



Board Games as Educational Media: Creating and Playing Board Games for Acquiring Knowledge of History*

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Abstract

The paper presents qualitative research in creating and using board games as educational media in history teaching. The research was conducted during a course of the History of Schooling in Serbia (Belgrade University), with 58 pedagogy students divided into two groups (13 game-designers and 45 evaluators) and a subject teacher. Students were engaged in project-based learning with the assignment to create, play and evaluate board games. Following these activities, students presented their views on the possibilities of board games application in history teaching within focus groups. Students-designers pointed out that creating a board game was a challenge that required sophisticated intellectual and emotional engagement and that they had acquired knowledge of history through problem-solving. They perceived the teacher as an initiator and facilitator in the learning process. Student-evaluators argued that the games had helped them in acquiring and revising the knowledge from a new and unusual perspective.

Keywords: Board-games, Gamification, Project-based learning, History teaching, Student perceptions

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Introduction

When talking about board games in the context of learning and education, it can be said that a board game is more than just a game of strategy played by moving pieces on a board. The term “board game” surely implies *action* (a specific kind of activity), but it also encompasses the experience of *play* – the unique modality of human experience (Botturi & Loh, 2008). It is a carefully constructed system designed to create a gameplay experience (Hunsucker, 2016), as well as to make certain content, problems or materials more clear, more personal and closer to the players; it is a sort of *autotelic experience* in which a person is completely involved engaging his or her full operational capacities (Csikszentmihalyi, 1999).

The focus of this research was on examining students’ perspectives on the possibilities of using board games as educational media in history teaching. Games were used in two ways – first creating and then playing the created board games. Through focus group sessions we aimed to understand these processes, the difficulties and advantages, as well as students’ reflections on both creating and playing the created games.

Theoretical framework

Theoretical considerations on the educational use of games and learning through play are not a novelty, but in recent decades these took a central place within the educational sciences. Various relevant concepts referring to interrelations between learning, education, games, and play emerged due to the significant scientific efforts launched in different parts of the world recently. The concept of *gamification* is one of these. The origins of gamification can be traced to the end of the 19th century, while the rapid development of this concept took place over the last two decades of the 20th century. It can be said that today, conceptually and practically, gamification has been utilized worldwide and in almost every domain of learning and level of education. Gamification in learning and education is described as a *set of activities and processes* aimed at *solving problems* related to learning and education by using or applying the *game mechanics* (Kim et al., 2018, p.29). Such a view on gamification is not the only one, though it explains the very essence of its conceptual and practical fundamentals. Having that in mind, we find it worth mentioning some authors’ statements according to which “what exactly is meant by gamification varies widely, but one of its defining qualities is that it involves the use of game elements, such as incentive systems, to motivate players to engage in a task they otherwise would not find

attractive” (Plass, Homer & Kinzer, 2015, p.259). Obviously, these arguments imply a particular value of gamification in the context of learning and education which is reflected in the possibilities of increasing students’ engagement, participation, and motivation during classes.

Gamification is interrelated with the concept and practical application of *serious games*. Understanding the differences between those two is very important in the context of learning and education. Serious games observed in a broad sense are educational games, and this becomes evident in at least two domains. *First*, serious games presume proper and intensive educational preparations aimed towards developing the competencies needed for their adequate use (Kačavenda-Radić, Nikolić-Maksić & Ljujić, 2011b). *Second*, serious games are specified as those games intentionally designed to be primarily, even exclusively, used in educational and learning purposes within which educational goals, objectives, and functions are explicitly presented (Brathwaite & Schreiber, 2009; Michael & Chen, 2006).

With those elements in mind, the distinction between gamification and serious games seems obvious in the context of learning and education and it can be observed relying on various criteria. One of these is something we highlighted as *game stats* criterion. Gamification in learning and education does not exclusively presume the application of educational games in a broader sense. Gamification is also related to the use of *casual games* – games that are observed as the opposite to serious games that don’t require exclusive educational preparation to be engaged within it, the main purpose of which is to provide fun, relaxation, rest and recovery (Brathwaite & Schreiber, 2009; Michael & Chen, 2006). On the other hand, serious games are always educational games, both in the sense of a means of preparation and their highlighted and dominant purpose.

Another criterion for distinguishing gamification and serious games is something we named *real-life* criterion. While gamification refers dominantly on games application in the process of learning and education as a means of achieving learning and educational goals and objectives in the real world (it is observed as an additional element supporting learning and education that happens in the real world), serious games are related to achieving learning and educational goals and objectives through the process of play that encompasses the problems or situations from the real world (Kim et al., 2018, p.30). In other words, gamification presumes *inserting games into the real-world* to create environments that support learning and education. On the other hand, serious games incorporate problems and situations *from the real world into the game*, and the learning is happening during the playing process.

