



Serious Games as a Means to Promote Thinking about European Identity: A Case Study of the Design and Development of the RU EU? Game

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SERIOUS GAMES AS A MEANS TO PROMOTE THINKING ABOUT EUROPEAN IDENTITY: A CASE STUDY OF THE DESIGN AND DEVELOPMENT OF THE RU EU? GAME

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Abstract: *The diversity of the EU is both a strength and a weakness, with Issues of National and European identity contributing to division, marginalization and exclusion. Many European citizens have very firmly entrenched, but frequently simplistic, views about the value of the European Union as good (pro EU) or bad (anti EU). To promote a culture of increased tolerance and inclusion, EU citizens need to develop a more mature and nuanced understanding of National and European identity that considers the validity of others' points of view. Serious Games are increasingly recognised as active and effective methods for tackling complex social problems. Therefore, the RU EU? (are you EU?) project developed a game to increase players' awareness of the complexity of European identity and values, to help players develop a more detailed understanding of European identity and promote critical thinking about their own views, the views of others, and the wider societal consequences. In this paper we describe the RU EU? Game as a case study explaining the thinking behind the game design. We outline the early design tasks that led to development of the multicomponent model of European identity that we used in the game, the adoption of the journalist narrative and the tools that assisted the player in his goal of compiling and publishing a set of articles about European identity. We discuss the potential of the game tools and mechanics to be used more widely to promote social understanding and inclusion.*

Keywords: *serious games; European identity; inclusion; case study; journalist narrative*

Introduction

In recent years European Union (EU) citizens and EU member states have shown fluctuating levels of commitment to membership of the European Union. These varied attitudes have increasingly posed challenges to the unity of the European Union, with many member states and their citizens expressing a reduced or absent sense of European-ness (Grillo, 2007; Börzel, & Risse, 2018). Recently these difficulties have been exemplified by Brexit, the referendum vote by UK

citizens in June 2016 to leave the EU. The result of the Brexit referendum and its aftermath clearly demonstrate the highly emotional and conflict-ridden nature of a problem for which there was no easy negotiated solution. Many European citizens have simplistic, but very firmly entrenched, views about the value of the EU as good (pro EU) or bad (anti EU), and the rigidity of these views contributes to division, marginalization and exclusion. To address these strongly polarised views and promote increased tolerance and inclusion and a culture of acceptance, EU citizens need to develop a more mature and nuanced understanding of National and European identity that considers the validity of others' points of view.

With this in mind, the RU EU? (are you EU?) game was created. The game aimed to: (1) increase players' awareness of the complexity of European identity and values; (2) to help players develop a more balanced understanding of European identity and (3) promote critical thinking about their own views, the views of others, and the wider societal consequences.

The game was designed primarily for students in the Further and Higher sector across Europe, especially those in disciplines such as social sciences and business who are taking modules where the topic of European identity is relevant. It was also envisaged that the game might be useful for Erasmus students as a means of finding out about more about European identity and topics of concern to students in other European countries.

Serious Games are increasingly recognised as providing modern, active and effective methods for learning (Plass, Homer, & Kinzer, 2015; Zhonggen, 2019). Romero, Usart, and Ott (2015) proposed that, as well as being highly engaging, serious games can provide an innovative and active platform for learning 21st century skills that prioritizes how students can apply their knowledge and skills, rather than just focusing on knowledge acquisition. Games can be used to tackle complex social problems and are especially useful for the acquisition of the social skills, such as communication, team skills and collaboration, regarded as essential for the 21st century workforce. Games can be used to tackle societal and civic issues such as the promotion of civic responsibilities and community participation (West, Yildirim, Harte, Ramram, Fleury, & Carabias-Hütter, 2019; Edwards et al., 2019); and can also be used to tackle ill-defined problems for which there is not one unique solution, but where there are many possible approaches and multiple solutions (Jamaludin & Hung, 2017). The consideration of multiple perspectives is essential when considering issues of European identity and associated attitudes and behaviors, and the potential of serious games to support reflection and attitude change by creating safe spaces to explore alternative perspectives and ideologies is increasingly being acknowledged (Muhamad & Kim, 2020).

In this paper we present a case study of the design and development of the prototype RU EU? Game. We outline the complexity of the game design process and discuss the varied issues that had to be considered, including the game content, learning outcomes, learning mechanics and game mechanics. We adopted an iterative process and we illustrate the decisions that had to be made at different stages in the design and development process to ensure that the game met its aims of promoting a more balanced understanding of European identity and its societal implications. This case study provides detailed insights into the design process of a serious game where the content was firmly grounded in a strong theoretical base to promote critical reflection

and evaluation of complex cultural issues, and their importance in the context of societal inclusion. The RU EU? game can be downloaded from the project website: <https://rueu-project.eu/>.

