Society, Society of Woman Geographers, National

Geographic Society, Association of Pacific Coast Geographers, and Geographical Society of Philadelphia, among other association and individual efforts at advocacy.

4.4 Corporate-Economic Value Thesis

Has the dominance of and focus on business and entrepreneurial education relegated subjects like Geography to the backburner?

Today's economy is mainly built on business and economics with little thoughts given to the underlying disciplines and knowledge upon which capitalism and its many entrepreneurial activities and processes, as well as systems rest. The age of continued corporatism has affected not just what disciplines we study or place value and importance on, but also what schools and colleges focus on in their curricula. For example, as a result of corporate focus and entrepreneurship, business administration and management have consistently ranked as the top major in the United States over the last few decades [37].

Geography like many other disciplines including some of the arts and humanities have been placed on the backburner because of the unmatched focus on business and technology education, as well as other majors deemed more job-market responsive. With many advocates including corporations stressing that students are not job-market ready, and that community and other colleges and institutions should be more responsive to job market needs [38], essentially to the needs of corporations, more and more colleges are focused on business and entrepreneurial majors and skills. Given the power of market demand and its influence on decided majors, geographic illiteracy will remain a challenge as fewer colleges and universities focus on this most important major. Additionally, because of this corporate-economic focus of education, it is also difficult to attract enough students to the field of geography.

4.5 Perceptions of Geography Thesis

Is Geography seen as a viable major for today's world and opportunities?

Those who study geography or who are geography practitioners have an important role to play in geographic literacy. This role is one of advocate, teacher, and "inviter" to the discipline. People might not perceive geography as wholly important to their well-being and growth, and

they may even see it as irrelevant to their understanding and progress in today's world. This is simply not the case and geographic educators and practitioners have a major role in motivating others to learn about the subject. Gritzner [39] believes that geographic practitioners have failed to make their discipline relevant and interesting to those who are on the outside. As he remarks, "practitioners, have failed miserably to convey the nature, utility, and excitement of our discipline to non-geographers" (p. 38). Practitioners of geography must ensure that they communicate the nature and scope of the discipline to others [24].

5. CONSEQUENCES OF GEOGRAPHY ILLITERACY

Geography is an important discipline, and never before was its importance more obvious than in a globalized world with globally integrated cultures, societies, and systems. As we become exposed to more cultures, nationalities, languages, ethnicities and lifestyles our geographic competence should necessarily increase. This can only occur when we make effort to learn about other places and people. The available tools and technology to facilitate this endeavor are abundant despite the existence of a paradox where geographic knowledge and literacy seem to have declined despite increasing availability and access to information, and our existence in an information society [27]. Lack of geographic literacy or what we call "geo-illiteracy" is a major problem and its consequences reveal themselves in terms of environmental and sustainability challenge, economic challenge, national competitiveness, national security threat, and as a challenge to individual and community well-being and happiness.

5.1 Environmental-Sustainability Challenge

Is Americans' lack of geographic knowledge a major factor in sustainability and environmental problems and issues? Does the lack of geographic knowledge affect Americans' ability to deal effectively with environmental problems?

Frey [40] argues that geography contributes to species diversification, and hence, the diversity of life within regions. Many nations are able to develop services such as parks and recreation, tourism and nature lodging based on their geography of diverse lifeforms and terrain including vegetation and the activities stemming from these. As nations embrace the sustainability

movement, its adoption and following will be affected by people's knowledge and understanding of nature, and how they have learned to appreciate and respect nature through more intimate knowledge and understanding gained from geography. When people are less informed about their environment and their relationship with nature, they will have less to contribute to sustainability efforts and practices.

The sustainability movement in the United States has been slower than much of the rest of the world, and lack of geographic knowledge might be a major cause. As McFarlane and Ogazon [41] note, the failure and slowness to adopt sustainability into school curriculum might be reflective of a broader problem related to geography and its value and importance as a discipline, and the knowledge that American decision makers in government and education have about sustainability and geography.

5.2 Economic Challenge

What are the economic consequences of Geography Illiteracy – Individual, Community, Nation?

The Canadian Council for Geographic Education (n.d.) states that "There is a close relationship between geography and economics" (p. 2). The economy of a nation is influenced by its geography, and so are the activities and livelihood of its people. When people lack geographic knowledge, they lack the ability to fully and sustainably exploit and preserve their natural resources and nature's abundance and diversity. Geography affects the location of natural resources and shapes settlements in terms of housing and transportation networks. It also determines and affect the technology people use and the level of industrialization and energy production available (Canadian Council for Geographic Education, n.d.). In countries where citizens lack understanding of their terrain and natural resources, their negative impact on these might be greater in terms of overexploitation and depletion of resources, environmental problems and challenges such as pollution, deforestation, and soil erosion and similar challenges.