It seems important to mention another concept that is very present in recent decades within theoretical and practical educational affairs – the concept of “*Game-Based Learning - GBL*” (Kim et al., 2018; Plass, Homer & Kinzer, 2015; Yien et al., 2011; Demirbilek, 2009; 2010; Sauv , 2010; Whitton, 2007; 2009; 2010; Tang, Hanneghan & El Rhalibi, 2009; Gee, 2003; 2008; Pivec & Kearney, 2007; Kiili, 2005). From our perspective, the importance of GBL lies in its positioning as the unifying factor of gamification and serious games. In a certain way, GBL assumes and upholds both gamification and serious games in the context of learning and education. It summons significant characteristics of the aforementioned concepts constituting by that qualitatively quite *new*, *unique* and *holistic* educational concept. As stated in some previously conducted research (Kačavenda-Radić, Nikolić-Maksić & Ljujić, 2011a), it is evident that GBL represent the whole alternative approach to learning and education, individually or institutionally driven, aimed towards acquisition of knowledge, skills, attitudes and personality development in variety of different domains, within specially designed playing and simulating environments. Besides the fact that GBL is often observed in the context of educational use of digital games in the contemporary world, it is not always the case (Plass, Homer & Kinzer, 2015, p.259). GBL is associated with educational use of games in general.

The aforementioned description of GBL becomes more understandable when we take into consideration the detailed specification of characteristics of GBL that Tang, Hanneghan & El Rhalibi (2009) identified in their research. According to mentioned authors GBL possess great motivational potential and it provokes active engagement in the process of acquiring knowledge and skills development; GBL requires active participation in learning, education and playing; GBL presumes precisely defined objectives of learning and education that are skillfully embedded into a playing scenario and the narration is the main method of educational/playing content delivery; GBL incorporates reflective game scenarios and it supports experiential transfer from the real world into a virtual world of playing; GBL guarantees free action within the game (the freedom is relativized by the game rules); GBL provides clear and understandable feedback about actions carried out (both in sense of respecting game rules and in sense of achieved goals and objectives of learning and education); GBL supports the processes of evaluation of learning and educational outcomes; GBL is adjustable to individual mental capacities, learning habits and learning styles of participants; GBL is applicable in relatively large learning and educational groups. Considering all mentioned aspects and relying on some previous research results

(Kačavenda-Radić, Nikolić-Maksić & Ljujić, 2011a; Michael & Chen, 2006), it becomes clear that GBL represents a complex, holistic and brand-new learning style that encompasses *active learning, experiential learning, situational learning, and just-in-time learning*.

There is a variety of articles and research dealing with the use of board games in teaching. Some authors discuss the advantages of using board games in history teaching (Abramson et al., 2009; Gonzalo, 2016), in the construction of cultural memory (Begy, 2015), or as a platform for collaborative learning (Hunsucker, 2016). Play does not only result from cultural and societal events. It also represents the source of cultural and societal values (Huizinga, 1944; Kajoa, 1979). Having all that in mind, it is not surprising that some authors state that games use their potential to actively involve the players in the construction of meaning and in the understanding of the historical event (Gonzalo, 2016). Our intention was to comprehend the possibilities of the use of board games in history teaching by taking an “inside” look into that process from two aspects – from the perspective of students as game-designers engaged in the process of game designing as a form of project-based learning; and from the perspective of students who play the game as a finished product – for these students playing a game is a form of learning.

In order to observe both perspectives of the process, it was necessary to engage students in project-based learning – PBL, which we observe as a significant constituent of each concept previously described (gamification, serious games, and Game-Based Learning). Projects are complex tasks based on challenging questions. According to Thomas (2000), in this type of learning students are involved in design, problem-solving, decision making or investigative activities; while given the opportunity to work relatively autonomously over extended periods of time, which usually culminates in realistic products or presentations. Some of the defining features of PBL include authentic content, authentic assessment, teacher facilitation (but not direction), explicit educational goals, cooperative learning, and reflection. All of these features were implemented in this research since they imply educational interaction among equal participants in joint learning experience within which play and improvisation came to the fore, as acknowledged in previous research (Nikolić-Maksić & Ljujić, 2012).

Research methodology

The aim of this research was to explore the potential of board games and to comprehend how their use affects the processes of teaching, learning and acquiring knowledge of history. It is not easy to

link experiential learning with the acquisition of knowledge from the past. How can it be possible to experience events that happened a long time ago? In this research, we have attempted to examine the possibilities provided by board games on this subject matter. This aim led us to the research objective of exploring students' perceptions regarding the use of board games in history teaching from two aspects. Our intention was to take an "inside" look at the process from the perspective of those who create the game and from the perspective of those who play the game as a finished product. In order to get a better understanding of the students' perspective on the use of board games and how they affect the processes of teaching and learning, we selected the qualitative methodology using a focus group method. Abramson et al. (2009) conducted similar research in a university context for the history of psychology teaching. The mentioned research differs from this one in using the existing commercial board games with simple mechanisms and adapting them to the content of the course. Taspinar, Shmidt & Schuhbauer (2016) explored students' thinking about the game that they, with their teachers, had created for the purpose of the course they were taking.

