Going Global: Utilizing Instructional Geocaching to Enhance Students' Global Competency

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Abstract

Within contemporary society, technology has taken on an integral role in the way we come to know and understand the world. In recognition of that reality, an increasing number of educators have begun to utilize an emerging technology resource, GPS devices, and a GPS-based activity, geocaching, to help enhance students' global competency. The following article illustrates the use of instructional geocaching to carry out a multiphase project in which students of a recreation studies Trends and Issues course were both the creator and consumer of a geocache event. Students' involvement in the project revolved around investigating a global trend or issue related to the recreation and leisure field, applying what they learned to create a geocache based on that same trend or issue, and then participating in an instructional geocaching game based on the geocaches developed by all students.

KEYWORDS: Global competency, trends and issues, instructional geocaching

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Introduction

The globalization of commerce, cross-cultural conflicts, threats against the planet's ecosystem, as well as advancements in technology and science have helped bring certain global issues to the forefront of people's daily lives. As the world continues to evolve, the need for students to understand interconnections between societies will become even more apparent (Byrnes, 1997). In order to effectively function in a complex and uncertain world, students must be prepared to work in partnership with their peers from around the globe. The success of that collaboration is to some extent a factor of whether educational institutions can promote and develop skills of global competency among students in their classrooms (Byrnes, 1997; Kniep, 1989).

Global competency, as described by Lambert (1998), refers to a person who has knowledge of current world events, can maintain an open mind, demonstrate compassion for others, and possesses a capacity to recognize the value in those things that are foreign. Although other definitions of the term have emerged, there is a consistent theme that persists; globally competent learners possess a greater degree of cross-cultural awareness and a richer understanding of the interconnectedness between and among peoples and their environments (Olson & Kroeger, 2001; Reimers, 2009).

Leisure and recreation, as an academic discipline, provide a unique platform from which to enhance students' global competency. A student pursuing a degree in the leisure and recreation field must often take a contemporary trends and issues course in partial fulfillment of program requirements. That course generally aims to help students gain a better understanding of the trends and issues that are impacting the industry (i.e., unmanaged recreation, recreation access, ethnic and racial diversity, gender inequality, etc.). When the examination of such trends and issues extends beyond the boundaries of the U.S., a student's provincial view of the world can expand. Students become increasingly aware of the role that a country's cultural, political, economic, and environmental circumstances can have in shaping a given trend or issue. With the boundary between today's domestic and foreign matters quickly disappearing, there is a greater need for all students, especially those within a service industry, to be more globally aware. In order to facilitate that process, a pedagogical approach that not only develops students' global proficiency, but also can engage students on a global level is essential.

Geocaching: An Instructional Tool

Geocaching is a relatively new outdoor pursuit that involves participants using global positioning system (GPS) technologies to locate hidden treasures (or caches). In a traditional geocache experience, a cache is often comprised of a log book and a low-cost novelty trinket, placed within a waterproof container. Upon locating a cache using a GPS device, a participant typically signs the log book and exchanges the trinket with an item of equal value that he or she has in their possession. Drawing on this basic premise, an increasing number of educators have begun to utilize geocaching as an instructional tool (Lary,2004; Matherson, Wright, & Wilson, 2008). Within this context, educators or students design the content of a cache so as to have it correspond with the topics that are the focus of a particular course. In many cases, the content of an instructional cache consists of a set of questions students have to answer, a specific

task students need to complete, or a problem they need to solve. Pedagogical activities of this type are often constructivist in nature. Through a student's participation, the activities seek to support new learning based on prior knowledge. In addition, these same activities often encourage student collaboration, promote critical thinking, and develop students' problem solving skills (Doolittle & Hicks, 2003). Each of these aptitude areas is consistent with the 21st century skills often considered to be vital in developing a globally competent student (Rotherham & Willingham, 2010).

The Learning Activity

Established as a semester-long project, *Going Global* was a collaborative and competitive group activity in which students were both the creator and consumer of a geocache event. The underlying purpose of the project was to offer students an authentic learning experience directed at enhancing students' competency of global trends and issues in leisure and recreation. In order to accomplish that goal, the project utilized multiple phases. Each phase served to build on the previous, with a strong focus on the acquisition and application of knowledge in order to promote new learning through an activity-based experience. The following exposition provides an overview of the three project phases, identifies intended learning outcomes, explores a possible low tech alternative to geocaching, and offers concluding thoughts on the use of instructional geocaching as a teaching tool.

