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Strengthening Geography Pedagogy with Authentic Intellectual Work

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Introduction

From the NAEP (National Assessment of Education Progress) results and other data, we conclude that more than 70% of high school graduates are not prepared to do the ordinary geographic reasoning that everyone in our society must do in the course of caring for themselves and their families, making consequential decisions in the workplace, and participating in the democratic process.

(Edelson, Shavelson, & Wertheim, 2012)

Over the past 20 years, social studies and geography in particular, have been marginalized in the curriculum (McMurrer, 2007). With the rise of high stakes testing and rigid accountability mandates, teachers often “abandon student centered, community based instruction in an effort” (Mathews & Adams, 2016, p. 297) to cover the required curriculum. Further compounding the status of geography as a protected subject within social studies is the precarious place that it holds within teacher education programs across the country (Schell, Roth, & Mohan, 2013; Theobald, Dixon, Mohan, & Moore, 2013). On a more positive note, advances in technology (Milson & Kerski, 2015), renewed emphasis on inquiry teaching (NCSS, 2013; NCSS 2014), more attention to global issues (Lipscomb & Doppen, 2013), and collaborative efforts on the part of national geographic associations (Edelson, Wertheim, & Schell, 2013), provide geography educators with an opportunity to improve their practice like never before.

What Does the Research Say About Geography Teaching Practice?

Over the past four decades, a small group of dedicated geography educators and researchers have fought to maintain geography’s place within the social studies curriculum. This struggle, although it has had its share of successes over the years, is in need of a reboot. Although national commissions and standards documents have highlighted the importance of geography to citizenship education, there has “been no measurable improvement in overall NAEP scores” in geography assessments given to US students over the past 17 years (Edelson, Wertheim, & Schell, 2013, p. 2). Geography has fallen victim to the same traditional pedagogical mindsets and practices (Knowles & Theobald, 2013) as the other social sciences that constitute social studies. That is, a superficial understanding of the discipline, on the part of teachers, students, and social studies teacher education programs dominates preservice and inservice experiences. The good news is that, within the literature on geography teaching practice, there has been a recent push to balance geographic *knowledge* (i.e., geographic body of knowledge represented by the “5 Themes” content)



with geographic *action* (i.e., inquiry and problem solving). This development in the field stresses

the importance of integrating geographic knowledge and geographic practices in instruction rather than teaching them separately. A traditional view, and one that would feel more comfortable to many people, would be that factual understanding should be taught first, followed by conceptual understanding, and then reasoning skills. However, educational research teaches us that it is ineffective to separate learning of facts, concepts, and reasoning because they need to be used together in practice. (Edelson, Wertheim, & Schell, 2013, p. 4)

Research on the teaching of geography is a mixed bag (Segall & Helfenbein, 2008)—some studies point to an emphasis on “doing geography” (Bednarz, Downs, & Vender, 2003) while others support the assertion that traditional pedagogy dominates most geography classrooms (Knowles & Theobald, 2013; Marran, 1994). In addition, there is some evidence that the ideals that teachers bring to the geography classroom do not always match those same teachers’ enacted curriculum. In a survey by the Texas Alliance for Geographic Education (Acheson, 2003), it was revealed that geography teachers approach their subject in highly idiosyncratic ways and that they believed that they were teaching students to “think geographically,” paying attention to higher order thinking concepts in the field. However, when these same teachers were asked to describe the content of their geography lessons, they were mainly teaching students to read maps. In short, “their higher-order goals were not supported by their lower-order practices” (Bednarz, Acheson, & Bednarz, 2010, p. 125).

In recent years, the “Creating a Road Map for 21st Century Geographic Education” (<http://education.nationalgeographic.org/programs/road-map-project/>) project has attempted to address these persistent issues within geography education in the United States. The National Geographic Society, the Association of American Geographers, the American Geographical Society, and the National Council for Geographic Education have joined together for the “Road Map” project to address research, assessment, instruction, and professional development in geography. For the purposes of this article, we will point to *two* of their recommendations and how they fit with and may be supported by the concept of Authentic Intellectual Work (AIW). First, we examine the notion of *geographic inquiry* and how this may be used to improve geography teaching and learning. After all, “...the aspect of geography that has been implemented the least in schools is the application of geography understanding to *answer questions or solve problems*” [emphasis added] (Edelson, Wertheim, & Schell, 2013, p. 3). Secondly, we focus on six categories of *geographic practice* identified by the committee that should drive inquiry focused geography instruction. These geographic practices are:

- Posing geographic questions,
- Acquiring geographic information,
- Organizing geographic information,
- Analyzing geographic information,
- Answering questions and designing solutions, and
- Communicating geographic information.



