

# Study-Town – a Game for Cultural Awareness

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## ABSTRACT

Games are a convenient method of preparing foreign exchange students for the challenges they are going to encounter living in a foreign country. In this paper, we describe the background, concept, and usage of a game called Study-Town created for the German Academic Exchange Service DAAD. The game prepares the foreign exchange students coming to Germany for typical German peculiarities.

## Categories and Subject Descriptors

H.5.2 User Interfaces

## General Terms

Design; Human Factors

## Keywords

Serious Games; Intercultural Design

## 1. INTRODUCTION

Every year some 50.000 foreign exchange students move to Germany. Many of them have only a vague idea about their host country. Once arrived, they have to master several challenges: the language is different, the teaching and examination procedures are different, the food is unfamiliar, they do not know anybody at the beginning, and last but not least: the culture is different to their own culture. Thus, exchange students have to cope with a lot more than regular students. This is true not only for students who move to an obviously very different cultural environment, like Chinese students coming to Europe, but also for students who move to the rather similar cultural environment of a neighboring country like English students coming to Germany. Sooner or later they all experience the infamous cultural shock.

Games can help to master typical problems exchange students encounter while living in a foreign country. Those games either try to teach some cultural background or they put the player in a situation where he or she does not know the exact rules of the game. The task is here to figure out the exact rules. This

experience of not knowing the exact rules is typical for people moving to a different culture.

In 2010 the German Academic Exchange Service DAAD started a competition looking for a concept of an online game which helps foreign students to cope with typical German peculiarities. One of the contributions was chosen to be realized. The resulting game *Study-Town* went online in 2011<sup>1</sup> and can be found on the DAAD web site *Study in Germany*<sup>2</sup>. This paper describes the winning contribution.

## 2. GAMES FOR CULTURAL AWARENESS

Play is the central condition for the generation of culture [10]. It is one of the key hypothesis of Huizingas seminal book *Homo Ludens* that play is freedom from real life and its constraints. Furthermore the predefined arrangement of a game allows for structured experimentation without ramifications for real life. Such an arrangement temporarily suspends issues of social status and character attributes that otherwise may lead to dependency, timidity or embarrassment. A game equals people for the time of its duration. Congruently gaming is considered a fundamental component in skill development and adaption, knowledge acquisition and transfer [9][12]. Subsequently games that advance over pure entertainment are considered *Serious Games*. [1]

Among many other applications in recent years, Serious Games have been employed to overcome issues in intercultural communication, e.g. for learning about different cultures, overcoming cultural differences and connecting people from diverse countries of origin. Serious Games that present and challenge intercultural differences have a proven value for the broadening of behavioral and interpersonal skills [8]. Thus Serious Games can advance people's intercultural communication abilities, e.g. when moving to a different cultural circle for leisure, business or study.

Hofstede [8] states that every culture can be classified with the help of the following five dimensions:

- Power distance
- Individualism versus collectivism
- Achievement-orientation versus cooperation-orientation
- Uncertainty avoidance versus uncertainty tolerance
- Long-term versus short-term orientation

It is a complex process to design Serious Games that successfully educate people about different cultures. On the one hand, according to Hofstede the classification of a culture is only

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<sup>1</sup> See DAAD press release of November, 11th 2010: <https://www.daad.de/portrait/presse/pressemitteilungen/2010/15786.de.html>

<sup>2</sup> Study in Germany: [www.study-in.de/en](http://www.study-in.de/en)  
Study-Town: [www.study-in.de/games/wg/](http://www.study-in.de/games/wg/)

complete, when all five dimensions are considered. On the other hand, their consideration does not automatically result in a successful game design for intercultural communication. In order to be successful, the most crucial point of a Serious Game is not only knowledge presentation but the player's emotional engagement [5]. The strictness of this statement of Folwer & Pusch [5] might be arguable. Nevertheless it seems to be an essential part. To achieve a rational and emotional consistent implementation of a Serious Game, a sustainable game structure [8] that can support emotional engagement needs to balance simplicity and complexity in defining culture.

A noteworthy example for a well-executed Serious Game for intercultural communication is *Barnaga*, an analog card game. It simulates mini cultural shocks for each of its participants while they move through a variety of cultural configurations. This reiteration of adaptation forces the players repeatedly to try walking in many different shoes during the process of the game. *Barnaga* is well executed, as it is able to present many different cultural configurations simultaneously in one game. However, it takes at least 45 minutes to play and at least nine players [15].

