30 August 2021

RePAST Deliverable D6.15

Report of game application in classrooms, including its impact on student perceptions

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Document history					
Version	Date	Author(s) / Organisation	Status	Description	Distribution
1.0	9/8/2021	Iolie Nicolaidou (CUT)	Draft	Initial draft of the deliverable	project cloud folder
1.1	17/8/2021	Rok Zupancic (UL)	Draft	Provided comments for improvement	project cloud folder
1.3	19/8/2021	Iolie Nicolaidou (CUT)	Draft	Addressed comments of 1st internal review	project cloud folder
1.4	23/8/2021	Maria Solomou (PwC Experience Center)	Draft	Provided comments for improvement	project cloud folder
1.5	23/8/2021	Iolie Nicolaidou (CUT)	Draft	Addressed comments of external review	project cloud folder
1.6	24/8/2021	Sara Hajslund (SGI)	Draft	Provided comments for improvement	project cloud folder
1.7	25/8/2021	Iolie Nicolaidou (CUT)	Draft	Addressed comments of external review	project cloud folder
1.8	27/8/2021	Dimitra L. Milioni (CUT)	Final draft	Minor edits	project cloud folder
1.9	30/8/2021	Ljubica Pendaroska	FInal	Approval by Ethics Expert	email

Peer reviewed by:

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Executive summary

The Fact Finders game was designed to motivate school children and young people (and the general public in extend) to engage with contested pasts and ongoing conflicts. The purpose of this study was to evaluate the game Fact Finders concerning its effect on students' perceptions of conflict in history. More specifically, this study attempted to evaluate the game's effect on supporting students to: a) develop evaluation credibility skills for different historical sources, b) realize that history is "constructed" and often exploited to achieve specific goals, c) accept multiple perspectives in a conflict as valid and, consequently, d) be more positive with respect to overcoming troubled pasts.

Attempts have been made (and continue in the academic year 2020-2021) in all partner countries for the game to be disseminated to teachers in formal primary and secondary education. Prior to reaching children, the game was pilot-tested and evaluated by a sample of 93 undergraduate students in Cyprus and a sample of 77 undergraduate students in Slovenia, with promising results that are currently under review for publication in a high impact journal. The RePAST Fact Finders game (https://factfinders.seriousgames.net/) has been played by 982 players worldwide (until August 6th 2021), as SGI analytics data show, out of which 505 are estimated to be primary and secondary school students.

Researcher-facilitated interventions in primary and secondary education were combined with data collection on students' perceptions before and after playing the game to examine its effect on students' perceptions of troubled pasts. The main data source of the study was a 17-item questionnaire on users' perceptions of conflicts in history, which was administered before and after students' interaction with the game. Students' perceptions of conflicts in history consist of four dimensions: a) credibility of multiple sources, b) the constructedness of history, c) multiple perspectives in a conflict and d) the ability to overcome troubled pasts. Students responded to 5-point Likert scale statements with replies that ranged from "Completely disagree" (1) to "Completely agree" (5).

The game reached 505 primary and secondary education students from three different countries (Cyprus, Greece and Germany). Due to the need to obtain parental informed consent prior to data collection, data was collected from a subset of 299 students (224 from Cyprus, 56 from Greece and 19 from Germany) coming from 18 different schools. The majority of participating students attended primary schools (66.2%, 198/299). Students' average age was M=12.32 (SD=1.58).

Overall students' perceptions of conflicts in history were neutral to positive, since the mean scores lied between 3 (neither agree nor disagree) and 4 (agree). A slight non-significant increase was observed from M=3.44 (SD=0.50) prior to playing the game to M=3.47 (SD=0.45) after playing the game. A statistically significant positive change was observed with respect to students' perceptions regarding multiple perspectives in a conflict (t_{235}=−2.4; P=.017) which changed from M=3.71 (SD=0.64) before playing the game to M=3.81 (SD=0.63) after playing the game. Students were supported through the game to understand the importance of including multiple perspectives in a historical investigation. Students also had a positive attitude towards accepting an opposing perspective in a historical conflict.

Considering the prevalence of master narratives in formal education typically expressing nationalistic views that are opposing to overcoming troubled pasts, the difficulty of changing people's perceptions through short-term interventions, and the challenging conditions of the game's implementation in formal education during the COVID-19 crisis, these preliminary findings can be seen as positive.

1. Introduction

According to Psaltis et al. (2017), "Children and young people come to classrooms influenced by the history absorbed from the family and the streets. Their historical images and representations of the past are usually enwrapped in contemporary attitudes and politics. Students may express misunderstandings, make unsubstantiated assertions about historical events, or leave out aspects of the past that have been deemed inconvenient within their community" (p.7). "Students, as lay historians, are particularly vulnerable to framing their interpretations relating to the history of conflict from a position […] that largely adheres to collective memory, popular culture, and official narratives of conflict. This is due to one-sided contents included in curricula and textbooks and to influences from parents and peers" (Psaltis et al., 2017, p.5). According to the same researchers, "in post-conflict and divided societies, proper historical enquiry is often obstructed by the inaccessibility of crucial sources of information or archives due to linguistic, physical, legal or mental barriers. This situation reinforces the mono-perspectival master narratives in a single community and hinders the emergence of counter-narratives or alternative representations of the past" (Psaltis et al., 2017, p.6). The Fact Finders game attempted to surpass these limitations, challenge students' views and allow for questioning master narratives.

The Fact Finders game (https://factfinders.seriousgames.net/) was designed to motivate school children and young people (and the general public, in extend) to engage with contested pasts and ongoing conflicts by exposing themselves to contrasting narratives, engaging with different sides of the conflict, and developing skills toward the renegotiation of troubled pasts. The game was therefore designed to directly challenge students' views and allow for questioning master narratives. It included multiple types of historical sources, such as testimonials/interviews, artworks, monuments, books, and newspaper articles, coming from both sides of the conflict to support historical source credibility evaluation and multiperspectivity.

The purpose of the study was to evaluate the digital game Fact Finders with respect to its capacity to develop young children's (11-18 years old) evaluation credibility skills of historical sources and with respect to its capacity to help students understand that history is constructed, and that there are multiple, often contradictory perspectives in a conflict.

1.1 Description of the RePAST Fact Finders game

A transformative history teaching approach was used to design the Fact Finders game. The transformative history teaching approach is an interdisciplinary approach, which attempts a critical understanding of the conflictual past through the cultivation of historical thinking, empathy, an overcoming of ethnocentric narratives and the promotion of multiperspectivity (Psaltis et al., 2017). The design of the game followed co-design principles in an interdisciplinary collaboration bringing together different stakeholders (such as subject matter experts, historians, educational technologists, researchers, programmers, game designers, graphic designers) who were involved in the design process.

The game is accessible as an app for Android and IOS and through a browser and is available in 8 languages (additional information on the game's development are available in D6.14).

The game had the following learning objectives: a) to support young students' evaluation of historical source credibility, b) to support awareness-building about the constructedness of history, c) to promote multiperspectivity in conflicts, and d) to help users overcome troubled pasts.

There are two scenarios in the game. The first one, the *"Cyprus" scenario*, is based on real data, part of which was collected as part of RePAST (e.g. testimonials by people who experienced the 1974 war). The second one, the *"Borduria" scenario*, is based on fictional data. The first scenario was used in this study. In the "*Cyprus*" scenario, students are asked to provide an answer to the question, "How was life in Cyprus immediately after 1974?". Cyprus has been and remains a deeply ethnically divided society due to the protracted nature of the political conflict between Greek Cypriots and Turkish Cypriots during the last five decades (Zembylas & Kambani, 2012).