Game Design Process

Designing and developing a serious game is a complex, interdisciplinary process which Parberry, Kazemzadeh, and Roden (2006) viewed as a mixture between science and art. Although there are no universally agreed guidelines (Silva, 2020), many view game development as an iterative multistage process (Branch, 2009; Ramadan, & Widyani, 2013). We followed Branch's ADDIE (Analyze, Design, Develop, Implement, and Evaluate) approach in designing the RUEU? Game. The key stages that we describe in this paper are (1) the early analysis and design tasks which included a literature review and a user requirements analysis; (2) the development and implementation of the game based on these early results and (3) the piloting and evaluation of the game.

Early Analysis and Design Tasks

To inform the game content, the early design tasks included a literature review to provide theoretical insights about the nature of European identity, and a user requirements analysis that aimed to collect qualitative empirical evidence from prospective users of the game concerning their views about European identity. Before recruitment commenced University ethical approval was sought and received Both sources of information were used to inform an operational definition of European identity that could be employed within the game.

Although the literature review noted “there is no clear agreement on what a European identity actually is” (Leith, Sim, van der Zwet, & Boyle, 2019, p. 560), it did provide useful insights about how European identity could be conceptualized within the game. European identity is in some sense similar to national identity, an aspect of social identity, which explains the strong feelings that people have about belonging to a group in terms of in-groups and out-groups and which exaggerate similarities to their own group and differences from other groups (Tajfel & Turner, 1986). The analogy with national identity also presents some problems however, since national identity has features not always shared by European identity. Therefore, we focused on defining precisely the concepts and perceptions underlying European identity and its expression in behaviour.

A key feature of European identity is that it tends to be expressed in two very conflicting narratives that represent deeply held beliefs, with some citizens very favourably disposed towards the European Union (pro EU) and others very much against (anti EU). There is a paradox in that, although Eurobarometer studies suggest that citizens' European identity is relatively weak compared to national identity, differences in allegiance to the European Union as pro or anti EU seem to escalate into highly emotional and conflictual differences of opinion (European Commission, 2015). Being pro or anti EU is an important dimension of European identity and this polarity dimension was incorporated into the game to reflect these strongly held opposing views.

The literature also highlighted that a sense of identity is produced and reproduced through discourse, by language and other semiotic systems (de Cillia, Reisigl, & Wodak, 1999). This observation suggested early in the game design process that it would be useful to reflect different viewpoints about European identity in statements made by the non-player characters (NPCs).

Another essential feature of EU identity is that it is a multicomponent construct (Kaelble, 2009). In the early design stages of the game, our content experts, van der Zwet and Leith (2017) identified four components of European identity as important: (a) costs and benefits of European integration; (b) value-based consideration relating to shared beliefs and norms often expressed through political institutions; (c) cultural considerations which are often a more emotive identification to Europe as a shared cultural entity expressed in pride, shame and attachment and (d) biological/ geographical considerations which are more ethnic driven identification markers. Costs and benefits of European integration seemed to reflect the pro and anti EU feelings that were integrated into the game content as discussed above. Mendez and Bachtler (2016) distinguish cognitive and emotional aspects of European identity, that is what we think about Europe and how we feel about it. Many pro and anti opinions expressed by EU citizens reflect a strong emotional component. The Eurobarometer survey that aims to assess the extent to which European citizens feel a sense of belonging to Europe, includes questions about how attached respondents feel, and how proud they feel about Europe and their own nation (European Commission, 2015), so it was important to explore both emotional and cognitive aspects within the game.

In addition to the theoretical insights about European identity provided by the literature review, the user requirements analysis aimed to collect qualitative empirical evidence from prospective users of the game that illustrated their views about European identity. Interviews and focus groups were carried out with a range of stakeholders to ensure that the game was firmly based on realistic and representative understandings of European identity that are of concern to educated young Europeans. 18 members of staff from the universities of the 5 project partner countries (Scotland, Greece, Netherlands, Germany and Croatia) participated in the interviews, while 21 students and 16 members of staff contributed to the focus groups.

Participants were asked varied questions about their views of Europe and the European Union, but of most relevance to our aim of operationalizing European identity for the purposes of the game were participants' responses to the question: "What would you say are the main components of European identity?". Participants' responses from the focus groups and interviews were transcribed and thematically analysed. Several distinct themes relevant to European identity emerged from this analysis (see Leith, Boyle et al., 2019 for a detailed discussion).

The most frequently expressed views of focus group participants related to political and civic aspects of identity. Responses categorised under political represented observations about specific political philosophies typical of the EU, such as: "Classical liberalist ideas" and "Neoliberal ideologies". Other comments reflected the political unity between nations, such as: "Building consensus" and "Assistance between states", but also noted divisions between political entities "by cooperation EU became a strong block against USA". The civic component is similar in many ways to political, but was used to categorise responses that referred more to the characteristic

values of the EU, such as: “Liberal democratic rule of law”, “Freedom of speech”, “solidarity”, “equality”, “tolerance”, “acceptance” and “acceptance of diversity”.