A prime example of an online game for only one player at a time has been published by the University of Freiburg. The Game *Unicosmos* was designed to educate the universities many Chinese freshmen about the specifics of living in Freiburg.<sup>3</sup> Two different cultures had to be defined. Their execution was arguably easy, as a Chinese student living in Freiburg was in charge of the design. The game has however a plethora of problems. The most apparent is, that its pleasant visual appearance cannot disguise that the game is in fact merely a mono-directional multiple choice test. While the game might do a reasonable job in defining culture, it does not motivate to play.

Video games such as *Versailles 1685* combine the pleasure of entertainment and the need of cultural education. The player lives in Versailles during the reign of Louis XIV and acts as an investigator, who can freely move around, learn about arts or talk to historical persons. The goal is to identify potential destroyers of Versailles. Due to the success of this game, several other concepts like *China the Forbidden City* or *Egypt 1156 BC Tomb of the Pharaoh* were published. [4]

Intercultural Communication can be a complex issue and video game technology can build a bridge to cultural understanding. *Argonautonline* for example is an intercultural training simulator, which is used by intercultural consultants, trainers and learners. This e-learning platform provides information specific to cultures as well as interactive tutorials to achieve a better understanding for another culture. [16]

Furthermore, many of those interactive training applications aim to explore cultures in a realistic and safe way. In *Global conflict: Palestine* the player plays the role of a journalist attempting to write a sound story about the different aspects of the conflict in Palestine like issues of human rights, checkpoints, settlements, martyrs and suicide bombs. The game simulation *Peacemaker* also addresses this conflict and was developed to stimulate mutual understanding among the opponents and to encourage the dialog between Israelis and Palestinians. Living Worlds were developed, in which social behavior and facial expressions can be

experienced in a 3D ADAT model: cultural differences in handshake, personal space, or treatment of male elders or women can be observed to learn a culture. [17]

Numerous tools like *BaFa'BaFa'*, *Cultural Detective*, *Annamay in Mexico* or *Cultures Crossings* prepare participants for living and working in an multicultural environment by testing their intercultural knowledge and increasing their intercultural competence. The diversity game *Diversophy* for example forces players "to put themselves in a certain situation and guess the appropriate answer" [3]. Therefore, either each person picks a card or a team can be formed. Questions and behavior are discussed afterwards. It offers different types of learning: General information about unknown cultures, how to speak, act and interact when working with others, specific information and insights and how one copes with other cultures.<sup>4</sup> While games like *Diversophy* or *Frost in France* deal with cultural business strategies, simulations like *Brief Encounters* or *BaFa'BaFa'* aim at a more interpersonal understanding and how people experience cultural differences.<sup>5</sup>

Some Serious Games combine both the personal understanding and the multicultural teamwork in companies. Another game, which trains cross-cultural communication and negotiation skills of executives or advanced business students, is *A Daughter in Danger*, which was renamed as *Takeover Trio*. This business training tool simulates fictional take-overs and requires logical thinking, dominance, creativity and process management [2]. Three teams of four persons manage three companies (mother, daughter and potential buying company) located in different geographic places and behave and act in their assigned synthetic national culture invented by Pedersen and Ivey [14]. Therefore, all participants need a preparation time of one hour and the game takes at least 12 players and 3 hours. [7]

A similar business simulation for understanding cultural constraints in a multicultural company called *The Windmill of our Minds*, requires four to 16 hours' time and up to 30 participants divided into four synthetic cultural groups. The challenge is to overcome confrontations caused by diverse approaches in sales and maintenance of windmills manufactured by the company and aiming for the development of a communication architecture while working with four representatives from each national subsidiary [6]. This exercise can be repeated several times and may offer a broader perspective of the experiences by changing roles of district managers and sales representatives. [11].