In the scenario focusing on life in Cyprus immediately after 1974, students gradually unlock as many historical sources as they want, from a collection of 12 sources, within 30 minutes (Figure 1). The 12 sources within the game include: three articles (two from local newspapers representing the two communities and one from the international press), five interviews (two from each community representing the experience of people who lived during the war, two from each community representing the transmitted experience of young people and one describing a bicommunal love story), one book and three different sources which included artworks, historical photos or monuments.
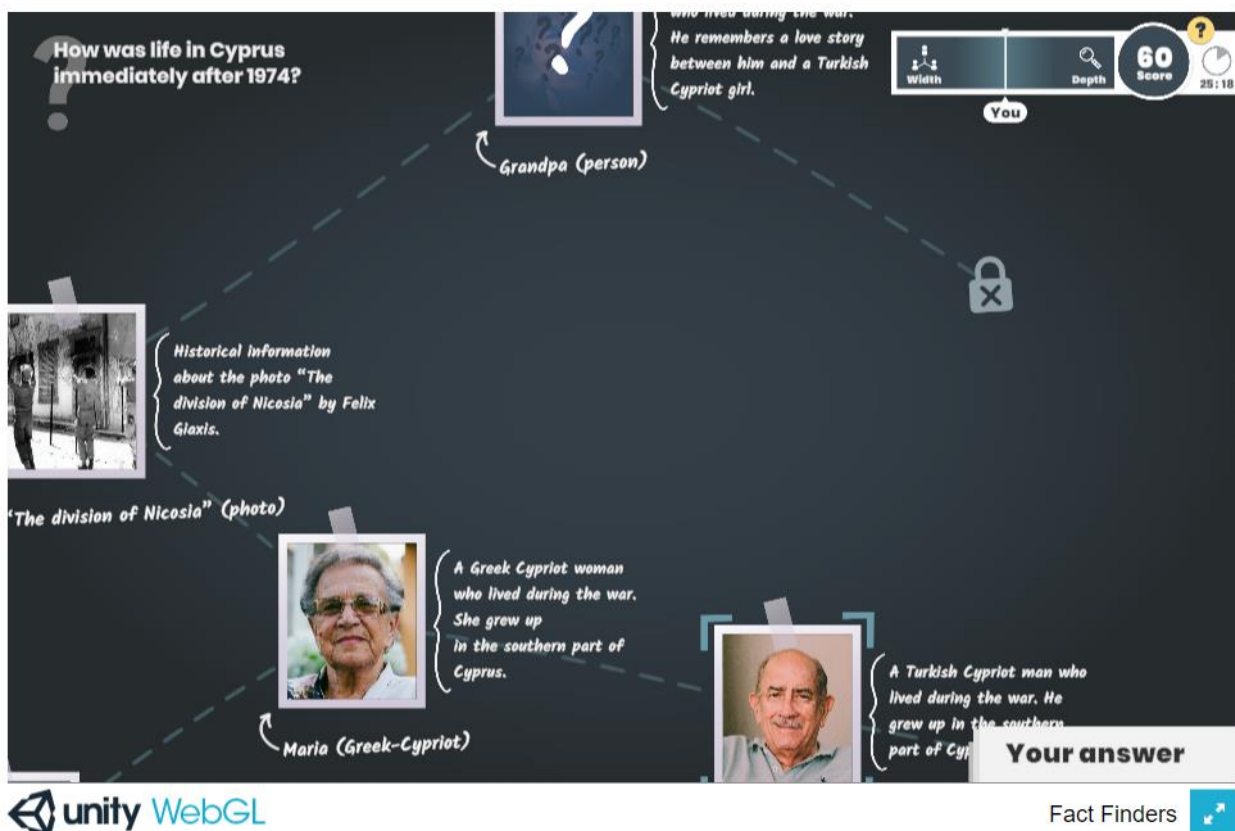

Figure 1: Players gradually unlock different historical sources on the conflict using a source map

The students are first exposed to *historical source credibility*. Once students choose a source, they can unlock up to four pieces of information as a background check of that source. As a first step, they need to evaluate the credibility of the source using one of the following ratings: a) very low, b) low, c) can't decide, d) high, e) very high. In each case, students receive feedback with the allocation of positive points if their answer is correct and negative points if their answer is not correct. They also receive instant feedback that explains why historians consider each source as a source of low or high credibility (Figure 2).

Figure 2: Users receive points and feedback after evaluating a historical source's credibility on a five-point scale from very low to very high

As a second step, students evaluate the usefulness and relevance of the information provided by each source for answering the research question, which is always visible in the top left corner. If the information is relevant, they can select it for their final report. If it is not relevant, they can dismiss it. In every case, students receive points and feedback on their choice (Figure 3). Students can choose to address the topic in depth (select a few sources and spend more time on them) or in width (select many sources and spend little time on them). Students also receive instant feedback about where they are with respect to the continuum of depth and width, as can be seen in the top right corner of Figure 3. The game's goal is a balance between depth and width. Students have to decide for themselves how to find a good balance between depth and width under time pressure.
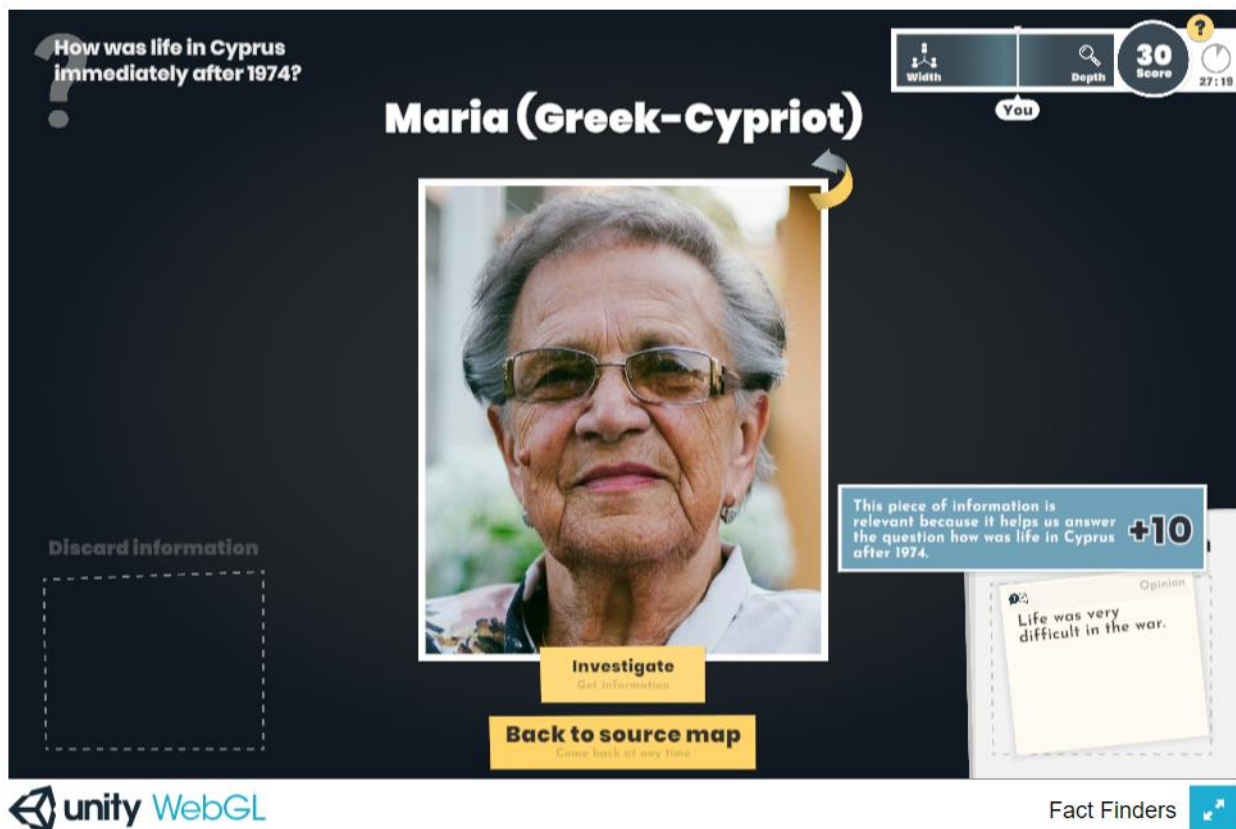
Figure 3: Users evaluate the usefulness and relevance of the information each source provides for answering the research question

The students are exposed to *multiple perspectives* (De Angeli et al., 2018) and conflicting narratives through the game. For example, sources of information within the game come from both Greek-Cypriots and Turkish-Cypriots who lived during the war (Figure 1). Exposing the players to the suffering that both communities experienced from the war is expected to help them be more empathetic and more open to the idea of overcoming their country's troubled past.

Students are exposed to the *constructedness of history*, as players can answer the same research question differently depending on the types of sources they consider as the most important and the most credible. This is evident from a final report automatically created (as a PDF file) through the game once this is completed, which can be different every time the game is played. This serves to show that history is "constructed" and often exploited to serve specific goals.

1.2 Purpose of the study

The purpose of the study was to evaluate the digital game Fact Finders concerning its effect on students' perceptions of conflict in history, more specifically its effect on helping users a) to develop evaluation credibility skills for different historical sources, b) to realize that history is constructed, c) to accept multiple perspectives in a conflict as valid and, consequently, d) to be more inclined to overcome troubled pasts. It is important to clarify that what is evaluated is the

game as a tool rather than its pedagogical implementation, which may differ from country to country.

2. Methodology

2.1 Research question

The research question focused on examining whether and how students' perceptions of conflicts in history change due to their interaction with the digital game Fact Finders. It was therefore phrased as follows: What is the effect of the game Fact Finders on primary and secondary school students' perceptions of conflicts in history?

Students' perceptions of conflicts in history consist of four dimensions: a) credibility of multiple sources, b) the constructedness of history, c) multiple perspectives in a conflict and d) the ability to overcome troubled pasts.

2.2 Data sources

The main data source of the study was a 17-item online questionnaire on users' perceptions of conflicts in history. In some cases, students' gameplay, which was provided as an automatically created report from the game, was also available. Students' gameplay was not included in data analysis.

The questionnaire on users' perceptions of conflicts in history was created for the purpose of this study and its content validity was examined by an expert historian. Dimensions that were examined are the following: historical source credibility (4 items), constructedness of history (4 items), multiple perspectivity in conflicts (4 items) and overcoming troubled pasts (5 items). Participants responded using a 5-point Likert scale ranging from completely disagree to completely agree.

The 17 statements of the questionnaire on users' perceptions of conflicts in history were the following:

A. Historical source credibility

1. A testimony by a person who survived the war provides first-hand information but can be biased.

2. An article that includes both perspectives of a conflict is a high credibility source.

3. Artworks, photos, and monuments are not valuable sources for historians.

4. Original letters and diaries written during a war are valuable sources for historians.

B. History is "constructed."

5. History is constructed and exploited to achieve various objectives.

6. It is important to include as many and as credible sources as possible in a historical investigation.

7. Representations of the past may differ depending on the perspective a historian chooses to adopt.

8. How people feel is more important than historical interpretations of the past.

C. Multiple perspectives

9. In a historical conflict, there are at least two different perspectives.

10. It is important to include multiple perspectives in a historical investigation.

*11. Greek Cypriots and Turkish Cypriots have different viewpoints with respect to the Cyprus problem and this is legitimate.