Participants

The research was conducted with third-year pedagogy students, during a single semester course on the History of Schooling in Serbia, at Belgrade University. The studies of Pedagogy at the Faculty of Philosophy, University of Belgrade, offer a variety of courses in general and specific pedagogy, for the purpose of educating pedagogues as educational professionals. A pedagogue is a broad profile of educational professional, with deep knowledge of the main pedagogical disciplines, combined with the knowledge and competences relevant for specific fields and areas of education and variety of target groups and topics. The sample included 58 pedagogy students who attended the course The History of Schooling in Serbia during the 2016/2017 academic year. Participants were divided into two groups (13 game-designers and 45 evaluators). These are the students who have already acquired some pedagogical and psychological knowledge on the concepts of education, teaching, and play, as well as on the processes of teaching and learning. Therefore, this makes the research sample more sensitive in observing the particularities of teaching and learning with the use of board games. On the other hand, students did not have previous experience in board games design, while their experience in playing board games was mostly related to playing simple games for younger children. A group of 13 students was engaged in project-based learning with the objective of creating board games – further in the text we

will refer to them as game-designers. The other students – 45 of them, at the end of the semester were invited to play the games that their colleagues designed.

Procedure and Data Collection

The project was organized through three phases: (1) *preparation* (introduction to the topic of the board games application in the classroom; familiarization with the basic principles of board games design; playing and discussing board games); (2) *planning and realization* (intensive study of the topics to be presented through the games; designing board games on the topics obtained from the course literature; testing the demo versions of the games by the designers); (3) *implementation* (students-evaluators playing the designed board games; all students presenting their views on the possibilities of board games application in history teaching).

In the end, through focus group sessions, students' perspectives on the process of learning through creating and playing board games for the purpose of acquiring knowledge of history were examined. Based on the data obtained during the focus group discussions, a thematic analysis of the content was made, which resulted in an overview of various aspects and possibilities of creating and using board games for the purposes of history teaching.

Results and Data Discussion

In this paper, we will present one segment of the research with the focus on the activities that took place during the project, through three phases – preparation, realization, and evaluation; and the students' reflections on the activities, the learning process (acquired knowledge and skills), and the position of the teacher through all stages of the research.

The Preparation Phase of the Project

This phase, in which students were given the assignments, lasted for two weeks. At the beginning of the phase, the teacher presented the assignment and the basic principles of board game design. After that, students brainstormed about board games in an educational context, using their previously acquired knowledge of pedagogy and psychology. Students' discussion, instead of providing some answers, opened even more dilemmas about the given topic.

One of the questions referred to the distinction between educational and non-educational, casual board games, designed to be relaxing or soothing instead of energizing, exciting or mentally requiring (Brathwaite & Schreiber, 2009; Carlisle, 2009; Fletcher Nettleton, 2008). The starting point was

Abt's conclusion that educational games are serious games with an explicit and carefully thought-out educational purpose, which are not intended to be played primarily for amusement (as cited in Koehler, Greenhalgh & Boltz, 2016) and it all led to discussion about educational games' potential to affect the processes of teaching and learning in terms of motivation and atmosphere in the classroom.

Another important topic related to board games is that it is a system that contains multiple components, which works according to clearly defined rules. The question has also been raised about goals: the educational goal of playing a board game and the board games' goals as such. Having in mind the above mentioned, students were given the opportunity to play and analyze board games on historical topics – *Timeline Challenge* (2015), *The Grizzled* (2015), *Freedom: The Underground Railroad* (2012), as well as the game *Agricola* (2007). Along with that, students searched the literature on the subject, observed game sessions and looked through the video reviews of these games and some of them even decided to visit the local board game club.

One of the problems they discovered referred to rule books for these games. In fact, they encountered difficulties in learning the rules from the written text attached to the game – they needed additional help to comprehend and learn how to play the game. In this regard, they pointed out the importance of the pedagogical approach in writing the rule book and gave themselves the task of ensuring that the rules of their games would be satisfactory in that sense. At this point, we would like to add that that this problem has already been discussed by some authors (Sato & de Haan, 2016).

Besides getting to know and playing different board games, students also reviewed the literature that was planned for the History of Schooling course, based on which they needed to define the themes for their games.

The Project Planning and Realization Phase

The second phase designated for planning and realization of the process of creating the games lasted for six weeks. Activities of this phase can be seen through several steps.

Defining the Educational Goals of the Games

The first step students made towards designing a game was defining the educational goals of their future games. At the end of this phase, students decided to work in 3 teams and one student worked individually, to create 4 games with different educational goals: knowledge revision, development of strategic thinking, historical empathy.

Defining the Topics of the Games

The second step was to define the topics of the games. This was the time for students to familiarize themselves with the contents of the provided literature. All of them, at the beginning of the project, started with making an insight into the whole of the material. Now, they intensively studied the topics they would present through the games, by approaching the materials in different ways. Afterward, during the focus group, students commented on the specifics of acquiring knowledge in the context of creative problem-solving.

