

Building Geography Knowledge: Retrieval Practice of Countries, Regions, and Geographical Features

A Model Teaching App for K-12 Teachers

Read the Full Article Here:

<https://www.modelteaching.com/education-articles/ai/building-geography-knowledge>

Introduction

Imagine a middle school teacher finishes a unit on East Asia. Students had been working on identifying and locating physical and geographic features on a map, like landforms, bodies of water, and urban centers, as well as identifying the location of countries around the world. In this unit, the teacher described the region's monsoon climate, and students learned why its rivers support a denser population than in other areas. While students are engaged in the content throughout the unit and analyze a map of the region as they discuss its features, they have a hard time identifying geographic features on their own. For example, when the teacher projects a blank map onto the board and asks students to identify the Yellow Sea or label countries like China, Japan, and North and South Korea, many students are unable to do so, even though they discussed these areas in class extensively.

She realizes that her students need more practice retrieving foundational concepts like locations of countries, rivers, and other regions, so they can not only identify these areas themselves in the future but also engage in deeper analysis and understanding of the region by being able to visualize exactly where they are in the world. Because of this realization, she begins to pair her units with explicit practice and memorization of the countries, rivers, deserts, and mountain ranges of the regions she teaches for each unit.

Why Geographic Literacy is Important

Geographic literacy is generally defined as an individual's ability to understand and evaluate how different places and systems on Earth are connected. In order to truly and deeply understand our world, students need to understand history, the local economies, current events like conflicts in different areas, how geographic features shape regions, and, of course, where regions are actually located in relation to one another.

On the 2018 National Assessment of Educational Progress in geography (the last time geography was tested and reported), only about 25% of eighth graders scored at or above the proficient level, and scores declined compared with 2014 test results.

<https://www.nationsreportcard.gov/geography/> The NAEP tests Space and Place, Environment and Society, and Spatial Dynamics and Connections. Students are required to have a deep understanding of geographic regions, cultures, and connections across countries, but must also recall facts and connect their knowledge to analyze how one might solve real-world problems. Being able to recall the locations of countries and land features like rivers, mountains, or deserts becomes an important component of geography literacy and serves as the backbone of deeper geographical reasoning. Without a mental map of where places are, students will not be able to make deeper connections to world events or determine patterns and relationships between countries without having that foundational knowledge in place first.

Foundation Geography Practice for Greater Understanding

A consistent body of research in cognitive psychology shows that there are specific and effective ways to move information into retrievable memory. Once knowledge is stored in your memory, those ideas can be more easily used for deeper thinking and to make connections across topics. Focusing first on storing foundational information is a critical component of many subjects, but especially important in geography, where landmass features and country locations are essential to understanding before more complex connections can be made. With this in mind, let's review a few research-backed memory strategies that allow for storage of ideas into long-term memory to justify to you that requiring students to memorize countries and other geographic features can be beneficial.

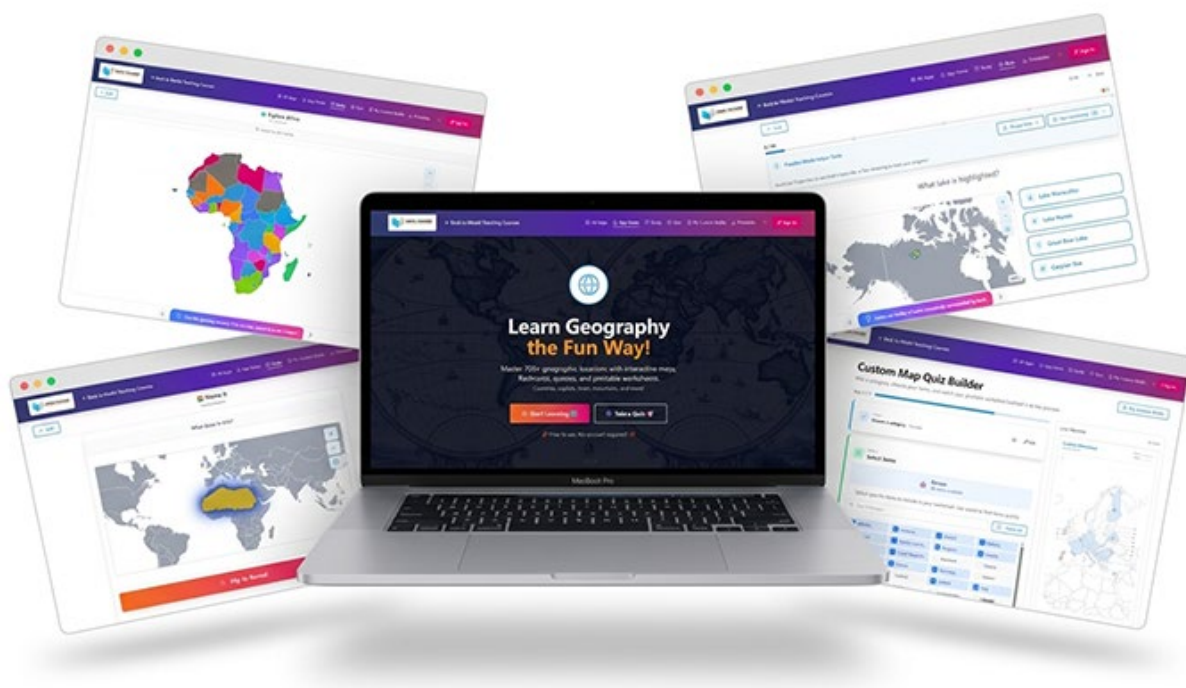
First, retrieval practice is an attempt to recall concepts from memory, which helps retain information better than simply re-reading or studying material. Also known as the testing effect, repeated self-testing, such as with quizzes or flashcards, strengthens the information's retention in memory. An example of this effect was shown in a 2013 paper that evaluated primary school children studying geographical facts, with or without retrieval practice

(<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0078976>). The retrieval practice group recalled more facts when tested both one and five weeks later.