*12. In 1974, Greek Cypriot nationalists wanted the island to become a part of Greece.

D. Overcoming troubled pasts

13. It is possible to overcome a conflict if we understand the "other's" (the "enemy's") perspective.

14. How a person who lived a war remembers or talks about the past is crucial for constructively dealing with the past (let bygones be bygones) or sticking to it (I shall never forget).

15. The way people remember conflicts that happened in the past is typically based on memories and recollections (e.g., of people who experienced the conflict and transferred this experience to their children) and not only on facts.

*16. Greek Cypriots and Turkish Cypriots can live together harmoniously if a solution to the Cyprus problem can be found.

17. Remembering is my personal duty, part of inherited family values.

*Statements with an asterisk specifically refer to the use of the Cyprus scenario in the RePAST Fact Finders game. They were not included in the data collection process from German students who, as third parties of the Cyprus conflict, were free to play any one of the two scenarios currently available in the game.

The same statements were administered after students' interaction with the game. Seven demographic questions were also included in the questionnaire administered before students interacted with the game, including the following: gender, age, ethnicity, whether students' parent(s) was/were a refugee or internally misplaced person, whether they had previous knowledge of the Cyprus problem and what were their sources for this knowledge, e.g. whether their parents or relatives talked to them about the Cyprus conflict. Additional closed-ended questions were included in the questionnaire administered after students interacted with the game to examine whether the game increased their curiosity and intention to search for additional sources about the Cyprus conflict in the future, and to examine whether their perceptions about history have been challenged after playing the game. An open-ended question also asked participants to indicate what was the most important thing they learned through the game (see

Appendix 1 and 2 for the pre-game and post-game complete questionnaire). The analysis of open-ended questions is not included in this Report.

The questionnaire was available either online (see an example of the pre-game questionnaire in English) or as a PDF for teachers to print at school.

All teachers who used the game in their classes and all students who participated in the study by providing data in pre- and post-game questionnaires received a certificate of participation to the study. A description of the game's implementation in classes is described briefly in Section 2.5 and in detail in Appendix 3.

2.3 Ethical issues

All procedures and criteria that were decided as part of D7.1 to be used by RePAST to identify and recruit research participants, including detailed sampling plans and procedures for acquiring approval for research that requires contact with under-aged populations (students of primary and secondary education) were followed. For example, for Cyprus, all necessary approvals from the Cyprus Bioethics Committee, the Center for Educational Research and Evaluation (CERE) and the Directorates of the Ministry of Education and Culture of Cyprus had to be obtained prior to contacting schools to request their participation in the study (Appendix 4).

Final approval was granted from the Directorates of the Ministry of Education and Culture of Cyprus and final access to schools was subject to approval by individual school heads. All participating children as well as their parents/guardians had to sign an informed consent document, which explained their involvement in detail, including the benefits and risks of the study. Children were free to withdraw from the study at any time with no prior notice.

2.4 Teacher recruitment

Different strategies were used in each country in an effort to reach as many teachers as possible. The content of the Cyprus scenario of the game ("How was life in Cyprus immediately after 1974?") is based on real data and historical facts. As such, it is compatible with content covered in the History class of the 6th grade (primary school) and of the 9th grade (secondary school) in Cyprus. This scenario was therefore appealing to teachers working in Cyprus and, potentially, in Greece. All partners had the option to implement the Borduria scenario of the game, which was based on fictional data or the Cyprus scenario, which was based on real data.

Teacher recruitment in Cyprus

After the approval for conducting the study was obtained from the Cyprus Bioethics Committee, the Center for Educational Research and Evaluation (CERE) and the Directorates of the Ministry of Education and Culture of Cyprus, an email invitation was sent to all Greek-speaking public and private primary (n=332) and secondary schools (n=144) in Cyprus. Interested teachers completed an online form (available in Greek here) and provided information with respect to equipment in

their schools, preferred grade level for their students to try the game, preferred time period to try the game, preferred mode (face to face or distance learning), and number of students in their class.

A total of twenty-three teachers (16 from primary and 7 from secondary education) responded within the period between Jan 25th and March 7th 2021. The researcher contacted all interested teachers via phone and email to send them: a) evidence of approval for conducting the study by two national bodies in Cyprus for obtaining the approval of each school's headmaster and b) consent forms for parents to sign. It was the responsibility of the teachers and headmasters to collect consent forms from students. Students whose parents did not sign consent forms did not participate in the data collection process but could try the game in class. All students' consent forms were kept in schools to avoid the possibility of sharing students' real names and personal information with the researcher who was responsible for the study.

Teacher recruitment in Greece

Convenience sampling was used to invite History teachers from private primary and secondary education from the network of AUTH partners. Three of the five teachers who have been contacted by the researcher responded positively. The targeted students were approximately 75 students.

Teacher recruitment in Germany

Convenience sampling was used to invite a teacher to participate with her students in five different classes (grades 7, 8, 9, 10 and 12) of a total of approximately 80 students in secondary education.

Teacher recruitment in other partner countries [Ireland, Spain, Bosnia Herzegovina, Kosovo and Poland]

All eight partners sent out their plans for reaching the required number of students before the 30th of October 2020. Their plans contained the strategy for reaching students, a tentative timetable and a rough estimation of the number of students that were expected to be reached, which was decided to be approximately 70 students per partner country.

There were serious challenges with respect to how the implementation would be conducted provided that due to the COVID-19 pandemic schools were closed for extended periods of times and all classes were conducted online for several consecutive months. In most cases, teachers in both primary and secondary education in Europe, had to prioritize covering the required syllabus of the curriculum in each country and were therefore not willing to devote their time to external initiatives. Moreover, running the interventions online posed many challenges, including not being able to provide pedagogical or technical support easily. Added challenges imposed by the COVID-19 pandemic included the need for students to work individually (rather than collaboratively) for social distancing, which meant that schools that did not have 1:1 (student:computer) ratio could not participate. Schools that were equipped with fewer than one computer per student (e.g. with a 2:1 student:computer ratio) could not participate because of the need to disinfect computers and

mobile devices or the whole room prior to their use by a second child, according to health protocols that were in place at the time in schools.

Another concern was the fact that the conflict presented in the Cyprus scenario was not part of the curriculum of any one of the partner countries, with the exception of Cyprus and potentially Greece, and therefore it was of little interest to teachers of other European countries. Greek-Cypriot and Greek students can be considered as direct parties of the conflict described in the Cyprus scenario of the game while German students, for example, can be considered as third parties of the conflict. German students in this study were free to play any scenario they wanted (either the Cyprus or the Borduria scenario).

Several attempts to test the game in Bosnia-Herzegovina have been made (the town of Zenica, where the researchers have been in a close contact with high school "Prva gimnazija u Zenici"). The fast spread of pandemics in BiH prevented the researchers from University of Ljubljana to travel to Bosnia-Herzegovina and test the game there (in the spring 2021, when the game was supposed to be tested, high schools in BiH were closed; therefore, the researchers did not contact other schools than the one in Zenica). Last, but not least, the researchers coming from Slovenia (University of Ljubljana) to BiH would have to go in 14-day quarantine upon arrival to BiH, because they have not been vaccinated by then. To mitigate these issues, we suggested the teachers in Zenica to test the game virtually (using platform Zoom), but were prevented from proceeding this way, because teaching was then done *asynchronously*.

As reaching primary/secondary schools in Bosnia was impossible, the target group was changed to young adults, specifically undergraduate students in Slovenia with an average age of 20 years old, who had a background in Political Science, reached using convenience sampling. It is worth mentioning that the results of the evaluation of the game with a sample of 93 Greek-Cypriot undergraduate students as direct parties of the Cyprus conflict and a sample of 77 Slovenian undergraduate students as third parties of the Cyprus conflict have been submitted as a manuscript for a high impact journal publication and are currently under review.

In Ireland, Spain, Kosovo and Poland efforts were extended until the end of the school year. There had been no response probably because of lockdown backlogs in delivering the curriculum. For example, in Ireland, at the end of May all secondary students had exams (with 3rd and 6th year students having national exams) so no teacher was available or interested in testing the game. Efforts will continue with the beginning of the new academic year (September-October 2021) for the game to be disseminated in all partner countries.

Dissemination of the game to the general public and NGOs

The game is linked to on SGI's webpage and was described in posts on SGI's social media channels (LinkedIn, Twitter and Facebook), therefore reaching a total of 982 users worldwide (SGI analytics data until August 6 2021), including students. Analytics data do not differentiate between users who opened the game or engaged with and completed the game. At least 505 primary and secondary education students engaged with and completed the game.