5.3 National Competitiveness Challenge

Does Geography Illiteracy affect National Competitiveness?

There has always been a perception that literacy levels affect national competitiveness. For

example, the 1983 publication of *A Nation at Risk* was perpetrated highly on this eventuality given the status of literacy in America then. The report in 1983 remarked, "Our Nation is at risk. Our once unchallenged preeminence in commerce, industry, science, and technological innovation is being overtaken by competitors throughout the world" [1]. This remains the case today as America's literacy level is still behind many nations, especially in the STEM disciplines, as well as in reading [42]. With Americans having less geographic knowledge and understanding, they will not be able to exercise their full potential in securing from nature bountiful wealth while ensuring sustainable practices and relationships with nature and the world to continue a prosperous American saga of wealth and dominance into the future. Lack of geographic knowledge affects strategic geopolitical intelligence and success, and hence, the ability to develop and launch effective offensive and defensive strategies in a globally competitive market and economy.

5.4 Threat to National Security Challenge

Is Geography Illiteracy a Threat to National Security?

Geographic illiteracy is regarded as a significant challenge to America's continued position of dominance and power in the world, and De Blij [35] has argued that the United States has become the world's most geographically illiterate society of consequence because America's geographic illiteracy is a direct risk to America's national security. De Blij [35] believes that geographic knowledge is an important ingredient of national security for the United States. In a global world, De Blij [35] believes that "Geography is a superb antidote to isolationism and provincialism" (p. 29), especially where spatial solitude affects competitiveness, progress, and access for nations and peoples.

The changing geopolitics of our world calls for better understanding of what is taking place with nations such as China as it has successfully transformed its Pacific Rim provinces "from backwater to global juggernaut in little more than one generation" [35] to affect the strategic interests of the United States and other countries near and afar. Issues of energy crisis, climate change, and even weapons of mass destruction (WMD) become important national security challenges that the United States must regularly and continually address as it struggles to secure

safety for its democracy and citizens in an increasingly turbulent world. De Blij [35] believes that geographic illiteracy increases both liability and risks for America and Americans. The need for geography literacy and its importance to the preservation of American democracy and nation is underscored by Gritzner (n.d.) who writes, "If the United States is to endure, we must ensure that all students - kindergarten through college - be given the key to the future: an understanding of the world that only a rigorous geography curriculum can provide" (para 9).

5.5 Well-Being and Happiness Challenge

How does Geography Illiteracy Affect the Individual's Well-Being and Happiness?

Geographic illiteracy is perceived by many to affect individual well-being and happiness. Part of our well-being and happiness is the knowledge we have about our world and surroundings. Geography helps us to understand and learn about the world and our environment and as such, moderate and inform our participation and interaction with the world, including other peoples and cultures along with nature and environment (Canadian Council for Geographic Education, n.d.). When individuals lack knowledge about nature and its processes, about people and cultures, it becomes more difficult to identify with, relate to, and appreciate differences. Geographic knowledge increases international understanding as it offers knowledge and awareness about other people and cultures that help us to find our place in a global community (Canadian Council for Geographic Education, n.d.).

6. RECOMMENDATIONS

In order to improve geography literacy across the United States, many solutions have been proposed. For example, Alderman (2019) recommends what he calls a "Radical Geography Literacy" approach. According to Alderman (2019), this approach consists of a "discipline-wide elevation and intensification of geographic education-related outreach and advocacy" (para 16). This becomes paramount in the age of continuing globalization where knowledge of places and people matters more than ever before. Alderman (2019) explains this approach as follows: "The radical approach proselytizes the educational and political necessity of having a broad comprehension and appreciation of the world's complexity and diversity as a means of countering ongoing national efforts to deny that

reality" (para 16). Without the involvement of government on a national level placing geography education at the forefront as it has done for science education or the STEM subjects, this will become a major challenge.

