

A Game-Based Tool for Cross-Cultural Discussion: Encouraging Cultural Awareness with Board Games

Christian Nyman Gomez¹, Björn Berg Marklund²

¹University of Skövde, christian.nyman.cng@gmail.com

²University of Skövde, bjorn.berg.marklund@his.se

Abstract

This paper studies whether a board game can effectively raise awareness of cultural differences and their impacts on everyday life. Furthermore, the paper compares whether a board game might achieve this goal more efficiently, or differently, than more traditional ‘open discussion’ exercises. To conduct this study, a board game that present players with cultural dilemmas was designed and developed based on a comparative model of individualistic and collectivistic cultures. The game’s ability to generate discussion and engagement with cross-cultural topics was evaluated and compared with traditional discussion exercises in a series of experimental studies conducted in SFI (Swedish For Immigrants) classrooms. A follow-up survey was also conducted to compare long-term effects between the board game and the traditional discussion exercise. Results indicate that the game benefited participants’ discussions and reflections regarding cultural awareness directly after the game session, and that they retained their attitudes and perceptions of cultural awareness better than participants of the non-game exercise.

Keywords: Cultural awareness, Cross-cultural training, Serious board games, Classroom games

1 Introduction

As societies are becoming increasingly multicultural, developing efficient means for fostering mutual understanding and respect of cultural dissimilarities is becoming more pressing. As expressed by scholars such as du Toit [1] and Lane and Hays [2], absence of mutual cultural understanding in a community can lead to misconceptions which, in critical and sensitive scenarios, can lead to conflicts. With this in mind, this paper focuses on examining how games, or more specifically board games, might be used in multicultural classrooms to foster cultural awareness and reciprocity.

This paper builds upon previous studies and games made with the intent to examine and support cultural understanding and cultural training. Some of these previous efforts aim to use digital games to convey information about non-western cultures to train businesses and military personnel in managing cultural differences and teach the importance of cultural understanding and reciprocity (e.g., BiLAT by Lane and Hays [2], and Living World by Zielke, et al. [3]). Others, such as Maseltov [4], try to facilitate integration and prevent social exclusionism by encouraging immigrants to interact with local populations by the use of pervasive game mechanics. There are also examples of non-digital products being developed and employed for the same aims, such as The University Game [5], which uses analogue game-like tools like cards to encourage university students to reflect upon dilemmas and incidents that can arise in situations and environments where dissimilar cultures collide.

Building on this previous research, and taking the challenges outlined by previous cross-cultural training games into account, this paper ultimately aims to contribute to the topic of

game-based cross-cultural training by answering the following questions: what considerations are important when developing/designing this type of game, and; how does a game-based discussion exercise perform in comparison to a non-game discussion exercise when it comes to raising cultural awareness?

To answer these questions, a board game was developed in collaboration with a Swedish firm that does consultancy work and hosts seminars and workshops on the topic of cultural awareness. Similar to The University Game, the game developed is an analogue game with cards describing critical incidents. These incidents were created using a model produced by Bhawuk [6], in which individualistic and collectivistic cultures are compared to one another.

To evaluate the performance and effectiveness of the developed game, an experimental field study was conducted. In the study, attendees of Swedish For Immigrants (SFI)¹ courses participated in a series of sessions where they either played the developed game, or were part of a control group that had a non-game-based discussion exercise. After these sessions, the participants filled out a survey based on the ‘culture awareness scale’ as proposed by Rew, et al. [7]. The purpose of the survey was to discover if there were differences in cultural awareness between individuals of each group. Three weeks later participants filled out the survey once again to see if there was any latency effect. In addition to the surveys, the study is supplemented with qualitative data from observations made during the exercise sessions. The purpose of the observations were mainly to note whether there were any differences in the social “atmospheres” in the two groups, and in how individual group members participated and engaged in discussions. Ultimately, the coupling of these methods intends to show how the use of games can affect both groups and individuals when it comes to discussing cultural differences.

2 Background

In order to discuss the problem that the developed board game intends to solve, this chapter will provide an overview of research on culture and cultural integration, potential challenges encountered in past and present integration processes, as well as previous work on the creation and use of tools meant to foster cultural awareness and facilitate integration. The background also serves to contextualise the conducted study by describing the Swedish integration model and how it may differ from other countries.

2.1 Framing culture and cultural understanding

Since culture, and facilitation of the development of individuals’ understanding of cultural differences and traditions, is at the core of this research, it is important clarify what definition of the term ‘culture’ this study is using as its foundation.

Culture can be defined in many ways, and just describing it in a dictionary manner would not only be fairly dull, but would also blunt the concept’s complexity and nuance. Hutnyk [8], for example, state that it is not possible to codify the term into a strict definition as its

[1] Swedish For Immigrants (SFI) is a government-funded programme open to non-Swedish-speaking immigrants, migrants, and refugees. The programme’s focus is mainly to introduce people who have recently arrived in the country to the Swedish language, but it also serves to introduce them to Swedish customs and culture.

meaning is always changing, and because of the large variety of categories the term can be divided into. It is also debatable if culture is something that people 'possess' as a natural product of their upbringing, or if it is something that they 'acquire' and maintain through practice [8]. According to Hutnyk [8], culture is a mixture of identity, tradition, and change, all at the same time.

Culture can also be defined from a more pragmatic standpoint. Zielke, et al. [3], for example, describe culture in terms of its ultimate purpose: culture serves to unify groups of individuals by creating a communal framework through which they can better understand and relate to one another; and, it is an important mechanism which let groups of people feel affinity. They describe culture as information that is socially transmitted, and that it affects peoples' behaviours by facilitating communal gregariousness and, ultimately, survival [3]. Boyd and Richerson [9] have a similar definition of culture, and describe it as information with the capacity to influence people's behaviour which is obtained from other people through teaching, imitation, and various forms of social transmissions. This cultural information is then spread across members of a population through interaction, which means that culture is something that proliferates by means of exposition. If a person does not exhibit the cultural signifiers appropriate to a certain community, the person will be perceived as not being of that culture. If there is an absence of understanding of cultural differences or nuances, the person might also be perceived as fundamentally different, whether in a positive or negative way [9, 10].

From these particular interpretations and descriptions, culture can be seen as a model, which can be more or less formal and explicit, that describes the "correct" way to behave and act within a certain given social or societal context. Behaviours which are not appropriate within a specific cultural context will often be discouraged or suppressed, in service of maintaining the social glue that bonds a community together [9]. Maintenance of culturally informed norms and behaviours can have positive effects for a community and its individuals, but it can also be problematic when groups of different cultural backgrounds need to integrate with one another, or when individuals start pressing on the cultural boundaries established by their communities.

