

## **Geocaching at the Institute of Paasikivi – New Ways of Teaching GPS Technology & Basics of Orientation In Local Geography**

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### **Abstract**

*Considering treasure hunt games as part of digital culture through environmental education, a new method of education using GPS technology and experience culture. This paper focuses on the forms of interaction in the international geocaching game. It describes what geocaching is and presents an analysis for case researches how to use geocaching as a rewarding approach for teaching new technology in education. This paper deals with a case study called "New Sport Game of Geocaching and Virtual Communities Involved in the Game", a course taken by media assistant students in 2006 at the Paasikivi Institute of Turku in Finland. The study consists of descriptions and an analysis of the geocaching experiences at the Paasikivi Institute.*

### **1. Introduction**

Treasure hunts in children's games, exciting notes in bottles or other caches and scenic hikes through the local countryside and town have become the latest form of high-tech treasure hunt for families.

Geocaching is a new sport game: partly treasure hunt, partly outdoor exploration based on principles of orientation. It was started round the year 2000 and owes its birth to human ingenuity, the Internet, and Global Position System (GPS) technology. The concept of geocaching is simple. One person puts together a collection of things like toys, trinkets and places them in a container, a plastic box called the cache, measures its position with a GPS device and then posts the location numbers to the Web site called [www.geocaching.com](http://www.geocaching.com). Someone else, an interested player, looks up the location coordinate (to be printed on the above-mentioned web address), finds the cache, takes one item from the collection and replaces it with another. Caches are hidden in the wilderness, in parks or even in urban locations accessible to the public.

How the caches are hidden, depends on the creativity of the one doing the hiding. The point of teaching for media assistant students in geocaching is that the multicache includes exercises for their own studies. For example, a student of photography had to make a picture story of our treasure hunt route.

The geocaching game, as a sport, is where a variety of experiences can be created to meet the needs of enthusiastic participants. The enthusiasm for the game has quickly spread as participants combine their love for outdoors life with their interest in modern technology. One may find a route of strenuous hikes through mountains and technical rock climbing as a great fun and as a challenging setting for geocaching. Another person may view it as a game of finding tiny treasures. It has been so appealing to many that the activity has grown from a few dozen enthusiasts at the beginning to hundreds of thousands just over the past six years. This is the main argument for using GPS technology in teaching the latest technology to young children. That is what they will use every day in the future, also at work. In this paper, it is my intention to make some notes on how taking advantage of the GPS technology and location can be brought into a central feature of gaming and what consequences it will have on the entire gaming experience. Recently, the gaming concepts taking advantage of positioning and location information have brought some new interesting features to the nature of gaming. Among the treasure hunt games, geocaching and other games, plays and hobbies based on the position system and using GPS-technology are a new trend in the game culture. Thanks to computer technology and the industry of computer games, it is now possible to development new game types and genres. Letterboxing can also be identified to be a treasure hunt game, with the purpose to adventure in nature. The game culture of today has become more varied and there are now issues of,

among other things, new trends and meanings in the structures of games. Nowadays players are becoming more actively engaged in the game, playing their part in the structures of the game.

To live along traditional computer games, there is now a more active manner of using the game. For instance in geocaching, the player actively hunts for treasures in the real world. Geocaching is good for the health and fitness of the students. Geocaching also gives some intriguing educational possibilities. Games can be used in education over a long period of time. In the United States, geocaching game has been used in education since 2004. The geocaching game is helpful in understanding relationships between contents, processes and the context of a subject matter. Geocaching also provides students with group dynamics and strategy. Games are social systems: so is geocaching in an educational way. Development applications to environmental education and experiences of local history are meaningful in case studies. Applications can be planned for different target groups.