The game series was also offered to NGOs in conflict prevention and peace building focusing on young people. The European Peacebuilding Liaison Office and the Search for Common Ground were contacted though RePAST partners' connections. All NGOs that are members of The European Peacebuilding Liaison Office whose mission relates to peace building and conflict resolution were contacted. Some of these NGOs are the following: Agency for Peacebuilding (AP), Berghof Foundation, Budapest Centre, Cordaid, Centre for Humanitarian Dialogue (HD), Conciliation Resources, Concordis, Conducive Space for Peace (CSP), CMI – Martti Ahtisaari Peace Foundation, CSSP – Berlin Center for Integrative Mediation, The Democratic Progress Institute, The European Institute of Peace, The Institute for Research and Education on Negotiation, German Platform for Peaceful Conflict Management, The Global Partnership for the Prevention of Armed Conflict, The Guerrand-Hermès Foundation for Peace (GHFP) Research Institute, Nonviolent Peaceforce (NP), International Alert, The International Catalan Institute for Peace, International Center for Transitional Justice (ICTJ), The International Crisis Group, Interpeace, Nansen Center for Peace and Dialogue (NCPD) and The Life & Peace Institute (LPI).

Specific NGOs based in Sarajevo were identified though RePAST partners' connections and contacted. These include: the Center for non-violent action (Centar za nenasilnu akciju), the Youth Initiative for Human Rights, the Centers of civic initiatives (Centri civilnih inicijativa), Tuzla, Mostar, Sarajevo, Banja Luka, Doboj and Bijeljina, the Center for peace and multiethnic cooperation (Centar za mir i multietničku saradnju), theTranscultural psychosocial educational foundation (Transkulturna psihosocijalna obrazovna fondacija), the Center for peace-building (Centar za izgradnju mira), the Cultural Heritage without Borders (Kulturno naslijeđe bez granica), Foundation Girls (Fondacija Cure), Networks for peace-building (Mreža za izgradnju mira), Sarajevo and Banja Luka, Foundation Mosaic (Fondacija Mozaik), Srajevo and Banja Luka and Foundation Peace academy (Fondacija Mirovna akademija).

Specific NGOs based in Germany were identified though RePAST partners' connections and contacted. These include the following NGOs: The Konrad-Adenauer-Stiftung, The Friedrich Ebert Foundation - For Social Democracy, Friedrich Naumann Foundation for Freedom and The Heinrich Böll Foundation.

2.5 Game implementation in classes and data collection protocol

The process of implementing the game in formal education was designed and overseen by CUT, and was implemented by three of the RePAST partners leading a case study in Cyprus, Greece and Germany. Researcher-led interventions were organized in formal education, in the subject matter of history, through a structured activity sequence in classroom settings, that facilitated students' interaction with the game for Cyprus and Greece. In Germany, the responsible teacher provided guidelines to students who were asked to play the game individually and independently at home.

The implementation of the game in formal education was severely impacted by the COVID-19 pandemic which resulted in the closure of European schools for extended periods of times. In most cases the implementation took place at a timeframe when the physical presence of teachers and children was allowed at schools but access to external visitors was prohibited. The researcher was

therefore invited to the classrooms via videoconference to facilitate the process (in Cyprus and Greece). In all cases the implementation had to be limited to its duration as teachers who volunteered their time had to prioritize covering curriculum requirements rather than participating in extra-curriculum educational activities. In a few cases the intervention was conducted while physical presence of children at schools was not allowed and therefore all students, their teachers and the researcher participated via videoconferencing, therefore the intervention took place entirely online.

In Cyprus and Greece the official platform chosen by the Ministry of Education, Culture, Sport and Youth of Cyprus and the Ministry of Education and Religion in Greece for primary and secondary education (Microsoft Teams) was used by the History teacher to contact the researcher and/or students during the allocated time of their History lesson. All guidelines and regulations associated with students' online participation in classes announced by the Ministry of Education, Culture, Sport and Youth of Cyprus and the Ministry of Education and Religion in Greece were strictly followed. For example, students' cameras were always switched off, for security purposes and for protecting their personal data.

Students were asked to complete a 15-minute questionnaire on their perceptions of conflicts in history. This was done either online (using a google form link, see an example [here]), in which case data was submitted by students automatically and was available in an excel file, or in paper-based format. In both cases an identification number selected by either the students themselves or assigned by the teacher was used to ensure that the students' real name would not be used.

After the completion of the pre-game questionnaire, the students participated in an in-class intervention during which the researcher first showed them how the game is played via a videoconference including screen sharing functionality and then asked them to play it themselves for 30 minutes. Students used desktop computers in computer labs or mobile devices to play the game. In a few cases, a few students shared their results with the whole class for a brief discussion. In most cases time restrictions did not allow for a discussion.

At the end of the intervention students completed the same 15-minute questionnaire, either online (see an example [here]) or in paper-based format using the same identification number used in the pre-game questionnaire. The identification number was used so that students' pre and post-tests could be paired. Students' real names were not collected. Students completed the post-questionnaire either immediately after or a few days after interacting with the game. In a few cases the History teachers had their students complete questionnaires and interact with the game using detailed guidelines and a video tutorial prepared by the first author of this Deliverable. The duration of the intervention was on average 60-120 minutes.

In Cyprus, between February 2021 and June 2021, the game reached at least 496 students from 22 different schools in both primary and secondary education, based on data coming from 22 teachers who indicated an interest to incorporate the game in their classroom. A total of 14 teachers from 12 different schools from all five different districts of the island participated in the researcher-facilitated classroom implementation of the game, which reached a total of approximately 350 students. Pre-test data was collected from a subset of these participants (n=224) because of the

requirement of parental informed consent for child's participation. A smaller number of students completed post-tests (n=164).

In Greece, three teachers from the same city participated in the classroom implementation of the game, which reached a total of approximately 75 students, of whom 56 completed pre-tests and post-tests. The implementation of the game took place towards the end of the academic year in June 2021 in one class from a private primary school and in two classes from a private secondary school.

In Germany, one teacher participated in the classroom implementation of the game, which reached a total of approximately 80 students in July 2021. As the school was not equipped with laptops it was not possible to play the game with the children in class. The game was assigned as homework. Written parental consent was only obtained by 21 students, who were the only ones who participated in data collection. Pre-test data was available from 19 students.

2.6 Data analysis

Data analysis only included students whose parents provided consent forms for them to complete the questionnaire before and after interacting with the game.

Data from the pre- and post-questionnaires that were available online was input in a statistical package (IBM SPSS Statistics 25) for analysis. Pre- and post-questionnaires could be matched with the use of a 6-digit number that participants selected. Even though the intervention required the use of technology for students to play the game, either in computer labs in their school or using mobile devices, and even though the questionnaires were available for completion online, the completion of pre- and post-questionnaires in most classes took place using printed questionnaires (n=188/299, 62.9%) as this was easier for teachers compared to using online questionnaires (n=111/299, 37.1%). Completed questionnaires were either mailed to the researcher or scanned and sent to the researcher digitally. In these cases, data was input in SPSS manually.

Cumulative scores were computed by adding the items corresponding to each dimension examined in the questionnaire of users' perceptions of conflicts in history. Paired sample t-tests were used to analyze the change in students' perceptions pre and post. The alpha-level was set a priori to 0.05 for all statistical analyses.

Participants' demographic information

Table 1 presents the number and percentage of students per participating country (Cyprus, Greece and Germany). Even though dissemination efforts reached a total of 505 students, pre-test data was collected from a subset of these participants (n=299) because of the requirement to have students' parents sign consent forms for them to participate in data collection. A smaller number of students completed post-tests (n=218).

Specifically, in Cyprus pre-test data was collected from a subset of the 350 participants who played the game (n=224) because of the requirement of parental informed consent for child's participation. A smaller number of students completed post-tests (n=164). In Greece, 56 (out of the

75 students reached) completed both pre-test and post-test data. In Germany, written consent was only obtained by 21 students out of the 80 who tried the game, and 19 of them participated in data collection.

Countries	Frequency	Percent	Valid Percent	Cumulative Percent
Cyprus	224	74.9	74.9	74.9
Greece	56	18.7	18.7	93.6
Germany	19	6.4	6.4	100.0
Total	299	100.0	100.0	

Table 1: Frequency and percentage of students per participating country

Table 2 shows the number of schools that participated in the study and the number of students in each school that participated in data collection. As shown in Table 2, a total of 15 different schools were reached, 12 schools from Cyprus (numbers 1-12), two schools from Greece (numbers 13-14) and one school from Germany (number 15).

School number	Frequency	Percent	Valid Percent	Cumulative Percent
1.00	15	5.0	5.0	5.0
2.00	27	9.0	9.0	14.0
3.00	9	3.0	3.0	17.1
4.00	5	1.7	1.7	18.7
5.00	19	6.4	6.4	25.1
6.00	12	4.0	4.0	29.1
7.00	32	10.7	10.7	39.8
8.00	6	2.0	2.0	41.8
9.00	20	6.7	6.7	48.5
10.00	16	5.4	5.4	53.8
11.00	20	6.7	6.7	60.5
12.00	43	14.4	14.4	74.9
13.00	38	12.7	12.7	87.6
14.00	18	6.0	6.0	93.6
15.00	19	6.4	6.4	100.0
Total	299	100.0	100.0	

Table 2: Frequency and percent of students who participated in the data collection part of the study per school (for 15 schools)

In most schools only one specific class participated, therefore very small numbers of students were reached (ranging from 5 to 20), as can be seen from Table 2. In some schools, two classes participated, therefore higher numbers of students were reached (ranging from 27 to 43).

The majority of students reached came from primary education (145/280, 61.2%), as shown in Table 3 and specifically from public schools, as shown in Table 4.