Phase 1: Investigating the Trend/Issue

The success of the *Going Global* project was contingent upon, in part, students' initial efforts to investigate a global trend or issue specific to the recreation and leisure domain. Given that consideration, students worked in small groups (three to four students) as a research team. Student groups investigated a wide range of topics that included issues on recreational inequities among women in South Africa, impacts of cruising on beach and marine litter in Indonesia, and the corporate greenwashing of the Olympics. The responsibility of the research team was to provide a thorough written report on the trend or issue selected. All reports submitted were required to address certain areas of interest. Those areas included 1) a history of the trend or issue, 2) a description of the current status of that trend or issue, 3) a comprehensive explanation of the various stakeholders involved, 4) an examination of the factors that influenced the selected trend or issue, and 5) the direct implications the trend or issue has had on the recreation and leisure field. The implementation of this process intended for student groups to gain a much richer understanding of their topic, allowing them to more freely use their creativity to transform that topic into a geocache.

Phase 2: Creating the Geocache

For this phase of the project, student groups applied what they had previously learned from their research in Phase 1 to create an instructional cache. As a parameter to that objective, the cache not only had to underscore the major themes of a group's selected trend or issue, but also allow for participants of the cache to obtain a solution independent of a facilitator. For example, in the case of one group, they investigated the impacts of climate change on the glaciers of Africa's highest mountain, Mt. Kilimanjaro. Based on their research they had learned that while this issue might initially appear to be solely environmental, the effects could very well have a dramatic impact on the

tourism industry in Tanzania, as well as the local peoples of that region. Each year Mt. Kilimanjaro attracts thousands of tourists and climbers eager to catch a glimpse or stand on top of its snowcapped summit. In addition, a number of local farmers at the base of the mountain rely on the glacial melt water for irrigation. Unfortunately, the glaciers of Mt. Kilimanjaro are slowly vanishing and could be gone in the very near future.

Using the information obtained as part of the research process, the group adapted an activity that used melting ice to teach lab students about radiometric dating (Wise, 1990). In that activity, the lab students had to determine the time at which their professor originally set out ice in a funnel that was sitting on top of a graduated cylinder. By measuring the volume of water across a given interval of time, students could determine the rate at which the ice was melting and thus make a reasonable prediction about the time the teacher originally set out that ice. The principles used in this activity are similar to those used by scientists who assess glacial ice cores, like those found on Mt. Kilimanjaro.

As part of the instructional cache created by this group of students, a worksheet was provided at the location of the cache that contained a brief description about Mt. Kilimanjaro and the potential impacts its vanishing glaciers could have on tourism and the local people. Having now been primed on the issue, a set of instructions followed that then asked participants to take on the role of the scientist. In that role, participants needed to determine the rate at which Mt. Kilimanjaro's glaciers were melting, as well as the time the instructor set out the ice for the activity. Although answers to each of these questions served as verification that this task had been completed successfully, a number of reflective questions were also included. These questions served to promote further critical thinking on the impacts of climate change in this region and assist participants in seeing connections between the Mt. Kilimanjaro example and perhaps other issues closer to home.

Phase 3: The Geocaching Challenge

The Geocaching Challenge provided students with an engaging and interactive means by which to learn about the various trends and issues researched by other student groups. Set up as a multi-cache event, the objective of the game was to be the group with the highest point total at the end of the allotted activity time. Groups earned points by using the provided GPS receiver to locate each instructional cache and complete the task associated with that cache. Tasks varied in difficulty, distance from the starting point, and the time and effort needed for completion. The point values assigned to each instructional cache were to an extent a reflection of these factors.

In addition to the instructional caches created by students, there was one limited resource cache provided by the instructor. Located at this particular GPS coordinate was a cultural artifact of significance. That artifact, a small Norwegian troll figurine, served as an additional opportunity for students to learn about another culture, and more specifically the mythology or folklore of that culture. Once a group had retrieved that object, the object and points associated with it were no longer available to other groups. As a result, groups had to make strategic decisions about which caches they would attempt to locate and complete first. At the conclusion of the game, the group fortunate enough to recover the limited resource cache presented it to the class and

discussed its background and significance based on information provided at the cache's location.

