# USING FLASH GAMES TO STIMULATE COOPERATIVE COMMUNICATION

**Serge Gabarre**
serge@fbmk.upm.edu.my
***Universiti Putra Malaysia, Malaysia***

**Cécile Gabarre**
cecile@fbmk.upm.edu.my
***Universiti Putra Malaysia, Malaysia***

## Abstract

The benefits of using games in the language class are numerous (Godwin-Jones, 2005). Playing computer games have become a popular form of relaxation for many learners (Yang, 2001). Can this phenomenon be utilized to support foreign language teaching at the tertiary level? In this research, a group of 15 Malaysian students were asked to solve a puzzle in a Flash game. Their task was simple: exit from a virtual room without a door. The computer/language lab used for this task was the Sanako Lab 300. Each learner had access to a single computer as well as a microphone and a headphone. The class had been divided into three groups of four students each and one group of three. In order to create an information gap task, four different audio instructions were available to each group. Each member of a group was required to communicate with the other three groups in order to complete the task.

**Keywords:** second language acquisition through computer gaming

Data were collected through questionnaire, focused and group interviews. Similar to previous research on motivation (Prensky, 2003), the findings revealed that the learners were so engaged in the game that they did not realize they were applying foreign language skills which they had learned to complete the task. Although in some instances, communications took place in L1, the vast majority of interactions were carried out in L2. Games, therefore, have more appeal than non-recreational applications and can eliminate part of the apprehensions related to technological anxieties. Nonetheless, some of the drawbacks noted by the teachers were similar to other complaints which often occur in e-learning projects (Lennon & Maurer, 2003). The drawbacks include complex infrastructure involved as well as the amount of time needed to prepare teaching materials. This paper explores several opportunities that may simplify the preparation of materials.

## Bringing the students back to the university during the semester break...

Although the events related in this case study stem from circumstances which do not normally occur in a classroom situation, we believe that they may be reproduced in a useful context. The context of this case study is quite atypical as it does not reflect common learning conditions. Our hierarchy informed us that the newly installed Sanako Lab 3000 would be officially opened by the university's vice-chancellor, and at the same time asked us if we could organise a demonstration with our students. We were more than delighted to oblige, but were faced with a major difficulty. The date chosen for the ceremony fell during the semester break. From past experience, we knew that obtaining participation from our students during their holidays might prove difficult (Gabarre, 2007). How could we motivate them to return to the university during the break? "Why is motivation such a big problem? Because all learning requires effort, and like crime, people rarely do it without a motive" (Prensky M. , 2002, p. 5). Current literature suggesting that gaming can stimulate motivation (Barab, Thomas, Dodge, Carteaux, & Tuzun, 2005; Godwin-Jones, 2005; Yang, 2001) prompted us to use such an approach. Like Gee, we believe that games can bring "deep pleasure" (2005, p. 211) to the learning process. Second year students were contacted, informed of the situation and invited to participate in the official opening. They were aware that there would be an activity related to learning French as a foreign language and that a computer game

would be involved. From a group of 19 learners, 15 accepted the invitation and took part in the activity. The remaining 4 were either unreachable or were unable to return to the campus on the specified date.

**...to find a hidden door...**

We decided to design an activity that would first of all be entertaining for the learners and at the same time would showcase the IT and audio features of the Sanako Lab 3000. This lab is equipped with 28 internet capable computers. One of the most interesting features is that the stations can be grouped together for various activities through a peer discussion function as each computer is equipped with individual headsets and microphones. As researched previously (Rieber L. P., 2002), we believed that by hinting rather than giving complete instructions, learners would learn more from this activity. By creating an information gap, they would also need to communicate among themselves in order to solve a puzzle. The game selected for this activity comes from the French web site www.jeuxvideo-flash.com. It is a small

Flash game called "La pièce", which translates into "The room". In this game, the player needs to find the exit to a room which has no visible door. By navigating between the four walls, visible clues are obtained that change the overall aspect of the room. Objects are collected, which when pieced together with items in the scenery reveal more possibilities. Eventually, a door appears that allows for exit and thus ends the game. The game itself is quite simple, and can last less than five minutes when one has all the required information. On the other hand, if one needs to proceed by trial and error, the game is quite challenging and could last around one hour. It is this challenge that we intended to use as a form of motivation (Gee, 2003). The students were divided into three groups of four participants and one group of three. Verbal instruction on how to complete the game was given to each "player" through incorporated audio files.