The Canadian Council for Geographic Education for made several recommendations to increase geography literacy. These include the following: (1) encouraging geographical learning; (2) providing opportunities for teachers to upgrade their geography knowledge; (3) hiring qualified geography teachers; (4) ensuring that geography classes in schools have proper equipment; and (5) making learning geography an interesting and exciting learning venture for students (Canadian Council for Geographic Education, n.d.). In addition to these, geography as a discipline needs strong advocates and better integration into modern practices across business and economic decisions and activities. For example, Dando and Chadwick [43] have recommend using film and modern media to enhance learning and interest in geography. For example, they recommend adapting geography to a media-saturated society by making use of films, television, podcasts, YouTube, as well as other social media sites [43].

In order to address the issue of geographic illiteracy on a national level, in 2015, Every Child Achieves Act (ECAA) via U.S. Senate's legislation reauthorizing the Elementary and Secondary Education Act (ESEA) known as No Child Left Behind (NCLB) included competitive grants to promote innovative history, civic, and geography instruction [37]. This is seen as a welcomed direction for the American Association of Geographers (AAG), but it represents only a small portion of the monumental task and efforts needed in making geography education a national priority.

To address geographic literacy in children, Liben and Downs [44] have recommended an "interdisciplinary approach combining the fields of geography and developmental psychology" (p. 549) beginning with "developing pregeographic or premapping skills during the preschool years" (p. 549) and advancing activities as children grow through the structured chronologically graded educational system. Rose [45] recommends making geography a less male-dominated field by making more opportunities for learning the subject and engaging practice available for girls and women. She feels that part of the geo-illiteracy problem has been the male-

domination of the field. This is supported by Nolan [46] whose test on physical and geopolitical geography administered to 321 adults, found that women, regardless of education level, scored significantly lower than men. Turner and Leydon [47] recommend using tests and other methods to develop strong geographic literacy skills needed to make sense of spatial data that has become so widely available and used today.

Thomas-Brown [48] believes that enrolling students in an afterschool Geography Club can significantly affect and improve their love and motivation for geography as a discipline and their levels of geographic literacy. In particular, she states that such a program can foster place recognition, application of geographic theory, establishment of connections between geographic facts and the students' daily lives, and awareness of other cultures [48]. Lukinbeal and Craine [28] recommend using media literacy strategies to foster geographic knowledge and learning, especially owing to the fact that new media plays such an important role in what we pay attention to. Given the importance of geography education to national development, a public policy effort by the federal and state governments must ultimately be the most viable solution to improving the geographic knowledge and skills of American citizens.

7. CONCLUSION

The issue of geographic illiteracy is just one side of the literacy challenge facing the American nation, as well as several of its counterparts in the Western world. On December 3, 2019, Agence France-Presse (AFP) released the following story, "Students in four Chinese regions topped the rankings, ahead of their Western counterparts in reading, mathematics and science" in relation to results of a PISA survey carried out by the Paris-based Organisation for Economic Cooperation and Development (OECD). Program for International Student Assessment (PISA) is an international assessment that measures 15-year-old students' reading, mathematics, and science literacy every three years, and this year it assessed literacy in those areas among its 37 member states and 42 partner countries and economies (Agence France-Presse [AFP], 2019). Among the 600,000 15-year-old students who took the two-hour tests, students in four Chinese regions of Beijing, Shanghai, Jiangsu and Zhejiang ranked higher than their Western counterparts in reading,

mathematics and science [42]. Other countries that showed well included the Baltic nation of Estonia, followed by Canada, Finland and Ireland [42]. Unfortunately, the trend of American and Western students being outshone by Asian counterparts and others in non-Western regions is not a new trend in education, but a continuing one despite countries like the United States spending far more per student on education.

When it comes to geographic literacy, the problem is universal in terms of demographics in the United States. As Liben and Downs [44] note, "A disturbing level of geographic ignorance in both children and adults has been well documented in recent years" (p. 549). Children and adults alike are grossly deficient in geographic knowledge, and as Nolan [46] conveys, most adults know very little about the world in which they live. This means that a viable solution will have to be one that is collectively and nationally applied through Congress or the federal government mandating requirements for geographic literacy. While we worry about geography and its future based on its declined presence in schools and the high level of geographic illiteracy among populations, especially in the United States, Freeman [49] believes that geography is going nowhere due to its vitality because in a world of increasing sensitivity to the problems of people and resources, geography has constantly provided the basic information for its sister sciences, economics, political science, sociology and demography, and will continue to do so [51-54].

HIGHLIGHTS

- Geographic literacy as an element in national competitiveness among nations
- Geographic illiteracy as a paradox in today's world of so information tools and availability
- Americans score significantly lower than almost all other nations on geography literacy

COMPETING INTERESTS

Author has declared that no competing interests exist.

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