The process by which groups verified that they had successfully completed the tasks at an instructional cache occurred in one of two ways. Depending on the kind of instructional cache, groups either demonstrated their success by taking a picture of the solution, or providing a written response. Space to write such a response was available on the worksheet given to each group during the game's introduction. That worksheet, presented in a table format, also identified each instructional cache as it appeared in the GPS (i.e. Global 1, Global 2, etc.) and the total points associated with each instructional cache (i.e., 25, 50, 75, and 100 points). A list of boundaries (or rules) appeared on the back of the worksheet as a reminder to each of the groups involved in the game. Those rules were as follows:

1. During *The Geocaching Challenge*, groups must stay together at all times. Failure to do so will result in your team's automatic disqualification from the game if caught.
2. If another group is already present at your desired location (geocache site), your group must proceed onto a different location.
3. After completing an instructional cache, please return the materials or supplies of that cache to the manner in which you found them (if needed). Failure to do so will only assist your competition and hinder your group's ability to meet the objective of *The Geocaching Challenge*.
4. If a challenge is too difficult or taking up too much time, a group may decide to move onto a different instructional cache. A group, however, will only earn points for successfully completing the objective of a challenge.
5. Although a group may use cell phones for emergency purposes, please refrain from using such devices in manner that would provide you or your group with an unfair advantage. Please act with integrity.
6. For each minute a group is late after the time allotted has expired, there is a 25-point deduction from that group's point total.

The Learning Outcomes

As a course project, *Going Global* had a number of desired learning outcomes. First and foremost, the project aimed to broaden students' understanding of a number of prominent global trends and issues within the field of recreation and leisure. The project accomplished that goal to the extent that each group extensively researched a specific global trend or issue. Furthermore, The Geocaching Challenge provided an opportunity for students to gain some degree of exposure to those trends and issues researched by their classmates. Collectively, each of these aspects of the *Going Global* project speaks to the ideals of a more globally competent student; an individual that is more cross-culturally aware and better prepared to understand the interconnectedness between and among peoples and their environments. The use of instructional geocaching not only provided an engaging medium to explore different trends and issues, but also offered opportunities for collaboration, critical thinking, competition, and problem-solving. Outcomes such as these are often regarded as having a critical role in the development of a person's global competency (Brustein, 2007). As a somewhat unintended learning outcome, the *Going Global* project also provided students with a usable template from which to create other instructional geocaching experiences.

Recommendations

The use of instructional geocaching can provide a unique opportunity to promote inquiry and exploration among students. At the same time, however, the cost of GPS units can serve as a significant deterrent to instructors who would like to incorporate these types of experiences into their curriculum. When resources are limited, there are low-tech alternatives that can simulate a similar experience and achieve the same types of outcomes. One viable option is to create a Score-O orienteering course. Score-O courses consist of a number of control points (designated locations) scattered around a specific area of play (i.e., college campus). At the game's introduction, the instructor provides each group with a map of the area. If the selected area is an urban environment, groups will not require a compass, as there are likely a number of landmarks from which they can orient their location, and approximate the location of the cache. At the start of the game, the instructor provides all groups with a limited amount of time (two minutes) to review the Master Map and copy down all of the control points. Once a group has successfully transcribed all of the control points from the Master Map onto their group's map, or time for viewing the Master Map has expired, a group must then select which control point they will trek to first. From this point forward, the game functions in a manner consistent with The Geocaching Challenge.

Conclusion

As digital natives, students today have a strong appetite for technology (Presnky, 2006). The use of instructional geocaching provides educators with a way to embrace that appetite, while at the same time create a potentially rewarding learning experience. The *Going Global* project offered students a unique experience from which they could develop a greater degree of familiarity with global issues and trends that impact the recreation and leisure field. In addition to heightening students' awareness to those issues, the project also created opportunities for students to make use of their own creativity, engage in collaboration and competition, challenge their ability to problem-solve and communicate effectively, and engage in inquiry and exploration. With such versatility, clearly the benefits derived from these types of experience are limited only by a person's imagination!

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