For example, the team who, inspired by the game Agricola (2007), decided to make a strategy game focused on understanding the factors that the school's development depends on. In order to make a strategy game, it was not enough just to identify and recognize those factors in the materials they read, but rather to put them in interrelations. A group inspired by The Grizzled (2015), opting for a game based on historical empathy had a different approach. In the provided literature, they only found the topic and key contextual information – the life of the civilian population in occupied Serbia during WWI. After reading the material, this group focused attention on the search for additional resources. Here's how one student summed it up:

"I only think that in fact, it's a very different approach to the material because none of us have taken all the material to read the data in order to memorize the information, but we were thinking about how to put them in the function of the game, and that learning was flowing spontaneously... We have to think about the material so much more than when we just want to memorize it, but then again, we did not try to do that." (game designer – team 2, member 1)

Developing Mechanisms and Creating Components for the Games

Students, by thinking about this problem, have come to the realization that the educational potential of their games depends on the quality of the mechanism. These are some examples of how the students who created a strategy game, were thinking about this problem:

"... we tried to find some of the key aspects that led to the development of the school, such as legislation, textbooks, teachers, and so on, so we listed all that, and then we looked for those pieces of information about the development for each school..." (game designer – team 3, member 3)

"...we had enough of statistics and mathematics...since our game is based on scoring points – and those resources, the number of resources – whether there are too many resources of one kind, or too few of the other, whether scoring is done evenly, that was really a problem... and we are not sure if it's all right now." (game designer – team 3, member 1)

"...how will we develop the mechanism itself so that it functions, because at some point we thought that in our game no one can lose..." (game designer – team 3, member 4)

As for the students who created a game based on historical empathy, their strategy for developing mechanisms of the game was slightly different:

"...how this game would actually trigger empathy... and we came up with the solution to put players in certain situations, so then it was necessary to decide what these situations would be, what they would do in these situations and in general all this mechanism..." (game designer - team 2, member 4)

Students were faced with the problem of how to construct a mechanism that will simulate real historical situations and events. The term simulation is crucial to understanding those board games that are not using historical content only as a decoration. If a game is an exact reproduction of the system it represents, then it would cease to be a game and become a strict simulation without its ludic dimension. Gonzalo (2016) states that two things become necessary in order to make a *ludofictional* world. First, it is important to establish certain limits related to the way in which we want to represent the reference world (characters, places and specific characteristics of that world). Second, it is necessary to allow an amount of modification within those limits in order to make the *possible world* and to allow players to be active in the possible world, to be involved in the game and reproduce significant aspects of the events. This is the way the player becomes a part of that world.

When being asked, during the focus group, to present their project strategy, students pointed out that they did not have or had not worked out a strategy for the realization of activities because the creative process is difficult to plan, even though they tried. In fact, they didn't have much to say about the strategy, which can be seen in the following answers:

"...very often ideas emerged in transportation, on the bus, while we were going back home, etc., so these were the key moments. This way when we meet then we say all those ideas that we came through during some day-to-day activities, at least I think so." (game designer - team 2, member 1)

"In my case, the realization of the final game was not a stable and uninterrupted process, for a while I devoted my time only to the game. For two or three days in a row, I was just making maps or designing something, and then for two or three days I had completely different obligations, and then I returned to the game to see what I did and if I wanted to change something I continued to work." (game designer - team 4, member 1)

"In fact, I think that that day we realized what our game would be was happy for everyone. I think that we were all glowing those days and that it was so important to us that we came up with it and that we came up with an idea, finally, some specific and settled idea that it was wonderful to watch." (game designer - team 1, member 2)

During the realization of the activities, two ways of finding inspiration for designing the game were identified among students' responses - 1) starting from the content and the studying of literature,

and 2) starting from the games – playing already familiar and getting to know the rules and mechanisms of new games.

At the end of this process, the designers also evaluated the created games, by playing the games of the other teams. The purpose of this game testing was to give a general impression of the created games, as well as to identify the possible malfunctions in game mechanisms and to prepare the final versions of the games to be played by another group of students.

Project results – four different board games.

The planning and realization phase resulted in the creation of four different board games. Each of them will be presented briefly.

A group of students designed a knowledge revision game called *From Mystery to History* (Figure 1). It is a competitive game for four players in which the players should, based on the given information, determine which school the given information relates to. Players draw cards according to colour and enter card data on their notepaper. By entering information, they receive an overview and the possibility to organize and easily memorize the collected information.



Figure 1: *From Mystery to History*

Identity (Figure2) is a game for three players, with historical empathy as an objective. This game is inspired by the game *The Grizzled* (2015). The story of Identity is about the life of civilians in Serbia during WWI when the civilian population was exposed to various measures of repression. The game is cooperative, players are in the role of high school students facing several situations in which they must make decisions that may result in a loss of dignity, danger, growth of dignity or safety. They can provide support to each other, which is limited. The victory has two levels. The first level is to preserve life, while the second level is to preserve identity.



Figure 3: *Nastavlenije*



Figure 2: *Identity*

The game *Nastavlenije* (Figure 3) was inspired by the game *Agricola* (2007). *Nastavlenije* is the term used in the 19th century, meaning instructions for practical work in schools prescribed by the Ministry of Education. This is a strategy game for four players, in which the players are in the role of the founders of various types of schools that existed in Serbia in the 19th century. In order for one school to develop, it is necessary to satisfy a number of conditions and strategically manage the available resources. One of the goals is to understand the conditions in which the school system in Serbia had

developed. For example, it is necessary to ensure finances, students, teachers, textbooks, etc. This game enables students to experience and explore the complexity of school organization and management. Such experience is the basis for later discussion and analysis of the facts from the schooling history.

