

PROJECT “TOPOGNOSIA”: STRENGTHENING LOCAL IDENTITY THROUGH DIGITAL GAMES IN EDUCATION

Evangelos Valasiadis, George Katsadoros, Rea
Kakampoura and Manos Fokides
University of the Aegean

Abstract

This article presents a pilot project introducing a new learning subject named “Topognosia” (*Knowing the region*) that incorporates cultural, historical, and geographical aspects of the local society students live in. Its purpose is to enrich the basic knowledge of students about their region and strengthen their awareness and notions towards local identity. The specially designed accompanying material includes a textbook, a website with online lessons and a collection of digital mini games, one of which is hereby demonstrated in detail.

Postmodern Relativism and Identity

Since its appearance, the postmodern condition has evoked both laudatory and critical reaction (Mackenzie, Good, & Brown, 2014). Whether it is viewed as a liberating or a problematizing force, its tendency to challenge preexisting limits, dispute established terms and call cultural and political norms into question, causes a general feeling of indeterminacy (Harvey, 1990). From a pedagogical point of view, this widespread relativism does not contribute to the stable socioemotional environment required for the balanced development of children as it may expose them to confusion, account for a deficit of trust and even affect their adaptation process by disrupting the formation of the cognitive schemata. Additionally, it influences cultural identities by constantly reinterpreting them, thus affecting all individuals; mostly young adolescences -whose social identity is still under development- making them vulnerable to distress and internal conflicts. As Bendle (2002, p. 1) puts it, in our age, “the acquisition and maintenance of identity has become both vital and problematic.”

Regionality could be used as a base for the formation of a stable, socio-cultural identity, since the belonging to a region calls upon a sense of community that can merge together with an array of coexisting and overlapping elements like gender, sexuality, class, religion, race, ethnicity, etc. (Tomlinson, 2003). However, this merging procedure is not to obtain the homogenizing character that spatial conditions implied in the pre-modern situation, often leading to isolation and subjection (Paasi, 2002). In the current historical context, individuality and freedom of choice are considered essential: The constant movement of people through increasingly porous borders into ever growing “global city-regions” (Scott, 2001) calls for an intercultural consciousness that doesn’t conflict with the semantics of the postmodern and for a new local identity addressing the question *Where do I live* instead of *Where do I belong*. This new type of local identity appears less

associated to origins and is oriented towards the inclusion of difference and heterogeneity (Paasi, 2003).

Research Steps and the Project “Topognosia”

These contemplations involve many issues that could be further investigated: Is it possible for up-to-date education to promote a new type of local identity, combining traditional and modern elements? Can that identity be at the same time clearly defined but also tolerant to the difference and focused to inclusion, corresponding to the plurality of the urban populations? What characteristics should it incorporate in order to represent the hybrid culture of the multimillion metropolises? And could technology contribute to the attractiveness of such an identity so that students will embrace it voluntarily for self-description purposes? The above discussion has led to the formulation of a main research question: Can the use of digital games in education assist in enhancing the local identity of 9-year-old pupils in an urban region like Galatsi of Attica?

After specifying the question, literature review followed, as well as designing of a pilot new subject named “Topognosia” (*Knowing the region*), that incorporated cultural, historical, and geographical aspects of Galatsi region into printed and online material. The project, product of thorough research, was approved by the Ministry of Education and distributed to the elementary schools of the area with the help of the local authorities. Then, the implementation of the project was designed. The total number (397) of 4th-grade pupils studying in Galatsi’s public schools was divided into three groups: The first to be taught by use of a printed textbook including 20 hourly courses of “Topognosia”; the second to be additionally given access to a website with online lessons and a collection of digital mini games; the third group was not educated on the subject.

At the same time, a survey was designed (and is still on-going), in order to evaluate the effectiveness of the project. Individual pre- and post-questionnaires were addressed to the target group, containing questions referring to three groups of information: demographic ones (like gender, parents’ level of education, etc.), attitude toward tradition (responders’ opinion about folk dances, etc.), and views on aspects of local life (perceived efficiency of local authorities, etc.). The main focus was to collect data that will allow a comprehensive assessment of the pupils’ local identity status before and after the educational intervention. Based on this information, a set of indicators (like level of knowledge about the region, perceived area’s desirability, level of social attachment, etc.) will be developed to monitor the changes occurred.