The culture of the EU was also identified as a component of EU identity with participants mentioning: “Common cultural identity”, “Diversity of cultures”, “Enlightenment, the French revolution and ancient Greek civilization being at the core of EU culture and traditions”, as well as more specific aspects of culture such as “Religion” and “Architecture”. The relevance of the common history of Europe and more recently the EU were also reflected in participants’ statements such as: “The core ideas of Europe was rooted in Enlightenment, the French revolution and ancient Greek civilization”, “Difference in history, but nations share a common past.” and “Shared history, i. e. WW2”. Participants mentioned Geography, both in the sense of the global location of Europe: “Geographical positioning” and the “Common geographical landscape or area”, but also in the sense of the interconnectivity of the countries of the EU: “In terms of borders and connections it gives us a feeling of being connected with other European regions”. Less frequently mentioned, but also emerging as separate components, were Safety and Security: “Peace and respect”, “Being European gives a sense of safety”; Economy: “the common currency of the Euro”; Social: “Willingness to collaborate on the main goal” and Emotions: “Makes one more appreciative of the good things we take for granted”.

Participants’ responses in the interviews and focus groups not only helped to identify underlying issues that are relevant to European identity, many of the statements expressed by the participants were used to inform the content of the game itself, in the text used to express the opinions of the non-player characters (NPCs).

Game Design Models

In addition to the design tasks that helped to define the game content, several game design models provided useful guidance about the range of issues and components that should be considered at the design stage. These models aim to inform the dual goals of producing (1) a well-designed game, and (2) an effective learning experience. Garris, Ahlers, and Driskell’s (2002) influential model proposed that game design requires consideration of how instructional content and game characteristics are integrated to create engaging game activities, and how these aspects will lead to players achieving the desired learning outcomes. de Freitas and Oliver (2006) agree that we need to consider game characteristics but they proposed that, in addition, consideration must also be given to theories of learning, characteristics of the players, and the context in which the game is played. More recently, Arnab et al. (2015) proposed the LM-GM model, advocating that the key elements to consider in designing and analyzing games are learning mechanics (LM) and game mechanics (GM) and how they work together. Learning mechanics reflect the pedagogical principles of the game, and game mechanics are the design aspects that enable learning goals to be realised whilst playing the game.

In the current study we took an eclectic approach to the game design process, aiming to specify the instructional content, relevant pedagogical theory and the learning outcomes for the game, and how the learning outcomes are realized by the game characteristics as well as thinking about the intended audience for the game. To achieve these goals an interdisciplinary team with

complementary skill sets, including the subject matter experts, the game designer and developers and the pedagogical theorists was required.

Defining the Instructional content: What is European identity?

Papadogiannis (2019) noted that European identity is a slippery construct and expressed concerns about whether or not it actually exists! However, for the purposes of the game we had to develop an operational definition of European identity that could be implemented in the game. The literature review and user requirements analysis were useful in confirming that European identity is an elusive concept, but converged on the view that polarity is an important characteristic, since European citizens often hold conflicting but deeply held beliefs, with some citizens very favourably disposed towards the EU and others very much against.

It was also clear that European identity was a multi-component construct. Following careful consideration of the literature review and user requirements analysis, as well as extended discussion between the project partners, 10 key components were selected to reflect the varied factors underlying European identity. Table 1 shows these 10 components along with the definitions used in the game. The components aimed to represent similar levels of abstraction and were named so that they were easy for players to understand and distinguish. This offered an informative first step in operationalising the concept of European identity for realisation within the game.

Table 1: The 10 European identity components and definitions

Component	Definition
Social	interactions with and impacts on other people
Environmental	concern for protecting the environment
Rights and Responsibilities	equal rights and opportunities for all citizens
Safety and security	honest and protective exchange of information
Emotions	how people feel about the EU
Economy	employability and growth of national and EU economy
Political	locus of power and decision making
Historic	common past
Culture	common roots and values, languages, literature, arts and religion
Geography	where we come from/ ethnicity

Pedagogical Considerations and Learning outcomes in the RU EU? Game

Games are very varied in the kinds of learning that they offer, and many theories and principles of learning are relevant to serious games (Gee, 2003; Gentile & Gentile, 2008). The theories that were viewed as most relevant to the RU EU? game are social constructivism and critical thinking. Social constructivism proposes that learning is most effective when learners actively construct their understanding by taking part in a range of authentic, real-world activities that present multiple perspectives on a topic and offer learners opportunities to develop their ideas through social interactions with more knowledgeable others (de Corte, 2012). Serious games can provide learning opportunities that are consistent with these characteristics (Dondlinger, 2007; Arnab et al., 2015) and are appropriate for social games like the RU EU? game.