Within multicultural societies, du Toit [1] argues, negative consequences such as social and political problems often arises when the responsibility of cultural understanding is unevenly distributed. One of the reasons for this is because minority groups have to put in a significantly higher amount of effort when pursuing their rights and defining their place in society, as opposed to larger groups [1]. This has potential of inciting disputes between cultures, religions, nationalities and ethnic groups [1]. What is problematic is not the cultural variation per se, but problems of communication which do not only concern the presence of common language but other aspects which are needed for meaningful communication as well [1]. Other scholars, such as Lane and Hays [2], also agree that having low cultural knowledge and understanding can have negative impact when meeting someone with a dissimilar cultural background. The outcome of meetings between groups of people are highly informed by the individuals' own expectations and attitudes, which are in turn influenced by their communal cultural background [2]. Therefore Lane and Hays [2] believes it is a crucial trait of both individuals and communities to be able to understand other cultures and be aware of their differences. If this trait is not nurtured, miscommunications can occur and, in critical scenarios, conflicts can potentially arise.

2.2 *Previous work on Serious Games for cross-cultural training*

As previously mentioned, there are numerous examples of games being applied for the purpose of disseminating or increasing cultural awareness and understanding. BiLAT, for example, is a business oriented serious game which aims to coach players in intercultural communication and competencies [2]. Others, like Living World, are used to prepare military personnel for deployment in foreign countries [3]. There are also games like Maseltov that

aim to facilitate socialization and integration by introducing migrants to new traditions as well as cultural and social norms [4].

Living World [3] is primarily used by the military to prepare soldiers that are assigned to tasks in foreign countries. One of the aims of Living World is to let the user learn about sometimes high-stakes consequences of acting incorrectly in other cultures in a safe way in an immersive 3D environment. The game allows the player to visit new cultures to explore and interact with the local population to fulfil certain goals, which is a process which the developers consider to be integral in integrating oneself in new cultures. Real life interaction, according to Zielke, et al. [3], is not without consequences and behaving in an inappropriate way may affect the attitude of locals towards a visitor. These tense dynamics are also represented in Living World. The amount and outcome of conversations, the amount of friends the player gained during their interaction, and the average opinion the NPC (Non-Player-Character) citizens have of player at the end of a game session presented in a final scoreboard. This scoreboard helps the player reflect on their performance, and gives feedback about which behaviours they might need to change. The game BiLAT [2] has a similar purpose and approach, and aims to teach players about cultural customs and behaviours through simulated interactions with other cultures. Acting in culturally inappropriate ways (some of which are obvious, some of which are subtle), can have negative consequences to the meeting and cause NPCs to mistrust the players' honesty and competence. Forfeiting trust can result in the NPCs of the game not being as willing to negotiate with the player, and might disband the player from the meeting room altogether. According to the developers [2], trust underpins much of Middle Eastern cultures' business procedures, and the game aims to give players the opportunity to practice correct behaviours, as well as experiencing incorrect ones.

Maseltov is an example of how games for mobile devices can be used to not only prepare users for eventual social interactions, but to immediately encourage them to do so [4]. One of its major purposes is to counteract social exclusion and facilitate cultural integration and cross-cultural interaction [4]. The game aims to let immigrants partake in everyday life of the host society by lessening the severity of language barriers, and to teach them about cultural dissimilarities [4]. Maseltov does this by getting the user to perform social activities in a pervasive but playful way. The game consists of two parts, one part is a virtual world in which the users can train their language skills and cultural knowledge, and the other which encourages the user to head out to the real world to completing social interaction tasks together with people from the host society [4]. The game encourages participation through points, quests and various types of rewards.

Not every game with the aim of giving the user cultural knowledge is digital. Damron and Halleck [5], for example, created a card game called The University Game. The game's stated purpose is to provide players them with the cultural understanding they need to be able to avoid situations where misunderstanding usually occurs. The University Game in particular aimed at international university students with knowledge of the English language. As is the case with the game created for this study, the cards in The University Game were created based on the cross-culture assimilation model described by Bhawuk [6]. The cards in The University Game consists of displayed text portraying a "critical incident" (a situation in which cultural differences may lead to an incident), together with a number of answers serving as explanation for the incident and a description of why the different explanations of the answers are correct or incorrect [5]. Thus, The University Game's design is akin to a quiz game intended to teach about correct and incorrect behaviours.

2.3 Defining cross-cultural challenges through cultural dimensions

Cultural integration and understanding is, no doubt, a complex and nuanced issue. The board game created for this study needed to present cross-cultural encounters that evoke the tensions described by du Toit [1] and Boyd and Richerson [9] in order to let the participants dissect and discuss them. It is, of course, important that this is done in a way that does not

discourage or judge, but in a way that encourages introspection, understanding, and reflection.

Hofstede and Tipton Murff [11] present six dimensions which can be used to categorise or describe characteristics and differences between cultures, which makes them useful as guidelines when it comes to designing 'tense' encounters. The six dimensions are Power distance, uncertainty avoidance, individualism, masculinity, long-term oriented and indulgence.

Power Distance – A high score in this dimension would mean population to be expecting but also accepting power inequalities. This can be observed in the culture of a country such as the Philippines. At the same time the culture of New Zealand, which is a country with a low score in this dimension, the opposite can be observed and equality is expected by the population. Taiwan and the United States of America are two countries having scores close to one another but with Taiwan having a score slightly higher on Power Distance it should be more accepted with inequalities there than it is in the United States [11].

Uncertainty Avoidance – Japan is a country having a high score in this dimension as the culture perceive differences as threatening and people of such countries prefer situation to which they are well acquainted with. Cultures with low scores are more curious about dissimilarities and have no significant problem with chaotic situations [11].

Individualism – In individualistic cultures it is the individual achievement that is of the most importance. Countries with a high score are for instance the United States and Australia where acting as individuals is more common and also preferred. South Korea and Taiwan are some of the countries scoring low in this dimension due to the cultures of those countries being more collectivistic oriented and are seeing themselves as being members of a larger group [11].

Masculinity – Countries with a high score in Masculinity, for example Japan, encourage competitiveness, and relationships of conflict or opposition are seen as natural. Other cultures with low scores, for example Sweden, welfare is to be preferred. Population of a low scoring culture consider relationships where general agreement can be obtained to be normal [11].

Long-Term Orientation – Cultures with a high Long-Term Orientation score (e.g., Hong Kong) emphasise self-improvement, pragmatism, and the pursuit of long-term goals. Moral reasoning and expectations of immediate results are more prevalent in cultures with low scores in this cultural dimension (e.g., Canada) [11].

Indulgence – Freedom, socialization, and life enjoyment are predominant features in cultures with a high Indulgence score. According to literature from which this dimension originate [12], cultures scoring low on indulgence are described as "restrained" cultures. In restrained cultures, personal freedom is more limited, and personal duty is more prevalent [11].