This is where the information gap was created as all participants were only given partial instructions. Since there are four different audio instructions, we can label each learner from N1 to N4 according to the message they had access to in the sequence. Each learner was required to first listen to the message available on his station, understand it and then explain it to the other three members of his group. Through collaborative communication, the group was thus expected to complete the task. Apart from visual observations, the listen-in feature of the lab was used to monitor the groups' conversations during the activity. Due to the unavailability of recording software, screen activity and voice were not recorded as in other research (Wideman, Owston, Brown, Kushniruk, Ho, & Pitts, 2007) but only manually noted from observations. Following the in-class collaborative task, qualitative data pertaining to the learners' perceptions was collected through focused interviews.

**...through forced and spontaneous collaboration...**

Each group was allocated one table with four computers arranged in a cross shape. All communication was supposed to occur within the peer discussion of the group; that is to say, through the microphones and the headphones. The vast majority of learners did not take the necessary time to read the general instructions that were given on the web page (Figure 1), and straight away, in a true gamers spirit, started clicking into the game itself (Figure 2).


Figure 1

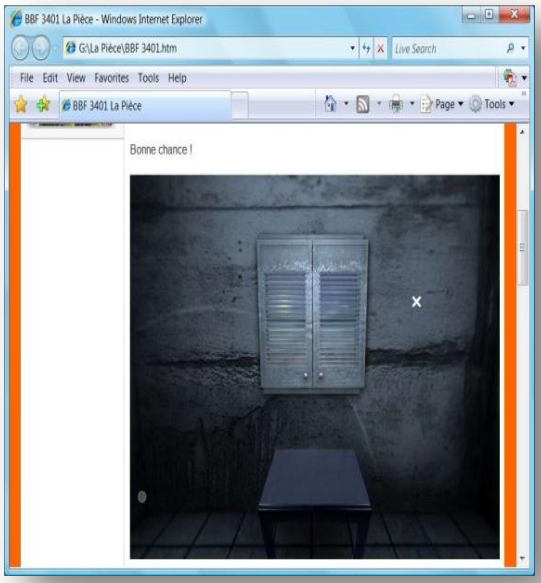


Figure 2

It is only after giving the class a verbal announcement through the lab's "Teacher to All" feature that they read the instructions (Figure 3), listened to their individual audio message and glanced over the visual clues (Figure 4). In each group, the learners who were given the first of the four audio messages, the N1's, were at a clear advantage, whereas the others had instructions which at that time could not be exploited. It is therefore not surprising that the N1 learners were able to get a lead in the game. As requested they needed to give the instructions to the other members of the group.

This was done in several ways. Some listened to the message and tried to repeat it verbatim to the others. Others chose a faster approach and paraphrased what they believed to have understood. A minority stood up, walked around to their friends' stations and pointed on the screen to the actions that needed to be done. The "rules" of the game was repeated to those who were on the move. For most groups, the first phase of the game was completed relatively rapidly compared to the following ones. This can be explained by the fact that the N2, N3 and N4 learners had already tried their hands on the task, while the N1's were deciphering the first message.