We believe that the 2 core concepts of *inquiry* and *geographic practice* can be used as starting points for geography instruction that utilizes AIW as a framework for organizing and implementing curriculum.

What Does It Mean to do Authentic Intellectual Work?

“Authentic” is used here not to suggest that students are always unmotivated to succeed in conventional academic work, or that basic skills and proficiencies should be devalued, but only to identify some kinds of intellectual work as more complex and socially or personally more meaningful than others. (Newmann, King, & Carmichael, 2007, p. 3).

Social studies education scholars have long pointed to the low quality of instruction found in many social studies classes (Barton & Levstik, 2003; Cuban, 1991; Levstik, 2008; Ross, 2000). The stereotype of lower-order thinking activities, worksheet dominated classes, and memorization of isolated facts continues to be pervasive in our field. If the purpose of the social studies as a school discipline is “...to help young people make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an interdependent world” (NCSS, 2010, p. 9), then our social studies classes/spaces should reflect this ideal. In short, social studies classes should reflect the activities, mindsets, and skills that are *actually required of citizens—social studies should match the world/space that students enter/inhabit*. Authentic Intellectual Work ensures that students are engaged with challenging (i.e., real) tasks that, rather than representing a “series of contrived exercises to earn credentials” (Newmann, King, & Carmichael, 2007, p. 2), represent activities that are required of citizens in their day-to-day lives. In this sense, the term “authentic” does not necessarily mean “real” (although it can) but it does serve a term that separates the work that students typically do in schools (for grades) and the organized, purposeful application of knowledge in a meaningful ways (for jobs and daily problem solving). Because AIW is focused on applying knowledge and ideas to real world issues and tasks, the in-depth study of a problem concludes with products that have meaning beyond the traditional classroom parameters (i.e., assignments and grades simply to earn a grade). With this brief introduction in mind, AIW can be summarized by its focus on 1) construction of knowledge, 2) disciplined inquiry, and 3) value beyond school (Newmann, King, & Carmichael, 2007).

Construction of Knowledge

When framing social studies instruction around the “Construction of Knowledge” idea, we are essentially asking our students to take on the mindset of social scientists doing work in a discipline. In this way, they are producing knowledge in much the same way as historians or geographers. For example, in a geography classroom examining the racial segregation in the city of Detroit (<http://www.metrotimes.com/Blogs/archives/2015/08/31/the-racial-dot-map-shows-the-world-just-how-segregated-metro-detroit-is>), students would use “documents, graphic sources, and inferential reasoning to make judgments” (Scheurman & Newmann, 1998, p. 2) to answer inquiries about *why* people live *where* they do. In the same way the geographers attempt to answer questions about society using geographic tools and reasoning, so would our students. Having students use the tools of social scientists to answer real questions is, in some school climates, a



radical idea and constitutes a very different type of social studies experience for students (Newmann & Associates, 1996). As King, Newmann, and Carmichael (2009, p. 44) write, AIW involves “organizing, interpreting, evaluating, or synthesizing prior knowledge to solve new problems.” Allowing students to develop geographic *inquiries* directed towards problems in their communities allows students to “do geography” with an eye towards the local, and that supports their investigation from a disciplinary perspective (next section). In this way we are helping students to understand the philosophical foundations of geography as well as how geographic knowledge is created, used, and represented.