As the survey was conducted on a voluntary basis, and written consent of the parents was needed in order for the students to participate, only 285 of the total 397 fourth grade students of the local area’s elementary schools completed the first questionnaires. This may affect the results, as it is possible that only parents who were interested in the survey allowed their children to take part in it. Moreover, as the subject material includes online lessons and games, the pupils of the second group without internet access at home

wouldn't be able to take advantage of the digital elements. After the completion of the program and the gathering of the post questionnaires, the collected data will be analyzed in the light of the above-mentioned limitations, so that the research question can be answered.

Employing Digital Games for Educational Purposes

Digital games are interactive rule-based systems involving challenge to reach a goal while providing feedback on the progress of the player (Lieberman, Chesley Fisk, & Biely, 2009). As they have become an important part of most children's leisure life and at the same time an important aspect of our cultural landscape (Kirriemuir & McFarlane, 2004), they started being incorporated in formal teaching, after the appearance of serious games: a branch of video games especially developed for a purpose other than pure entertainment.

There are several reasons digital games are implemented in education. Most importantly, they were proven to have high educational value as effective learning tools (Gee, 2005; Heins, 2017; Robertson, 2009). Well-designed games can provide rich, fun and interactive experiences, promoting pupils' learning (Thai, Lowenstein, Ching, & Rejeski, 2009). Furthermore, as games make the learning process more fun, they can be used to create a mood that corresponds better with students' interests (Prensky, 2001). Finally, as students come to school with increasingly enhanced digital literacy, gaming applications can be considered as ways to harness their experience (et al., 2008).

When students enjoy a game, they may spend hours of playing without any regrets or complaints (Alshanbari, 2013). However, high attractiveness doesn't make an educational game equally beneficial: In order to be considered well-developed, a game needs to be pedagogically designed and conceived following the game-based learning principles, while its content has to be appropriate in terms of matching students' learning needs. It is also clear that educational games are not a panacea: not all students learn better via games and not all lessons are best taught through them. Therefore, games on this project have a supporting role and are not the only way through which students acquire the desired information. All the content displayed in-game is also available to students as text, through online lessons. Digital games could solve many of education's key challenges, but there is a need for continued research, as well as evaluation of the efficacy of game-based approaches. One of the aims of this research is to add input to this direction.

Developing Games that Strengthen Local Identity

According to Zimmerbauer, Suutari and Saartenoja (2012), local identity -- the regional consciousness of the inhabitants -- consists of three essential features: a cognitive one that refers to awareness, in the sense that local citizens are familiar to regional characteristics; an affective one, that concerns people's emotional ties to a place; and an instrumental one, having to do with the use of the region as, for instance, a basis for mobilization. The nature of digital games allows them to focus only on the first and the second element, but the wider "Topognosia" project comprises all three of them, through various

activities like school visits to nearby hills, the municipal library and the city hall, cleaning of communal areas, meeting events that take place outdoors, etc.

The games feature attributes of the key area, combining real life graphics based on the district's surroundings as they look presently, but also as they appeared in the historical past. They are designed to help users identify with the avatars, understand how the landscape changed over time to reach its current, familiar appearance and aim to trigger them to learn more about the area. The scenarios are inspired by the region's history and folklore, making wide use of what Lyotard described as "petit récit" (1984, p.60), or little stories. The mere fact that digital narratives of the area are turned into online games, could boost students' conceptions about the area's esteem in the eyes of the "Others."

Taking into consideration that different types of games are better for different areas of learning (Van Eck, 2006), various game genres are included: The quizzes and puzzles focus on improving users' ability to recognize patterns and thus are targeted on characteristics of the area like names and locations of the neighborhoods, position of its monuments, names of surrounding hills, etc. Other games that belong to the arcade style, are adequate for more complex scenarios and thus deal with issues like the different origins of the first inhabitants and their interaction, which gradually caused the formation of the hybrid local culture. One of the titles refers to a volunteer project by local citizens, who, after gathering sour oranges off the street trees, processed them to produce vases with sweets, eventually offering them to people in need. This scenario demonstrates the importance of civic solidarity and aspires to stimulate pupils to act alike. Another game presents the hard work done by the municipal workers and officials, aiming to affect pupils' notions towards the local authorities. Finally, a title blending strategy with action is inspired by the destruction of an ancient local monument by ignorant inhabitants, encouraging students to learn more about their regional history, so that they can prevent similar incidents in the future. In short, most of the games use, as a background, historical facts concerning the area. This information, apart from directly strengthening users' awareness and emotions concerning the region, aims to enrich the collective memory of the community, uniting students through the common past of the area they live in, regardless of their descent.