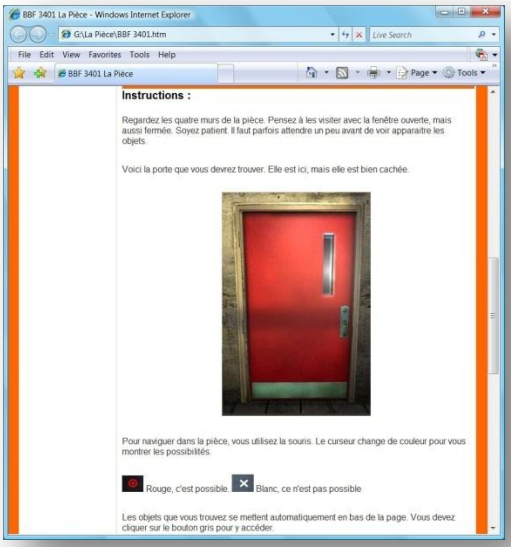


Figure 3

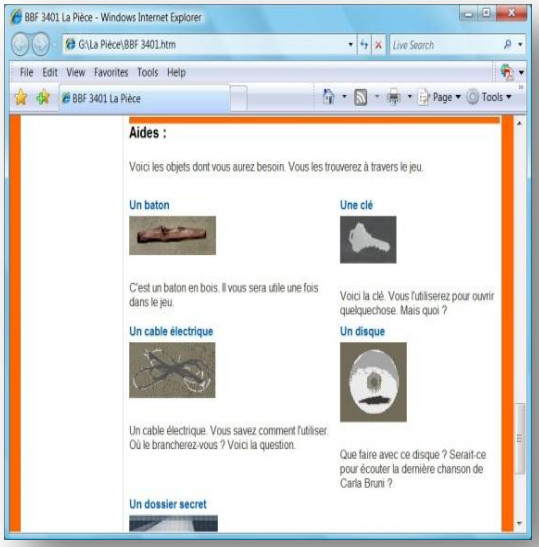


Figure 4

The second phase, where the N2 had the advantage, revealed once more a mixture of learners who opted for the paraphrasing technique while others simply repeated the message they heard. This stage proved slightly trickier than the first one with some group struggling to reach the third part of the game. As all learners had listened to their individual message, N3 and N4 learners where able to hint at things that were to come at a later time in the puzzle, thus giving invaluable clues. It is with joy and cheers that the first group announced that one of its members had finished the game. Subsequently, collaborative communication within the group enabled all of its members to virtually exit the room. While most groups had managed to finish the game, some less organised ones where still struggling to complete it. Those from the groups that had already finished spontaneously helped the others to reach the end of the game. In these cases, communication took place outside of the peer group, without using the equipment of the language lab.

It was believed that since the instructions were given in a sequential order the role of group leader would have also followed the N1, N2, N3 and N4 sequence. Interestingly, this was however not the case. One, and in some cases two leaders, always appeared in each group. What characterises them from the other members? Their number in the sequence seems irrelevant. On the other hand, it appears that it is their competency with communication skills and their IT fluency that gave them their advantage.

In the first phases of the game L1 and L2 were both used, but after a brief general reminder, communications in L2 became the norm. It was later revealed in the interviews, that some learners became too frustrated from being stuck in the game, and thus from time to time reverted to using their L1. In these cases, the game took precedence over the language activity.

**...proved to be quite successful...**

This activity was undeniably a success, but why did it work so well? Why is it that the large majority of learners chose to return to the university during their semester break? From previous experiences, it appeared extremely difficult for students to be involved in online learning activities during their holidays (Gabarre, 2007). Most of the time, they explained their non-participation with justifications of prior engagements such as work, travelling, or visiting friends and displayed various inhibitions. Why were the results different in this case? One of the reasons resides in the different contexts. In our previous

experiment, when we asked the students to participate in the online modules during the semester break we were not yet their lecturers. At that time, the learning contract had not yet been established between the class and ourselves. It was therefore more difficult to seek their participation. After one year of teaching, the situation was relatively different. When their lecturers requested the presence of the students in class, close to 80% of the learners returned even though some of them live a few hundred kilometres away. It appears that the different learning situation was the main reason that enabled the students return. This reason alone however does not justify the success and the enthusiasm of this activity. Once the learners started looking for the exit to the room, they were no longer just applying their communication skills. They were immersed in a situation that was different from their usual learning environment. This as stated by Conrad & Donaldson (2004) is one of the necessary criteria for the success of online activities. "Winning" the game became their utmost goal, and speaking French became secondary. Why did this goal take precedence over the rest? After all, there was no prize for finding the door other than the satisfaction of completing the game. One could have just as easily have closed the program and the result would have been the same. Rather it appears that "games provide an immensely compelling and rewarding experience" to the players from the "generation.com", from which our learners are issued (Garris, Ahlers, & Driskell, 2002, p. 442). Being immersed in virtual worlds and playing games brings a feeling of contentment. Furthermore, Gredler states that "Educational games and simulations are experiential exercises that transport learners to another world. There they apply their knowledge, skills, and strategies in the execution of their assigned roles" (2004, p. 571). Often students are not motivated by learning, and would rather spend their times on computer games which keeps them "interested, competitive, cooperative, results-oriented, actively seeking information and solutions" (Prensky M. , 2003, p. 1). It is therefore necessary to try to keep the positive aspects of gaming and put them in the learning process.

This is the main challenge of bringing games in the classroom. It has been done successfully with complex language learning games (Johnson, Vilhjalmsson, & Marsella, 2005), yet our case was different as it implicated using a game which was not originally designed for language learning. Previous research suggests that complex games are more beneficial in engaging the learning process (Prensky M. , 2005). In our case, the time constraint of just one cession of less than 30 minutes did not give us the opportunity to experiment with a more complex game.