Spaced repetition (<https://citl.indiana.edu/teaching-resources/evidence-based/spaced-practice.html>) is the practice of repeating retrieval practice over a longer time period. In space repetition, a student will revisit the same concept and retrieve the information from their memory at spaced intervals, like once a week, and then perhaps every few weeks or

every month. This helps retain the information and strengthen your memory. In addition, when practice is distributed across several short study sessions over time rather than focused on one or very few long sessions, students retain more. In short, this means that a repeated recall of the same set of countries or features across a week or several weeks tends to produce better recall and stronger memory than something like a single extended study period.

Finally, dual coding is a third concept we will briefly touch on that is highly relevant to geography. Paivio's dual coding theory (1986) states that when you pair and learn verbal information with a visual representation of that information, it creates strong memory. This idea complements the study of countries and regions perfectly, since you are studying a country's name and later important facts about the country alongside its location on a map. This combination of a verbal and a visual cue supports strong recall from memory.



The Model Teaching Geography Study App

The Model Teaching Geography Study App (<https://apps.modelteaching.com/geography>) was designed around the research principles mentioned above. This app is designed to be used after core instruction and as a supplement to live instruction in the classroom, in a simple way for students to practice recall of countries, landforms, and regions. Not only does the app allow for this practice, but it is completely customizable, so you can design

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quizzes, flashcards, and worksheets focused only on the region or countries your students are currently studying:

Quiz Mode: Choose from easy, medium, or hard mode, where students can view a country and either select from multiple-choice options with hints, no hints, or be allowed to type in the country name or select the country when presented with the name. Varied testing options allow for stronger memory and recall of each country's location and name.

Flashcards: Flashcards are one of the most studied retrieval practice formats and support long-term retention of knowledge. Allow students to practice using virtual flashcards specific to the countries they are currently studying.

Workbooks: Fully customizable, printable worksheets with answer keys provide a low-tech option for practice, which is important for students to limit their interactions with digital products, especially at a young age. You have the option to print a full map and select exactly which countries you wish students to study.

Like all Model Teaching apps, the geography study app is simple, intuitive, and focused only on one area, where it does very well: allowing students to master countries and geographic features in an easy-to-use and customizable app.

How the Model Teaching Geography Study App Compares to Other Practice Tools

There are many geography apps available to both teachers and students, offering a variety of options and features! Some are broader reference or exploration tools like interactive globes or street-level images, while others are more academically focused on quiz tools for practicing memorizing the location of countries, capitals, and physical features. The quiz-style tools generally fall into two categories. The first are clickable-map quiz sites which present a map to students and then ask students to click on the correct location when a country name, region, or physical feature is presented. The second is the gamified, app-store geography game, which wraps practice in characters, timers, leaderboards, or animations. Both types have their place, depending on the teacher, parent, or student's needs! But they aren't always the best fit for every learner. Gamified apps can pull a student's attention toward the game's visuals and competition rather than the geography itself, and even the clickable-map sites tend to offer only one way to answer, which doesn't always suit the needs of every learner.

The Model Teaching Geography App is designed for a specific purpose: to help students master where countries, capitals, cities, rivers, mountains, and other features are located, and what they are called, as they work toward geographic fluency. It removes any additional "fluff" or steps, focusing solely on the geography itself. The app requires no account, so a teacher, parent, or student can open it and get started immediately. It is fully customizable for the exact regions and feature types a teacher wishes to practice, and it lets students answer the same content three different ways: choosing the name from a list, finding the location on the map, or typing the answer from memory, allowing students to move from recognition to true recall as they progress. And, most interestingly, it pairs digital practice with customizable and printable worksheets, which is uncommon among free geography apps.

Considerations and Model Teaching Recommendations

The app is a support to your instruction, not a replacement for it. New concepts and the reasoning behind them are best introduced by you through evaluating maps, discussion of the country and region's features, and explicit teaching. The app reinforces the learning that is already occurring in your classroom. Allow your students to keep sessions short. Brief practice spaced out over time ensures you are keeping screen time to a minimum, and you are requiring a focus only on the recall of facts to strengthen student memory. Of course, you always want to pair any digital practice with the extension of ideas and a deeper analysis of the countries students are studying. Recall of countries and regions is a foundation for geographic literacy, but certainly not the end goal! Strengthening your students' foundational knowledge of countries and regions is a minor, yet critical component of the rigorous instruction you will be providing to your students as they tackle more complex concepts in your classroom, like connections and discussions

Getting Started

The Model Teaching Math Facts App is available at:

apps.modelteaching.com/geography.

You can use it in three ways:

- ✓ Worksheets
- ✓ Quiz
- ✓ Flashcards

The app covers more than 700 locations across categories including countries, capitals, cities, rivers, mountains, deserts, oceans and seas, lakes, and U.S. states. It is free to use, customizable, and requires no account, so you can try a warm-up quiz with your class this week.

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