Hofstede's *Trade Mission* is one of the most used training games and similar to the before mentioned simulations. Small teams acting for different countries and trying to sell their products to each other at an international trade event. The exercise is to become involved in an intercultural exchange and circumstances of a culture clash. [13]

<sup>3</sup> The game *Unicosmos* can be played at: <http://game.studentenwerk-freiburg.hostingkunde.de/> (retrieved 24. Apr 2014)

<sup>4</sup> See the homepage of *diversophy*: [www.georgesimons.com](http://www.georgesimons.com) (retrieved 24. Apr 2014)

<sup>5</sup> For more descriptions of simulations for culture learning see CARLA – Center of Advanced Research in Language Acquisition: [www.carla.umn.edu/culture/resources/exercises.html](http://www.carla.umn.edu/culture/resources/exercises.html) (retrieved 29th May 2014)

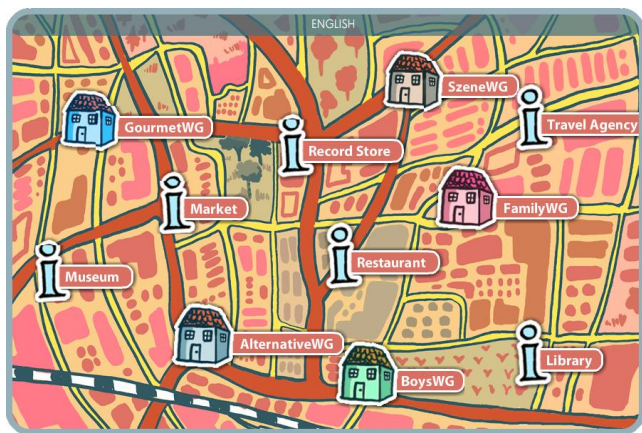
### 3. CONCEPT OF STUDY-TOWN

We wanted to address a variety of cultural dimensions with the game Study-Town. However, we did not want to diminish the overall fun-of-use with an explicit configuration of prototypical dimensions. As previously noted, a game that carefully pursues those has a steep learning curve, tends to be rather lengthy, needs more than one player and favors detail over fun-of-use.

Thus, we created a variety of Mini Games that are easy to play, make sense on their own and only implicitly transport learning content. They are as well nested inside a bigger challenge that again addresses a configuration of stereotypical cultural properties.

The setting of this multifaceted game is the situation of an exchange student coming to a fictive German town in order to study. He or she is now in need for a place to stay. The player now visits some student's apartments aiming to move in to one of them. Furthermore, the player needs some additional information about the town and the country.

The start screen presents a map of the town with some information points and some shared apartments where the exchange student might move in (Figure 1). But before the player might move in he or she has to meet the students already living in the shared apartments. In short mini games the player needs to qualify.



**Figure 1. The start screen: Map of Study-Town**

More than 20% of German students live in shared apartments. This is next to the university dorm and staying with the parents the most economical way of living. Often these shared apartments are the students' meeting point for learning, cooking, chatting, celebrating and much more. And just like in the TV series *Big Bang Theory* the students sharing an apartment usually also share common interests concerning politics, music, sports or life style. The game presents such typical shared apartments, in German usually abbreviated WG for *Wohngemeinschaft*:

- Alternative-WG: Students listen to alternative rock and are political left wingers, resp. green party.
- Boys-WG: Students spend their time with sports, cars and computer games.
- Gourmet-WG: People just love cooking.
- Scene-WG: Urban creative in arts, music and design.
- Family-WG: Single mothers and fathers help each other.

Figure 2 shows the scene of the Alternative-WG. Three students are already living here. The player's task is to persuade them all

that he or she might be a good roommate. In the upper left corner a dotted line turning from red to green shows the player's performance. Clicking on one of the people starts a mini game.



**Figure 2. The Alternative-WG**

### 3.1 MINI GAMES

Each student in the shared apartment is connected to a mini game. By playing the mini game the player tries to convince the student that he or she is the perfect roommate. Figure 3 provides an overview of the 16 mini games. They are basically drag&drop, point&click games where items have to be selected or arranged. Thus, the interaction modes are on the one hand quite simple. On the other hand they change throughout the whole game in order to prevent the impression, that the mini games would just be different realizations of the same game type.

As in Figure 3 shown the topics of the games are indeed very different: the player has to sort rubbish, know the protagonists of German fairy tales, play children's songs on the piano, finish a jig saw of Germany, paint German sights, know the players of the national soccer team and their position, play cards with German cars, arrange the national anthem, know the key plot of famous German novels, know modern German popular music, detect mistakes in famous German paintings, do some cooking, know typical German food, select items in a grocery store, match German politicians with the main parties and allocate a set of German cities.