Danilo's game (Figure 4), is a fantasy role play card game for one player led by a game master.

A game master needs to be well familiar with the possible scenarios of the game in order to



Figure 4: *Danilo's game*

communicate with a player who is in the role of an ordinary man in Serbia at the end of the 19th and early 20th century. He will find himself in a number of different situations, in most situations he should make decisions that determine his life path.

The Implementation Phase

The final versions of the games were included in the process of project implementation, while students-evaluators were supposed to play the games and reflect on the possibilities of using board games in history teaching.

In the third phase, the implementation phase of the project, two game sessions were organized. At the beginning of this phase, the games were played by the 45 students who did not participate in designing the games. After that, through focus groups (one with students who played games, and the other with students-designers), students presented their views on the possibilities of the use of board games in history teaching. Using thematic analysis of the content obtained through focus group discussions, the following topics related to particular aspects of the use of board games in teaching were identified: Games application in the classroom; determining the content and the purpose of the game; components and the aesthetics of the game; social relationships in a group, a positive and supportive

atmosphere; game as a basis for discussion; the relationship between the game, the content, and learning; long-lasting concentration and perseverance.

Application in the classroom. Students pointed out that the games could be used as an introduction to a certain topic, or after the completion of a specific thematic unit, for the purpose of learning something new, better understanding (of the context, for example), revising, evaluation, and individualized approach (e.g. for students with weaker performance). With reference to that is a reminder that board game should not be used too often.

Content and Purpose. The content and purpose of the game depend on the educational goal that is sought through the game, as well as the types of learning and the type of knowledge that are presented throughout the game. Kilgore (2001) identified similar relativity and variability in his study on play and education and pointed out that there are no such phenomena as a single learning goal, a single learning style or a universal learning environment.

Components and Aesthetics of the Game. Students recognized the commitment with which their colleagues approached the design and aesthetics of the games.

Social relationships in a group, a positive and supportive atmosphere, regardless of the fact whether the game is competitive or cooperative. Game-designers pointed out that in such an atmosphere it was all right to be criticized, that they were very open to hearing comments evaluating their work, their products. It seems that a change in the field of relationship with other people happened which Božović (2010) also noticed in his observations of the developmental role of games and play in human life.

A game as a basis for discussion. The discussion starts spontaneously, through action and during the game. The themes that open up depend on the content of the game. Players discuss ethics in war, decisions, and existence – these are important and difficult ethical issues. A discussion takes place during the strategy game as well. Players discuss decisions that are related to the decisions of other players, the cause-and-effect relationships, etc. These discussions, and the speech in general while playing the games, are valuable material for further research. Therefore, we come to the conclusion once more that gameplay is about interactive communication and not so much about transactional communication and that fact should be taken into account when launching efforts towards implementing gameplay into the processes of teaching and learning.

The game, content, and learning. The “lived” (experienced) content is revived content. Students have pointed out that the game should not include all the material and content from a thematic unit, and that it should not be burdened with information, it should rather provide an experience. The experience is what changes an attitude towards the content, what facilitates understanding and knowledge acquisition.

“When I learn history, I do not have the feeling that these things really happened, it seems too far away, it looks like they are from a story, and here we are really faced something that showed us that these people existed and that something really happened to them, and then it's a quite different learning because you... identify ... I started to think about how it would be for me if someone wanted to take everything that I own, if someone wanted to take my name and my language and words... And this has ... made me think about how many of these things actually define us and how much they mean to us.” (game evaluator – student 7)

The question of the durability of knowledge was also raised through focus group sessions – what remains after the game. In a strategy game and a game that pursues empathy, the duration is focused on the experience – in the first case of problem situations (making decisions, overcoming and observing causal relationships, etc.); and in the second case an emotional trace. When describing their emotional engagement in the game, students refer to it as “being part of a story”, “being dragged into the context”. From the perspective of Dewey's teaching, the above could be described as a moment in which everyday experience gains enduring substance (Dewey, 1916, 2001, p. 216). In this sense, board games can be considered as valuable educational media.

Long-lasting Concentration and Perseverance. Game sessions, on players' demand, lasted much longer than predicted. Even though they had been given the possibility to leave the game session at any time, the students would not leave, they would either play or observe and patiently wait for the free place at the game table while participating in the discussions and asking questions. As an illustration of the level of concentration during game sessions, students pointed out that they did not even look at the time or check their mobile devices for texting, etc. In terms Csikszentmihalyi (1990) uses, students as players may be inclined to reach and spend some time in the state of flow and be confident about their abilities to participate in play activity, directed by a concrete goal and rules, intensively concentrating

without any attention directed toward irrelevant issues, lost in time in some way and absolutely dedicated to play for its own sake.