3 Designing a game for cross-cultural training

There are many available examples of games being applied for the purpose of disseminating or increasing cultural knowledge. Some are business oriented [2], others can be used to train military personnel [3]. There are also games that aim to facilitate integration by introducing migrants to new traditions as well as cultural and social norms [4]. This section will use some specific examples of Serious Games that have been developed for these different purposes. Accompanying studies to the games that detail the designs, development, and effectiveness of the games will be provided as well. Other features of interest which are considered as important for the game to serve its intended purpose will also be highlighted.

3.1 Design Rationale – as based on previous research and designs

Whereas the games Living World [3], BiLAT [2], and Maseltov [4] have high requirements in terms of resources, tech- and game literacies, and technical infrastructures where they are

to be used, the game developed in this study aims to pursue the simplicity and low usage-threshold achieved by The University Game [5]. With the option to choose the number of critical incidents to use in a game session, the teachers can adjust the game to fit within the timeframe available to them. The modular way in which the game is constructed also allows teachers to adapt the game to focus on certain topics that they want to discuss in their classrooms.

It is important to note that most previous serious game titles found in literature focus on conveying knowledge about cultural norms in order to teach correct behaviours. For example, whereas The University Game also uses critical incidents, it provides answers to the correct and incorrect ways to handle critical incidents to its players. The primary goal of the game developed for this study, however, was to foster cross-cultural dialogues and raise cultural awareness. With this in mind, the game has been designed to pose dilemmas and questions to the players, but not to provide them with definitive answers to these dilemmas. The ambition of the game is to encourage players to contemplate their own culturally informed behaviours and how they might either clash or synergise with the culture they're currently surrounded by. Thus, the game is not strictly about knowledge generation in the sense of learning correct answers and procedures, but rather about awareness generation and attitude change.

The game created and used in this study (shown in Figure 1), titled *Hur Skulle Du SÄga?* (translation: *How Would You Say It?*), was made in cooperation with a consulting firm called Management Molecule Dynamics Tools. The game mechanics and rules are relatively straight-forward, which makes the game easy to learn and start using. As previous research has indicated that the cultural dimensions of individualism and collectivism can affect how people play games [11], the game offers both competitive and cooperative game mechanics and 'modes' of play. Competitive players may, for example, challenge other players, and more cooperatively oriented players can focus on facilitating or expanding on other players' efforts. In order to encourage all participants to get involved in play sessions, the game is turn based and every participant actively contributes to the events of each turn.



Figure 1. *The version of the board game used for the study, with all its components.*

Briefly summarised, the board game only has a few components: currency tokens, red 'disagree' and green 'agree' cards (one set per player), and twelve cards describing the critical incidents. The critical incident cards are used to provide player groups with cultural situations and dilemmas to discuss. Players take turn drawing critical incident cards. The player who draws a critical incident card reads it aloud, and describes their own views of what the critical incident might mean, why the incident might have occurred, and how they think it could be handled in an amicable way. Beyond the critical incident cards, the game also involves the use of red and green 'opinion' cards. Every player has their own opinion cards, which they use to show whether they agree (green) or disagree (red) with the incident solution proposed by the player who has drawn the critical incident card. In the game there are also silver coins that serve as score keeping markers, and the player who possesses the highest amount of coins

at the end wins the game. Players receive silver coins when a group member agrees with their incident descriptions and solutions.

For the non-game discussion, the critical incidents described on the game's cards were printed out to be used in the group which was not to be playing the game. Rather than having their discussion centred round the rules and materials of the card game, they were set to perform a more traditional open discussion exercise using the same incidents.

A total of twelve critical incidents were created for the version used during this study. To exemplify the nature of the created incidents, the card shown in Figure 1 reads as follows (translated from Swedish): "One of your classmates has been to an event (for example, a party) at a friend's place. The friend, and most of the other people at the event, were locals. Your classmate tells you that they felt "left out" while at the event. What could the reasons for this be, and do you have any advice for how to solve them?" While the incident may seem fairly mundane, it is designed to be an everyday relatable occurrence rather than something monumental or life changing in order to encourage group members to share their own experiences of similar incidents and reflect on what cultural components might potentially play a role in them. The incidents also don't have firm correct solutions, but are rather meant to provide discussion frameworks.

The design of the critical incident cards themselves is informed by the previously mentioned cultural dimensions presented by Hofstede and Tipton Murff [11]. Although the dimensions might be a simplification of complex and nuanced cultural phenomena, having a general framework of the ways in which cultures can differentiate from each other was useful for inventing scenarios where cultural norms could be challenged for the purposes of cross-cultural training. Another strong influence is the Individualism and Collectivism Assimilator (ICA) proposed by Bhawuk [6], which itself was informed by an earlier version of Hofstede and Tipton Murff's cultural dimensions. Much like the ICA, the incidents created for this board game were created by utilizing cultural differences identified by culture and integration scholars, and scenarios were designed to encompass elements that might be acceptable or pedestrian in one culture while being considered rude or noteworthy in another. Using the previously described incident card as an example, cultural dimensions was described in the design framework as:

"Card 12. In individualistic cultures and collectivistic cultures social gatherings may not have the same meaning. In individualistic cultures social gatherings are informal whereas in collectivistic cultures formality is maintained (Hofstede & Tipton Murff, 2007). This applies also when it comes to social interaction. What to say and how to act in social situation are often more formal in collectivistic cultures than individualistic cultures (Bhawuk, 2001)."

So, while the text in the card can seem fairly innocuous, evoking the feeling of otherness in a social situation, even when the invitation was extended by a close friend, it was done with the intent to discuss a situation that might be relatable to some players, but not others. The other incident cards used different tensions found in the cultural dimensions in the source literature [6, 11].

The critical incidents were also constructed through participatory design, and interviews were conducted with teachers working with SFI to discuss scenarios which, in their experience, might produce interesting (but not negative or overly uncomfortable) discussions. During these interviews, teachers and designers particularly discussed misunderstandings of Swedish culture and customs that were common among their student cohorts. The interviews were then supplemented with literature of civic orientation in the Swedish society which includes information about Swedish culture and customs, Swedish infrastructure, environment, laws and general information about peoples' rights and obligations [13]. In this way meaningful and realistic scenarios which were supported by literature, and to which the students of SFI could relate, could be produced. During the process of creating the incident cards, the incidents were also sent to the teachers of SFI to be revised so that the language used was understandable by their students.

4 Evaluation study

To evaluate the effectiveness of cultural awareness training, there have been tools of measurement developed. The one used in this study is based on the Cultural Awareness Scale (CAS) which was created by Rew, et al. [7], and was in their case primarily used on subjects within nursing faculties. Because of this, some of the items used in the survey CAS has been exchanged or revised to fit the context of this study.