## 2. Geocaching in Education

Geocaching has been used in teaching many different subjects in the United States since 2004. In Finland geocaching has not earlier been used in education. In my master's thesis, I applied geocaching to education, with a course called "Geocaching in Geography", held at a Finnish high school. The aim of my research is to discuss more in detail the results presented in my master's thesis to bring out knowledge of treasure hunt games in the field of digital culture. The main purpose is to introduce different case studies of applying treasure hunt games to different levels and different subjects in schools. I also discuss possibilities of using digital technology in meaningful learning. A central argument is, that treasure hunt games, new technology skills, a new kind of environmental education and multiplicity pedagogical solutions can be considered simultaneously in emphasising study programmes and to focus on an increase in the significance of courses utilizing position systems. What would be new in the educational system is that courses could combine geocaching and different subjects. With a new kind of education and cooperation, resources for position systems and know-how fields of information technology could be created. Thereby it would also be possible to acquire skills required in the professional life of today and in the future.

In the basic syllabus for high schools, accepted in 2003 and in operation since the autumn of 2005, the

subject of geography is now more scientific. One of the consequences is that knowledge of basics for cartography and geographical information systems is compulsory in the fourth course.

The information technology based GIS (geographical information systems) has become a new area of expertise for geographers. Thanks to information and communication technology, there are new possibilities of teaching geography in comprehensive schools and high schools. That is also the reason for the suitability of geocaching as an educational application in high schools. We now aim to find more schools for cooperation in development of different courses using geocaching in education. Position systems as a integral part of everyday life has made education more meaningful and the hobby of geocaching can be said to have contributed to the spread of position systems.

### 2.1. The case study "New Sport Game Of Geocaching and Virtual Community Involved In The Game"

A course called "New Sport game of geocaching and virtual community involved in the game" was among the first courses which used geocaching in education in Finland. It was arranged between September and October in 2006. The purpose of the course was to provide the students with basic knowledge of geocaching and virtual communities. The course was designed to teach skills of media technology with the aid of geocaching, such as GPS receivers, digital cameras and even critical analysis of discussions at forums of virtual communities. One of the purposes was to focus on new media technological applications to different subjects at schools. The aim of the course was also to combine geocaching, virtual communities, media technology, the history of the Institute of Paasikivi and sports.

The geocaching game has several functions. For example, the frame of the game is that other people communicate in the virtual community and others play the game of geocaching in the real world at the same time. The geocaching community "Groundspeak Forum" is a part of the game, because people who find caches in the real world have to log their findings on the web page [www.geocaching.com](http://www.geocaching.com) (depending on which cache the player has found). Every cache has its own webpage. The finder also has a possibility to write a log detailing his/her experience on the webpage where the found cache is listed. This will allow future cache seekers to see when it was found and to learn

from their experience. The Internet is the key element in the development of geocaching and has been equally responsible for its rapid growth. The web is used in a number of ways, ranging from informing new players about the sport and listing the available caches to allowing geocachers to keep in contact and discuss their favourite hobby. Geocachers have an international community, where people discuss experiences of geocaching. Geocaching continues to evolve, because participants like to test the latest gear and the newest game idea. The forums are a place to share ideas and information to see just where the game will take us next.

The Institute of Paasikivi students register in geocaching.com forums and learn how to act in the international virtual community. Students have exercises at the geocaching forum. Students have to analyse conversations between the geocachers at the forums and involve themselves in those conversations. They learn critical media conversation. Students also analysed articles written on geocaching and introduced own analysis to each other. Students enjoyed the critical media conversation, because we learnt a lot from being involved in a real virtual community and a culture of its own. They also liked the geocaching virtual community because of its large and multifaceted nature. For example there is an own community for journalists where you can be in touch with professional journalists and learn how to write articles of geocaching and for which magazines to offer them.

The real game took place in the real world. The Institute of Paasikivi students created a cache to show off their creativity, demonstrate their skills as a navigator, and to display expertise as a geocacher. There is a great sense of pride in developing a cache that offers a unique challenge. The place where the students created the cache was called Harjattula, Turku in Finland. Cache name is Poluilla Paasikivi-Opiston N 61° 22.284 E 022° 17.470. The cache is a multicache, which means that you have to find the first cache with the help of a coordinate. When you have found the cache, it contains another coordinate or hint for a second cache and so on as long as you will find the real cache. The cache is filled with scraps of paper, serving as a logbook, filled with trinkets and booties (geocoins). The cache created by the students also contained exercises for geocachers to do in nature, such as the earth art. Students found this geocaching course very interesting, because it could easily be included in their media assistant studies. For instance, students of journalism could write articles dealing with geocaching and students of photography were able to work on their own exercises within the course. For the

