

Use of Games in Education: GeoGuessr in Geography Course

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SUMMARY

Almost all of the studies which are about the learning effects of the games emphasize as if, they have all agreed on all hands that the games contribute to the child's spiritual and educational development. No matter at which age group it is, to claim that game derived gains couldn't be gained by no other way, wouldn't be exaggeration indeed. The ones who spend their time playing games are known to be ahead from the ones who don't in a lot of areas like 3D thinking, reasoning and having responsibilities aside from having fun. When units and gains observed in geography courses, it is seen that there is no reference to gaming. In fact, gaming affects all students' learning performance of all ages positively. The geography game "Geography Prediction" spread on the internet with the slogan "Discover the World" named GeoGuessr, takes its players to many places from Australia's play the game in which one has to figure out a location based on five randomly given pictures by using various geographical indicators, players put a mark on the World map and gain point according to the proximity of their mark to the location. It is looked for an answer to the question of "Which geographical indicators used by the students in this GeoGuessr exercise?". It was asked to play this game from a group of 140 first grade Mugla Sıtkı Kocman University, Faculty of Education students. They all have encountered the game for the first time and have never played before, they are asked 6 questions like how many times they have played the game, the reason they got low points, the highest point they got, which indicators they have used and the place of the game in teaching geography. All of the participants shared the highest point they got on their own blog and made evaluations about the game.

Keywords: Geography, game, map knowledge, world, indicator

INTRODUCTION

It is known that since the beginning of the 20th century, traditional methods and techniques are affected by various developments as cinema being in the first place. Particularly, researches and developments happened in England and in France indicate that students can learn better by giving more time to movies and games. Actually, important events of this period became prominent through the cinema. One of the developments focused on the positive effects of playing games on human and sanity had started in health centers before it started in educational institutions as an example of multi-directional interaction. For example, accepted in some environments as a Pioneer in this subject, Positive Health Center was established in Peckham suburb, South London as a foundation to keep people away from illnesses with group activities such as family games, dance and music (Lambert and Morgan, 2010).

Effects about the games and toys kept on drawing more and more interest in time and when Brown (2010) in his TED speech said: "a game is something more than having fun, it is vital." He meant that he finds gaming seriously entertaining on a dangerous level. He asserts that game is something serious with no purpose and is about discovery and curiosity and as a result it has deeper effects than gender. Thus, game centers and institutes has been established in a great number of countries in the world.

In Serious Games Institute established in the Coventry University in England, a project started with the purpose of applied research labor relations and education executed between 2011-2013. Project known as the EduGameLab, targets families and teachers and develops a concrete and special solution to their serious game problems. These researches also argue that only 10% of the serious games are used in educational programs in schools. Therefore, proved benefits of serious game use is limited to children's specific circumstances and is not deployed to achieve educational goals and priorities. Studies show that, it is highly depended on the teachers' attitude, skills and knowledge to improve the use of important games in education. Interestingly enough, when it is taken into consideration, neither being digitally illiterate nor the position of the parents, the use of serious games establishes an excellent connection between home, school and official and unofficial education. SGI develops a rating tool for the games in this project (SGI, 2017).

MIT game lab, on the other hand, was established in Massachusetts to investigate academicians, game creators and technologists and to create new ways for game designing. Having set a goal as discovering the society firstly, the laboratory was identified to help people's education in order to discover the new world difficulties with new exercises (MIT, 2017). American University Game Lab (Washington DC) acts as a center of innovative manufacturing of experiential education, persuasive game research and games with purposes. Both master's degree and game design certification program were provided jointly by the Faculty of Communication and the Art and Science College (AU, 2017). In the past decade, educational games became more popular. Besides, of the games created solely for education, games created for entertainment purposes can also be educational. Project EduGameLab is a project that aims to promote playing games in the classroom. In order to understand the effectiveness of game based learning, a meta-analysis has been made. Results based on the empirical proofs show

the increase of game use. Games are not only used in lower grades as it was before, but also used in middle and in higher grades as well. Arguments whether the teachers have a connection with the game developers or not are continuing (Backland-Hendrix, 2013).