Education level	Frequency	Percent	Valid Percent	Cumulative Percent
primary	198	66.2	66.2	66.2
secondary	101	33.8	33.8	100.0
Total	299	100.0	100.0	

Table 3: Frequency and percentage of primary and secondary school students participating in the study

Type of school	Frequency	Percent	Valid Percent	Cumulative Percent
public	207	69.2	69.2	69.2
private	92	30.8	30.8	100.0
Total	299	100.0	100.0	

Table 4: Frequency and percentage of public and primary schools participating in the study

Participating students included a total of 299 students, of whom 156 were male (52.2%) and 143 were female students (47.8%). Students' average age was 12 years old (M=12.33, SD=1.58, min=11, max=19). Ninety-five per cent of students (95.6%) had an age between 11 and 15 years old.

A rather high percentage of Cypriot students (42.3%, 93/220) had one of their parents who was a refugee or internally displaced person. None of the Greek students had a family member who was a refugee. This question was not asked for German participants.

3. Results

The research question of this study attempted to examine whether a change could be detected when comparing students' perceptions of conflicts in history before and after they interacted with the digital game Fact Finders. Students' perceptions of conflicts in history consisted of the computation of the average of students' answers in all 17 statements.

Overall students' perceptions of conflicts in history were neutral to positive, since the mean scores lied between 3 (neither agree nor disagree) and 4 (agree). A slight non-significant increase was observed from M=3.44 (SD=0.50) prior to playing the game to M=3.47 (SD=0.45) after playing the game, as shown in Table 5.

Perceptions of conflicts in history	Mean	N	Std. Deviation	Std. Error Mean
perceptions_total_pre	3.4421	238	.50461	.03271
perceptions_total_post	3.4652	238	.44608	.02891

Table 5: Table showing Mean scores for students' perceptions of conflicts in history before and after playing the game

More specifically, students' perceptions of conflicts in history focused on four dimensions: a) the evaluation of historical sources' credibility, b) the "constructedness" of history, c) multiple perspectives in a conflict, and d) the ability to overcome troubled pasts. Findings are presented for the whole sample (n=238), for each of the four dimensions examined, focusing on specific statements within each dimension that had a statistically significant change.

3.1 Credibility of historical sources

The first analysis examined whether a change could be detected when comparing students' perceptions of *historical source credibility* before and after interacting with the digital game Fact Finders. For this analysis, the four items corresponding to the dimension *historical source credibility* were added, and the average was computed.

A slight, non-significant increase was reported as students' mean scores slightly increased from M=3.61 (SD=0.63) to M=3.65 (SD=0.61), as shown in Table 6.

Perceptions on historical source credibility	Mean	N	Std. Deviation	Std. Error Mean
credibility_pre	3.6112	235	.62698	.04090
credibility_post	3.6452	235	.60501	.03947

Table 6: Table showing Mean scores for students' perceptions of historical source credibility before and after playing the game

However, the game seemed to be effective in changing students' perceptions with respect to realizing that *"A testimony by a person who experienced the war provides first-hand information but it can be biased"* and that *"an article that includes both perspectives of a conflict is a high credibility source"*.

More specifically, as shown in Table 7, students' perceptions changed significantly ($t_{234}=-4.49$; P<.001) with respect to a) realizing that a testimonial from a person who lived during the war may be a valuable source that gives first-hand information, but it could be biased from M=3.45 (SD=0.93) before playing the game to M=3.79 (SD=0.93) after playing the game. Students' perceptions changed significantly ($t_{229}=-2.74$; P=.007) concerning b) realizing that an article that includes two perspectives of a conflict is a reliable source of information from M=3.69 (SD=0.95) before playing the game to M=3.90, (SD=1.06) after playing the game.

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean

Pair 1	Q1pre *A testimony by a person who experienced the war provides first-hand information but it can be biased*	3.45	235	.925	.060
	Q1post	3.79	235	.932	.061
Pair 2	Q2pre *An article that includes both perspectives of a conflict is a high credibility source*	3.69	230	.952	.063
	Q2post	3.90	230	1.065	.070

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	Q1pre *A testimony by a person who experienced the war provides first-hand information but it can be biased* Q1post	-.336	1.148	.075	-.484	-.189	-4.489	234	.000
Pair 2	Q2pre *An article that includes both perspectives of a conflict is a high credibility source*	-.217	1.202	.079	-.374	-.061	-2.742	229	.007

Table 7: Table showing results of a Paired samples t-test comparing mean scores for students' perceptions on two specific statements of historical source credibility, before and after playing the game

3.2 Constructedness of history

The second analysis examined whether a change could be detected when comparing students' perceptions of the *constructedness of history* before and after interacting with the digital game Fact Finders. For this analysis, the four items corresponding to the dimension *constructedness of history* were added, and the average was computed.

A slight, non-significant decrease was reported as students' mean scores slightly decreased from M=3.61 (SD=0.58) to M=3.57 (SD=0.60), as shown in Table 8.

Perceptions on constructedness of history	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 constructedness_pre_v1	3.6118	217	.58175	.03949

constructedness_post_v1	3.5783	217	.60253	.04090

Table 8: Table showing mean scores for students' perceptions of the constructedness of history before and after playing the game

The goal of realizing that history is constructed cannot easily be achieved through playing the game once, for a maximum of 30 minutes. It became evident from data analysis that students needed to interact with the game and play the same scenario for a second time at a minimum. In that case, they would most probably reach a different construction of history based on a different selection of sources. Unfortunately, due to time limitations this was not possible.

Part of the initial planning also included devoting time at the whole class level, after students had a chance to play the game and create their report, to share their interpretations and discuss them. This was expected to support users in realizing that different people construct history differently. This part of the study did not take place in the vast majority of school classes.

3.3 Multiple perspectives

The third analysis examined whether a change could be detected when comparing students' perceptions of *multiple perspectives in historical conflicts* before and after interacting with the digital game Fact Finders. For this analysis, the four items corresponding to the dimension *multiple perspectives in conflicts* were added, and the average was computed.

A significant positive change was observed with respect to students' perceptions regarding multiple perspectives in a conflict. More specifically, as shown in Table 9, students' perceptions changed significantly ($t_{235}=-2.4$; P=.017) with respect to realizing that there are multiple perspectives that should be taken under consideration in a historical conflict from M=3.71 (SD=0.64) before playing the game to M=3.81 (SD=0.63) after playing the game.

Paired Samples Statistics				
	Mean	N	Std. Deviation	Std. Error Mean
Pair 1 multiple_pre_v1	3.7101	236	.63954	.04163
multiple_post_v1	3.8065	236	.62766	.04086

Paired Samples Test

		Paired Differences							
					95% Confidence Interval of the Difference				Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	t	df	
Pair 1	multiple_pre_v1 - multiple_post_v1	-.09640	.61567	.04008	-.17535	-.01744	-2.405	235	.017

Table 9: Table showing results of a Paired samples t-test comparing mean scores for students' perceptions on multiple perspectives in conflicts, before and after playing the game

As shown in Table 10, a slight non-significant increase was documented with respect to students realizing that *it is important to include multiple perspectives in a historical investigation* (pre-test M=3.96, SD=0.62, post-test M=3.98, SD=0.89, n=213) and that *Greek Cypriots and Turkish Cypriots have different viewpoints concerning the Cyprus problem and this is legitimate* (pre-test M=3.67, SD=1.06, post-test M=3.80, SD=0.92, n=214). This is particularly important for Greek-Cypriot and Greek students, because opposing perspectives (e.g. of Turkish or Turkish-Cypriots) come in contrast with the master narrative that traditionally prevails in schools.

Turkish military troops invaded Cyprus in 1974 after a short-lived coup engineered by the junta in Greece that aimed at the union of Cyprus with Greece. This created feelings of insecurity to Turkish Cypriots and led to Turkey's invasion of Cyprus. A fact often neglected in the Cyprus conflict portrayed in Greek-Cypriot textbooks is that "in 1974, Greek Cypriot nationalists wanted the island to become a part of Greece". As shown in Table 10, Greek and Greek Cypriot students' level of agreement with this statement significantly increased from M=3.37 (SD=1.23) to M=3.57 (SD=1.12) after playing the game (t_{210}=–2.33; P=.021). This shows a positive attitude towards accepting an opposing perspective in a historical conflict, which comes in contrast with the master narrative, at least for Greek and Greek-Cypriot and students.

	Mean	N	Std. Deviation	Std. Error Mean
It is important to include multiple perspectives in a historical investigation (Q10 pre).	3.96	213	.862	.059
Q10post	3.98	213	.893	.061
Greek Cypriots and Turkish Cypriots have different viewpoints with respect to the Cyprus problem and this is legitimate (Q11pre).	3.67	214	1.064	.073
Q11post	3.80	214	.919	.063

	Mean	N	Std. Deviation	Std. Error Mean
In 1974, Greek Cypriot nationalists wanted the island to become a part of Greece (Q12 pre).	3.37	211	1.225	.084
Q12 post	3.57	211	1.116	.077

Table 10: Mean scores for students' perceptions on multiple perspectives in conflicts before and after playing the game

3.4 Overcoming troubled pasts

The fourth analysis examined whether a change could be detected when comparing students' perceptions of *overcoming troubled pasts* before and after interacting with the digital game Fact Finders. For this analysis, the five items corresponding to the dimension *overcoming troubled pasts* were added, and the average was computed.