Designing Board Games in Project-based Teaching: Students' Perspective

Students pointed out the following as their first impression about the assignment: they were afraid that the task was complicated but challenging. They were enthusiastic for being given the opportunity to do something different, interesting and exciting. Although some of them were thinking of giving up, no one did, and most of them were ready for a challenge. The following is one student's observation about the assignment:

"I think that, in general, within the limitations, we all saw many positive things... all that we thought would cause us a problem actually turned into a big plus for everything." (game designer - team 1, member 3)

Game-designers indicated that creating a board game was a challenge that required sophisticated intellectual and emotional engagement and that they had acquired knowledge of history with understanding and through problem-solving while developing social and organizational skills, as well as skills and abilities to present the knowledge, information or given content through a board game which is a completely new educational medium for them. They noticed that this kind of project requires time, creativity and dedication as well as knowledge of the basic principles of teaching and learning. They recognized the advantages of learning through creating board games in terms of affecting the quality of knowledge (acquiring more permanent and applicable knowledge), improving the process of learning (different and interesting approach to learning, more spontaneous, through identification, through play and emotions), encouraging engagement and motivation for further learning and improving atmosphere and social relations among students, and between students and a teacher.

Their impressions about game sessions were mostly positive. They played and enjoyed it. It seems that they experienced the final joy after engaging in unpredictable and pleasantly tense activity, as Huizinga (1944) describes gameplay. They were very proud of the games they had made and the feedback from the players, and they characterized this activity as a real exchange with their colleagues.

According to students' opinion, the use of board games for acquiring knowledge in this way greatly depends on the willingness and open-mindedness of the teacher – his/her motivation, readiness to give support, trust in students' abilities and awareness of his/her students' personalities.

The Teacher's Role and Students' Position

At first glance, one would say that the role of the teacher in the preparation phase was closest to the traditional understanding of a teacher's position in the process of teaching. Along with giving instructions and explaining the assignment, the teacher defined deadlines for each of the project phases, but without giving the lecture or overwhelming students with information. She encouraged students' discussion and brainstorming and inspired them to participate in this project. Students were given the opportunity to work relatively autonomously with the freedom to define the educational goals and objectives of their games, to choose the theme, type, and mechanism for their games.

During the planning and realization phase, the teacher's role shifted towards becoming support and facilitator while the students (the designers) took up the leading role in the process. The teacher provided students with additional literature and resources; organized and provided space for meetings; helped students to structure and argument their ideas and partially enabled the technical realization of the games. The teacher also actively participated both in students' discussions (mostly by asking questions) and in the game sessions.

As the most significant feature of the student's position in this learning process, students pointed out the freedom to be creative, choose the content and plan and organize themselves as they like. We observe this as a confirmation of a statement according to which play supports creativity and productivity during the entire lifespan (Lobman & O'Neil, 2011). This is how one student explains her personal educational significance of the project she participated in:

"... this freedom is very important because you (teacher) did initiate this project, but we had ... we were active in the whole sense, we were the creators. We had the freedom to choose the content ourselves, which further motivated us to choose how we will and when we are going to work. We were able to negotiate with you about these terms, so it was a partnership going on between us, and there was not a possibility for us to feel subordinated to you, but it just meant a lot to me that I had the feeling that you recognized that what we were doing was something valuable. That it is not just a seminar work which I will write and which you will evaluate, and it will end there, but that this is something that is new and something that is significant, unexplored and that as students we can contribute to it." (game designer – team 2, member 1)

Conclusion

Based on the research results and students' reflections, it can be concluded that creating and playing board games have great potentials and should be represented more in history teaching. Students-designers have participated in the process of knowledge acquiring through project and research. Within that process, the acquiring of pedagogical and new knowledge of history (content knowledge) is interrelated. For these students, the knowledge of history (content knowledge) became an instrument for creatively resolving a didactical problem. They were presented with the problem of how to represent the given content through the given medium – a board game, and how to achieve certain educational outcomes which contribute to specific educational goals.

Mayer & Harris (2009) have shown that board games could be classified according to Bloom's taxonomy of educational objectives. In this research, students-evaluators had the opportunity to acquire knowledge of history (content knowledge) through board games playing. These students pointed out different possibilities of the use of board games as media for acquiring knowledge in different phases of teaching and learning. They also considered possible limitations as well as conditions that are needed to be met in order for the board game application in teaching and learning to be successful. Considering that they have had the opportunity to test and evaluate four games with different educational goals, mechanisms, and contents, students have recognized the interrelation of these determinants: variability of the board games design is determined by the variability of educational and learning settings. It can be said that multiple outcomes were achieved through these activities: students have acquired certain knowledge about the content that was presented through board games, but they have also recognized social interaction and emotional engagement through gameplay, which is in accordance with the following conclusions. Being unpredictable and multiply determined by group dynamics, the (learning) outcomes of gameplay are important for all participants, not only for particular individuals (Henricks, 2011). By experiencing freedom while playing, participants (free players) can develop self-consciousness, awareness of the social environment and other people within it as well as relationships they engage in with others (Božović, 2010). Some authors point out that the use of games in teaching positively affects the motivation, engagement, and atmosphere in the classroom (Koehler, Greenhalgh & Boltz, 2016). It is also worth mentioning that this project has motivated some students to continue this research, which resulted in three master theses.