Critical thinking skills, such as developing arguments, providing evidence to support arguments, testing assumptions and evaluating conclusions are language-based skills of the kind that are highly desirable in Higher Education. Given the complex material involved in European identity, it was felt that much of the gameplay in the RU EU? game would require higher level thinking skills with players selecting, comparing and evaluating linguistic material. Although there is less evidence of games that support critical thinking, Steinkuehler and Duncan (2008) found evidence of higher-level reasoning in games: they coded players' contributions to the online fora in the massively multi-player online game (MMOG) World of Warcraft and found evidence of systems based reasoning, evaluation and argument. Noroozi, Dehghanzadeh, and Talaei (2020) found that game genres such as simulation, strategy and role play are commonly and successfully used in argumentation.

Another important pedagogical theory concerns learning outcomes. These are statements that describe the knowledge or skills that a student should gain having taken part in a particular learning activity (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956; Krathwohl, 2002). Theorists such as Echeverría et al. (2011) and Arnab et al. (2015) recognize Bloom's model as the most influential model of learning outcomes for serious games. Bloom categorised cognitive outcomes in a hierarchy with memory, comprehension and application viewed as lower level outcomes and analysis, synthesis and evaluation viewed as higher-level outcomes. Bloom also provided more detailed accounts of these components. The activities in the RU EU? game aimed to support higher-level cognitive outcomes such as analysis (examine, categorise), synthesis (combine, hypothesise) and evaluation (assess, judge). By emphasizing the contrasting, contradictory and frequently conflict-ridden nature of different people's views, the game also aimed to increase players' awareness of the different aspects of European identity (themes) that are evident in the varied views expressed by the NPCs.

Game Mechanics in the RU EU? Game

Another crucial aspect of the game design process concerns which game features/ game mechanics are best suited to implementing the instructional content and pedagogical learning mechanics to create a coherent game that delivers the desired learning outcomes. Different categorisations of game components at different levels have been proposed in the literature, including game genre, game design patterns (Björk, Lundgren, & Holopainen, 2003), game bricks (Djaouti, Alvarez, Jessel, Methel, & Molinier, 2008) and game mechanics (Arnab et al., 2015).

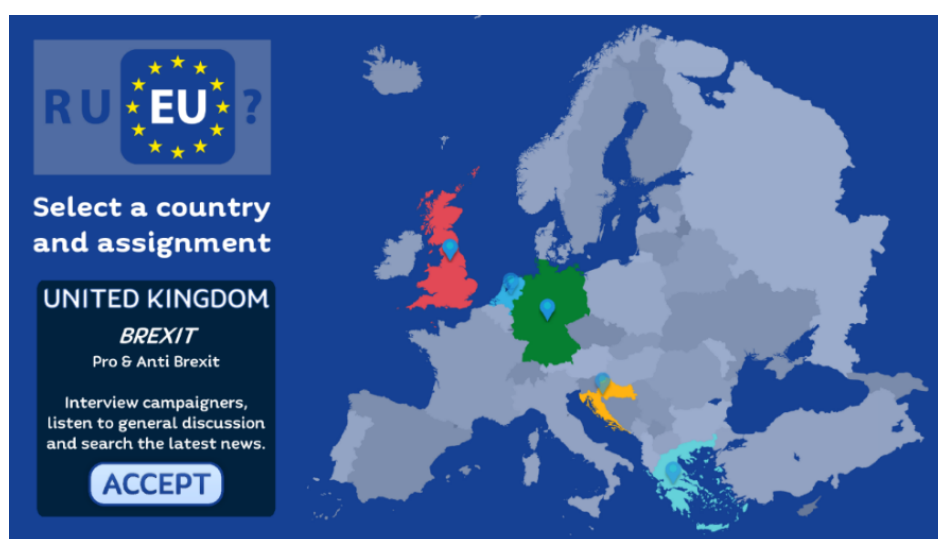
Game genre is an established higher-level classification of games based on the broader activities, actions, challenges and interactions that take place during gameplay (Herz, 1997). Our thoughts about the game content and learning outcomes suggested that the game would involve players dealing with conflictual opinions expressed by NPCs about Europe and European identity. Further discussions led to the idea of a role-playing game with a journalist narrative as a means of achieving this, where the journalist's goal was to collect appropriate material from formal interviews and informal discussions for an article that he was going to write about European identity. The journalist narrative would engage players, provide an overarching storyline and organizational structure to provide a rationale for players for carrying out the game activities and structure them into a coherent experience.

Once the journalist narrative was agreed, this informed the more specific game mechanics, suggesting activities that a journalist might execute in carrying out an assignment. The player's overall goal as a journalist was to track down material for his written report that reflected different views about the topic. In the game players encountered differing views about European identity expressed by different NPCs and engaged in tasks that required them to select questions to ask, categorise opinions into higher level themes, compare and choose statements and select the statements they found most useful. The results of the early design tasks fed into the design specification for the RU EU? Game. We will now look in more detail at how these ideas were implemented in the game.

