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The Sociological Imagination Machine (S.I.M.): Using game elements to help learners apply the sociological imagination

Hilary Wheaton
Learning Design Team
Online Education Services

David Hall
Learning Design Team
Online Education Services

A leading online education provider used gamification and a custom built technology to assist the understanding and application of the sociological imagination in first-year Sociology students. In a sixteen-week period, a collaborative team including learning designers, teaching staff, education technologists and a graphic designer, devised and developed a gamified weekly activity for students featuring randomising and roleplay mechanics. Results indicated that the use of gamification improved students' engagement with their class group and assisted them in learning key concepts. The considered and purpose driven use of gamification has proven to be a valuable tool in online learning.

Keywords: gamification, sociological imagination, engagement, collaboration, technology, randomising, roleplay, learning design, social constructivism

Introduction

Online teaching and learning encounters a variety of problems relating to student engagement that are both similar and different to those experienced "on campus"; such as participation in weekly discussions of academic concepts. Approaches to resolving these issues vary, and increasingly the use of gamification to assist with engagement and the learning of complex cognitive material has resulted in positive feedback from both students and staff (Domínguez et al., 2013; Simpson & Elias, 2011). Gamification, defined as "the application of game elements to real life tasks, which can help change behaviour, improve motivation and enhance engagement" (Cassells, Broin & Power 2015), has been applied to education for decades, though new possibilities provided by technology have led to a recent resurgence of interest in the topic. The mechanics of gameplay (or parts thereof) can be used in novel and functional activities that may offer students alternative methods of learning without necessarily requiring the expense of fully coded and realised game environments.

The online education provider was keen to explore gamification as a potential solution for decreased student engagement in a first-year Sociology unit. Although still high, student satisfaction scores had slightly decreased the previous teaching period resulting in a need to recover and surpass the high student satisfaction scores previously attained. In addition, teaching staff endeavoured to identify why a decline in engagement on the unit's discussion board had occurred, with only suggestions that the unusual decline may have simply been a result of the annual timing of the teaching period or features of the cohort. A potential factor was that this unit required students to understand, develop and use their sociological imagination, a concept considered central to the discipline of Sociology. Use of the sociological imagination requires the ability to "think yourself away from the familiar routines of everyday life" (Mills, as cited in Hayes, 2015, p.3) and is a cognitively and socially challenging critical analysis task, which faculty often cite as difficult for students of sociology, and likely exacerbated by the online medium.

Simpson and Elias (2011), suggest that games are "tools through which cognitively complex learning may take place, resulting in greater critical analysis skills" (p. 43). With this statement in mind, learning designers at the education provider proposed the use of elements of gamification, specifically scenario and role-playing based techniques. These were used in the introductory sociology unit to encourage students to use their sociological imagination as part of a gamified weekly activity, therefore enhancing their critical thinking. As a result, it was expected that engagement would increase on the discussion board via interaction with other students, which itself would determine better understanding of the unit content resulting in increased overall grades.

Sociology and the sociological imagination in practice

Sociology, the study of human society and our role within it, requires an understanding of day to day life to allow an objective view of the world and the way in which it functions. Gallmeier (2004) recounts his introduction of students to sociology stating that it forces them "to look at the world differently. I warn them they will need to acquire a pair of sociological glasses to begin to understand structural explanations versus individual explanations, or what is often referred to as human nature or personalized causes, to explain social behavior and social problems" (p.86). At an early stage of their degree, Sociology students must engage with critical thinking as a fundamental skill in all aspects of their course. Specifically, they require mastery of the sociological imagination, requiring them to look at the world through other people's eyes and consider new perspectives different from their own (Gallmeier, 2004). Students often need to make a jump on a cognitive and emotional skill level (specifically empathy) to exercise their sociological imagination. Without use of the sociological imagination - many of the assessable components of even a first year sociology unit can become difficult. The concept, and the required skills that accompany it, can be difficult to convey; videos, readings, and lectures alone can fail to help students step outside their own perspective, and instead carefully constructed activities are required. But still, students need to be motivated to achieve this change in perspective.

An additional problem in sociology, also related to the use of the sociological imagination, is that students are required to discuss and challenge each other on these different perspectives at a critical level. Students may be happy to engage in debate when supporting their own non-evidential view, as they employ passion and personal experience to aid their discussion. But educational debate needs to occur at a more sophisticated level, in which students must utilise their critical thinking to analyse, develop, and support their argument when challenged by others. Within sociology, students are not only challenge with academic debate, but also the additional demand of using the sociological imagination. It was therefore important to find a way to engage students with each other, and their use of the sociological imagination, so that they would participate in the discussion boards. Another key reason was to improve grades as research by Chen, Lambert and Guidry (2010) has indicated that overall, students who participated in discussion forums tended to have better performance in their course.