The scale was chosen for this study not only because it is in line with the research goals of this study, but because its reliability and validity has been tested and ratified in other studies [14, 15]. In addition to the questions following the CAS, the survey also collected information regarding participants' gender, age group to which the participants belong, why they have migrated, level of education, and what cultural background they have. While most of these questions were presented in a multiple-choice format, the cultural background question was presented as a free-text field (as it is difficult to include all potential combinations of cultural history that the participant might be associated with). The survey also provided some examples to clarify what the term 'cultural background' refers to in this specific context (e.g., country of origin, ethnic group, etc.), as the term can be quite ambiguous.

Important to note before we describe the main experiments conducted for this research, is that it was pre-empted by a pilot study. The pilot study was conducted on a smaller group of participants from a master's program at the authors' university. A limitation of the pilot is thus that all participants had a similar, relatively high, level of education (which is not always the case in SFI settings). Furthermore, the participants' were not as culturally diverse as one would find in a SFI classroom. However, even with these limitations in mind, the pilot study was useful to iron out some of the more significant flaws of the initial survey design.

Primarily, the pilot study helped in identifying confusing or ambiguous phrasings of survey questions which helped stream-line the already lengthy CAS survey. Furthermore, the pilot helped prepare the observing researcher for their role during the live tests in the SFI classrooms. Just as with the final study, the pilot study included a follow-up survey three weeks after the first experiment.

4.1 Participants and experiment procedure

Before the classroom experiment was conducted, an explanatory session took place where participants were informed about the basic parameters of the study and what types of activities they would be involved in if they chose to participate. The participants were also informed that they had the opportunity to end their participation at any time during the experiment without requirement of an explanation, and that the survey responses and any other information gathered was anonymous.

The sample size was fifty-two participants between the age span 18 and 50 years old. At the time of the experiment all subjects were students in the Swedish for Immigrants (SFI) program at two different locations in Sweden. The reason of why SFI students were chosen to participate was that they are often relatively new to Swedish culture and society, and that the SFI students cohorts tend to consist of individuals with different cultural backgrounds. Furthermore, a secondary aim for SFI classes is to educate and discuss cultural differences and cultural integration with students who have recently arrived in Sweden, thus making it a good forum for testing tools for facilitating such discussions.

The Participants were evenly and randomly divided into two groups. One group (Group A) played the game, and a control group (Group B) participated in 'traditional' classroom discourse exercises. During the 'traditional' non-game exercise, participants discussed the same dilemmas that Group A discussed during their game-based session, but they did so using pieces of paper with the critical incidents written on them without any game mechanics surrounding the discussion. Both groups were randomly divided a second time into sub-

groups of four participants. At the end there were five sub-groups in both Group A and Group B.

Once the participants had been distributed in different groups, the participants would either start either the game-based (Group A) or non-game-based (Group B) discussion exercise. Group A and Group B were in separate classrooms during the exercises, and conducted the exercises at different hours of the day. The exercises lasted for one hour, and to ensure that discussions followed a similar “progression” in every group, the cards describing critical incidents were placed in the same order for every sub-group in Group A, which was the same order as they were presented on paper for Group B.

During the exercises, neither the observing researcher nor the teacher present in the classroom took an active role in mediating the activities. After distributing the games and papers with discussion topics, and ensuring that each group knew how to proceed with the exercise, the teacher and researcher observed the sessions and only intervened in case of students wanting to ask any specific questions regarding the exercises. They did not participate in or guide the discussions among the students.

4.2 *The adapted CAS survey*

The CAS survey itself is a 7-point Likert scale type of questionnaire where statements are displayed (Appendix B). The participants then circled the number which characterised how they felt about the statement. 1 meaning ‘strongly disagree’ and 7 ‘strongly agree’. Three weeks after playing the game, or discussing critical incidents without the game, a similar questionnaire was filled out. Changes that were made was the order of the statements and some of the statements with positive meaning were changed into negative ones (Appendix C). This was made to not allow participants with a high level of recollection to remember how they answered when they filled out the survey on the first occasion, thus encouraging them to think about questions carefully and not being too guided by memory alone. The survey was filled out at the later occasion to see if there were any differences in retention or attitude changes between Group A and B in cultural awareness over time. A pre-test was not used in this study. The reasoning behind this decision is that pre-tests can affect performance in post-tests by ‘priming’ subjects to pay extra attention to specific aspects of a conducted study or alter their behaviour during the actual experiment. This priming can make it difficult to distinguish the actual effectiveness of the artefact (cf. All et al., 2015; Lane & Hays 2008), and thus the pre-test was omitted from this experiment.

The 38 items of the survey were divided into five categories (see Table 1). With minor exceptions, the categorization is identical to one previously made by Rew, et al. [7]. In a literature review conducted on cultural awareness among health care practitioners, they identified five key categories: ‘General Educational Experiences’, ‘Cognitive Awareness’, ‘Behaviours/Comfort with Interactions’, ‘Research Issues’ and ‘Patient Care/Clinical Issues’ [7]. For the purposes of this study the category ‘Patient Care/Clinical Issues’ was changed into ‘Classroom Issues’ and phrasings of questions regarding this category in the CAS was rephrased to reference classmate and classroom issues rather than issues with patient care. Furthermore, a category called ‘Game’ has been added for participants in group A whereas a ‘Non Game’ category has been added in the survey for group B.

Table 1. *The categories included in the CAS survey for this study, and the number of survey items contained in each category.*

Category	Number of items
General Educational Experiences	14
Cognitive Awareness	7
Behaviours/Comfort with Interactions	6
Classroom Issues	5
Game (Group A), Non Game (Group B)	6

In the Rew, et al. [7] study, the items of the ‘Research Issues’ category examined if the participants have any knowledge or presumptions of how the school as a faculty work and do research with cultural issues in mind. In our study, however, the pilot conducted before the experiment revealed that this category was largely irrelevant for SFI students and difficult to understand. This could perhaps be because the category dealt with a lot of high-level abstract concepts of their education and the organizational structures behind it. The survey questions in this category ultimately seemed to be more obtrusive and distracting than helpful for the students, and they were thus removed from the survey. Other categories, such as the ‘General Educational Experiences’ category, contained more direct questions regarding how the students’ perceived their teacher’s treatment of cultural differences and issues, so reflections regarding these concepts were still present in the final survey.

The first category ‘General Educational Experiences’ consists of the largest amount of items. Items within the category focus on experiences in school and what kind of education the school provides in subjects such as multiculturalism and multicultural issues. This category also included questions regarding how participants felt that their teachers acted in the classroom setting from a cultural perspective, e.g. if students with a certain cultural background are perceived as excluded or not. For example, this category contains items such as: “The teacher at this school adequately addresses multicultural issues in society.”

