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# Interactive Serious Games: Communication and Play to Promote Intercultural Competence

## Abstract

*SumMit* is a project exploring theory and practice for implementing interactive serious games to be used to work on topics of intercultural competence in various formats. Conducted by graduate students, *SumMit* examines the dynamics which support players in their effort of leaving their primarily unconscious comfort zones of interaction and communication. Being designed for the use on tablet computers or smartphones, interaction takes place between players and combines elements of experiential learning with reflective debriefing units, thus leading to learning outcomes that can serve as starting points for discussion and further learning units.

## Keywords

Intercultural competence, intercultural communication, game design, tablet computer, serious games

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Within globalisation and internationalisation strategies of universities, student groups become more and more diverse in various aspects. Attending to these student groups calls for change not only in languages, but also in teaching methods. In order to provide space for intercultural learning, facilitators are asked to look for sustainable methods, creating meaningful conflicts and allowing participants to reflect on own expectations, perspectives and behaviour, all of which promote intercultural competencies.

In this paper, we describe the ongoing project *SumMit*, which is an interactive serious game aimed at establishing inclusive learning environments for both national and international students and supporting intercultural competence learning. Looking at new forms of learning units for intercultural competence, we describe motivation and theory and first results of play-testing. As this is work-in-progress, we take a look at prospects of implementing this new method into workshops for intercultural competence, at first evaluation results as well as perspectives for future use.

## 1 The Project

*SumMit* took place during the winter semester of 2016/17 and is work-in-progress during the summer semester of 2017, coordinated by the authors of this paper, Alexandra Schreiber, Head of the Center for Intercultural Competence at University of Goettingen, and Dominik Wilhelm, Professor of Game design and Applied Games in the M.A. programme ‘Media and Games Conception’ of the department of Automation and Computer Sciences, Harz University of Applied Sciences in Wernigerode.

The project *SumMit* is a cooperative multiplayer game for tablet devices. It can be played by 8 – 16 players of suggested ages 15 and up. Although it is played on a tablet, the core game mechanic takes place in real life, with players talking to each other, interacting and trying to solve the intertwined game challenges. Throughout the game, players must interact with other players as well as with the game. During

the debriefing phase, facilitators can take on topics of intercultural communication and invite participants to reflect on communication and intercultural teamwork. This interaction and playing *SumMit* will enable participants to raise awareness of their own expectations and means of cooperation. When played in a culturally diverse group, players will get a chance to gain insights into new ways of problem-solving which could differ widely across cultural groups.

Although this is never stated explicitly, the game can only be finished successfully when all players have managed to leave their comfort zones and have mastered all the game's challenges as a team. It therefore engages players in cooperative ways to overcome obstacles and learn from each other. With the start of summer semester 2017, the project is taken into playtesting, transferring theory into practice by developing it for the use on smartphones and tablet devices.

## 1.1 The Game Concept

*SumMit* is a name based on the Korean word “sum” which means island, the German word “mit” which has various meanings of connection and relationship and the English word “summit”, which is the goal to be reached during play, as *SumMit*'s setting comprises a mountain with various plateaus and sceneries.

Starting the first level at the foot of the mountain, players must find one other player in order to solve the first challenge, which brings both to the next level, in which more players must act together accordingly. Challenges are independent of each other, with every level presenting its own challenge. All have in common that in order to successfully reach the next level, it is necessary to talk to group members, to rehearse patience, to change perspective and to cooperate, as it is not possible to solve a challenge alone. Similarly, the next game level can only be reached together as a group. The higher the plateau, the more people need to work together to progress.



Figure 1: *SumMit* mountain sketch (HUBE, 2017)

By means of its challenges, *SumMit* fosters collaboration among players and allows them to experience the richness of intercultural exchange as well as the fun of working together in a dynamic setting of discussion and exchange. They can learn from each other and learn about themselves, the learning outcomes made visible in a debriefing session afterwards.

## 1.2 The Game Design

The game design contains a mountain, which is divided into several layers. Players move left or right on their tablet screens in a 2D space. *SumMit* does not tell a specific story, but intends to create a collaborative playing experience. Yet, working together, helping each other to scale a mountain and communicating about it, creates a narrative of its own that unfolds between the players during gameplay. Once the team reaches the summit, players are rewarded with a view from the top. But from there, they can already see many other mountains on the horizon – more summits that can only be mastered by leaving one’s comfort zone to communicate and work together with others, even after the game has ended.

While the core game mechanic of a traditional platforming-videogame might be described as ‘jumping’ or ‘running’, the core mechanic of *SumMit* is instead ‘communicating’ to overcome obstacles with regard to reaching the micro-goals of solving puzzles and increasing the team size and, in turn, to achieve the macro-goals of reaching the next level and ultimately the summit of the mountain. Starting with challenges for two players in finding a mutual way through a maze, micro-challenges end with a puzzle and riddle task that can only be solved by all players working together and communicating successfully. Defying expectations on competitiveness, closely associated with computer games, *SumMit* can only be completed when all players cooperate and work together.

Players are represented in the game by means of simplified characters and use nature as visual model. This encourages the avoidance of stereotyping and linking characters to cultural groups of people. The visual style of *SumMit* consists of simple, clearly defined 2D graphics. Each level can be distinguished by colour, making the game vivid, colourful and fun to play.