Utilising gamification and the technology

Previous studies suggest that "games are motivating because of their impact on the cognitive, emotional and social areas of players" (Domínguez et al., 2013, p.381), therefore applicable and useful in education. The sociological imagination lent itself to the concept of roleplay, a method used in many games, which would allow students to achieve the change in perspective and motivation to engage on a social, cognitive, and emotional level with the weekly activities. Thus, we built gamified elements into the first year unit that centered around the idea of roleplay, in which random characters and traits would be generated for students to share with each other and prompt critical thinking, sharing of perspectives, and discussion.

Roleplaying games (RPGs) had previously been used in on-campus units to engage the sociological imagination (see Simpson & Elias, 2011), though the focus of this gameplay was more traditional with dice-rolls that generated statistics and character traits. However, the use of gamification was proven to have had a positive impact:

> "Through the mechanics of RPGs, we found that students employed already-internalized social scripts but were empowered to view society through another person's point of view. This change in perspective allowed them to develop a sociological imagination and identify linkages between individuals and larger social structures. This led to critical analysis and a reevaluation of their worldviews. The game created a distance from the students' personal life [sic] that allowed for greater objectivity" (Simpson & Elias, 2011, p.52).

A carefully structured tool therefore needed to be developed to operate within the course learning materials to encourage students to roleplay.

The initial idea involved students creating a character based on a pool of attributes using a randomising tool throughout the 12-week course. Within the activities of the learning material for each week, students would consider the issues from the perspective of this particular character to exercise the sociological imagination. When considering how this would be applied, it was determined that, due to the variety of topics throughout the course, it would be difficult to make one character relevant and relatable to each week. More practical was the idea to use the randomising tool to generate relevant attributes on a weekly basis.

While generating new characters each week overcame our initial problem, the idea lacked a unified narrative to tie each weekly activity together. Using the focusing statement "explain it to me as though I know nothing", the narrative was based around a future sociologist who had lost historical archival records of all societies as a result of a disaster. As seen in Figure 1, communicating with the students via video each week (yet "from the future"), this sociologist would enlist students to research and generate sociological information with the assistance of a machine called the S.I.M. (the Sociological Imagination Machine). The story explained that the S.I.M. had the capability to transport students to anytime and anyplace, so that they could complete their tasks each week.

On "launching" the S.I.M., students would be presented with an image and text which had a number of attributes randomly taken from a pool of possible outcomes. Figure 1 shows the activity from a week which discussed urbanisation. Although the scene was set in Australia, students could be provided with a variety of outcomes based on the attributes of era (in the example below, "1950-1970" was the era which was generated. Other potential outcomes were "2000-2010" and "2010-2015"), and; family type (in the example below, "an Italian family" was the family-type which was generated. Other potential outcomes were "a farming family" and "professional couple"). Students were then required to ask the family a series of questions and report back. To achieve this, students were required to answer from the family's perspective. In the example in Figure 1, the text read (with randomized attributes italicised):

> I found myself in Australia between *1950-1970* where I met an *Italian family (undecided about where to live)*. I asked them about the opportunities urbanisation presents to people living in cities that are otherwise not available to people living in small towns or villages. I also asked if they think urbanisation has affected the social environment negatively or positively for them. This is what they said:

Students could then begin their discussion post by copying this text via a button on the page.