We recognize the similarity between our findings and the results of some previous researches indicating that playing games lead to the creation of something new, intangible, but certainly noticeable. At this moment we want to point out the development of self-awareness, familiarity with the social environment, relationships with other people, acquisition of social values and roles, creation of cultural and personal identity (Nikolić-Maksić & Ljujić, 2012). Also, if we compare the formal education and learning with board games and improvisation, where all the participants are "performers" who develop, teach and learn as a community, students in correspondence with teachers actively participate in the processes of teaching and learning, contributing to the growth and the development of the group in which all of them are learners.

Such a playful approach to education gives freedom to all actors in the processes of teaching and learning. Freedom is particularly noticeable in the context of understanding, encouraging and creating new learning and teaching potentials through a collective, collaborative and creative work based on the application of board games. If this freedom is to be productive in terms of development, both students and teachers need to learn about games and play, so these could be appropriately used for learning purposes. Thus, learning *about* games and play is a precondition of learning *through* games and play, which also comes out as an implication of our research.

References

- Abramson, C., Burke-Bergmann, A., Nolf, S. & Swift, K. (2009). Use of board games, historical calendars, and trading cards in a history of psychology class, *Psychological Reports*, 104(2), 529-544. doi: 10.2466/pr0.104.2.529-544
- Begy, J. (2015). Board games and the construction of cultural memory. *Games and Culture*, 12(7-8), 718-738. doi: 10.1177/1555412015600066
- Botturi, L. & Loh, C. S. (2008). Once upon a game – Rediscovering the roots of games in education. In C. Miller (Ed.), *Games: Purpose and Potential in Education*, (pp.1–22). London: Springer. doi: 10.1007/978-0-387-09775-6_1
- Božović, R. (2010). *Tišina dokolice* [The silence of leisure]. Beograd: Čigoja štampa.
- Brathwaite, B. & Schreiber, I. (2009). *Challenges for Game Designers*. Boston (MA): Charles River Media Group.
- Carlisle, R. (2009). *Encyclopedia of Play in Today's Society*. Thousand Oaks (CA): SAGE Publications Ltd. doi: 10.4135/9781412971935
- Csikszentmihalyi, M. (1990). *Flow – The psychology of optimal experience*. London (UK): HarperCollins Publishers Ltd.
- Csikszentmihalyi, M. (1999). If we are so rich, why aren't we happy. *American Psychologist*, 54 (10), 821–827. doi: 10.1037/0003-066X.54.10.821
- Demaegd, C., Henry, F. Colette, X. & Fleury, J. (2015). *Timeline Challenge (board game)*. Asmodee

- Demirbilek, M. (2009). The use of electronic games in distance learning as a tool for teaching and learning. In P. L. Rogers, G. A. Berg, J. V. Beottecher, C. Howard, L. Justice & K. Schenk (Eds.), *Encyclopedia of Distance Learning* (2nd Ed. pp. 2209–2223). Hershey: IGI Global. doi: 10.4018/978-1-60566-198-8.ch327
- Demirbilek, M. (2010). Digital games for online adult education: Trends and issues. In T. Kidd (Ed.), *Online education and adult learning: New frontiers for teaching practices*, (pp. 212–222). New York: Information Science Reference (an imprint of IGI Global). doi: 10.4018/978-1)60566-7.ch016
- Dewey, J. (1916, 2001). *Democracy and education*. The Pennsylvania State University, Electronic Classics.
- Fletcher Nettleton, K. (2008). Fair Game: Gender Differences in educational games. In C. Miller (Ed.). *Games: Purpose and Potential in Education*, (pp. 54–72). New York (NY): Springer Science+Business Media, LLC. doi: 10.1007/978-0-387-09775-6_4
- Gee, J. P. (2003). *What video games have to teach us about learning and literacy*. New York: Palgrave Macmillan. doi: 10.1145/950566.950595
- Gee, J. P. (2008). *Social linguistics and literacies*. New York: Routledge (an imprint of Taylor and Francis Group).
- Gonzalo, J. (2016). Simulating history in contemporary board games: The case of the Spanish Civil War, *Catalan Journal of Communication & Cultural Studies*. 8(1), 143–158, doi: 10.1386/cjcs.8.1.143_1
- Henricks, T. (2011). Play as deconstruction. In C. Lobman & B. E. O’Neil (Eds.), *Play and performance – Play and culture studies*, (pp. 201–236). New York (NY): University Press of America, Inc.
- Huizinga, J. (1944). *Homo ludens: A study of the play-element in culture*. London, Boston & Henley: Routledge & Kegan Paul.
- Hunsucker, A. (2016). Board game as a platform for collaborative learning. Paper presented at the *Meaningful Play 2016 Conference*, East Lansing, MI. Retrieved from https://www.researchgate.net/publication/309385174_Board_Games_as_a_Platform_For_Collaborative_Learning
- Kačavenda-Radić, N., Nikolić-Maksić, T. & Ljujić, B. (2011a). Alternativni pristupi obrazovanju odraslih: učenje bazirano na računarskoj igri [Alternative approaches to adult education: Computer Game-Based Learning]. *Inovacije u nastavi*, 24(3), 19–29.
- Kačavenda-Radić, N., Nikolić-Maksić, T. & Ljujić, B. (2011b). Igra odraslih: Da li kompjuterska igra obrazuje u slobodnom vremenu? [Adult Play: Does a Computer Game Educate During Leisure?]. *Andragoške studije*, (2), 147–169.
- Kajoa, R. (1979). *Igre i ljudi: Maska i zanos* [Games and people: Mask and enthusiasm]. Beograd: Nolit.
- Kiili, K. (2005). Digital game-based learning: Towards an experiential gaming model. *Internet and Higher Education*, 8(1), 13–24. doi: 10.1016/j.iheduc.2004.12.001
- Kim, S. Song, K. Lockee, B. & Burton J. (2018). *Gamification in learning and education – Enjoy learning like gaming*. Cham: Springer International Publishing.
- Koehler, M.J., Greenhalgh, S.P. & Boltz, L.O. (2016). Here we are, now entertain us! A comparison of educational and non-educational board games. In G. Chamblee & L. Langub (Eds.), *Proceedings of Society for Information Technology & Teacher Education International Conference (AACE)*, (pp. 567–572).
- Lobman, C. & O’Neil, B. E. (2011). Play, performance, learning, and development: Exploring the relationship. In C. Lobman, & B. E. O’Neil (Eds.), *Play and performance – Play and culture studies* (pp. vii–xvii). New York (NY): University Press of America, Inc.
- Mayer, B., & Harris, C. (2009). *Libraries got game: Aligned learning through modern board games*. Chicago: American Library Association.
- Mayer, B., Nocoñ, J. & Paschal, S. (2012). *Freedom: The Underground Railroad* (board game). Academy Games.