Disciplined Inquiry

With the publication of the NCSS C3 Framework (2013), there is a renewed interest in *inquiry pedagogy* in social studies education. Within this category of AIW, students are asked to 1) “use a prior knowledge base, 2) strive for in-depth understanding rather than superficial awareness, and 3) develop and express their ideas and findings through elaborated communication” (King, Newmann, & Carmichael, 2009, p. 44). As teachers know, social studies content is better understood if it connects to some prior knowledge the student already possesses. Prior knowledge in social studies could take the form of any number of experiences (Newmann, Marks, & Gamoran, 1996). In geography, the good news is that *all* students have had some experiences with this subject matter from watching the news to using GoogleMaps on their smart phones to getting lost on a road trip. In fact, everything happens somewhere, thus geography is everywhere. Depending on the lesson, prior knowledge in social studies can be strengthened by infusing common readings, videos, discussions, or mini-lectures into your unit of study. The task of “in-depth understanding” requires that we look beyond the superficial understandings (i.e., labeling place names) and work to understand how geography can be used as a lens (Alleman, 2010) for understanding the world. Students in a geography class would need to understand the problems and issues that are inherently a part of the discipline (Segall, 2010; Schmidt, 2011). Finally, the concept of elaborated communication speaks to the ways in which students use the language that experts within a given field use in their day-to-day work. “The language they use—verbal, symbolic, and visual—includes qualifications, nuances, elaborations, details, and analogues woven into extended expositions, narratives, explanations, justifications, and dialogue” (Newmann, Marks, & Gamoran, 1996, p. 284). When students have the requisite prior knowledge and in-depth understanding, they can begin to use the language of geography to convey their understanding of the inquiry under investigation (see Pang, Fernekes, & Nelson, 2010; Todd, 2011).

Value Beyond the Classroom

If you have ever had a student ask the question “Why do we have to learn this?” then you are familiar with the “Value Beyond the Classroom” aspect of AIW. Teaching and learning that addresses this part of AIW has meaning beyond a grade or a checkmark for credit. “When experts in history, geography, economics, or political science do their work, there is a purpose to their work that is outside the bounds of simply displaying their competence in a field. Most assignments in school, by contrast, are only designed to document the ‘competence’ of the learner” (Chandler, Branscombe, & Hester, 2015). Assignments that are simply connected to grades “lack meaning or



significance beyond the certification or success in school” (King, Newmann, & Carmichael, 2009, p. 45). Students find geography more interesting and consider it more useful when they are allowed to engage in projects and activities that foster active environments that challenge students’ thinking (Trygestad, 1997). In the next section, we briefly outline some simple ways that geography teachers can begin to integrate aspects of AIW into their teaching practice.

Authentic Intellectual Work *In Real Life*: Interdisciplinary Unit in Physical Geography

When I was a student, I can remember asking the million-dollar question, “When am I going to use this after high school?” That question now drives my decision-making when I create lessons for my students. Now the question is “How can this material best prepare my students for life after high school?” When trying to prepare for my first year of teaching, I read and researched a lot to try and make the transition through my first year smoother. Armed with my beliefs and research, I came across AIW. During my teaching, AIW is woven throughout my classroom lessons; in fact, it is foundational part of my classroom culture as well. Below I share some brief examples of how I integrate this idea into my geography classroom. Specifically, the purpose of this lesson was help students understand the negative impact that rainforest deforestation has on climate and ecosystems.

Construction of Knowledge: *Construction of Climate Maps*

For the first part of our human-environment interaction unit, I co-taught with a science teacher about climate types around the world. My geography students and the science students were heterogeneously grouped to construct a map of the world as well as to color code the climates on the map. Previously, the students had learned about the climates around the world. They learned about location, seasons, weather, plants, and animals. By creating these maps, students were constructing something tangible and this helped to make a connection between where those climates were located on a map and what places had similar climates. After the students created the maps, each group had to research a “food chain” for one of the climates. In each group there were at least two science students that had to explain what a food web was and what aspects of their climate to research. Students utilized computers to research “producers and consumers” that were related within each climate. The importance of this lesson was for students to see how organisms survived in different climates and what the effect could be if an organism was removed from the area. Students were able to understand where animals were on the food chain depending on that certain climate. This information was being used to create a base of knowledge as they approached the next part of the unit.

Disciplined Inquiry: *Deforestation*

With climate types and food webs as prior knowledge, students were able to work together to solve real world problems. One of the problems the world faces today is the destruction of the rainforests. The school I currently teach at has a strong emphasis on teaching towards standardized tests because most students only need to pass the Ohio Graduation Tests (OGTs) in order to graduate. In order to accommodate real world issues *and* standardized tests, I researched past OGTs to find questions that would accommodate real world issues and standardized tests. For



example, a question that has popped up in previous science and social studies OGTs involves negative environmental consequences. I wanted my students to study not only the climates around the world, but also how they can be affected by human interaction.