The first game shown in Figure 3 for example is concerned about a typical German peculiarity: waste separation. In Germany you have several waste bins for different kinds of garbage. First comes a container for glass. Next to it you can see a blue bin for paper. Next to this bin you can see a yellow one for packaging rubbish like cans or tins. Next to it you can see a brown bin for biological waste. The player is just about to throw an apple into this bin. On the far right you can see a black bin for all the rest of the rubbish. This bin is usually the smallest one.

We must admit that this game is in fact a simplification of the German waste separation system. Actually there is no single system but many slightly different ones. In some areas you don't have one glass container but several different containers for transparent glass and green or brown glass. In some areas you have two bins for packaging: one for plastic and one for metal. Nevertheless, player get the general idea.



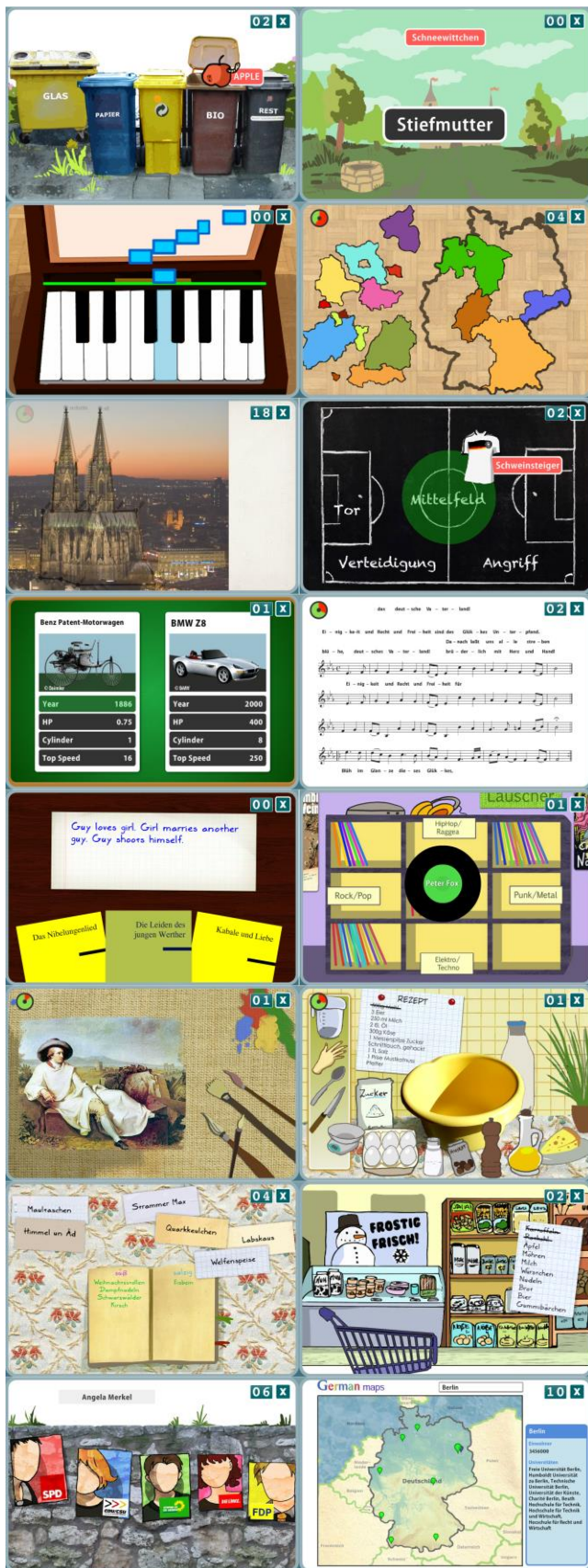


Figure 3. Mini games

The mini game is invoked by clicking on the left girl with the tea cup in Figure 2. The aim is to sort several pieces of rubbish. During the mini game the player can see the achieved point in the upper right corner of the screen. After having finished this task, the player returns to the view of the shared apartment. Here he can see his or her overall doing in the upper left corner of the window. The more points the player collects the greener they turn and the more likely the people in the shared apartment are willing to invite the player to stay with them.

In order to improve the score the player may play the mini games more than once. With the repetition of the game the player also improves his or her cultural knowledge. Thus, game playing and learning go hand in hand.

