

## Multi-User Virtual Environments Fostering Collaboration in Formal Education

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### ABSTRACT

This paper is about how serious games based on MUVES in formal education can foster collaboration. More specifically, it is about a large case-study with four different programs which took place from 2002 to 2009 and involved more than 9,000 students, aged between 12 and 18, from various nations (18 European countries, Israel and the USA). These programs proved highly effective into fostering a number of transversal skills, among which collaboration (both remote and in presence), stood out as prominent. The paper will introduce the four programs, the way they were designed to foster collaboration and the data on their impact.

### Keywords

MUVES, 3D virtual environments, Computer-supported collaborative learning, Educational benefits

### Introduction

“Most great learning happens in groups” and “collaboration is the stuff of growth”: thus goes Ken Robinson’s thinking as expressed in the successful YouTube video “Changing Educational Paradigms” (Robinson, 2010).

We could not agree more that modern society needs people who are capable of working, learning, negotiating opinions, being creative in *groups*. But school systems around the world are still modeled on an “individual accountability” basis, which – again, as Sir Ken Robinson points out – depends on the ideology and societal organization of the period in which they were created: the beginning of the 19<sup>th</sup> century, when enlightenment on one side and industrialization on the other were shaping society in a way never seen before.

It so happens that our children are taught that there is “one and only one answer to a question” (which can be found at the end of the book – and you can’t look it up, that’s cheating!), that there is no room for multiple views, that talking to peers and discussing different opinions is not allowed nor profitable, that in the end what matters is the score the single student gets and there is no point in helping or cooperating with the others. But there is a lot of evidence that these “solo-players” produced by our school systems are not what our new, ever connected, ever interplaying society and professional world needs. The digital natives of today live the majority of their lives in a net of relations, stretching far and wide: the only place where the lines of this net are broken is school. How long can this last?

This paper presents a large case-study with four serious-games programs deployed in the context of formal education, in which *collaboration (both remote and in presence) was essential* for success. These programs involved thousands of students, from all over Europe, Israel and the USA, interacting, studying and playing over serious subject matters. The results, extensively monitored through a number of means, were quite positive in terms of educational benefits (Di Blas & Ferrari, in press): Participants learnt more about the subjects at stake, gained a number of skills (improved English, technical skills...) and also changed their minds about some issues (e.g., they better understood their peers’ cultures). For the sake of this paper, the most relevant result regards collaboration: the design of the educational experience pushed participants to collaborate, both within the class and their remote peers. The main findings of the research study are: teachers were very keen on organizing the class in such a way as to promote collaboration (e.g., through group-work) and they rated collaboration as one of the main benefits for the students; the students themselves acknowledged they had improved their capacity to work in groups and rated group work and cooperation as two of the most engaging aspects of the experience. These data were confirmed by the online tutors monitoring the meetings in the MUVES and the interaction in the forums.

## Background

### Learning and collaboration

Computers in education have a high potential for supporting collaboration. The recent relevant literature about HCI (e.g., Czerwinski et al., 2008; Olsen et al., 2009) and interaction design for children (e.g., Cassell, 2008) shows a pronounced interest in the development of collaborative technologies that can support interaction of groups at a distance or in co-presence.

Theories of cooperation place an accent on the underlying motivation and the dynamics of cooperation. Argyle (1991) suggests that there are three main reasons that can trigger cooperation: external compensation; building relationships and sharing and enriching the activities the participants are involved in. Some authors insist on the intrinsic motivation to cooperate as a key element for successful cooperative learning (McConnell, 2000). Cooperative learning can be defined by insisting on a shared goal in group work (Underwood and Underwood, 1999), or on the relation between collaboration in group work and learning, with a focus on the process (McConnell, 2000). The analytical premises in the field of computer-supported cooperative learning (CSCL) are tied to different theoretical schools. Koschmann (1996) identifies three major theories influential in the CSCL field:

- (1) constructivism insists on the role of interaction among peers in cognitive development and on the socially constructed nature of knowledge;
- (2) sociocultural theory, building on the legacy of Vygotsky (1978), places an accent on the role of the tutor, or a more skilled person, and their support in defining ‘the zone of proximal development’;
- (3) situated cognition theories stress that learning occurs through proximal participation; communities of practice have embedded specific knowledge, and learning occurs by entry and participation into such a community through active sharing.