Instead of just giving students the answers, they used prior knowledge of climates and food webs to work in groups and discuss how to develop a solution. The students were using a real world example of human environment interaction and a higher order of thinking to come up with the possible solutions to this issue. As some additional insight, students were all given the same problem about providing negative consequences of rainforest deforestation, which ultimately challenged students to come up with several different consequences of this deforestation process.

Elaborated communication: *Impact of Rainforests*

A technique that I utilized for communication was a process called “Think, Pair, Share” which allowed students to first work individually on their conclusions before they discussed in a group setting. As students felt more comfortable with their conclusions and rationales, they were then able to pick fellow classmate to partner with and further discuss their responses. After about ten minutes, the pairs joined with another pair to become a group of four to repeat this process in larger groups. In the groups of four, students had to create a response of two negative consequences for deforestation. Once students came up with a strong response, the discussion opened up to the class. The groups were able to discuss their findings with a great sense of confidence because of all the previous steps that were taken. During this process, most groups said pollution, loss of animal habitats, and the dangers of the climate changing. Because of this group discussion, students were able to see how much damage was being done by humans negatively interacting with the environment. The use of machines creates pollution that damages our environment and can cause human suffering due to poor air quality. The loss of animal habitats would lead to animals becoming extinct and disrupting the food web. The biggest realization to the students was that the climate in the rainforest was dependent on the trees. When more trees are cleared, the whole system is disrupted. After the discussion, students had to complete an exit ticket. The exit ticket helped me to assess if the students learned the objective of explaining two negative consequences of rainforest deforestation. One of the questions on the exit slip for the students to answer was, “How can rainforest deforestation change the climate in places like Brazil?”

Value Beyond School: *School Recycling Program*

As a bell ringer the next day, I asked students to write down three to five ways that they individually and negatively impact the environment. Having discussed some of their responses, I then asked them to think of ways they could reduce their negative impacts on the environment. For example, one student said cutting down on the amount of hairspray she uses would have a positive impact on the environment, and another student said to walk more places rather than driving. To elaborate on the discussion further, I created a lesson to connect to students’ lives by thinking about what the school does as a whole that negatively impacts the environment—then we brainstormed on ways to “fix the problem.” A matter that came up through discussion was the fact that our school does not have a recycling program. Because of this unit, students are currently writing letter to the principal to see if that situation can be changed. I spoke to the principal first



and told him that the students were going to try and change something around this issue. If the students are able to make this happen, my hope for them is that they realize that they can foster positive change in their worlds and make a difference. Moving forward as I plan a unit such as this in the future, I hope to make it overall a stronger, more comprehensive lesson. To do this, I plan to have a field trip to a recycling center or water treatment plant to ensure that the students fully understand the processes they are suggesting. As another idea, I would request my class do an art project with recycled goods and to have an interdisciplinary lesson with the art teacher.

After the students wrote the letters, there was a formal test on the material. The test consisted of multiple-choice and short answer items. The multiple-choice questions were about climates and map reading. The short answer questions were focused on defining deforestation, where deforestation was occurring, and naming 2-3 consequences of deforestation. Below is a chart that helps show our ideas and how they connect to the 6 geographic practices and AIW.

Organization Interdisciplinary Unit

| Authentic Intellectual Work | 6 Geographic Practices | Content, Methods, Outcomes |
|------------------------------------|--|-----------------------------------|
| Construction of Knowledge | 1. Posing Geographic Questions | Climate Maps |
| Disciplined Inquiry | 2. Acquiring Geographic Information | Deforestation |
| Elaborated Communication | 3. Organizing geographic information | Think-Pair-Share, Exit Tickets |
| Value Beyond School | 4. Analyzing geographic information 5. Answering questions/designing solutions 6. Communicating geographic information | Recycling Program |

Conclusion

Ultimately, strengthening geography in the US will involve highlighting its usefulness towards citizenship education. As this very brief example bears out, this sort of geography instruction is possible. We believe that AIW can aid in this process. As scholars (King, Newmann, & Carmichael, 2009) of AIW have noted, this idea is uniquely suited towards this end. Authentic intellectual work prepares our students for the workplace and citizenship, increases student engagement, and “strengthens the professional community” (p. 49) of teachers. Meaningful geography instruction that draws from recent developments in the field of geography *and* that deploys AIW as a teaching stance is only limited by our imagination.



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