- Michael, D. & Chen, S. (2006). *Serious games - Games that educate, train and inform*. Boston: Thomson Course Technology PTR.
- Nikolić-Maksić, T. & Ljujić, B. (2012). O igri u odraslom dobu i njenim obrazovnim implikacijama [On play in adulthood and its educational implications]. *Andragoške studije*, br. (2). 103-124.
- Pivec, M. & Kearney, P. (2007). Games for learning and learning from games. *Informatica*, 31(4), 419-423.
- Plass, J.L., Homer, B.D. & Kinzer, C.K. (2015). Foundations of game-based learning. *Educational Psychologist*, 50(4), 258-283. doi: 10.1080/00461520.2015.1122533
- Riffaud, F., Rodriguez, J., & Tignous. (2015) *The Grizzled* (board game). Sweet Games.
- Rosenberg, U. & Klemens, F. (2007). *Agricola* (board game). Lookout Games.
- Sato, A. & de Haan, J. (2016). Applying an experiential learning model to the teaching of gateway strategy board games. *International Journal of Instruction*. 9(1), 3-16. doi: 10.12973/iji.2016.912a
- Sauvé, L. (2010). Using educational online game to stimulate learning. In Y. Baek (Ed.). *Gaming for classroom-based learning: Digital role playing as a motivator of study*. (pp. 138-158). New York: Information Science Reference (an imprint of IGI Global. doi: 10.4018/978-1-61520-713-8.ch009
- Tang, S., Hanneghan, M. & El Rhalibi, A. (2009). Introduction to games-based learning. In T. Connolly, M. Stansfield & L. Boyle (Eds.), *Games - based learning advancements for multi-sensory human computer interfaces - Techniques and effective practices*. (pp. 1-17) New York: Information Science Reference (an imprint of IGI Global). doi: 10.4018/978_1_60566_360_9.ch001
- Taspinar, B., Schmidt, W. & Schuhbauer, H., (2016). Gamification in education: A board game approach to knowledge acquisition. *Procedia Computer Science*, 99, 101-116. doi: 10.1016/j.procs.2016.09.104
- Thomas, J.W. (2000). *A review of research on project-based learning*. California: The Autodesk Foundation. Retrieved from https://documents.sd61.bc.ca/ANED/educationalResources/StudentSuccess/A_Review_of_Research_on_Project_Based_Learning.pdf
- Whitton, N. (2007). Motivation and computer game-based learning. *Proceedings of the ASCILITE, Singapore Tugun: Australian Society for Computers in Learning in Tertiary Education*, 1063-1067.
- Whitton, N. (2009). Learning and teaching with computer games in higher education. In T. Connolly, M. Stansfield & L. Boyle (Eds.). *Games - based learning advancements for multi-sensory human computer interfaces - Techniques and effective practices*. (pp. 18-33) New York: Information Science Reference (an imprint of IGI Global). doi: 10.4018/978_1_60566_360_9.ch002
- Whitton, N. (2010). *Learning with digital games - A practical guide to engaging students in higher education*. Oxon, UK: Routledge.
- Yien, J-M., Hung, C.M., Hwang, G.J & Lin, Y.C. (2011). A game-based learning approach to improving students' learning achievements in a nutrition course. *TOJET: The Turkish Online Journal of Educational Technology*, 10(2), 1-10.