The second category, ‘Cognitive Awareness’, contains seven items that, in essence, centres on introspection and reflection regarding how a person’s cultural background might affect their behaviour. These questions asked the participants to evaluate their own behaviours as well as the behaviours of their peers. This category contains statements such as: “I think my beliefs and attitudes are influenced by my culture.”, and “I often reflect on how culture affects beliefs, attitudes, and behaviours.”

The third category, ‘Behaviours/Comfort with Interactions’, contains six items which consists of statements describing how participants feel about interacting with people with dissimilar cultural backgrounds. For example, item number 9 reads: “I am less patient with individuals of certain cultural backgrounds.” This item has a negative slant to it, whereas item 10 in the same category is formulated in a positive manner: “I feel comfortable working with people of all ethnic groups.”

The fourth category, ‘Classroom Issues’, were the only category that contained items that had to be significantly changed from their phrasing in the original incarnation of the CAS. Originally, in the study by Rew, et al. [7], the category dealt with situations between patients and caretakers as it was designed to be used to examine nursing school students’ cultural awareness. Item number 32, for example, originally says: “I respect the decisions of my patients when they are influenced by their culture, even if I disagree.” For this paper, the same item instead says, “I respect the decisions of my classmates when they are influenced by their culture, even if I disagree.” Similar substitutions were made for all questions in the category that specifically referenced patients or healthcare procedures.

The last category of items focuses on evaluating the game and non-game exercise formats. The category contained six items, and were differentiated between Group A and Group B to fit their respective exercises. These differences were only in the phrasing and

word usage of the items (e.g., saying “the game was an engaging way to discuss cultural differences” for members of Group A).

The time for the playing and discussion sessions for both group is approximately one hour. The game session for a group ends when all critical incidents have been discussed. As the time is limited to one hour the participants may only discuss one critical incident for a maximum of five minutes. For filling out the survey there is no time limit but should take about seven minutes according to the pilot study.

4.3 Observations

In addition to the survey, the study is supplemented with a more qualitative methodology in the form of observations. The main purpose of the observations were to take direct notes if there were any noticeable differences between Group A and Group B in terms of ‘group atmosphere’, and how the group members participated and engaged in the exercises. As open discussion has no rules it may exclude some of the participants from actively partaking in the discussions depending on the in-group personality types [16]. If survey data is contradicting observational notes it can be findings of importance when analysing results. As the observations were carried out at two different locations, an observation protocol was used to ensure that the notes between the different classrooms were comparable and focused on the same issues.

The particular topic of conversation and choice of words was not the main priority in observations, and the aim was solely to see how discussions progressed, if there were even or uneven involvement of participants in the group discussions, and if one group seemed to have a higher level of observable engagement than the other. These ‘soft’ interpersonal aspects of the exercises are interesting for the study, and might not be best captured by a survey alone. So, the observations served to supplement and provide context to the data gathered through the CAS surveys, and to provide some indicators of whether the game and non-game exercises were noticeably different when it comes to facilitating certain types of group dynamics. The observer was only present to observe and not to guide participants in any way (i.e., it was not a participatory observation).

5 Results

The overall results show a slight difference in how the two groups generally answered the surveys, with Group A (the game group) being, on average, displaying more positive attitudes regarding their cultural awareness and understanding than Group B. The averages of the groups’ responses in their “unprocessed” 7-point Likert scale format, as well as the medians from the Mann-Whitney U test, are shown in Table 2.

Table 2. Overview of the results from the two surveys.

Survey session	Group A			Group B		
	Mean	Std.	Median	Mean	Std.	Median
First survey (Likert scale)	4,70	1.38	5.20	4,47	0.91	4.75
Second Survey (Likert scale)	4,67	1.26	5.25	4,14	1.04	4.30

Shortly put, there were some small differences in the survey results between the two groups. However, a Mann-Whitney U test shows no statistically significant difference between the survey results from the first session for Group A (Mdn = 5.20) and Group B (Mdn = 4.75), $Z = 1.64$, $p = .101$. A Mann-Whitney test reveals a significant difference

between the survey results from the second survey for Group A (Mdn = 5.25) and Group B (Mdn = 4.30), $Z = 2.34$, $p < .05$. This general analysis of the survey responses indicates tendencies in changing cultural awareness associated with maturation. More interesting indicators of differences between the groups emerge if the data is categorised, or if the survey items are analysed individually.

When collating and comparing the survey answers according to the question categories (as shown in Table 1), it is easier to directly see the categories in which participants' answers differed the most between the two groups, as well as how their answers changed over time, when it came to the general topics in the CAS (see Figure 2). These categories, however, also do not show statistical significance, which only emerged on individual item levels (as shown in Figure 3).

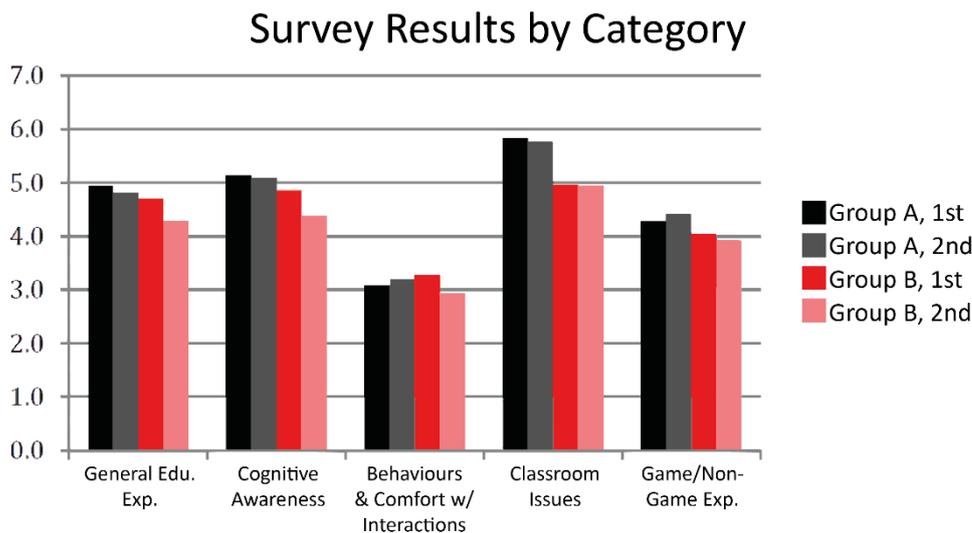


Figure 2. Comparison of survey results, divided into survey categories. The bars show the mean of the groups' responses on the CAS survey's Likert scale.