Games in geography courses

In “Thoughts on Education”, Russel (2014), argued that in the geography and history courses, cinema could make positive contributions and suggested that teachers should use movies in their courses. In Education faculties, more and more educational movies and documentaries are involved. Similarly, courses enriched with games and toys attract students more. You can see the most played geography games below (Buczowski, 2015):

- GeoGuessr: Random road view guessing
- Pursued: Recognizing a city by looking at its streets
- Smart Pins: Finding the answers on a map
- Map Race: Recognizing a city from a satellite view
- MapsTD: Street defender system
- Build With Chrome: Map Lego Game
- Geo Buns: Tank wars on a map game
- Locate Street: Recognizing the streets game
- Goggle Maps Cube: 3D city game
- Driving Simulator: Riding through the city game

Since the prices of hardware and software became more affordable, teachers can benefit from programs such as word processing, charts, diagrams, practice-exercise, games, multimedia, global positioning systems and remote sensing (Fitzpatrick, 2007). Hence, it is particularly needed to get rid of the pressure of standard tests and exams. The main purpose must be getting to know the world and the country and to solve problems.

There are best principles of permanent learning in computer games. These are the principles that must be used today: yet, tendency of enhancing the skills and interests does not seem possible when standardized multiple choice tests are taken into consideration. Principles, particularly the learning which are at risk are more significant to those who are prepared and ready for school and who are behind and get less support from the school and also to those who know how to read and write (Gee, 2007). Technology and game platforms are more essential to a group of students with the ones who have disadvantages initially. Teachers need to spare time to play games, which would draw the students’ attention while they are planning their courses. It is known that games provide a great deal of benefits in teaching arguable subjects of geography. Games are usually played by giving information about factors and association techniques about facts. Teachers who try to get geographic output for knowing how to carry out a game emphasize it in the research about the questionable approaches. Nevertheless, learning output was given place such as giving basic concepts and ideas about the field, confronting with decision-making process, geographical world facts and geographical classification. On the other hand it is explained how to play the games and how to design according to different age groups and ranks (Walford, 1969).

Teaching geography with games means time saving both for teachers and students. One should be careful when picking games. Games, which have easy and understandable rules such as card games, puzzles and word finding games, help students learn faster in a shorter period (Gersmehl, 2014).

GeoGuessr game

Games based on web pages and applications change the way students learn about the world map. Having information about countries is seen as the main reason of this mistake. Digital geography games reveal new effects in many areas today. When looked at the results of the games played, it is generally seen that learning skills and output is focused. The configuration stage of the first-degree tech in this field is without any doubt the reason of the formation of this situation. However the benefits of the games outweighs the side effects.

An article about GeoGuessr described these games players as “The Digital Pilgrims of GeoGuessr”. Even though the clothes, tools, nature and signs in the game are hard to follow sometimes, it takes the players who try to guess the places by looking at pictures to an adequate sightseeing. In addition, the more they play, they are taken to a global tour (Figlerowicz, 2015). It is natural for people who travel and know the world to get high points from the game. It can become something more meaningful and strategical to those who cannot leave the place they live. As guessing the places, trying to catch the indicators and reasoning gets harder, one gets more pleasure from it.

As of October 2017, this game, which is played online worldwide, is played 6 million times in famous places and more than 22 million times in various places on earth. In parts of the game, it can be played both solo or with multiple players, five high-resolution random pictures take place. Each step is executed by guessing where the picture belongs to and marking that point on the world map. In the end, your score is automatically calculated based on the proximity to the pictures coordinates. In the choices added to the content of the game there are pictures

from tens of countries such as : Europe stadiums, 61 roads, USA cities, European Union, Game of Thrones, England, Premier League, Australia, Russia, Argentina, Brazil, Canada, Spain and Turkey (GeoGuessr, 2017).



Image 1. GeoGuessr game screenshots

It is needed to make good use out of some clues to get high scores from the GeoGuessr game. Some of these clues support sign-guessing skills and a couple of words to guess what is the native language of the location where the picture has been taken. Particularly, the flora makes it easier to guess at which latitude or how high that place is.