Presenting the Games

The software used for the development of the games was Clickteam's Fusion Developer version 2.5. An HTML5 export module add-on was then utilized to ensure compatibility with web browsers. All games are two dimensional with screen resolution of 640 x 480 pixels, and, in some cases, using horizontal scrolling. The image files were edited using Adobe Photoshop 7.0 CE, and the sound files were edited using Audacity v. 2.1.2. The games, after their development and testing, were uploaded to the game hosting webpage (<https://itch.io>) and links to them were placed on the "Games" section of another website specially created to promote the online part of the project, located at <https://sites.google.com/site/galatsigames/>.

As it isn't intended to present all the titles of the collection, in the paragraphs to follow, one representational game is introduced, accompanied by details on how it was created and comments about the reasons the specific elements were chosen.

“Wolves in Turkovunia Hills”

This title (Figure 1) belongs to the platform genre, meaning that the user guides the avatar to jump between platforms in order to collect objects and advance to next levels. The player controls the movement using the keyboard or his finger, trying to avoid letting the avatar miss jumps or collide with the enemy.



Figure 1. Screenshot from the game

Plot. It's the year 1877. After an attack of wolves to a sheepfold located in Turkovunia hills, a young shepherdess is called by the shepherd to pick up the remaining sheep before the wolves return and attack again. The game consists of three levels of similar difficulty, each with 10 scattered sheep for the player to pick up before the wolf attacks.

Plot background. The plot was inspired by a true event, published to a 19th century newspaper. Specifically, the newspaper *Aletheia* (Truth) on January the 13th 1877, reported that a wolf attacked a sheepfold located in the area, killing 120 of the 140 animals that belonged to shepherd Kostandellos from Lidoriki, while he was absent.

The specific story was chosen for the game plot for many reasons. To start with, it contains the first known press report on the area's name and is therefore considered of certain historical value. Secondly, it presents a part of the first settlers' life during modern times, thus offering a motive to display useful information about their origin and way of living. Additionally, the date of the event provides the players a chance to learn about the early days of their home area and observe its original appearance, before the extensive quarrying and the expansion of the city changed its morphology. Finally, the story was chosen because it involves Turkovunia hills, which are considered a key element, since -- as a landmark -- they form a natural border of the area and connect the past to its present and the future.

Visuals. The text appearing on the title and in the information screens is typographically enhanced (Peters, 2012) and uses vivid colors, in order to draw the attention of the pupils (Zettl, 2005). However, much of the material used is artificially colored, as the original dates back to the first half of the 20th century. For example, the pictures from Turkovunia hills are from the early 1930's, attempting to regenerate the image of the area when it was still uninhabited, and the quarries had not yet started distorting the landscape. Moreover, the drawing of the medieval church of St. George is dating back to 1921, displaying the temple's appearance before the restoration of its roof, which took place in 1956 (YCBS, p. 438, §5). Finally, the avatar of the shepherdess appears wearing a dress created by the combination of two traditional costumes from Attica district. (Figure 2).

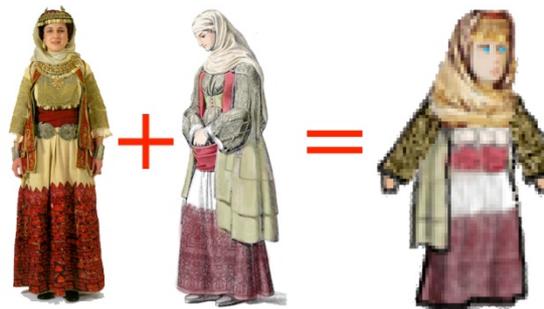


Figure 2. Two traditional costumes combined for the avatar's dress. The first is acquired from <http://www.e-istoria.com/147.html> and the second a colorized drawing depicting an Athenian peasant woman by Stackelberg (1831, p. 45).