students, the most interesting things to do were hiding the geocaches, learning to use GPS receivers and photographing. A student, Kirsi Nousiainen, suggested that during the course students could have searched for the caches hidden by real geocachers in the centre of Turku. Almost every town, some 75 per cent of the Finnish towns, has got caches. Geocaching reminded the students of orienteering. Heidi Heikkilä commented that geocaching was clearly a sport and that physical education in school could possible include some geocaching, for instance in the winter, when we would search for the caches by skiing. Another student, Marja-Riitta Heikkilä, was impressed by the course, learning that geocaching is a very large subject with lots of possibilities in education and welfare tourism.

Over the past six years the game has grown by leaps and bounds, now having a worldwide participation. Caches are being created at the astonishing rate of more than 5000 per month, which means there must certainly be an even greater number of participants. Geocaching is a sport on the cusp of a major growth, fuelled by the realization by outdoor retailers and manufacturers of its significance. The increased level of participation by key retailers and manufacturers, improvements in technology, and the availability of specialized equipment for our sport will continue to encourage more people to join in the fun. On the last day of our geocaching course at the Institute of Paasikivi, I arranged a GIS-day (Geographical Information Systems) with the students. I introduced our unique course on how to use the GPS-technology in new ways in education. Students introduced their articles and a picture exhibition of our course. Then we had a visit from a real geocacher, who introduced his hobby for us. On the GIS Day we swapped roles so that the students taught us how to use the GPS receiver and we went out to find our multicache together with the staff from the Institute of Paasikivi. After that, we analysed how to take advantage of geocaching in new ways, in teaching different subjects.

### 3. Conclusions

Geocaching has an educational and beneficial role, especially as a great learning activity for students, allowing them to improve their skills in English, critical thinking, journalism, photography, media technology and geography. In many cases, lessons are not captivating, but young people would like to play treasure hunt for study purposes. Geocaching is also an appropriate activity for boys and girls alike. Students will learn how to use maps, digital cameras and GPS

receivers together. By teaching and reinforcing these skills via geocaching, the student will focus on the object of the game and learn without struggle or reluctance.

Young people are eager to be on the cutting edge of a new trend. Geocaching is also good for a large population of retirees searching for a way to maintain a healthy and active lifestyle while participating in a sport that can be enjoyed at a leisure pace nationwide. Involvement in the sport will help you make sense of your GPS receiver and it also helps you meet your personal goals and needs. This segment of population can hereby be labelled as "Generation GPS". Multiplayer gaming has become a social experience, one that can constitute a 'social pleasure'. As did our course at the Institute of Paasikivi, giving students social pleasure and teaching them group solidarity. This adventure brought new experiences, some of which will remain as a resource in the human psyche, while some will be good memories and part of a lived life. Experiences and feelings are inspirational for further adventures in the future.

This case study introduces how to use geocaching in education. From the pupils' viewpoint, game culture is prominent in different media environments, even if the pupils would not be interested in it themselves. The position of games in the new media environment is remarkable. That is the reason why the emphasis of our geocaching course was on virtual communities and on studies useful for media assistants. Thanks to the game-like elements of geocaching, the course was educative for the students in expanding the understanding of media environments.

The global position system has been applied at schools in local environment studies, when studies in global position systems became compulsive in geographical studies at high schools in 2005. Studies in global position system are a very broad and extensive topic in themselves, which, in my opinion, should be dealt in a professional context as an integration of several different subjects. During the course called "New sport game of geocaching and virtual community involved in the game" the meaning of technology as well as that of sport were emphasised. The main focus of the course was taking advantage of the theory of geocaching in planning and in realization of multicache in the area of the Institute of Paasikivi. In planning the contents of the course, it is possible to focus on the main subjects to be used by different students.

Geocaching is a worldwide hobby in which the limits are defined by the teacher whose motivation in teaching the subject will contribute to the level of learning. With a new kind of education and

cooperation, it could be possible to meet the requirements of competence in jobs of today and in the future in the field of Information Technology.

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