The purpose of this research is to make students see that these game practices increase the interest in the geography course and provide permanent learning. Amongst the sub goals, there are global perception, map reading, visual examination and boosting their skills to find and use the indicators. Thus, it will be a significant achievement for teacher candidates to get pleasure from time spent with games, discoveries and problem solving skills.

METHOD

A pre-interview has been done with students who take General Physical Geography course in Mugla Sıtkı Kocman University, Turkey, and it is understood that they have not played games such as finding a location on a map etc. After they were suggested to play this game in two weeks, feedbacks were given in social network sites. A score comparison was made, and the group was encouraged to play the game. Out of 150 students, 140 of them who took this course are reached and 103 of these students attended to this study. The scores they published in their own blogs were evaluated. Finally, interview forms were handed in the course and following questions were asked:

- Have you played this game before?
- How many times have you played the game?
- What is the reason you got a low score?
- What is the highest score you achieved?
- Which indicators and signs have you used?
- What do you think about games in Geography courses?

Data collected from the interview forms were transferred into an Excel table and examined with the document analysis method. After quantitative examinations, the main reasons for getting a low score and the indicators used assigned into categories and evaluated. Lastly, their reviews about the game is examined.

FINDINGS

Amongst the findings, the most remarkable one is the ratio of excess of the people who play for the first time and the ones who does not show any interest to the interview form. Another thing, which is remarkable amongst the findings, is that the reason for them to get low scores is that they do not have a full command of the geographical signs.

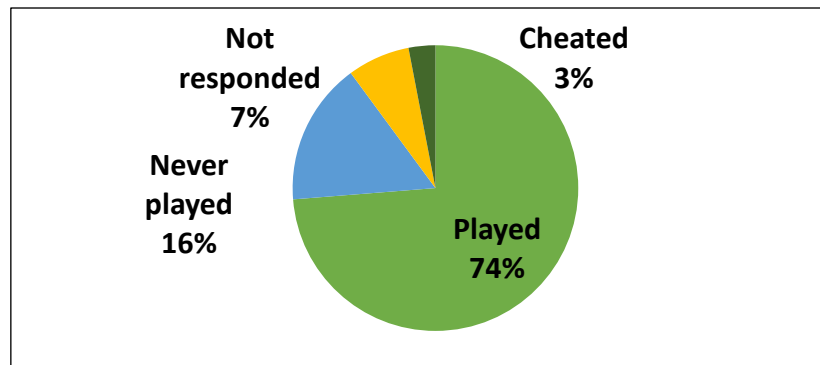


Image 2. Information regarding participants

103 students out of 140 students, who are asked to play games as extracurricular activity for geography course, played it 629 times. 23 out of these students have never played the game, 10 of these students left questions unanswered or picked up a different topic and four of these students reported that they had cheated in the game, which they scored full points. In the game, students used 317 indicators in total they faced to find where the picture belongs on a world map in seven categories.

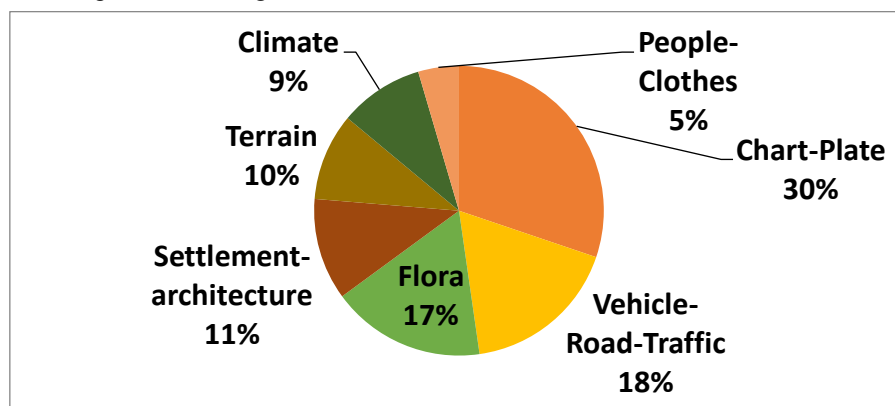


Image 3. GeoGuessr game features

This study can give inspirational results not only for teacher candidates, but also for journalists and security guards. In fact, in a laboratory study about GeoGuessr in USA, players whose ages are between 18-35 made classification according to difficulty level and beginner level possible. A strategy is examined based on the studies of 4 experts and 15 novice players who participated in the study (Mehta, North and Luther, 2016). According to this, 4 different categories can be mentioned.