Developing the RU EU? Game

When the player logs into the RU EU? Game they are presented with a map of Europe with 5 different scenarios. The scenarios are presented to the player on a map, with each scenario linked to one of the partner countries; UK, Netherlands, Croatia, Germany and Greece, as shown in Figure 1. When the player hovers over one of the scenarios, a short description of that scenario is shown.

Figure 1: The map showing the five game scenarios



The scenarios represent issues, situations and contexts relevant within the 5 countries involved in the project. The 5 game scenarios are (1) Brexit, (2) Rights of EU citizens to work across Europe,

(3) Rights of Immigrants, (4) Who is European anyway? - differences between EU nations, and (5) Changes in European identity over time. We do not suggest that this is a complete list of situations where European identity is important; rather we selected these as important for the game.

To ensure consistency in developing the scenarios we used a template that included information about:

- The name of the scenario and the nature of the assignment
- The location: where that assignment took place
- The main actors: which NPCs were involved in the assignment
- The activities: the learning objectives for that assignment with a description of what the player would do
- The tools available for that assignment
- When that assignment would happen in relation to the other game events

The Game Interface and Tools

By clicking on one of the five scenario locations the player accepts that assignment and a mobile phone chat tool appears with the player's instructions for that assignment. This opens the Mobile Workspace Homescreen for that assignment (see Figure 2). Since the journalist is a mobile journalist, the homescreen is the same for all 5 scenarios, apart from the pictures on the wall that depict the location of the scenario, e. g. the map of the UK and photos of a UK town represent the UK (Brexit) assignment. The sequence of actions is similar, but not identical, for each scenario. The player can choose which order to carry out the assignments.

Figure 2: player's mobile workspace Homescreen



Source: Image from Shutterstock.com

To assist the journalist in their overall aim of “writing” an informative article about European identity, the game provides a range of realistic activities that were implemented via a set of game

tools. The tools expose players to differing viewpoints about EU identity expressed by non-player characters in formal (Interview tool) and informal (Discussion tool) settings and include activities such as tracking down and categorizing material, selecting, comparing and evaluating the material with the overall goal of eventually organizing this material into a draft article to be “published”. The tools are the Mobile phone chat tool, the Interview tool, the Discussion tool, the Newsflash tool and the Final assignment tool. Table 2 summarises the game tools, the desktop icon representing that tool and the function of the tool and the learning outcomes for that tool.

Table 2: Overview of the tools in the game

Tool	Desktop Icon	Function	Learning outcomes
Mobile phone chat tool	Mobile phone	The mentor provides instructions for the player’s next assignment	The player reads and acts on the mentor’s instructions about this assignment
Interview tools	Pro and Anti campaigners	The player carries out separate formal “interviews” with leading representatives of pro and anti EU positions on selected aspects of European identity.	The player chooses appropriate questions to ask the interviewee, selecting 3 of the 10 themes The player rates the usefulness of the 3 themes selected for inclusion in the final article
Discussion tool	Bottle of wine	The player observes conversations about European identity between pro, anti and neutral characters in informal situations such as a pub	The player categorises the statements made by the NPCs as pro or anti EU or neutral The player selects the most relevant statements for the final assignment
Newsflash tool	Red newsflash banner at the bottom of the screen	The player views the Newsflashes	The player categorises Newsflash statements with respect to (a) their polarity and (b) the theme they represent
Notebook	Notebook	The Notebook stores all the player’s selected statements.	The player can view the selected statements in their notebook at any time.
Final assignment tool	Laptop	This tool is only available after the player has completed all other tasks. It helps them compile their final report for that scenario.	The player examines all statements in notebook and selects the 2 top rated statements to include in the final report.

Each statement made by the non-player characters in the game and newsflashes was coded with respect to polarity and theme. Polarity refers to whether the statement represented a pro EU, anti EU position or, in some cases, a neutral position. Each statement also represented one of the 10 European identity themes that were identified in the literature review and user requirements analysis. In this way our operational definition of European identity was implemented within the game content.

The game provides an interesting approach to dealing with verbal information at different levels of analysis and abstraction: a) the themes, which are the abstract components of European identity; b) the statements, i. e. what the NPCs say about European identity; and c) the dialogues, the extended discussions between NPCs about Europe in the discussion tool. These varied tasks are typical of verbal interactions that we have in the real world, although frequently we are not aware of the structure underlying the material.

The Mobile phone chat tool is simply a means of providing instructions to the player about his remit for the selected assignment. The Interview tools, the Discussion and Newsflash tools and the Notebook are accessed from the Homescreen. The Interview tool (Figure 3) requires the player/journalist to interview, one at a time, representatives who are known to be advocates of a specific position, either pro or anti the European Union. The journalist is shown the 10 themes representing European identity and has to select the 3 themes that he thinks are most useful in his attempts to acquire material for his final assignment. In the second task for the Interview tool the player has to numerically evaluate the usefulness of his 3 selected statements on a 1 to 5 scale.