### 3.2 INFORMATION POINTS

Next to the mini games there are six information points on the map (see Figure 4) where players can get some additional online material about special topics. Except for the market place (second in Figure 4) all information points start with a scene introducing the point (shown in the left column in Figure 4). Within an information point the player finds a selection of items like paintings, books or music which are linked to web resources (shown in the right column in Figure 4). Thus, the information points serve as a browsing access to the web. Of course the focus is here still on German culture. Figure 4 provides an overview on the six information points:

- The museum shows 19 painting of famous German painters. The paintings are linked to web sites about these painters.
- The market place is occupied by representatives of major German political parties – Election Day is coming. In the German version of the game the representatives are linked to the homepages of these parties. In the English version they are linked to the corresponding Wikipedia articles.
- The Rainbow music store shows modern German music groups of different styles and provides links to their MySpace site.
- The restaurant “Zum Ochsen” links to recipes for typical German food.
- The travel agency links to tourist web sites of the 16 German states.
- The library finally provides the texts of famous German fairy tales.

Thus, the game Study-Town provides access to selected topics in two different ways: the way of mini games is foremost playful and offers implicit knowledge, the way of the information points provides deeper information. Some key topics like German painting, music and writing, political parties, food, and the 16 German states are covered by both of them. Few are covered by only one.

Especially the topic waste separation stands out here, since it is only represented as a mini game. Additional information would help a lot. Indeed the topic turns out to be fairly complex. The realization changes from state to state. Sometimes even from neighborhood to neighborhood. Thus, the game provides insight into the basics of waste separation. The foreign exchange students will be warned. A concluding description of German waste separation systems would be exaggeration in this situation.



Figure 4. Information Points: Intro-screen and detail (except for market place where no special intro-screen exists)

#### 4. TECHNICAL REALIZATION

Study-Town is implemented in Adobe Flash and ActionScript 3.0. Each shared apartment, information point, mini game, and the map are realized in an own SWF file that acts as a container for animations and interactions. A further SWF serves as entry point and main control: It instantiates levels and mini-games, provides the necessary dialogs, and stores user data. It also ensures convenient loading of the very high volumes of data.

Due to the large amount of illustrations, animations and sounds, the total amount of data of the game rose to more than 80 MB. Since the availability of the game should not be associated with grueling loading times even with relatively slow connection to the

Internet, this posed a special request to the programming. Any further increase of the compression of the data would have lead us to an unacceptable quality.

The huge amount of data is transferred by "lazy loading". The entire game has been broken down into the smallest possible parts connected by a hierarchical control structure. At the beginning each level (e.g. info point, shared apartment) only the entry SWF and a configuration XML have to be loaded before starting. All connected SWFs (like mini games, residents' reactions, etc.) can then be loaded in the background. In order to reduce load times even further sounds are streamed. Although this leads to a considerable amount of HTTP requests it allows selective loading. By this the game can use every second of inactivity of the user to load all the necessary data in the background.

#### 5. USAGE

Before going online the game was evaluated in a small informal user study<sup>6</sup>: 50 students were asked to play the game. 41 of them highly enjoyed the game and they would recommend it to others.

Figure 5 shows the web statistics of the game's usage. Due to the initial publicity of issued press releases the game was highly visited during the first weeks. After that initial phase the accumulated page impressions rise linear showing a steady usage for the last three years.

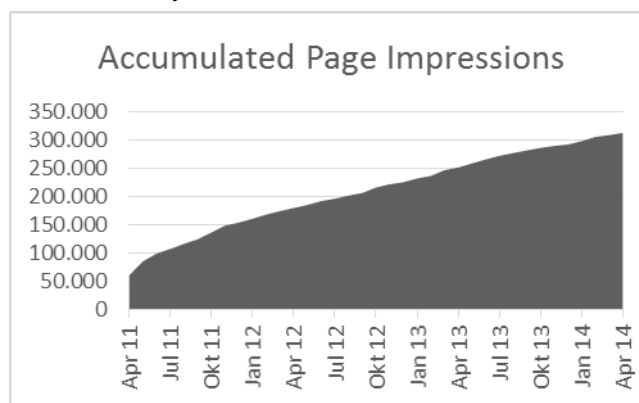


Figure 5. Accumulated page impressions for the last three years

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