- High level expert strategy
- Enhanced describing strategies and recognition clues
- Difficulties caused by human image in geographical positioning
- Indicators, which supply spatial perception and geographical position

In the web resources research, Alixiev (2016) explained the games' learning output with a chart made according to Bloom's learning taxonomy. Accordingly, explaining the visuals and the concepts in information step, listing and explaining colors and re-identification were given. Examining the images closely, changing the scale, quality identification, argument and association and comparison were shown in the comprehension step. In the third category, the practice, choosing and showing facts and suggesting a thesis by using the indicators take place. In addition, on the analysis step, there are classifying events and objects, geographical designing and decomposing the facts. Gathering data for a problem, finding solutions, examining the data and developing practice and map composition is found in the syntheses step. Finally, in the evaluation step, outputs such as: Evaluating natural and humane events, discovering the processes, interpretation of the results and joining the competition are listed.

As it is seen on the results of the research above, it is focused on the identification strategy and recognition clues. Particularly the opinions of the players who scored high are positive. Based on 113 findings acquired with the help of the questions answered by all participants, following data is acquired: 40 people said that the games support learning and teaching, 33 people enjoyed their time playing, 18 people said that they recognize the world and the countries, 17 people said that they improved their knowledge of location, place, direction, space and map and lastly, 5 people said that they improved their skill of association and interpretation.

CONCLUSION AND DISCUSSION

Firstly, all participants pointed out that they had pleasure from the game when looked at the opinions of the students who participated in the GeoGuessr game in geography course. Based on the views of the participants, $\frac{3}{4}$ of them gave positive impressions about the game. The remained $\frac{1}{4}$, stayed uninterested because of either technological restriction or gaming habits. Hence, the chart that the teacher candidates produced, gave clues about what needs to be done in the geography courses.

The conclusions, especially the learning output is parallel to that research has been done in Bulgaria named "Education Fields and Web Resources for Education of Geography and Economy" (Alexiev, 2016). In a research has been done in USA (Mehta et al., 2016) on the other hand, geolocation performances examined and human image and sky image caused the most of the problems. Other natural and humane indicators are found relative in marking a location.

Other than the acquisitions like map reading skills, with geography content games have also high-level acquisitions such as discovering the indicators and visual analysis. Primarily based on guessing, these type of games contribute highly to solving problems by reasoning. As Brown stated in his famous TED conference about games "The ones having game playing habits since childhood becomes smarter". Another significant contribution of the games is that players reach to information and learn by themselves. As a conclusion, it is understood that they agreed on the GeoGuessr game being a nice tool that supports learning.

Students of Mugla Sıtkı Kocman University have had increased performance while having an entertaining time and showing interest. The importance of playing the game more than one time is that it is supported by addiction and over learning. Similar results obtained in a research has been done in Poland (Pokojski, 2017) called "Computer Games in Geography". It has underlined that different versions of the game can be developed in teaching country's geography. It is being put forward that the results will be beneficial and effective particularly with the subjects which are hard to learn such as the list of national parks, wetland areas and typical geography areas.

In Geography Teaching studies, which Gersmehl published in 2014 and Lambert and Morgan published in 2010, one of the conclusions was that the importance of computer and technology supported vocational education that the teacher candidates get. Likewise, in Gees' study of Learning Video Games and Literate Tests (2007), it is emphasized on the effects of visual reading and technological reading. In this study, participant evaluation ratio for "Games' support to achieve geography courses goal" is as high as 35%.