Figure 3: Interview tool for the Brexit scenario



Source: Image from Shutterstock.com

The Discussion tool allows the player to listen into discussions between NPCs in a more informal “vox pop” setting such as a pub, where he can find out what “the man on the street” is saying about issues related to the European Union. The player observes a discussion between 3 people,

one who is pro EU (a remainer), one who is anti EU (a leaver) and one who is undecided. All the discussion statements are coded as representing one of the 10 themes. The first activity is a matching task where the player has to match the statements made by the NPCs to pro, anti and neutral positions. In the second activity the player is presented with both the pro and anti EU NPC's statements one theme at a time, and he has to decide which statement he finds most useful for his readership in writing his article. This task tests the player's ability to select the most convincing arguments (whether pro or anti EU) for his readership. In the third task, the player has to select another 3 statements to include in his article.

In the Newsflash tool breaking news headlines are displayed on a red banner at the bottom of the Homescreen, just as they are on many news programs on television. Clicking on the breaking news banner takes the player to the "Latest News" screen where the player's task is to categorise each of the Newsflashes with respect to which of the 10 themes it represents and with respect to polarity (pro EU, anti EU or neutral). This is a drag and drop matching task and helps to increase the player's awareness of the themes that underlie the statements. As they complete the tasks the player collects material in their Notebook that will be used in the Final Assignment tool. The player can look at this Notebook material at any time.

The overall aim for each of the 5 assignments in the RU EU? game is for the journalist to "compile" an article about that scenario for his readers. Once the player has completed all other tasks, the Final Assignment tool becomes available. This tool helps the player to compile their final report for that scenario. The player uses the material in his Notebook to select the statements that are best suited to the position that they wish to present in their article. Clearly the player cannot actually "write" an article in the game. Rather the text is largely pre-structured, apart from (a) the player's 3 preferred themes and (b) the statements to illustrate these themes that are selected by the player. Once they have completed the Final Assignment the player "publishes" the story which offers an overall representation of the player's adopted stance on European identity.

Evaluation of the RU EU? Game

A 3-stage iterative process was adopted in evaluating the RU EU? game with the evaluation combining ideas from established evaluation models (Mayer et al., 2014) from the literature and the RU EU? game design features (Boyle et al., 2018). The early prototypes were tested (Stage 1 and Stage 2) and some suggested modifications were made. Stage 3 was a Pre and Post Evaluation. In this section, we will summarise key aspects of the evaluation which is reported in more detail by Sim, Boyle, Leith, Williams, Jimoyiannis, and Tsiotakis (2021).

Before recruitment commenced University ethical approval was sought and received 11 staff members from three of the partner institutions (University of the West of Scotland, Polytechnic of Zagreb and the University of the Peloponnese) participated in the stage 1 qualitative piloting of the early prototype of the game. Staff members were instructors with enhanced experience in social sciences and educational technologies. Participants played through the game and provided qualitative feedback about the game content, game flow, usability, learning outcomes, game design features and possible improvements to the game. The main strengths and weaknesses identified by this early piloting are summarised in Table 3.

Table 3: Key findings of the early piloting of the RU EU? Game

Key points	Factors
Strengths	<ul style="list-style-type: none"> Meaningful and challenging topics Multiple aspects and perspectives of European identity Rich content, well-organized Good statements and structure of dialogues Interesting and challenging scenarios Interesting game activities Good levels of game flow, usability and learnability Learning outcomes, in terms of exploring and reflecting on critical European identity issues
Suggestions for Improvement	<ul style="list-style-type: none"> Improving game graphics and layout Enhancing character representations Shorter statements Add multimedia content and information (i.e., voice and video) Room for enhancing interactivity and playability of the game

Overall participants liked many aspects of the game content stating that the game topics were interesting, meaningful, useful and personally relevant, and they found that the game offered multiple aspects/perspectives about European identity and helped them to question their identity. Participants generally found the game and the game interface intuitive and easy to use and stated that the game flowed well. They were satisfied with the game usability and could understand the aims of the game and game tools. Participants also reported that they found the game and game features attractive and engaging and that they aroused their curiosity, and helped them to consider different opinions. Specific game activities that participants valued were the scenarios and the narrative.

Positive comments were also made regarding the pedagogical design underlying the game with participants confirming that the game promotes inquiry and self-directed learning. Some participants felt that it was easy to identify clear learning outcomes and goals for the game, while some explicitly stated that the game helped them to understand anti-EU views better, helped them to understand the different scenarios evident in the different countries, or realise how many nations in the EU are facing very similar questions to those faced in their own country. Qualitative data offers further insight into the achievement of the learning outcomes and it is interesting to note that participants comment upon how well the game permitted reflection whilst acknowledging that doing so had minimal impact on their European identity. For example:

The game encouraged me to reflect on a number of important issues related to EU policy and culture. For example, it helped me to a better understanding of anti-EU views.