Soundtrack. The music heard in the background of the game is the tune “Skaros” (available at <https://www.youtube.com/watch?v=MMNvJn0QqQE>), belonging to the Greek folk music tradition of the central and northern highlands. It's an instrumental piece in free rhythm, usually played by clarinet or flute in the early morning or late afternoon hours, while the shepherd leads the flock to the pasture or back. It was chosen for the specific game because it is representational for the areas of origin of the first settlers and, at the same time, deeply associated with the main theme of pastoral life, to the extent that it has been characterized as the “national anthem” of herdsmen. Its inspiring melody and the accompanying sounds of bleating sheep, ringing bells and barking dogs, blend well with the images and contribute to a balanced aesthetic experience, both entertaining and informative.

Accompanying information. Three screens containing simplified data about the early history of the area appear after the title screen. In the initial one, the first ever reference to the area's name is cited, accompanied by some information based on the 1840 census. Additionally, a short description of the first gatherings of houses and the surrounding landscape is included, obtained from a sale contract dated 1833, while the bad condition of the streets is depicted thanks to a newspaper article (Skrip, 1904, p.1). On the second screen, a short synopsis of an old legend is cited to explain how the local spring of Agia Glykeria started flowing around 1678 and why it was

considered important, according to folk tradition. The third screen informs the user about the origin of the first shepherds that arrived in the area, and the reason for their migration (Hatzoudis, 2016). If the user manages to finish the game successfully, a “bonus” screen with additional information explaining how the region acquired its name appears.

“Celebrating Koulouma in Galatsi”

This title (see Figure 3) belongs to the Breakout style games, a subcategory of the bat-and-ball genre, dating back to 1967. In this type of games, the player controls a paddle on the bottom of the screen and uses it to hit a ball, guiding it against various target objects. In this version, the original paddle is replaced by an avatar, the ball by a traditional diamond shape kite, while the target objects are bricks of various colors and durability.

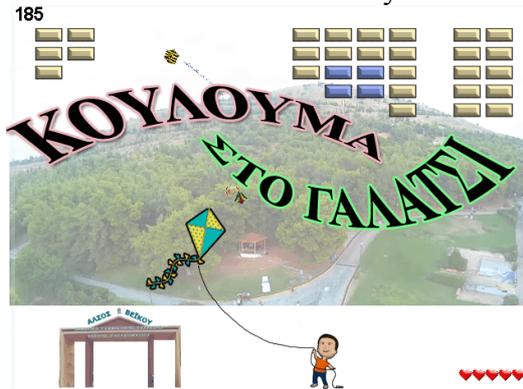


Figure 3. Title screen of the game.

Plot. On Clean Monday, a boy and a girl (Panayiotis and Anastasia), with origin from Naxos and Crete respectively, are enjoying the outdoors at the popular recreational park of Galatsi area, Alsos Veikou. The wind takes away their kite, and the user’s mission is to help them control it and direct it against a block of bricks. The game consists of two levels of increasing difficulty, the second one containing more bricks, including some of higher durability, which require a double hit to dissolve, thus creating a more complex playfield.

Plot background. Clean Monday, also called Koulouma, marks the end of carnival season and the beginning of the spring. It’s the first day of the Great Lent, a seven-week period which prepares Orthodox Christians for the greatest feast of the church year, Pascha (Easter). In Greece and Cyprus, it’s considered a public holiday and people celebrate it with picnics in the outdoors, consuming fasting food and flying kites.

Koulouma was chosen as a background for this game for various reasons. First of all, it’s a family celebration and one favored by children, since it involves excursions in nature and flying a kite with the help of the parents. Second, the Alsos Veikou Park is among the most popular destinations for celebrating Clean Monday in Athens, offering a reason to the local residents to feel proud and take care of their home environment. Additionally, the tradition of Athenian families choosing Galatsi area to spend a weekend in nature can be traced back to the early 20th century, a fact that can be used to connect the past to the present day.