A slight, non-significant decrease was reported as students' mean scores slightly decreased from M=3.72 (SD=0.57) to M=3.60 (SD=0.55), as shown in Table 11.

Perceptions on overcoming troubled pasts		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	overcoming_pre	3.7196	214	.56758	.03880
	overcoming_post	3.5963	214	.55019	.03761

Table 11: Mean scores for students' perceptions on overcoming troubled pasts before and after playing the game

However, Greek and Greek-Cypriot students who were direct parties of the conflict presented in the Cyprus scenario of the game increased their agreement with respect to *the ability of Greek Cypriots and Turkish Cypriots to live together harmoniously if a solution to the Cyprus problem can be found* (pre-test M=3.65, SD=1.19, post-test M=3.76, SD=0.95, n=213), which is in and of itself a promising finding.

	Mean	N	Std. Deviation	Std. Error Mean
*Greek Cypriots and Turkish Cypriots to live together harmoniously if a solution to the Cyprus problem can be found (*Q16pre)	3.65	213	1.186	.081
Q16post	3.76	213	.950	.065

Table 12: Mean scores for students' perceptions on the ability of Greek-Cypriots and Turkish Cypriots to live together harmoniously before and after playing the game

It is also important to note that the majority of students felt that their perceptions about conflicts in history have been challenged after playing the game. Specifically, 34.3% (79/230) answered positively, while almost half of the students (47.8%, 110/230) responded that their perceptions about conflicts in history have been challenged "to some extent". Only 17.8% (41/230) felt that their perceptions have not been challenged or changed after playing the game.

Another promising finding is that the majority of Greek-Cypriot and Greek students felt that the game increased their curiosity and that they intent to search for historical sources for the 1974 war in the near future (69.8%, 148/212).

4. Conclusion

This study attempted to examine the effectiveness of the RePAST game with respect to having an impact on students' perceptions of conflicts in history and specifically in achieving the following learning objectives: a) to support young students' evaluation of historical source credibility, b) to support awareness-building about the constructedness of history, c) to promote multiperspectivity in conflicts, and d) to help users overcome troubled pasts.

Overall students' perceptions of conflicts in history were neutral to positive, since the mean scores lied between 3 (neither agree nor disagree) and 4 (agree). A slight non-significant increase was observed from M=3.44 (SD=0.50) prior to playing the game to M=3.47 (SD=0.45) after playing the game.

A statistically significant positive change was observed with respect to students' perceptions regarding multiple perspectives in a conflict. Students were supported through the game to understand the importance of including multiple perspectives in a historical investigation. Students developed a more positive attitude towards accepting an opposing perspective in a historical conflict. This is particularly important for Greek-Cypriot and Greek students, because opposing perspectives (e.g. of Turkish or Turkish-Cypriots) come in contrast with the master narrative that traditionally prevails in schools.

Moreover, the game seemed to be effective in changing students' perceptions with respect to realizing that "A testimony by a person who survived the war provides first-hand information but it can be biased" and that "an article that includes both perspectives of a conflict is a high credibility source".

Students who were direct parties of the conflict presented in the Cyprus scenario of the game (Greek-Cypriots and Greeks) increased their agreement with respect to the ability of Greek Cypriots and Turkish Cypriots to live together harmoniously if a solution to the Cyprus problem can be found (pre-test M=3.65, SD=1.18, post-test M=3.76, SD=0.95, n=213), which is in and of itself a promising finding.

Considering the prevalence of master narratives typically expressing nationalistic views that are opposing to overcoming troubled pasts, the difficulty of changing people's perceptions through short-term interventions, and the challenging conditions of the game's implementation in formal education during the COVID-19 crisis, these preliminary findings can be seen as positive.

4.1 Limitations

The study had several limitations, most of which relate to the COVID-19 pandemic crisis, which forced schools to close for extensive periods of time. This severely impacted the time that teachers could devote in extra-curricular activities and forced the interaction time of students with the game to be as limited as possible, in this case it could not exceed 30 minutes of playtime. The time allocated for completing questionnaires was therefore equally limited. This forced us to include mostly closed-ended questions to examine a large sample of students' perceptions of conflicts in history and to therefore focus on a quantitative analysis of results. A qualitative analysis including students' in-depth interviews to examine students' perceptions of conflicts in history will be pursued in future dissemination efforts of the game.

Even though the goal of reaching at least 500 students in primary and secondary education from at least three different countries was met, the small number of participating students from third parties of the conflict did not allow for a cross-country comparative analysis. A cross-country comparative analysis could compare direct and third parties of a conflict and examine how a difference in context affects participants' understanding of conflicts, ability to overcome biases and ability to shift perspectives. Data analysis in this study showed that students' perceptions of conflicts in history did not change drastically. This was expected, to some extent, as people's attitudes do not typically change through short-term interventions. Another reason probably relates to the questionnaire that was used. Its reliability was not very high (Cronbach's alpha=0.625 with 17 items). As no standardized, valid and reliable instrument was found in the literature measuring young people's perceptions of conflicts in history, a questionnaire had to be created that addressed the needs of the study. The content validity of the questionnaire was examined by an expert historian, but the instrument was only pilot-tested with a sample of undergraduate students in Cyprus (n=93) and in Slovenia (n=77) and not with school children. As reported by teachers who participated in the study, the administration of the questionnaire, particularly in primary education, proved to be challenging especially in cases where the questionnaire was completed without the researcher being "present" through a videocall to answer any questions the students might have had.

Preliminary results from a pilot study in higher education with Cypriot and Slovenian young adults who used the game independently, online, with no pedagogical guidance or support, were very positive (results under review in a high impact journal). Due to COVID-19 time restrictions, there was no instructional intervention built into the research design of this first study targeting primary and secondary education students. Primary and secondary education students interacted with the game individually for a limited period of time and their game reports, which are automatically produced at the end of the game, were not discussed at the whole class level, due to time limitations. It is expected that an intervention encouraging students to work in pairs, as was the

initial pre-COVID19 design of the study, and to interact with each other and with their teacher or facilitator would potentially positively influence young students' perceptions of conflicts in history at a greater extent. Future research in this scope can show whether the game can potentially be effective as a pedagogical tool in teaching about conflict and its resolution in classroom settings.

5. References

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6. Appendix

A. Pre-game questionnaire on perceptions of conflicts in History

RePAST student questionnaire [prior to playing the game]

The aim of this study is to evaluate a digital game in history called Fact Finders. The game helps students like you learn how to assess the credibility of historical sources. Before you play the game please read the following guidelines and if you agree, please answer the questions below.

In this questionnaire:

a) Your answers will be anonymous. You will be given a number from your teacher which you will use instead of your name.

b) Your participation is voluntary and you can withdraw from the study at any time, without any consequences. If you cannot answer any of these questions you can leave them unanswered. You will still be able to play the game even if you cannot complete this questionnaire.

c) The data that will be collected will only be used for the evaluation of this game.

Part A: Demographic information

1. Identification number: _____ [This number will be given to you by your teacher].
2. Gender: Male _____ Female _____
3. Age: _____
4. Grade: _____
5. School: _____
6. Country: _____

Part B: Your views on history

Please circle a number to show whether you agree or disagree with the following statements (e.g. if you completely disagree please circle 1, if you completely agree please choose 5, if you neither agree nor disagree please circle 3, etc.)

1=Completely disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Completely agree					
Part A Historical source credibility					
1. A testimony by a person who survived the war provides first-hand information but can be biased.	1	2	3	4	5
2. An article that includes both perspectives of a conflict is a high credibility source.	1	2	3	4	5
3. Artworks, photos, and monuments are not valuable sources for historians.	1	2	3	4	5
4. Original letters and diaries written during a war are valuable sources for historians.	1	2	3	4	5
Part B History is "constructed."					
5. History is constructed and exploited to achieve various objectives.	1	2	3	4	5
6. It is important to include as many and as credible sources as possible in a historical investigation.	1	2	3	4	5
7. Representations of the past may differ depending on the perspective a historian chooses to adopt.	1	2	3	4	5
8. How people feel is more important than historical interpretations of the past.	1	2	3	4	5
Part C Multiple perspectives					
9. In a historical conflict, there are at least two different perspectives.	1	2	3	4	5
10. It is important to include multiple perspectives in a historical investigation.	1	2	3	4	5
11. *Greek Cypriots and Turkish Cypriots have different viewpoints with respect to the Cyprus problem and this is legitimate.	1	2	3	4	5
12. *In 1974, Greek Cypriot nationalists wanted the island to become a part of Greece.	1	2	3	4	5
Part D Overcoming troubled pasts					
1. It is possible to overcome a conflict if we understand the "other's" (the "enemy's") perspective.	1	2	3	4	5
2. The way a person who lived a war remembers or talks about the past is crucial for dealing with the past in a constructive way (let bygones be bygones) or sticking to it (I shall never forget).	1	2	3	4	5
3. The way people remember conflicts that happened in the past is typically based on memories and recollections (e.g. of people who experienced the conflict and transferred this experience to their children) and not only on facts.	1	2	3	4	5
4. * Greek Cypriots and Turkish Cypriots can live together harmoniously if a solution to the Cyprus problem can be found.	1	2	3	4	5
5. Remembering is my personal duty, part of inherited family values.	1	2	3	4	5

For Cypriot students only [similar questions can be developed for students from other countries]:

1. Is either one of your parents a refugee? Yes_____ No _____

2. Did you parents (grandparents or relatives) ever talk to you about the 1974 war in Cyprus? Yes___No____

3. How much do you feel that you know about the 1974 war in Cyprus? 1   2   3   4   5

                                         1=not much   5=a lot

4. What was/were your main source(s) of information concerning the 1974 war in Cyprus?

a) School

b) Parents or relatives

c) Books

d) Other [Please specify:_____]

THANK YOU FOR TAKING THE TIME TO HELP US WITH EVALUATING THE GAME FACT FINDERS!