Some of the more noticeable differences in terms of retention is in the categories of 'General Educational Experience', 'Cognitive Awareness', and 'Behaviours & Comfort with Interactions'. In each of these categories, the non-game group showed significantly lower retention or decline in perceptions regarding their own, their teachers', and their classmates' cultural awareness. While the game group also showed a decline in the first two categories, it was not at the same scale as for the non-game group. In the behaviours category, the game group actually showed an increase of positivity and perceived awareness in the three-week follow-up.

The 'Classroom Issues' category is where the two groups differed the most in both sessions, and this is also the category with the highest number of statistically significant differences in group responses. Overall, the participants in the game group seemed to feel more included in the classroom exercises and had a more positive experience interacting with their classmates while discussing cultural differences. Finally, the participants' opinions regarding the game activity was more positive in the three-week follow-up, whereas the non-game participants' opinion regarding the more traditional discussion exercise declined further.

When the items in the surveys are collated and compared individually, differences between how Group A and B responded to the surveys become a bit more nuanced (see Figure 3). While the averages of the groups' opinions only differed slightly for almost all items, there were only a few items where their opinions differed enough to be considered significant (again, based on the Mann-Whitney U test). Figure 3 visualises these differences by directly comparing the averages of each groups' answers in the two survey sessions, as well as showing the p-values for each survey question. The p-value is positively correlated to how

severely the two groups' answers differ from each other during a survey session, and Figure 3 also highlights items where the results were statistically significant.

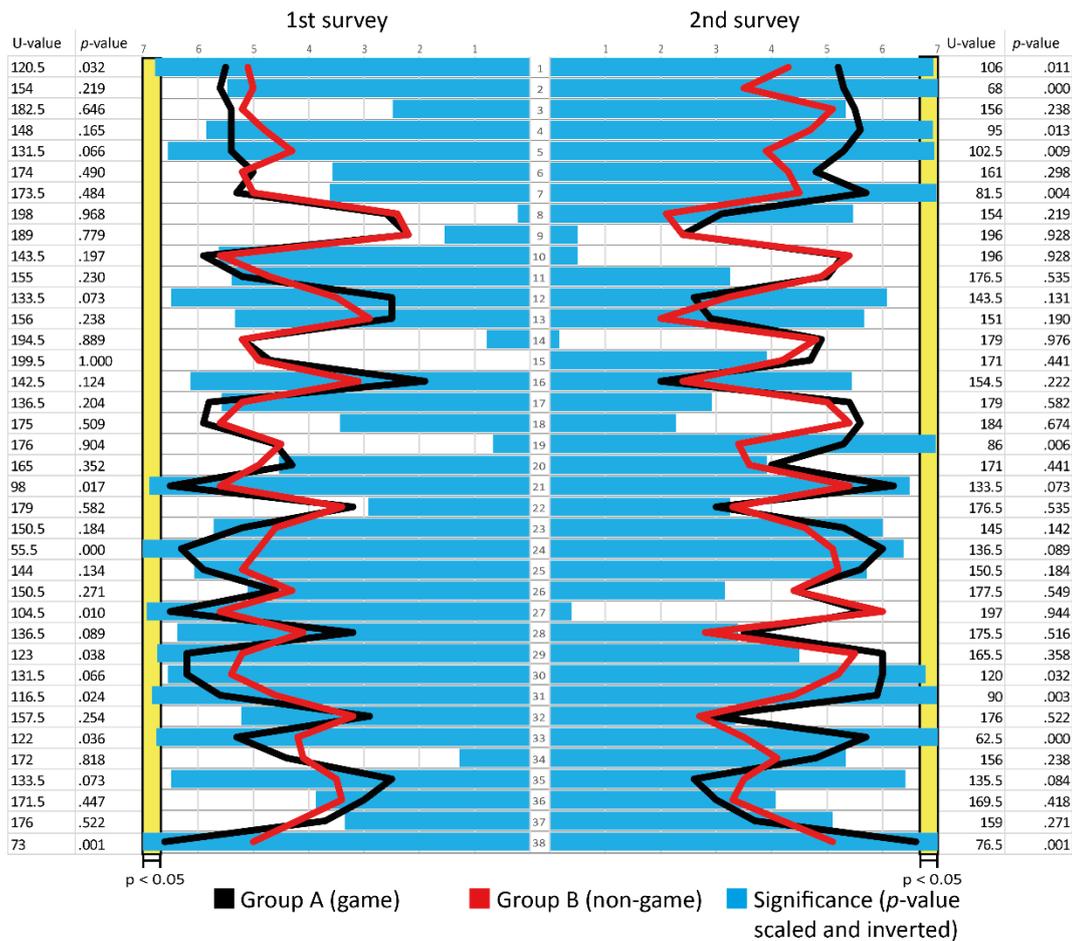


Figure 3. Visualised comparison of the two groups' responses between the two survey sessions. The bars are a visualisation of the statistical significance of each survey item, with items reaching the yellow bars having $p < .05$.

The results indicate that there is significance between the groups in some of the items, and that the items that are significantly different also changed between the first survey and the follow-up survey. The participants of Group A (the 'game group') were also consistently more positive in their responses in comparison to Group B. Not only was Group A more positively minded towards individuals with a dissimilar cultural background but also perceived themselves as being more aware of how the school faculty provides them with information about cultural issues. Group A's perception of using a game as a discussion tool was also more positive than how Group B felt about the open discussion exercise. Important to note is that items 12, 16, 20, 28, and 35-37, which seem to be exceptions to this rule, were all phrased as negatives in the survey, which is why the groups' responses are comparatively "inversed" on those particular items.

Conducting a survey and a Mann-Whitney U test on two occasions made it possible to reveal indicators of retention and latency effects for cultural attitudes and awareness between the two groups. As Figure 3 shows, the amounts of items in which the groups' answers were significantly different from one another not only increased in the three week follow-up survey, many of the questions in which significant differences arose were different from the ones in the first survey. After the three week follow-up, the data shows that the game was still preferred compared to open discussion exercises (item 33); Group A's opinions on the subject had grown more positive, while Group B's had become more negative. Furthermore,

while Group A's CAS scoring had increased in many categories in the follow-up survey, Group B's scores were both more inconsistent and had often become considerably more negative. Figure 4 shows a comparison of the averaged responses from the two survey sessions.

