

# ARCNews

## "Geo Learning"

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## Get Involved with Geo-Education Reform

We've got a problem in our country. The rate of geographic literacy—meaning the number of people who can synthesize geographic information from a variety of sources and draw a sound conclusion—is abysmally low. On the other hand, *ArcNews* goes to almost a million individuals who earn their living by doing that kind of geographic reasoning every day.

So, what we have is an enormous geographic literacy gap. We have a solid core of geographic experts, including the readers of *ArcNews*, but once we get outside that group, there is a dramatic drop-off in the level of geographic understanding and skills. As the companies and agencies that are struggling to fill openings for GIS professionals can attest, we can certainly use more geographic experts in our country. However, from a societal perspective, I believe the gap in expertise between experts and the rest of the population is a much bigger problem.

For our society to function effectively in the modern world, we need the vast majority of our population to be either *geographically competent* or *geographically proficient*. These are terms I use to describe nonexpert levels of geographic literacy. *Geographically competent* describes individuals who are prepared for everyday geographic reasoning, such as choosing where to live or evaluating a ballot initiative that would affect land use. In a well-functioning school system, most students would achieve geographic competence by the end of middle school.

*Geographically proficient* describes college readiness in geographic skills and understanding. A geographically fluent individual is prepared for college-level coursework in subjects that require geographic skills and understanding, such as international relations or environmental science. At the National Geographic Society, we have set the goal of achieving a

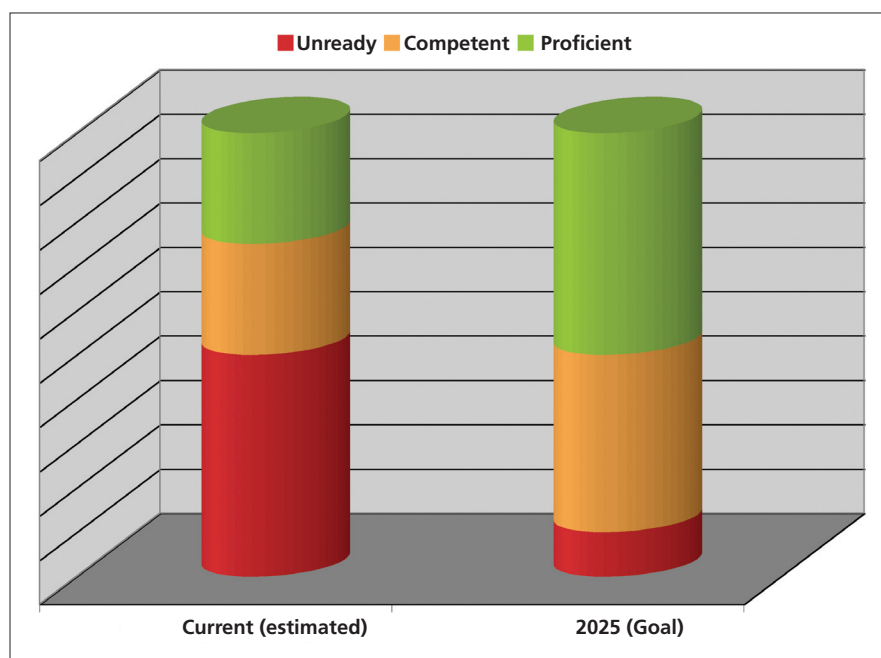
50 percent rate of geographic fluency among 18-year-olds by 2025.

While there are no statistics on the distribution among different levels of geographic literacy in the United States, there is pretty good evidence that a majority of Americans are not geographically competent. Our goal is to flip this distribution over the next couple of decades. Furthermore, our goal is to have the geographically proficient population be the largest, followed by the geographically competent and geographically expert populations.

One reason that increasing the rate of geographic literacy is more important than increasing the number of geographic experts is that

the public is the audience for the work of geographic experts at the end of the day. We can no longer afford for corporate executives, policy makers, politicians, and even the general public to be uneducated about geographic planning and decision making. If they are, then the work of geographic experts is largely wasted. Of course, the other reason is that if we increase the supply of individuals at the other levels of geographic literacy, then the pool for geographic experts gets larger.