B. Post-game questionnaire on perceptions of conflicts in History

RePAST student questionnaire [after playing the game]

Now that you played the game please read the following guidelines and if you agree, please answer the questions below.

In this questionnaire:

d) Your answers will be anonymous. You will use the identification number that was given to you by your teacher instead of your real name.

e) Your participation is voluntary and you can withdraw from the study at any time, without any consequences. If you cannot answer any of these questions you can leave them unanswered.

f) The data that will be collected will only be used for the evaluation of the game.

Part A: Demographic information

7. Identification number: _____ [This number will be given to you by your teacher].

Part B: Your views on history

Please circle a number to show whether you agree or disagree with the following statements (e.g. if you completely disagree please circle 1, if you completely agree please choose 5, if you neither agree nor disagree please circle 3, etc.)

1=Completely disagree 2=Disagree 3=Neither agree nor disagree 4=Agree 5=Completely agree					

Part A Historical source credibility

	1	2	3	4	5
13. A testimony by a person who survived the war provides first-hand information but can be biased.	1	2	3	4	5
14. An article that includes both perspectives of a conflict is a high credibility source.	1	2	3	4	5
15. Artworks, photos, and monuments are not valuable sources for historians.	1	2	3	4	5
16. Original letters and diaries written during a war are valuable sources for historians.	1	2	3	4	5

Part B History is "constructed."

	1	2	3	4	5
17. History is constructed and exploited to achieve various objectives.	1	2	3	4	5
18. It is important to include as many and as credible sources as possible in a historical investigation.	1	2	3	4	5
19. Representations of the past may differ depending on the perspective a historian chooses to adopt.	1	2	3	4	5
20. How people feel is more important than historical interpretations of the past.	1	2	3	4	5

Part C Multiple perspectives

	1	2	3	4	5
21. In a historical conflict, there are at least two different perspectives.	1	2	3	4	5
22. It is important to include multiple perspectives in a historical investigation.	1	2	3	4	5
23. *Greek Cypriots and Turkish Cypriots have different viewpoints with respect to the Cyprus problem and this is legitimate.	1	2	3	4	5
24. *In 1974, Greek Cypriot nationalists wanted the island to become a part of Greece.	1	2	3	4	5

Part D Overcoming troubled pasts

	1	2	3	4	5
6. It is possible to overcome a conflict if we understand the "other's" (the "enemy's") perspective.	1	2	3	4	5
7. The way a person who lived a war remembers or talks about the past is crucial for dealing with the past in a constructive way (let bygones be bygones) or sticking to it (I shall never forget).	1	2	3	4	5
8. The way people remember conflicts that happened in the past is typically based on memories and recollections (e.g. of people who experienced the conflict and transferred this experience to their children) and not only on facts.	1	2	3	4	5
9. * Greek Cypriots and Turkish Cypriots can live together harmoniously if a solution to the Cyprus problem can be found.	1	2	3	4	5
10. Remembering is my personal duty, part of inherited family values.	1	2	3	4	5

Your experience with the Fact Finders game:

1. What is the most important thing you learned through this game?
2. What did you dislike in the game? How would you improve it?
3. Within the last two weeks, I asked my family for more information about the 1974 war. Yes/No
4. I plan to search for historical sources about the 1974 war. Yes/No
5. After playing the game I feel that my views about history have been challenged. Yes/No

THANK YOU FOR TAKING THE TIME TO HELP US WITH EVALUATING THE GAME FACT FINDERS!

C. Dissemination of the game in detail (in Cyprus and Greece)

Dissemination of the game in detail in Cyprus

A public high school class consisting of 18 students in Paphos (School 1) used the game online in February 2021. All students were located at their houses at the time due to the schools being closed (COVID19). The intervention was scheduled for three 30-minute meetings over three different days. The researcher was present virtually only during the first meeting. The first meeting consisted of a brief welcoming introduction, the completion of the pre-test on behalf of the students and a demo of the game by the researcher. The researcher also supported students in downloading the game as an app on their phones or in using the game through a browser in a Windows or Mac operating system during the first meeting. The high school teacher took responsibility for guiding students to play the game during the second meeting and for facilitating a discussion in class during the third meeting. At the third meeting the completion of the post-test was also done by students. Only 8 out of the 18 students completed the post-test. Student's reports from the game were collected.

In March 2021 a private primary school in Nicosia (School 2) participated in the study. Two teachers of two history classes (combined) consisting of a total of 35 students took responsibility for having students complete the pretest during the first meeting. The researcher (invited to the class through a video conference) facilitated the students' use of the game during the second meeting, which was scheduled for 80 minutes. The students had access to ipads, on which the game was already pre-installed, and they were all located in one classroom at the time, as primary schools in Nicosia were open for face to face instruction during March. The two history teachers also acted as facilitators for students' use of the game during the second meeting. The two teachers took responsibility for having students complete the post-test during the third meeting. Twenty students out of the 35 completed the post-test. Student's reports from the game were collected.

In April 2021, a private primary school in Paralimni (School 3) participated in the study (a teacher of 6th grade history and 9 students). The researcher (invited to the class through a video conference) facilitated the students' use of the game during a single meeting, which was scheduled for 80 minutes. Students completed the pre-test during this meeting, prior to playing the game. The students had access to computers in the school's computer lab. They were all located in one classroom at the time, as primary schools in Paralimni were open for face to face instruction during April. The teacher will arrange for the post-test to be administered. He assigned identification numbers to students. Student's reports from the game were not collected.

In April 2021, a public high school in Limassol (School 4) participated in the study. A teacher of history arranged for her 8 female students to complete the pre-test (some have completed it online and some have completed a printed version). The researcher (invited to the class through a video conference) facilitated the students' use of the game during a single meeting, which was scheduled for 45 minutes. There was delay with students' getting into class and a few technical problems with

computers that were not working. The actual time of game play did not exceed 20 minutes. The teacher will arrange for the post-test to be administered. Students' reports from the game were not collected.

In April 2021, a public primary school in Paphos (School 5) participated in the study with 25 students. The researcher (invited to the class through a video conference) facilitated the whole process, students' completion of the pre-test, students' gameplay, a short discussion after playing the game and students' completion of the post-test. The whole process took 2.5 hours. Two teachers were present, one was the class teacher and another was the school's headmaster who has several years of teaching experience in History and was awarded for her efforts in involving her students to bi-communal student projects. Students' reports from the game were also collected.

In April 2021, a public primary school in Nicosia, Dali (School 6) participated in the study. The teacher arranged for his 25 students to complete the pre-test on their own. The researcher (invited to the class through a video conference) facilitated students' gameplay and a short discussion after playing the game. Three students were in quarantine at home and participated to the game from home. The teacher arranged for the students to complete the post-test on the last day of school before the Easter holidays (April 23). Students' reports from the game were collected.

In April 2021, a public primary school in Nicosia Geri A (School 7-with two classes with teachers) participated in the study. The teacher arranged for her 25 students to complete the pre-test on their own in paper-based format. The teacher followed instructions that were sent and tried the game with her students on her own. Students completed post-tests in paper-based format that were mailed to the researcher. Students' reports from the game were also collected. Another teacher from the same school followed the procedure described above and sent students' questionnaires via mail. A total of 32 students completed pre and post-tests.

On April 27th 2021 (during the Easter holidays when all schools were closed), two secondary education history teachers and 8 students (School 8) from two different classes of a public high school participated in the study while at home. The teacher arranged for these 8 students to complete the pre-test on their own. The researcher (invited to the class through a video conference) facilitated students' gameplay and a short discussion after playing the game. Some of the students completed the post-test while waiting for others complete the game. Students' reports from the game were collected.

Dissemination of the game in detail in Greece

The dissemination of the game in Greece took place at the end of the academic year in June and July 2021 in one private primary school and one secondary school. Two classes from the same secondary school participated in the study.

On June 2nd 2021 two secondary education history teachers and 19 students from one class of a public high school (Γ γυμνασίου) in Thessaloniki participated in the study (Greece-School 1). Ten students used computers in a computer lab (supervised by the first teacher) and 9 students used their mobile devices (supervised by the second teacher) in a second class. Students completed the pre-game questionnaires on paper prior to their interaction with the game. The researcher (invited to the class through a video conference) facilitated students' gameplay. At the end a couple of

students commented that the game was interesting, that they faced a few technical problems on the PCs, and that they learned how to differentiate between facts and opinions through the game, and they learned about historical sources. Students completed the post-game questionnaires on paper prior to their interaction with the game. Students also uploaded their game reports through Teams using their identification numbers and those were forwarded to the researcher.
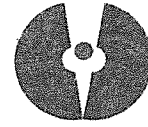
On June 7th 2021 the same two secondary education history teachers and 23 students from one class of a public high school (Β γυμνασίου) in Thessaloniki participated in the study (Greece-School 1). Students completed the pre-game questionnaires on paper prior to their interaction with the game. The researcher (invited to the class through a video conference) facilitated students' gameplay. Students used their mobile phones and showed a great interest in playing the game. At the end, three students shared their main findings and two students commented positively on the use of mobile games in the history lesson. Students completed the post-game questionnaires on paper prior to their interaction with the game. Students also uploaded their game reports through Teams using their identification numbers and those were forwarded to the researcher.