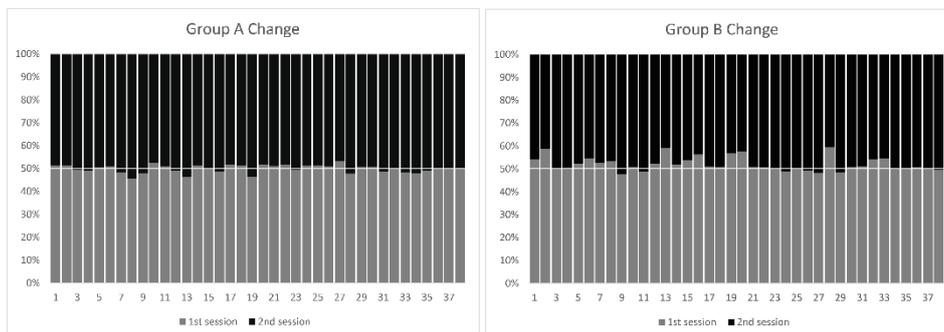


Figure 4. *Visualised comparison of the groups' responses during the two survey sessions.*

The percentage is based on a direct comparison of response averages (i.e., $\text{Avg.response1} + \text{Avg.response2} = 100\%$) for each survey question. Whenever bars deviate from the 50% line, the group's average responses differed between sessions (in favour of the dominant bar colour). As the figure shows, Group A's responses only changed marginally between the two survey sessions, and the participants often responded with higher scores in the second survey session. In comparison to Group A, Group B's responses changed quite drastically in the second survey session as they often responded to the survey questions with considerably lower scores.

On the first occasion, eight items showed significant differences in how Group A answered compared to Group B (item 1, 21, 24, 27, 29, 31, 33 and 38). Three weeks later, ten items showed significance (item 1, 2, 4, 5, 7, 19, 30, 31, 33 and 38).

The items that remained significant throughout the study were 1, 31, 33 and 38. Item 1 asked the participants whether they felt that the teacher at their school adequately addresses multicultural issues in society. Item 31 asked whether the participants felt comfortable asking their classmates about aspects of their cultures. Items 33 and 38 were both more focused on the participants' opinions regarding the performed game/non game exercise and asked whether they thought the exercise as an "engaging way to talk about cultural differences" and if they felt that they were included and able to partake in the discussions during the exercise.

5.1 Observations

When analysing the data gathered via observation, some distinctive dissimilarities could be seen between the two groups. Participants playing the game tended to be more active in discussions almost immediately as the session began. When Group B's session began they started their discussions more slowly and quietly. In Group A, all participants could be observed being equally involved in discussions, whereas there were one or more participants in every group not partaking in the discussions in Group B. Participants usually listened and let each other voice their thoughts at length. However, participants in Group A had a tendency to interrupt one another to a higher extent. Indications of engagement were more distinct in Group A as they had a higher intensity in their discussions, and the participants showed higher willingness to partake in discussions and getting involved with the game's rules and components. In cases where a participant tried to take over discussions and steer it in direction unrelated to the topic of cross-cultural dilemmas, the other participants would refer to the game rules to get back on track. Towards the end of the game-based discussion sessions, however, participants' engagement with the activity was noticeably dropping off. Thus Group B showed overall less engagement, but the level of engagement was more stable throughout the session.

6 Analysis

It is important to first point out that the total average results of this study are inconclusive, and the CAS scores taken as a whole do not show that the game-based exercise was significantly better at fostering cultural awareness in the study's participants. The results do, however, show some interesting indicators of differences within different categories of the CAS. Results show that participants of Group A felt more comfortable interacting with people with other cultural backgrounds, perceived that the faculty at their school provides them with information about issues related to cultural issues, and considered the game to be an engaging tool to discuss cultural differences. As Group B scored lower on many of the items in the survey, especially the ones discussing the engagement and involvement of the exercise, the open discussion exercise did not seem to be particularly appreciated or effective when it came to discussing culture. Furthermore, Group B participants' scores on the same items decreased significantly after three weeks while the scores of Group A participants increased. A Mann-Whitney U test revealed that Group A and B differed significantly on eight items after the first CAS. Ten items were significant after the second CAS survey conducted three weeks later.

During the classroom sessions, a higher level of engagement among participants who played the game was clearly observable. Furthermore, involvement in discussions was more evenly distributed among the groups with game-playing participants, and it seemed as though the non-game open discussion exercise either did not motivate participants to actively partake in the discussions or were more prone to a few group members taking charge and dominating the discussions. This is consistent with the survey results where participants score setting indicates that more of the students in the open discussion exercise group felt excluded during discussions. It was also observed that the engagement level was higher in the first half of the play session. The engagement level in Group B was relatively consistent but overall low during the time of the session. There was no clear way to distinguish why Group A's engagement diminished as the exercise progressed. It could potentially be a result of fatigue, or of the participants quickly getting bored with the game's concept and fairly simple and unchanging rules. It could also be the result of one of the game's shortcomings and (in retrospect) design flaws: games where players accumulate points run at risk of becoming frustrating if a player gets an unsurmountable lead. Perhaps players started realizing that they had little chance of gathering enough points to compete, and started disconnecting from the activity.

Based on the survey results and observed differences that emerged in terms of social dynamics between the two groups, we hypothesise that a large part of what made the game-based exercise favourable was the 'alibi' that the game afforded to the participants. Cultural differences can be a sensitive and uncomfortable conversation topic, and the rules of a 'game space' can establish a framework that allows its participants to separate their actions from their own constructions of identity. Whereas it can be uncomfortable to voice an opinion in an unstructured discussion format, a game space can provide a 'membrane' or frame (as described by Goffman, 1974) around an activity that helps its participants to separate the discussion from personal identity. This phenomenon is a staple of most forms of role playing [17-19], but is likely applicable here as well. While the participants may not explicitly play a 'role' to the same extent as participants of role playing games do, they do take on the parts of 'game players' when stepping into the game space provided by the board game. The popular card game Cards Against Humanity [20] can be seen as an exemplar of this, as it provides a forum for people to make (sometimes fairly reprehensible) jokes they otherwise wouldn't have, in the spirit of competing for being the most degenerate person in the playing group. Since they are told within the framework provided by the game, the jokes are not seen as indictments of the person making them. In essence, the game provides role distance to its participants, and there is safety in being able to participate as 'players' of a system rather than themselves. In the case of *How Would You Say It?* this safety may have translated into a liberating platform for discussing the sensitive topic of cultural differences.

7 *Conclusions and future work*

This study was conducted at an SFI classroom, a setting in which students learn about the culture and customs of the host society either through literature on the topic, lectures by their teacher, or through their own efforts and continuous interactions with their classmates. A total of fifty-two participants from SFI-classes at two locations were included in this study. The participants were divided into two groups, Group A and Group B, where the first group played a game and the other group had an open discussion exercise with the purpose to raise cultural awareness.

Results of the survey show that participants of Group A felt more comfortable interacting with people from other cultures, consider that the faculty at their school provides them with information about issues related to culture and consider the game as an engaging tool to discuss cultural differences. Group B scored lower on many of the survey items, and they rated their discussion exercise format less favourably than Group A. The score of Group B did decrease on the same item after three weeks (item 33). The score of Group A instead increased after three weeks. A total of eight items showed significant differences between Group A and B after the first survey and game session. Ten items showed signs of significance three weeks later, out of which six items were “new” and did not show significance directly after the sessions.