If we are serious about reducing this geoliteracy gap, then the question we have to ask ourselves is, Where is the solution to this geoliteracy gap going to come from? It is not going to



A rough estimate of the distribution of geographic literacy among 18-year-olds in the U.S. today (left) and the distribution that National Geographic is committed to achieving by 2025 (right).

be solved by the majority. The majority are not even in a position to understand what they are missing. The solution is going to come from the people who can see the price that our society is paying on a daily basis for the lack of geographic literacy among its citizens. It is going to come from the relatively small minority of geographically literate individuals, especially the geographic experts.

So, what actions can individual GIS professionals and other applied geographers take to help move along the incipient campaign to boost geographic literacy?

The first action is personal. It is important that we start building public awareness of why geographic literacy is so important and what a good geographic education would teach our children. Those of us who "do geography" on a daily basis need to start talking to the people in our families and communities about what we do, so they start to understand that geographic literacy is not about knowing where things are but about knowing how to plan and make decisions.

By talking to our family and friends about the kind of geographic problem solving we do, we can start to help them see what their children are missing in their educations. It is possible to talk to people about the kinds of work that GIS professionals do without using terms like symbology, constraint satisfaction, buffer, and model. It can be good practice for us and eye opening for them.

The second action is political. At both the state and federal levels, it is important that people who understand the importance of geographic literacy advocate for improved geographic education in our schools. As a result of hard work by a large number of "geoevangelists," all 50 states, the District of Columbia, and Puerto Rico have social studies, science, and technology standards that call for geographic literacy. However, these state standards are revised every few years, and if we don't stay vigilant, they can be changed. If you are interested in finding out about the current policy situation in your state, you can contact your state geographic alliance (find yours at [www.ngsednet.org/communities](http://www.ngsednet.org/communities)).

At the federal level, there is legislation pending in Congress right now to establish a fund for the improvement of geography teaching. Geography is the only subject listed in No Child Left Behind as a core academic subject that has no federal funding program. The bill in Congress, called the Teaching Geography is Fundamental Act, has strong bipartisan support, but it will not pass unless legislators know that there are constituents who care. All it takes is a few minutes to make a phone call or write a letter, and it can make a huge difference. National Geographic has

information about the bill and how to contact your legislators at [www.nationalgeographic.com/foundation/policy\\_initiative.html](http://www.nationalgeographic.com/foundation/policy_initiative.html).

## GeoMentor Program Introduced

The third action is educational. There are valuable roles for geography professionals to play in their local educational system. Many GIS professionals teach at community colleges and in professional seminars. This is very important for filling the pipeline for geographic experts, but there are things we can do in the K-12 system that will start to boost the numbers of geographically competent and proficient individuals. However, finding and developing opportunities to work in schools can be tricky. So, National Geographic and ESRI are teaming up on a GeoMentoring program to pair geography professionals with K-12 teachers to bring their expertise into the classroom.

At the ESRI International User Conference this summer, we will be introducing this new program that will provide geography professionals with guidelines for working with schools and materials for activities they can do with teachers in their local schools. These activities will range from "pre-GIS" activities using paper maps, crayons, and cutouts for lower grades and schools with limited technology access to real GIS activities using ESRI software in schools.

The fourth action is financial. In most of the scientific disciplines, a substantial stream of funding for educational improvement comes from scientists and the companies that employ them. Over time, the cause of geographic literacy is going to require that same level of support. In a future column, I will describe some giving opportunities for individuals and organizations to support the improvement of geographic education at local, state, and national levels.

In closing, I have two points to make. One is that the problem is urgent. The second is that the solution we are seeking will, at best, come slowly and only through serious and prolonged effort. There are things that we, as geographic experts, can and should do today, and I encourage you to begin right away. I must also cau-

tion you, though, that improving education is more about tortoises than it is about hares. So, if you do talk to a neighbor, call your senator, or become a GeoMentor, don't do it as a quick fix. Be prepared to stick with it for a while. If we all do, we will be able to make a change.

### More Information

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