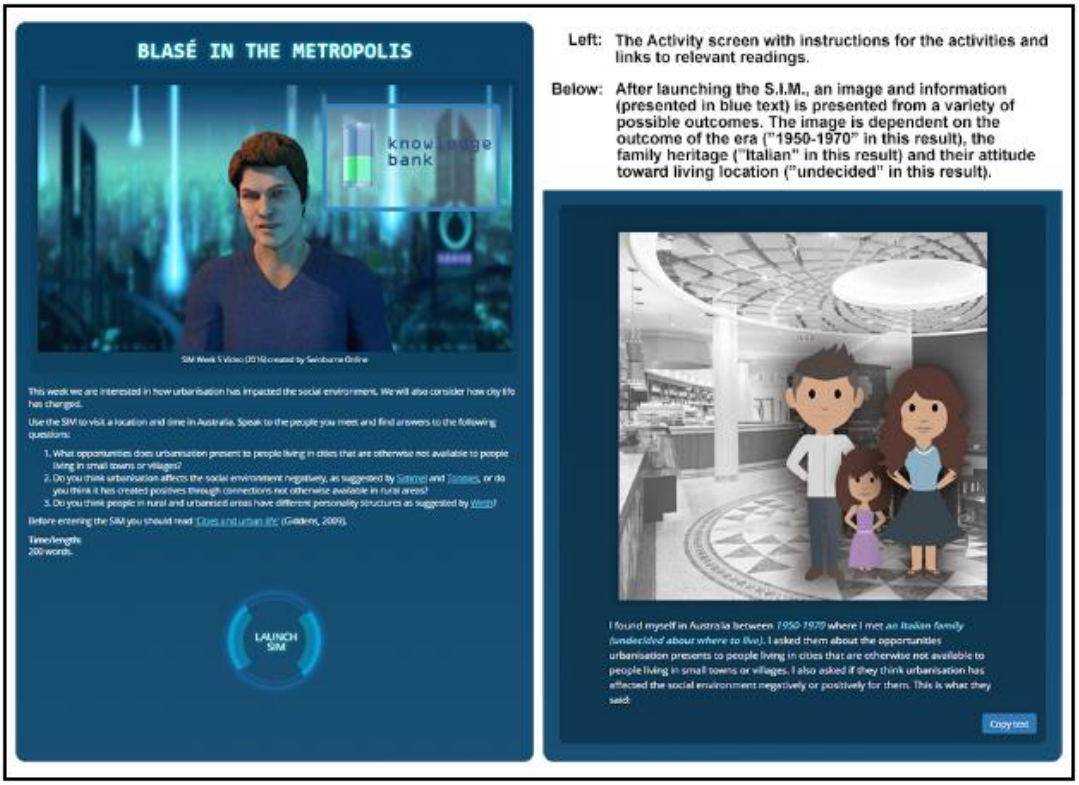

Figure 1: Version of the *Randomiser*

The weekly tasks tied in with the learning objectives of that week, creating a structured scenario that required students to read the relevant readings and undertake the necessary additional research to successfully complete the task. This ensured unit alignment, and guaranteed that the gamified elements served to both assist with the application of the sociological imagination and understanding of key concepts relating to assessment.

Technology was employed in several ways to achieve the roleplay required for the S.I.M. Firstly, the education technologists worked to produce code that allowed a series of randomised choices to be generated at the push of a button, therefore offering students a set perspective to which they had to respond. Additionally, a video was recorded using software to simulate the future sociologist, offering a way for him to communicate with students. Thirdly, based on the randomisation that occurred, a set of images custom developed by our graphic designer

would be deployed along with prescriptive but modified text that described what the students encountered after activating the S.I.M. Thus, each week the students were presented with a visual, audio, and textual tool which employed gamification in the form of narrative and mechanically randomised elements.

Student response

To determine how the students responded to the S.I.M., we deployed an anonymous survey in addition to our standard feedback mechanisms and results review. This allowed students to respond directly to questions about their interaction with the S.I.M. tool, specifically whether they believed it assisted them to better understand the learning materials and promote meaningful engagement with other students. Although respondent numbers were low (N=47 which was 13% of the overall cohort), the results were positive with 93.5% of survey respondents taking part in the weekly activities. Of those respondents, the majority suggested that it assisted their learning (Figure 2).

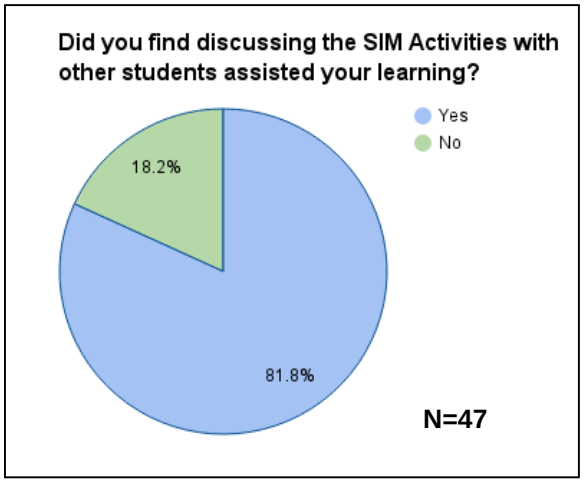

Figure 2: Results from student survey

This assisted learning was also reflected in a comparison of overall cohort grades from the previous delivery of the unit. There was a decrease in fail rates from 33% to 23% (Figure 3) which resulted in an increase in Distinction, Credit and Pass rates (Figure 4).