Although I personally disagree with these views, I found it interesting to explore and reflect on their rationale.

It did make me think about EU identity despite that my thoughts did not experience any kind of change.

My thinking about the EU is now better. The game was indeed helpful in exploring issues related to EU identity; however, it did not have an emotional impact on me.

Stage 2 piloting was carried out with students in the classroom to assess the usability and playability of the game and to assess whether the game was perceived as addressing the intended learning outcomes. The participants were 31 4th year (Honours level) psychology students at the University of the West of Scotland who played the game during a timetabled session and immediately afterwards completed a questionnaire to provide feedback about the game.

The questionnaire asked about (a) players' perceptions of the game tools and activities, (b) players' perceptions of game features, (c) the usability of the game and (d) whether the game helped them to find out about European Identity. Players responded to the items on a 1-5 Likert scale where 1 indicated strongly disagree and 5 indicated strongly agree. The students to like the game content, narrative and graphics, with mean ratings of 4.00 for "The game content and topics are interesting", 3.92 for "The journalist narrative in the game is interesting" and 3.85 for "The graphics in the game are appropriate or attractive". They also agreed that the game tools were engaging, with the interview tool rated (3.76) as more engaging than the discussion tool (3.58) and the Newsflash tool rated as least engaging (3.58). Students were also reasonably satisfied with the usability of the game, with mean ratings of 3.62 for "I could easily carry out the activities in the game" and 3.42 for "The game was easy to use". The game took students between 10 and 15 minutes to play and there was general agreement that "The game was about the right length." (3.50).

With respect to the impact of the game on learning about European identity, students agreed that the game met the learning outcomes in understanding European identity with a mean rating of 3.62 for "The game helped me to learn about important aspects of European identity" and 3.92 for "The game is suitable for increasing awareness of European identity".

Participants were also asked to comment on what they liked and didn't like about the game. Likes included:

It had relevant information and was informative about Brexit

The information provided about EU, something you don't think about every day but totally agree with

The premise shows promise and the point and click format was a wise choice

I liked the layout and look of the game. I liked the statements

In term of dislikes, the students agreed with the staff in phase 1 that the game would benefit from more varied media: “the info is too static - text is not engaging suggest using video clips of public discussions instead”.

Overall the results of the phase 2 piloting were encouraging, suggesting that students liked the game, found the game activities engaging and challenging and provided an interesting means of exploring European identity.

A more rigorous, Stage 3 pre and post evaluation of the final version of the game was carried out with 199 students from three partner institutions (Scotland, Greece and Croatia). This has been reported in full in Boyle et al. (2020), and due to relevance and word limit constraints, here we will only summarise the findings with respect to whether the game met its learning outcomes.

A pre and post questionnaire was developed based on the Eurobarometer survey (2018) as well as questions about European identity. Pre and post responses for the group who played the game (105 participants) were compared with a “control” group (94 participants) who received a lecture, using the same material and graphics of the game, but in a “traditional” academic setting. When asked what the term European identity means to them, the proportion of respondents agreeing that it meant something to them rose from 68.5% before the intervention to 72.4% after the intervention for the game group, and from 69.1% to 77.7% for the control group. Although these results may seem a little disappointing, they do suggest that both methods of teaching led to very small increases in agreement that the term European identity means something to them. There are many reasons why the increases are quite low, but it seems likely that the time between the pre and post-test was not long enough to consolidate understanding of European identity. It is also possible that use of more general closed questions in Phase 3 did not effectively probe users understanding of the extent to which the game achieved its learning outcome of promoting consideration of different views of European identity and may have been interpreted as probing whether their views had changed. As reported earlier, in Phase 1 and Phase 2, participants were positive about the extent to which the game promoted reflection and both quantitative and qualitative responses indicated that the game content and tasks were helpful in addressing the learning outcomes. The insights offered by qualitative and quantitative data also highlight the importance of adopting a mixed methods multi-stage approach to evaluation. Overall the evaluation indicates that, the game provided an engaging and fun alternative to lectures, so it should be regarded as an additional tool in a lecturer’s armoury.

Discussion

In presenting this case study of the prototype RU EU? game, we described a contemporary game-based approach to supporting students in thinking more deeply about European identity with the aim of promoting increased understanding and consequently more tolerance of others’ views. The paper had two main aims: (a) to raise awareness of the utility of serious games as a means of promoting critical thinking about complex social issues and (b) to illustrate the complexity of the game design process with respect to complex societal issues, especially with respect to the operational definition of the complex concepts that underpin the content.