Naxos and Crete, mentioned as places of origin for the two avatars, are islands where many of the current residents of Galatsi originate from (Hatzoudis, 2016). Thus, the game offers a chance to show the user how two local civilizations have interacted in an urban area, finally merging in an hybrid civilization combining elements of many areas around Greece.

Visuals. Again here, the text on the title and the information screens is typographically enhanced and using vivid colors. The background of both levels depicts the Alsos Veikou Park as it looks in the present day, so that the pupils may identify easier with the two avatars.

On the other hand, the images chosen to represent the original civilization of the two islands, belong to characteristic historical monuments: For Naxos, the “Portara” gate of Apollo’s temple; for Crete, a red column from the ruins of Knossos Palace. In one of the final screens of the game, these two structures combine to create the main entrance of the Alsos Veikou Park, showing metaphorically how the two distinct cultures blended into something new.

Soundtrack. The music chosen for this game is connected both to the tradition of Clean Monday and the two islands of Naxos and Crete. At first, the opening theme of the folk song *Horepsete – Horepsete (Let’s Dance)*, introduces the user to the spirit of the wider Aegean Sea area, while its swift and festive tune was selected to create a celebrating mood. The piece was orchestrated by V. Konitopoulos for the Y. Parios 1992 LP record “*Ta nisiotika*” and retrieved from <https://www.youtube.com/watch?v=vv-NUo6l5G0>.

The music accompanying the first level is a folk song from Naxos called *Voskistikos* (herder’s tune), heard usually during the carnival period, satirically referring to the love troubles in the life of a shepherd. On the second level of the game, representing the culture of Crete, the chosen song is again satirical, escorting a carnival dance game called “*skoupa*” (broom). The sound was extracted from a local television channel broadcast where the dance was demonstrated with the help of the folk dancing group “*Lazaros and Manolis Hnaris*” and the music ensemble of Petros Maroulis. It was retrieved from <https://www.youtube.com/watch?v=pmSszwiU9rs>.

Accompanying information. The title screen is followed by one containing information about the celebrations on Clean Monday, the accompanying activities and the traditional menu of the day. A small picture of the “*Lady Lent*” (Κυρά Σαρακοστή) appears, showing a doll with seven legs -one for each week of the Great Lent- but no mouth, the absence of which is representing the fasting of the period. The next screen informs the user about the popularity of the area among the Athenians and offers instructions on how the game is played.

After the user successfully completes the first level, another informative screen appears, including data about the area’s inhabitants originating from Naxos: The date when they founded their first cultural association, their main

fields of employment and their important contribution to the local society. After the end of the second level, a similar “bonus” screen containing information about the people of Cretan origin living in the area, appears, explaining how their neighborhood was named after Crete.

Conclusion

Postmodernism has been accused of causing destabilizing effects on society, influencing cultural identities and indirectly affecting the socioemotional development of school age students and adolescences. It is therefore claimed that present-day education should focus on assisting pupils obtain a strong local identity that will function as a secure shell, allowing them to develop in a less unstable and fragmented environment and at the same time enhance social cohesion. However, the meaning of *local* appears to have drastically changed during the last decades. The constant flow of people possessing heterogenous cultures to the cities, calls for an intercultural consciousness, an identity less associated to origins and more oriented towards the inclusion of difference.

Can the use of digital games in education assist in enhancing a new type of local identity that combines postmodern and traditional elements? The current article presents a project aiming to investigate that hypothesis by introducing a new teaching/learning subject named “Topognosia” (*Knowing the region*), which includes printed and online material, supported by a collection of specially designed digital mini games that incorporate cultural, historical, and geographical aspects of the key area students live in. The implementation of the project on the schools of the region is expected to result to a substantial improvement in all the three elements that constitute local identity: (a) advanced knowledge about regional characteristics, (b) increased desire to stay in the area and contribute to its improvement by dealing with the local issues in collaboration with the authorities and other inhabitants, and (c) enhanced use of the area through activities like school visits -- to nearby hills, the municipal library and the city hall.