Although the results of this study are promising in some respects, they should be interpreted with caution as the overall results of this study are largely inconclusive. While there were some differences in specific items of the CAS, the number of items showing significant differences are relatively few. Furthermore, the overall survey results of the first session did not reveal a statistically significant difference in the participants’ cultural awareness. The results from the second session, however, revealed a statistically significant difference between the two groups. If the results were to be briefly summarized, this study has shown that the game-based cultural awareness tools have certain features that might make them more efficient than non-game counterparts in fostering certain aspects of culture awareness. For example, they might elicit some positive changes in peoples’ cultural awareness over time. It should, however, also be noted that this study is limited in scope, both in terms of the number of participants and the duration of the study. As the approach does show some promise, future research might be able to address these study concerns, and provide a more conclusive description of the ways in which game-based tools can help foster cultural awareness.

The researchers observed a higher level of engagement among participants in the game group. However, there was a more notable decrease in engagement over time in the game-based exercise than in the non-game exercise. While this can be the result of fatigue, it could also be an indicator of a design flaw in the game. The competitive element of collecting points may have played a role in participants becoming disinterested in the activity if one player got a significant lead early on in the game activity. Thus, one particular piece of design advice to take away from this study is to either carefully consider the way competitive elements are presented, or whether they are necessary at all. Playing collaboratively, or treating points as hidden or less easily comparable information than coins or tokens, might ensure that players stay interested longer.

With these outcomes in mind, our conclusions from the study is that non-digital games show signs of being a resource efficient, engaging, and effective way of fostering cultural awareness and facilitating inclusive discussions on cultural topics. Not relying on technology to create these types of exercises, as well as designing the games with the practicalities of classroom teaching in mind, can also be a good way to ensure that game-based tools actually get put to use in classroom settings.

Acknowledgements

This study was conducted in collaboration with the Interaction Lab at the University of Skövde, Management Molecule Dynamics Tools, as well as teachers and students at from the Swedish For Immigrants initiative. The authoring of this paper was partly funded by Sweden Game Arena and the EU Interreg IVa funded project GameHub Scandinavia.

References

- [1] C. du Toit, "Diversity in a multicultural and polyethnic world: challenges and responses," 2004, vol. 25, p. 18, 2004-10-06 2004. <https://doi.org/10.1109/MCG.2009.30>
- [2] Lane H.C., and M.J. Hays, "Getting down to business : Teaching cross-cultural social interaction skills in a serious game," in *Workshop on Culturally Aware Tutoring Systems*, 2008, pp. 35-46.
- [3] M.A., Zielke, M.J. Evans, F. Dufour, T.V., Christopher, J.K., Donahue, P. Johnson, *et al.*, "Serious Games for Immersive Cultural Training: Creating a Living World," *IEEE Computer Graphics and Applications*, vol. 29, pp. 49-60, 2009.
- [4] B.W., Schuller, I. Dunwell, F. Weninger, and L. Paletta, "Serious Gaming for Behavior Change: The State of Play," *IEEE Pervasive Computing*, vol. 12, pp. 48-55, 2013. <https://doi.org/10.1109/MCG.2009.30>
- [5] L.R., Damron, and B.G., Halleck, "Generation cross-cultural training data for THE UNIVERSITY GAME," *Simulation & Gaming*, vol. 38, pp. 556-568, 2007. <https://doi.org/10.1177/1046878107308058>
- [6] D.P.S.. Bhawuk, "Evolution of culture assimilators:: toward theory-based assimilators," *International Journal of Intercultural Relations*, vol. 25, pp. 141-163, 3// 2001.
- [7] L. Rew, H. Becker, J. Cookston, S. Khosropour, and S. Martinez, "Measuring cultural awareness in nursing students," *J Nurs Educ*, vol. 42, pp. 249-57, Jun 2003.
- [8] J. Hutnyk, "Culture," *Theory, Culture & Society*, vol. 23, pp. 351-358, 2006. <https://doi.org/10.1177/02632764060602700>
- [9] R. Boyd, and J.P., Richerson, *The Origin and Evolution of Cultures*. New York, NY, USA: Oxford University Press, 2005.
- [10] D. Sperber, and N. Claidière, "Defining and explaining culture (comments on Richerson and Boyd, Not by genes alone)," *Biology & Philosophy*, vol. 23, pp. 283-292, 2008/03/01 2008.
- [11] G. J. Hofstede and E. J. Tipton Murff, "Repurposing an Old Game for an International World," *Simulation & Gaming*, vol. 43, pp. 34-50, 2012. <https://doi.org/10.1177/1046878110388250>
- [12] M. Minkov, *What makes us different and similar: A new interpretation of the World Values Survey and other cross-cultural data*. Sofia, Bulgaria: Klasika i Stil, 2007.
- [13] M. Ivarson and T. Ashjari, "Om Sverige: Samhällsorientering på svenska," Göteborgs Stad och Länsstyrelsen Västra Götalands län, Gothenburg, Sweden 2014.
- [14] L. Rew, H. Becker, J. Chontichachalalauk, and H.Y., Lee, "Cultural diversity among nursing students: reanalysis of the cultural awareness scale," *J Nurs Educ*, vol. 53, pp. 71-6, Feb 2014.
- [15] B. Krainovich-Miller, J.M., Yost, R. G. Norman, C. Auerhahn, M. Dobal, M. Rosedale, *et al.*, "Measuring cultural awareness of nursing students: a first step toward cultural competency," *Journal of Transcultural Nursing*, vol. 19, pp. 250-8, Jul 2008. <https://doi.org/10.1177/1043659608317451>
- [16] B.E., Larson, "Influences on Social Studies Teachers' Use of Classroom Discussion," *The Clearing House*, vol. 73, pp. 174-181, 2000. <https://doi.org/10.1080/00098650009600942>
- [17] G. A. Fine, *Shared fantasy: Role-playing games as social worlds*. Chicago, IL, USA: The University of Chicago Press, 1983.
- [18] M. Montola, "On the Edge of the Magic Circle. Understanding Role-Playing and Pervasive Games," Doctoral, University of Tampere, Tampere University Press., 2012.
- [19] C. Poremba, "Critical potential on the brink of the magic circle," presented at the DiGRA 2007 Situated Play Conference, Tokyo, Japan, 2007.
- [20] D.D., Josh Dillon, E. Halpern, B. Hantoot, D. Munk, D. Pinsof, M. Temkin, E. Weinstein, "Cards Against Humanity [Board game]," ed: Cards Against Humanity LLC, 2011.