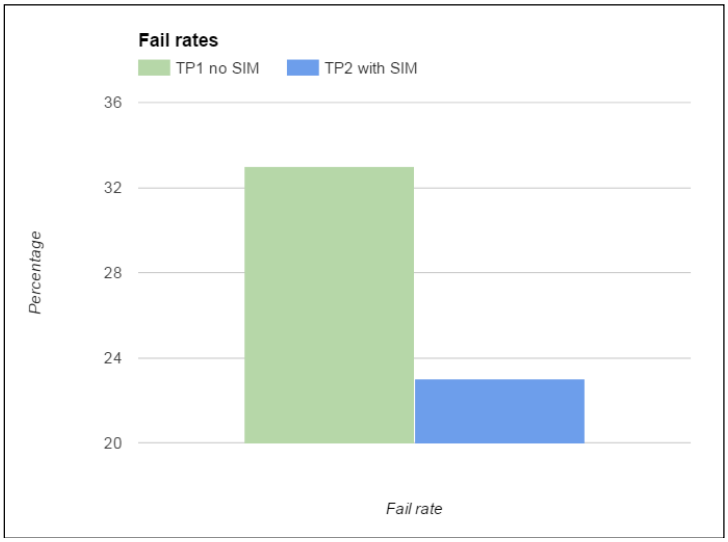

Figure 4: Fail rate comparison from two different teaching periods

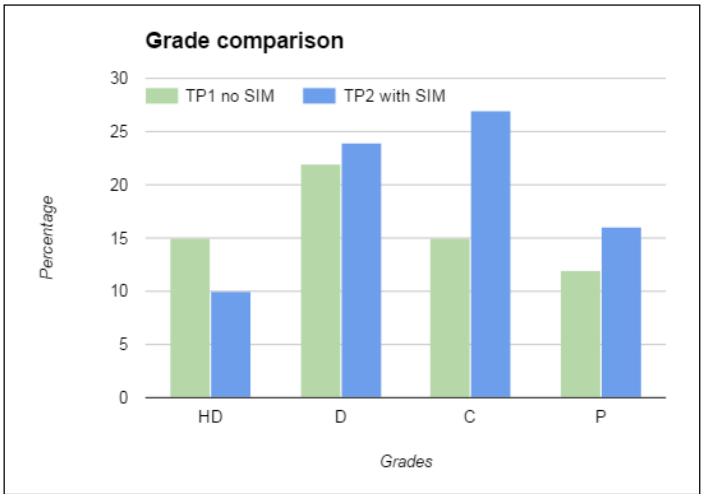

Figure 3: Grade comparisons from two different teaching periods

In addition, the teaching staff noted an increase in the use of the discussion board and meaningful interaction and debate between students. Although the student voice through the survey was overwhelmingly positive, there were some students who preferred more traditional activities. This was exemplified in a comment from the following student who said "I don't think the SIM provides any benefit to the learning and I would prefer we had questions that we needed to answer and we could post on the DB [discussion board] and discussion could stem from there".

However, the suggestion that the S.I.M. encouraged discussion board use and supported meaningful interaction for the majority of students came through in the following qualitative feedback:

> "[The S.I.M.] was an essential part of the TP for me".
>
> "I like that the SIM put me on one side of an argument. This challenged me to view it from another perspective and allowed for respectful debate."
>
> "This allowed the activities to be a little more entertaining. It would be interesting to have these similar activities used in other units"
>
> "It honestly helped me understand the materials, and the interaction helped me put theory into practice, and personally helped me remember more!"
>
> "I liked the visual aspect and interactive process - much more motivational than just having access to reading material."

The increase in results, when considered in conjunction with the survey feedback, suggest that the S.I.M. played a pivotal role in this improvement of student grades.

The combination of both increased and meaningful engagement in the discussion board with an increase in academic results, offers an opportunity to further consider the value of social constructivist learning in certain online environments and within specific disciplines. Sociology and roleplay lends itself to a social constructivist pedagogy, and the S.I.M. gamification tool capitalises on this aspect.

Conclusion

This paper suggests the value of purpose built and designed gamification technologies in online learning and the value of collaboration between learning designers, education technologists, graphic designers, and teaching staff. Importantly, gamification can be implemented within a short time period and offer a substantially intellectual and visual engaging aid to enhance the understanding of complex concepts such as the sociological imagination. The combination of visual, audio, and textual elements ensured greater accessibility to the weekly material. The technology behind the S.I.M. can now be utilised in additional units at the online education provider based on their suitability for gamification. If suitable, the narrative and other elements can be adapted to the discipline content and context. While it is important to ensure that the introduction of gamification elements are fit for purpose, we would suggest that the collaborative approach to integrating gamification within a pedagogical framework is instrumental in increasing the likelihood of success. The data shows that gamification can improve students' engagement with their class group and assist them in learning key concepts such as the sociological imagination.

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