**...and useful for the learners.**

By taking part in this short game, the learners improved their verbal skills. The use of the Sanoko language lab enabled us to partially isolate the learners from one another. By doing so, we were able to reduce the reliance on non-verbal communication to transmit information. Indeed, it is often quite possible to give or understand instructions pertaining to spatial movements by relying solely on non-verbal signs. With the lab, just like with a phone conversation, the exchanges needed to focus on verbal communication to convey the required message. Due to the nature of the game, a great part of the lexicon used was related to moving through space and interacting with objects.

For most of the learners, this implicated applying information that had already been learned in class with new one which originated from the game. From interviews that were carried out one semester after the activity took place, it appeared evident that long term memory had been stimulated through the gaming simulation. The learning process is enhanced by experiences which are subsequently stored in long-term memory before being used for solving problems in new situations (Gee, 2008). Some learners still remembered the various steps needed to exit the room and moreover were able to give precise instructions in L2. One drawback in this activity which is not unlike what has been suggested by Reese & Wells (2007) is the fact that the less talkative students are often dwarfed by the more open and confident ones. Although it is not uncommon to have different levels of communication skills in a language classroom, it can sometimes be used to an advantage. In our case study, the group leaders who, as mentioned above, were more fluent in French required information that was only held by the quiet students.

Because of this information gap, the better students were required to query the quieter ones in order to advance in the game. This exchange was not only beneficial to all students but also participated in the community building effort. After all, collaborative learning can only be achieved from a learning community (Palloff & Pratt, 2005). Playing the game through an online media with the computer lab enhanced the ties that existed in the face to face community. As is often the case with successful experiments in using games in a learning situation, students expressed their satisfaction from playing it (Schwabe & Göth, 2005). As required from the objectives set in this experiment, the learning activity was entertaining for the students and also demonstrated the different features of the Sanako Lab 3000.

**Creating such an activity: the technical side...**

Incorporating a Flash game in a learning activity is not as complicated as one may think. The first step is to find an activity that appears suitable for the language classroom. Some of the criteria that were important to us in the selection of the activity included: a task that could be carried out in about 20 minutes, where the new lexica would not be overwhelming and where an information gap could be created to induce collaborative communication. After browsing through popular search engines we found the www.jeuxvideo-flash.com web site. It is at this address that we found "La Pièce" to be a suitable candidate.

We then had several options regarding using this Flash game. The easiest possibility would have been to send the learners directly on the web site. There was however a major inconvenient with this solution. How could we be completely sure that the internet network connection would be working at the proposed time and date of the official opening? Another uncontrollable factor rested in the possibility of the web site changing its content. In order to reduce technical uncertainties, we decided to offer the game in an off-line format. So how is it technically feasible to host a Flash game on a local computer? Very simply by first visiting the web site where the game is available and then by looking for the relevant Flash file in the internet temporary folder. This folder stores all items that were downloaded by the browser while viewing the web pages. When using Microsoft Internet Explorer 6 under Windows XP, this folder is generally located in a location such as C:\Documents and Settings\default\Local Settings\Temporary Internet Files[1]. Compiled Flash files carry the swf extension. It is therefore quite feasible to locate the required file by searching through the location mentioned above. Sorting the files by date and time of access can help narrow the search. The Flash file can then be opened by a vast majority of browser on any local computer.

As we wanted to create an information gap, complementary instructions were created. After listing the various steps required in solving the puzzle, we divided them in four sections, since we intended to have four learners in each group. Each section was read and recorded. The four audio files created were converted to the mp3 format. Minor editing was carried out with the Audacity software.

Our final task was to assemble the Flash file with the audio files. We decided to use Dreamweaver for its ease of use yet any HTML editor could have been used. The final page included general written instructions on the activity, the Flash game in a centred and predominant position, a link to the audio file and pictorial clues for the new vocabulary. Different background colours were used for each of the four versions in order to better differentiate them.