We took a highly interactive approach to designing the game, using existing conceptually driven, top down guidance about game design, and a bottom-up approach that was driven by the learning objectives. We hope that our case study will stimulate the thinking of readers interested in game design by illustrating the general game design process with a specific example, and describing the concurrent challenges that need to be addressed with respect to the specification of the game content, learning outcomes, learning mechanics and game mechanics. The preliminary evaluation indicated that players regarded the game as a challenging, acceptable and enjoyable way of finding out about different perspectives on European identity and the varied activities in the game were valued.

The game scenarios present contextualized dialogue in realistic socio-cultural contexts in both formal situations such as interviews, and more informal social contexts, such as conversations in a pub. The journalist narrative provides a convincing rationale for carrying out the tasks and the game tools provide a range of activities that require choice, selection, comparison and evaluation of language-based units at different linguistic levels, including themes, definitions, statements and dialogues. These activities helped to increase players' awareness of their own views, the views of others, and the wider societal consequences. It is envisioned that these innovative ideas could be applied to or adapted to address many other divisive social issues by offering a controlled environment where differing attitudes and their associated behaviours and consequences can be explored and evaluated. Serious games are increasingly regarded as providing a good medium for learning about complex social issues and Muhamad and Kim (2020) highlight the importance of building societal games on good theory. We endorse this practice, and the literature review and user requirements analysis played important roles in informing the theoretical grounding of the game by identifying key aspects of European identity to be operationalized in the game.

We would argue that grounding serious games in valid theory is especially important in helping games that tackle complex social problems to avoid unintended consequences. Kim and Ewing (2010) found that a game designed to discourage young people from using sunbeds actually encouraged them to use them! Developing games for even more sensitive social topics, such as suicide prevention and intervention (Ong, 2020), requires a thorough understanding of the subject matter to avoid developing games and apps that might increase rather than decrease risky behaviours. We also need to be cognizant of ethical issues. Many social and health issues involve very strongly held and frequently unexpected differences of opinion. European identity is a very sensitive topic and that is why we spent a long time debating what the learning outcomes for the game should be. In the RU EU? Game we wanted to increase awareness and understanding of European identity and not inflame passions.

In taking the game forward we would like to more explicitly address confirmation bias, where people routinely only collect evidence that supports their own views, while ignoring or dismissing others' views. Activities in the game could be modified to include more explicit challenges to uncritical acceptance of views and to force players to evaluate the opinions of others more explicitly. This must be addressed to tackle issues of inclusion and ingrained, personal, institutional and societal beliefs, practices and biases that either implicitly or explicitly encourage exclusion and discrimination on the basis of gender, religion or race.

Although the game has a large number of positives, it is also important to reflect upon the limitations of the game and the processes involved. We acknowledge that distilling the complexity of European identity into a 10 component construct, does not fully reflect all the multiple facets of this highly intricate and often contentious concept. However, we are confident that the systematic literature review and the user requirements analysis establishes a solid base of essential elements that can be to build upon in a future version of the game to reflect a more nuanced conceptualization of European identity. As the Brexit referendum has shown, views and preferences change over time and this could lead to the game content becoming dated. To avoid the Brexit scenario becoming dated it was located the night before the Brexit referendum. The game structure is sufficiently general to allow content relating to another country to be added or updated to support consideration of why a member state may wish to leave. Whilst society and an individual's views may change, what does not change is that people will still differ in their European identity, the polarity of their views, as well as their perceptions of the different facets that underlie these differences. So, the underlying rationale of the game remains sound and the design is flexible enough for the actual content to be adapted as required.

In designing the RU EU? game we initially wanted to include more tools, graphics, images, audio and video but, due to time constraints, the game was largely language based. The early game piloting indicated that while staff and students liked the game, they felt that including more diverse media would enhance the interactivity and playability of the game. Future developments of the game could include more visual and audio material to make it more engaging, possibly even taking advantage of the immersive experiences offered by rapidly developing advances in Virtual Reality (Feng, Gonzalez, Amor, Lovreglio, & Cabrera-Guerrero, 2018).

A general problem with developing serious games is that they are resource intensive in terms of time and skills required. Despite this, interest in serious games is set to continue as Metaari's 2019-2024 Global Game-based Learning Market study suggested that: "Revenue for game-based learning and education is projected to reach more than \$24 billion by 2024" (Adkins, 2019, p. 20). This increased interest is likely to be sustained by the increased use of online delivery of teaching and learning at all educational levels as a result of the global COVID-19 pandemic in 2020 (Green, Burrow, & Carvalho, 2020).

To conclude, this paper presented a case study of the design and development of the RU EU? game which aimed to increase players' awareness of the complexity of European identity and values by engaging players in a series of connected critical thinking tasks. It is hoped that our case study will support more general advice about game design by illustrating the different processes involved, as well as the need to think about several different aspects of the games concurrently. We envisage that this approach could be applied to or adapted for use with many other social problems where stakeholders hold contrasting opinions. Understanding others' views and accepting their right to hold them, is a first step towards a more inclusive society.

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