On June 15th 2021, a primary school teacher and his 18 6th grade students in a private school in Greece participated in the study (Greece-School 2). Students completed the pre-game questionnaires on paper prior to their interaction with the game. The students watched a video of a tutorial of the game and then started playing. The researcher (invited to the class through a video conference) was present to guide the teacher but her support was not needed. Students completed the post-game questionnaires on paper prior to their interaction with the game. The teacher input the data from the paper-based questionnaires in the online form.

D. Approval for conducting the study in Cyprus by National Bioethics Committee and CERE

Αρ. Φακ.: ΕΕΒΚ ΕΠ 2020.01.183
Αρ. Τηλ.: 22809038/039
Αρ. Φαξ: 22353878

17 Σεπτεμβρίου, 2020

Δρ. Ιόλη Νικολαΐδου
Τεχνολογικό Πανεπιστήμιο Κύπρου
Τμήμα Επικοινωνίας και Σπουδών Διαδικτύου
Ανεξαρτησίας 172, Γραφείο 1 (2ος όροφος)
Ενορία Αγίας Νάπας
3040, Λεμεσός

Αγαπητή Δρ. Νικολαΐδου,

Αίτηση γνωμοδότησης για την πρόταση με τίτλο: «Ψηφιακά παιχνίδια για αξιολόγηση της αξιοπιστίας ιστορικών πηγών/RePAST: Η ενδυνάμωση της κοινής ευρωπαϊκής ταυτότητας μέσα από την κατανόηση και υπέρβαση του διχαστικού ιστορικού παρελθόντος»

Αναφέρομαι στην αίτηση σας ημερομηνίας 14 Σεπτεμβρίου 2020 για το πιο πάνω θέμα, και επιθυμώ να σας πληροφορήσω ότι από τη μελέτη του περιεχομένου των εγγράφων που έχετε καταθέσει, που αφορούν την πιο πάνω έρευνα, η Εθνική Επιτροπή Βιοηθικής Κύπρου (ΕΕΒΚ) **γνωμοδοτεί υπέρ της διεξαγωγής της εν λόγω έρευνας.**

2. Η Επιτροπή επιθυμεί να τονίσει ότι παραμένει ευθύνη δική σας η διεξαγωγή της έρευνας με τρόπο που να τηρούνται οι πρόνοιες του νέου Ευρωπαϊκού Γενικού Κανονισμού Προστασίας Προσωπικών Δεδομένων (2016/679) και του περί της Προστασίας των Φυσικών Προσώπων Έναντι της Επεξεργασίας των Δεδομένων Προσωπικού Χαρακτήρα και της Ελεύθερης Κυκλοφορίας των Δεδομένων αυτών Νόμος του 2018 (Ν. 125(Ι) /2018).

3. Σας ενημερώνουμε ότι για σκοπούς καλύτερου συντονισμού και αποφυγής επανάληψης ερευνών με το ίδιο θέμα ή/και υπό εξέταση πληθυσμό μέσα σε σύντομο σχετικά χρονικό διάστημα, η ΕΕΒΚ δημοσιεύει στην ιστοσελίδα της το θέμα της έρευνας, τον φορέα και τον υπό εξέταση πληθυσμό.

4. Κατά τη διάρκεια εκπόνησης της έρευνας, ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώνει την ΕΕΒΚ για κάθε τροποποίηση των αρχικά κατατεθειμένων εγγράφων (πρωτόκολλο ή άλλα ερευνητικά έγγραφα) και θα υποβάλλει τις απαιτούμενες έντυπες τροποποιήσεις στην Επιτροπή.

5. Σε περίπτωση διακοπής της έρευνας, ο συντονιστής/ επιστημονικός υπεύθυνος θα ενημερώσει γραπτώς την Επιτροπή κάνοντας αναφορά και στους λόγους διακοπής της έρευνας.
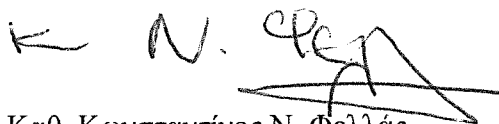
.../2

6. Ο συντονιστής/ επιστημονικός υπεύθυνος θα ενημερώσει την Επιτροπή σε περίπτωση αδυναμίας να συνεχίσει ως συντονιστής και θα υποβάλει τα στοιχεία επικοινωνίας του αντικαταστάτη του.

7. Με το πέρας της ερευνητικής πρότασης, ο συντονιστής / επιστημονικός υπεύθυνος θα ενημερώσει εγγράφως την Επιτροπή ότι το υπό αναφορά ερευνητικό πρωτόκολλο ολοκληρώθηκε.

8. Σας ευχόμαστε κάθε επιτυχία στη διεξαγωγή της έρευνάς σας.

Με εκτίμηση,

Καθ. Κωνσταντίνος Ν. Φελλάς
Πρόεδρος
Εθνικής Επιτροπής Βιοηθικής Κύπρου

ΥΠΟΥΡΓΕΙΟ ΠΑΙΔΕΙΑΣ, ΠΟΛΙΤΙΣΜΟΥ, ΑΘΛΗΤΙΣΜΟΥ ΚΑΙ ΝΕΟΛΑΙΑΣ

Αρ. Φακ.: 7.15.06.12/4
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19 Οκτωβρίου, 2020

Κυρία
Ιόλη Νικολαΐδου
Ανεξαρτησίας 172
Ενορία Αγίας Νάπας
3040 Λεμεσός

Θέμα: Άδεια για διεξαγωγή έρευνας μαθητές/μαθήτριες δημοτικών σχολείων

Αγαπητή κυρία Νικολαΐδου,

Έχω οδηγίες να αναφερθώ στη σχετική με το πιο πάνω θέμα αίτησή σας προς το Κέντρο Εκπαιδευτικής Έρευνας και Αξιολόγησης, **που** υποβλήθηκε στις 10 Σεπτεμβρίου 2020, και να σας πληροφορήσω ότι εγκρίνεται το αίτημά σας για διεξαγωγή έρευνας με μαθητές/μαθήτριες δημοτικών σχολείων που εσείς θα επιλέξετε, με θέμα «*Ψηφιακά παιχνίδια για αξιολόγηση της αξιοπιστίας ιστορικών πηγών*», την παρούσα σχολική χρονιά 2020-2021. Η απάντηση του Κέντρου Εκπαιδευτικής Έρευνας και Αξιολόγησης σας αποστέλλεται συνημμένα, για δική σας ενημέρωση. Θα πρέπει, επίσης, να παρουσιάζετε το Αναλυτικό Σχέδιο Έρευνας, σε περίπτωση που αυτό σας ζητηθεί.

2.   Νοείται, βέβαια, ότι πρέπει να εξασφαλιστεί η άδεια των διευθυντών/ριών των σχολείων, εκ των προτέρων, ώστε να ληφθούν όλα τα απαραίτητα μέτρα για να μην επηρεαστεί η ομαλή λειτουργία τους. Η έρευνα θα πρέπει να διεξαχθεί με ιδιαίτερα προσεγμένο τρόπο, ώστε να μη θίγεται το έργο των εκπαιδευτικών, το σχολικό περιβάλλον ή οι οικογένειες των μαθητών/ριών και όλες **οι** δραστηριότητες που θα αναπτυχθούν πρέπει να εμπίπτουν μέσα στο πλαίσιο **που** καθορίζεται από το Αναλυτικό Πρόγραμμα. Η έρευνα θα διεξαχθεί νοουμένου ότι η απώλεια του διδακτικού χρόνου των μαθητώ/ριών θα περιοριστεί στον ελάχιστο δυνατό βαθμό, ενώ για τη συμμετοχή των μαθητών/ριών χρειάζεται η **γραπτή** συγκατάθεση των γονιών τους. Οι γονείς πρέπει να γνωρίζουν όλες τις σχετικές λεπτομέρειες για τη διεξαγωγή της έρευνας, καθώς και τα στάδια μέσα από τα οποία θα εξελιχθεί. Σημειώνεται, επίσης, ότι τα πορίσματά σας κρίνεται απαραίτητο να είναι ανώνυμα και οι πληροφορίες που θα συλλέξετε να τηρηθούν απόλυτα εμπιστευτικές και αποκλειστικά και μόνο για τον σκοπό της έρευνας.

3.   Η παρούσα έγκριση παραχωρείται με την προϋπόθεση ότι τα πορίσματα της εργασίας, θα κοινοποιηθούν μόλις αυτή ολοκληρωθεί, στη Διεύθυνση Δημοτικής Εκπαίδευσης για σχετική μελέτη και κατάλληλη αξιοποίηση.

Με εκτίμηση,

(Δρ Μάριος Στυλιανίδης)
για Γενικό Διευθυντή

Κοιν.: Π.Λ.Ε.
        Επαρχιακά Γραφεία Παιδείας

ΑΤ/ΑΤ EREVNES

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