**...and possible adaptations**

Some lecturers who attended the official opening ceremony of the language lab mentioned that they believed that they would not be able to offer activities like the one related in this article. "It is too complex to put in place", and "it requires too much time" were heard. These statements do have some

[1] This location is generally identified under the Internet Options in the Tools menu.

elements of truth as the whole process from the planning to the final product required about six hours of work for a sequence that lasted just under thirty minutes. These negative comments are not too distant from those that may be encountered in other e-learning projects (Lennon & Maurer, 2003). It is however quite possible to shorten this time. Using the on-line version of the game could be done without demanding any HTML coding. The task mentioned in this article involved oral comprehension, but elaborating an activity for written comprehension would not require dealing with audio files. Working with text files alone would undoubtedly be less time consuming. A simpler version of this activity could therefore be put in place in less than an hour. In our case, the learners were required to speak to each other by using the audio features of the lab, yet in a more basic computer lab lacking such functions, communication could also be achieved through on-line chats. Using this synchronous tool would allow the possibility to work on written production. These are only some examples as this pedagogical scenario can be adapted in several ways to suit the various setup of each classroom.

Above all, this type of activity should be used in normal teaching situations and not be cantoned to showcase events as it proved quite popular with both the learners and the teachers. The benefits gained from including a gaming activity in the teaching plan are well worth the investment in time and preparation.

**References**

Barab, S., Thomas, M., Dodge, T., Carteaux, R., & Tuzun, H. (2005). Making Learning Fun: Quest Atlantis, A Game Without Guns. *Educational Technology Research and Development , 53* (1), 86-107.

Conrad, R.-M., & Donaldson, J. A. (2004). *Engaging the Online Learner.* San Francisco: Jossey-Bass.

Gabarre, S. (2007). Can Online Modules Reduces Anxiety in Chinese Learners? *AsiaCALL.* Indore, India.

Garris, R., Ahlers, R., & Driskell, J. E. (2002). Games, Motivation, and Learning: A Research and Practice Model. *Simulation Gaming , 33* (4), 441-467.

Gee, J. P. (2008). Learning and Games. In K. Salen (Ed.), *The Ecology of Games: Connecting Youth, Games, and Learning* (pp. 21-40). Cambridge, MA: The MIT Press.

Gee, J. P. (2005). Pleasure, Learning, Video Games, and Life: the projective stance. *E–Learning , 2* (3), 211-223.

Gee, J. P. (2003). What Video Games Have to Teach Us About Learning and Literacy. *ACM Computers in Entertainment , 1* (1), 1-4.

Godwin-Jones, R. (2005). Emerging Technologies Messaging, Gaming, Peer-to-peer Sharing: Language Learning Strategies & Tools for the Millennial Generation. *Language Learning & Technology , 9* (1), 17-22.

Gredler, M. E. (2004). Games and simulations and their relationships to learning. In D. H. Jonassen (Ed.), *Handbook of research on educational communications and technology* (pp. 571-581). Mahwah, NJ: Lawrence Erlbaum.

Johnson, W. L., Vilhjalmsson, H., & Marsella, S. (2005). Serious Games for Language Learning: How Much Game, How Much AI? *AIED 2005.* Amsterdam: IOS.

Lennon, J., & Maurer, H. (2003). Why it is Difficult to Introduce e-Learning into Schools and Some New Solutions. *Journal of Universal Computer Science , 9* (10), 1244-1257.

Palloff, R. M., & Pratt, K. (2005). *Collaborating Online Learning Together in Community.* San Francisco: Jossey-Bass.

Prensky, M. (2003). Digital Game-Based Learning. *ACM Computers in Entertainment , 1* (1), 1-4.

Prensky, M. (2005). In Educational Games, Complexity Matters, Mini-games are Trivial - but "Complex" Games Are Not, An important Way for Teachers, Parents and Others to Look At Educational Computer and Video Games. *Educational Technology , 45* (4), 1-15.

Prensky, M. (2002). The Motivation of Gameplay The Real Twenty-First Century Learning Revolution. *On the Horizon , 10* (1), 5-11.

Reese, C., & Wells, T. (2007). Teaching academic discussion skills with a card game. *Simulation Gaming , 38* (4), 546-555.

Rieber, L. P. (2002). Supporting Discovery-Based Learning within Simulations. *International Workshop on Dynamic Visualizations and Learning* (pp. 1-10). Tübingen: Knowledge Media Research Center.

Schwabe, G., & Göth, C. (2005). Mobile learning with a mobile game: design and motivational effects. *Journal of Computer Assisted learning , 21*, 204-216.

Wideman, H. H., Owston, R. D., Brown, C., Kushniruk, A., Ho, F., & Pitts, K. C. (2007). Unpacking the potential of educational gaming: A new tool for gaming research. *Simulation Gaming , 38* (1), 10-30.

Yang, C.-K. (2001). Sociopsychiatric characteristics of adolescents who use computers to excess. *Acta Psychiatrica Scandinavica* (104), 217-222.