References

- Alshanbari, H. (2013, November). *Video games in education – An Implementation in teaching construction management for college students*. Paper presented at Human and Social Sciences at the Common Conference, Zilina. Zilina, Slovakia: EDIS.
- Bendle, M. (2002). The crisis of ‘identity’ in high modernity. *British Journal of Sociology*, 53(1), 1–18.
- Gee, J. P. (2005). Learning by design: Good video games as learning machines. *E-Learning*, 2(1), 5-16.
- Harvey, D. (1990). *The condition of postmodernity: An enquiry into the origins of the cultural change*. Malden, MA and Oxford, United Kingdom: Blackwell.
- Hatzoudis, N. (2016). *Galatsi and its inhabitants through the 20nd century- First volume 1900-1974 [Το Γαλάτσι και οι Γαλατσιώτες στο διάβα του 20ού αιώνα. Πρώτος τόμος 1900-1974]*. Athens, Greece: Taxideftis.

- Heins, M. C. (2017). *Video games in education* (Master's thesis). Education and Human Development, The College at Brockport, State University of New York, Paper 625. Retrieved from http://digitalcommons.brockport.edu/cgi/viewcontent.cgi?article=1653&context=eht_theses
- Ito, M., Horst, H., Bittanti, M., Boyd, D., Herr-Stephenson, B., & Lange, P. G. (2008). *Living and learning with new media: Summary of findings from the Digital Youth Project*. Chicago, IL: The MacArthur Foundation.
- Kirriemuir, J., McFarlane, A. (2004). *Report 8: Literature review in games and learning*. A NESTA Futurelab Research report. Bristol, United Kingdom: Futurelab.
- Lieberman, D. A., Chesley Fisk, M. & Biely, E. (2009). Digital games for young children ages three to six: From research to design. *Computers in the Schools*, 26, 299–313.
- Mackenzie, J., Good, R., & Brown, J. R. (2014). Postmodernism and science education: An appraisal. In M.R. Matthews (Ed.), *International handbook of research in history, philosophy and science teaching* (pp. 1057-1087). Dordrecht, The Netherlands: Springer Science + Business Media.
- Paasi, A. (2002). Place and region: Regional worlds and words. *Progress in Human Geography*, 26(6), 802-811.
- Paasi, A. (2003). Region and place: Regional identity in question. In *Progress in Human Geography*, 27(4), 475-485.
- Peters, E. (2012). Learning German formulaic sequences: The effect of two attention-drawing techniques. *The Language Learning Journal*, 40(1), 65-79.
- Prensky, M. (2001). *Digital game-based learning*. New York, NY: McGraw-Hill.
- Robertson, D. (2009). *The games in schools – Community of practice*. Brussels, Belgium: European Schoolnet.
- Scott, A. (2001). Globalization and the rise of city-regions. *European Planning Studies*, 9(7), 813-826.
- Stackelberg, O. M. (1831). *Trachten und Gebräuche der Neugriechen*. Berlin: Reimer.
- Thai, A. M., Lowenstein, D., Ching, D., & Rejeski, D. (2009). *Game changer: Investing in digital play to advance children's learning and health*. New York, NY: Joan Ganz Cooney Center at Sesame Workshop. Retrieved from http://www.joanganzcooneycenter.org/wp-content/uploads/2010/03/game_changer_final_1_.pdf
- Tomlinson, J. (2003). Globalization and cultural identity. In D. Held (Ed.), *The global transformations reader: An introduction to the globalization debate* (pp. 269-277). Cambridge, United Kingdom: Polity.
- Van Eck, R. (2006). Digital game-based learning: It's not just the digital natives who are restless. *EDUCAUSE Review*, 41(2), 16-30.
- YCBS – Yearbook of the company for Byzantine studies [ΕΕΒΣ - Επετηρίς Εταιρίας Βυζαντινών Σπουδών]. (1956). (26).
- Zettl, H. (2005). *Sight, sound, motion: Basic media aesthetics* (4th ed.). Belmont, CA: Thomson Wadsworth.
- Zimmerbauer, K., Suutari, T., & Saartenoja, A. (2012). Resistance to the deinstitutionalization of a region: Borders, identity and activism in a municipality merger. *Geoforum*, 43, 1065–1075.

Author Details

Evangelos Valasiadis

air_vag@yahoo.com

George Katsadoros

katsadoros@rhodes.aegean.gr

Rea Kakampoura

rkakamp@primedu.uoa.gr

Manos Fokides

fokides@aegean.gr