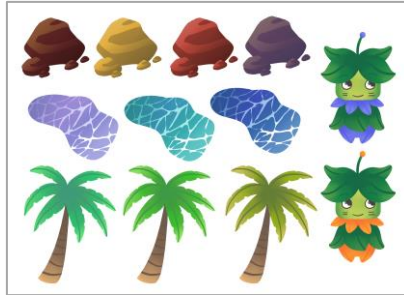


Figure 2: Outlines and colour examples for *SumMit* (HUBE, 2017)

### 1.3 Teamwork

The student team working on *SumMit* is internationally and interculturally diverse itself. Native languages are German, Korean, Estonian and study backgrounds are also many and varied: Intercultural German studies, diversity research, global poli-

tics and media and games conception. In addition, teamwork on *SumMit* is coordinated through virtual and face-to-face meetings, allowing the team to experience stumbling blocks in communication first-hand and reflecting the benefits and drawbacks of intercultural teamwork, all of which have added to the creation of *SumMit*.

## 1.4 Challenges and Tasks

Developing challenges that contain well balanced demands and know-how was one of the important aspects of designing *SumMit*. Intensive playtesting has taken place and is still going on to verify a fine-tuned balance of risk and safety within tasks, essential for participants to experience fun and motivation while leaving the workshop-routine and playing *SumMit*. This balance and concept of “flow” reflects players immersing into the game and stress and anxiety being reduced, thus making room for intercultural interaction and communication.

There are challenges for

- 2/4/8 and 16 players or
- 2/4 and 8 players

depending on the group size of either 8 or 16 participants.

All challenges are set up within the virtual island landscape of the game world. With each challenge solved, the landscape changes and groups of players are shuffled, hereby enabling new combinations of players. This is a feature which leads to a high level of interaction.

Each player can use their own smartphone or tablet computer to participate in the play session, yet all players should stay in close vicinity to each other as communication during play is paramount. While challenges are presented to the players in virtual space on the screens of their individual tablet computers, the actual game-space is extended beyond the players’ screens. To master the challenges, players are encouraged to talk to other players in the real world about their challenges, move around in the room, show their screens to other players or put their device

next to other players' tablets to solve certain puzzles. In the first level of the game, while still at the foot of the mountain, the individual players are isolated and separated from each other by obstacles, walls, canyons. In order to notice this, they have to look up from their screens and interact with the other players in the real world to break down the barriers in the virtual world. They are not leaving, but rather extending their comfort zones to include others until a large team is formed whose members all have the common goal of mastering the final challenge and reaching the summit. As this real-world part of the game space is not governed by any rules, players are free to find new and creative ways to solve the challenges together.

The challenges themselves are disconnected from the game world and its narrative. Each challenge and task is presented in a separate view, with its own ruleset, controls and game mechanics. This constitutes a deliberately open design that allows for the dynamic extension and replacement of individual challenges to adapt to different groups.

## **2 Intercultural Competence and Interactive Serious Games**

In order to preserve a high level of wellbeing and ensure tuitional satisfaction, it is important to focus on interaction between people from different cultural groups who are studying together. This can take place either at home or abroad, requiring students and faculty to rethink and adapt learning processes and teaching methods. Applying serious games for intercultural training sessions can encourage interaction and exchange, reducing stress and anxiety and make way to broaden intercultural competencies.

Talking to and with each other rather than talking about each other supports understanding, raises awareness of mutual goals and creates a common sense of belonging. Being able to change perspective and examine invisible cultural structures which affect behaviour, including different norms and values, are all important

assets that allow everyone to engage and enjoy the richness of cultural diversity. Expanding intercultural competence involves working on aspects of cognition, emotion and behaviour, all of which are addressed when engaging in interactive serious games (Fig. 3).

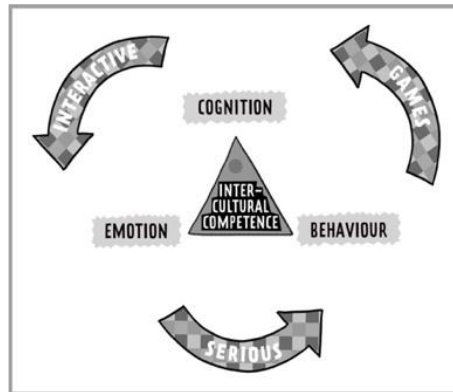


Figure 3: Intercultural Competence and Interactive Serious Games (Schreiber, 2017)

Acknowledging differences and interdependency causes students to think in new ways, while searching for answers to common questions of how to exchange knowledge and promoting trust within intercultural groups and teams. *SumMit* provides fun by allowing players to get to know other players' points of views. Engaging in play and getting deeply involved in solving micro-challenges as a team supports positive group dynamics and sets the ground for discussions. During this guided debriefing process, facilitators initiate discussions on what happened during play, how players felt, what supported interaction and what was obstructive.

In contrast to workshop methods like simulations, role play or activities, *SumMit* challenges participants in a very authentic way, with each action directly effecting the course of the game. Subsequently, these authentic learning experiences can be taken further into real-life examples of communication skills, empathy and change of perspective.



### 3 Evaluation and Perspective

After setting up theory and challenges, the student groups conducted analogous playtesting of the prototype version within different groups of students at the end of the winter semester 2016/17. Changes to challenges were made accordingly and will be considered for the programming phase. Ongoing playtesting and evaluation is planned for the programmed version of *SumMit* on tablet computers or smartphones. Future considerations include an online application for educational use together with tutorial and debriefing questions to be used by educators in international classrooms.

Creating learning environments in which students are able to exchange and examine underlying cultural structures of communication and behaviour provides opportunities to promote cultural understanding. *SumMit* can be used as a method to continuously embed intercultural learning aspects into any curriculum content, therefore promoting intercultural competence to support internationalisation processes of universities.

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