Consequently, authorized and responsible people have their parts to play in helping games such as this one to become more widespread in every stage of education. It should be given more place for games in syllabuses, books and activities. Game and game materials should be encouraged to be used in course books of the course. Game and toy laboratories should be constituted in schools and in universities. In education faculties, game development courses should be opened. Teachers using games in assessment and evaluation have a strategic value. National Center for Games should be established for society to gain more games and players and this center should be able to produce policies about this subject. A study should be done to increase the number of toy museums in our country. Postgraduate programs should be opened for teacher candidates to be able to take game developing and toy designing courses.

REFERENCES

- Alexiev, T. (2016). Educational geospatial web platforms and resources for geography and economics teaching. Bulgarian Academy Of Sciences 1–2 • Problems of Geography. 89-102.
- AU (2017). AU Game Lab. Retrieved from <http://www.american.edu/gamelab/> on 05.9.2017.
- Backlund, P., Hendrix, M. (2013). Educational games - Are they worth the effort? A literature survey of the effectiveness of serious games. Games and Virtual Worlds for Serious Applications (VS- GAMES), 2013 5th International Conference on <http://ieeexplore.ieee.org/document/6624226/> on 25.9.2017.
- Brown, S. (2008). Oyun sadece eğlenceden başka bir şey değildir. TED. Retrieved from https://www.ted.com/talks/stuart_brown_says_play_is_more_than_fun_it_s_vital on 10.10.2017.
- Buczowski, A. (2015). Top 10 Google Maps games of all times. Retrieved from <http://geoawesomeness.com/10-top-google-maps-games-of-all-times/> on 05.9.2017.
- Figlerowicz, M. (2015). GeoGuessr's Digital Pilgrimages. Journal Room One Thousand, 3(3). Retrieved from <https://escholarship.org/content/gt5gg4g7v8/gt5gg4g7v8.pdf> on 10.10.2017.
- Fitzpatrick, C. (2007). Teaching geography with computers. *Journal of Geography* 92, 156-159. Doi: <http://dx.doi.org/10.1080/00221349308979644>
- Gee, J. P. (2007). *Good video games+ good learning: Collected essays on video games, learning, and literacy*. New York: Peter Lang.

- GeoGuessr (2017). Retrieved from <https://geoguessr.com/maps/official> on 05.9.2017
- Gersmehl, P. (2014). *Teaching geography*. (Third Edition). New York London: Guilford Publications.
- Google oyunları. (2017). Top 10 google maps games of all times. Retrieved from <http://geoawesomeness.com/10-top-google-maps-games-of-all-times/> on 05.9.2017
- Lambert, D., Morgan, J. (2010). *Teaching geography 11-18: A conceptual approach*. Berkshire: Open University.
- Metha, S., North, C., Luther, K. (2016). An exploratory study of human performance in image geolocation tasks. Department of Computer Science and Center for Human-Computer Interaction Virginia Tech, Blacksburg.
- MIT (2017). Exploring the potential of play. Retrieved from <http://gamelab.mit.edu/> on 05.9.2017.
- Pokojski, W. (2017). Komputerowe gry dydaktyczne w geografii. Edukacja Biologiczna I Środowiskowa. Retrieved from https://www.researchgate.net/profile/Wojciech_Pokojski2/publication/318987962_Komputerowe_gry_dydaktyczne_w_geografii/links/5989dd86a6fdcc75626386ae/Komputerowe-gry-dydaktyczne-w-geografii.pdf on 05.9.2017.
- Russell, B. (2014). *Eğitim üzerine düşünceler*. İstanbul: Cem.
- SIG (2017). EduGameLab. Retrieved from <http://www.seriousgamesinstitute.co.uk/applied-research/EduGameLab.aspx> on 25.9.2017.
- Takahashi, D. (2016). Science game lab to be a central hub for scientists and gamers. Retrieved from <https://venturebeat.com/2016/06/21/science-game-lab-to-be-a-central-hub-for-scientists-and-gamers/> on 25.9.2017
- Walford, R. (1969). *Games in geography*. London: Longman Group Ltd. Retrieved from <https://eric.ed.gov/?id=ED064198> on 25.9.2017.