In the variety of approaches and theories that can serve to explore the relation between interaction and learning in group settings, two common denominators of cooperative learning can be found: the existence of a group, and a shared goal, purpose or outcome to achieve (McConnell, 2000). From here, a rich variety of cooperation patterns may arise and are currently practiced in schools worldwide. For the purpose of this paper, we find McConnell’s framework useful for analyzing the types of collaboration in cooperative learning, based on a set of six aspects: 1 structure (highly structured–no structure); 2 teacher control (high–low); 3 moderation of learning (external–internal); 4 learner motivation (external–internal); 5 learning content (curriculum based–learner based); 6 assessment (unilateral by teacher–unilateral by learner; McConnell’s 2000).

The approach of the programs presented in this paper can be related to constructivism (peer learners discuss and socially construct their knowledge), situated cognition (learning occurs by entry and participation) and sociocultural theory (the teacher acts as a tutor). The shared goal is of paramount relevance, as discussed later in the paper. Eventually, all the aspects of McConnell’s framework are represented, except number 6, in the sense that assessment was “the teachers’ business” and the designers were not involved in it.

### MUVEs in education

MUVEs have been used several times in formal education, i.e., situations where students in a class, with a teacher, are given precise learning goals (Dieterle, Clark, in press). We can recall here: Barab’s Quest Atlantis, a persistent virtual world where children engage in curriculum-related quests to save a fantasyland from environmental disaster (Barab et al., 2005; Barab et al., 2009); Dede’s River City (Dede et al., 2005), where teams of middle-school students investigate the social, health and environmental causes of an epidemic in a virtual town; Bers’ Zora (Bers, 1999), a virtual environment used by children with psychological, mental or physical problems to express themselves through the manipulation of virtual objects and characters; AppEdTech ([www.lesn.appstate.edu/aet/aet.htm](http://www.lesn.appstate.edu/aet/aet.htm)) a graphical MUVE supporting graduate students who work over distance; AquaMOOSE 3D ([www.lesn.appstate.edu/aet/aet.htm](http://www.lesn.appstate.edu/aet/aet.htm)), a MUVE about parametric equations; MOOSE Crossing ([www.cc.gatech.edu/elc/moose-crossing](http://www.cc.gatech.edu/elc/moose-crossing)), a text-based MUVE for children aged 9-13; Revolution ([educationarcade.org/node/357](http://educationarcade.org/node/357)), a multiplayer role-playing game where students “take part” in the American Revolution as members of a virtual community set in Williamsburg; Whyville ([www.whyville.net/smmk/nice](http://www.whyville.net/smmk/nice)), a graphical MUVE designed for children aged between 10 to 12 to communicate with friends, learn math, science, and

history, and build online identities; Critical Life (Rogers, 2011), a MUVE that allows student nurses to practice their clinical skills using the Second Life platform; Virtual Singapura (<http://virtualsingapura.com/game/>), an intelligent agent-augmented multi-user virtual environment modeled on early 19th-century Singapore, and a variety of artificial intelligence entities called intelligent software agents that act as the learning companions for the learners.

Recent MUVE studies (Aldrich, 2009; Badawy, 2012; Dickey, 2005; Laws et al., 2009; Tobias & Fletcher, 2011) show that a number of important questions have been raised, such as: Do games and virtual worlds work for all learners/subjects? How do we assess learning when it's happening in games and virtual worlds? How does the kind of learning that happens in games and virtual worlds map onto curriculum standards? Authors have a broad understanding of how MUVEs can be designed to support the situated and distributed nature of learning and thinking (Dieterle & Clarke, in press) recognizing the Distributed Cognition, which states that “knowledge and cognition is distributed across objects, individuals, artifacts, and tools in the environment” (Hutchins, 1995), as a contributing theory for 3D virtual worlds in education. As MUVEs are designed to give students problems with several paths to the solution, performance-based assessments, such as proposals or final reports, seem to better assess the pedagogical benefits (Ketelhut, Clarke, & Nelson, 2010). Researchers recognize general benefits for students since 3D virtual worlds can assist with improving self-efficacy (Ketelhut, Nelson, Clarke, & Dede, 2010) and can provide environments that immerse the student in various roles and tasks, encouraging her to become an explorer and experimenter (Rogers, 2011). Many published studies report on the impact evaluation of MUVEs in formal education. For example, authors in (Kennedy-Clark et al., 2009) focus on analyzing the impact of structure in inquiry-learning activities in Virtual Singapura, showing that “adopting a low structure initial activity in inquiry-learning can result in better learning outcomes than using an initial high-structure activity.” Researchers in (Nelson & Ketelhut, 2007) present a review of the emerging use of MUVEs to support interactive scientific inquiry practices revealing that “MUVE-based curricula can successfully support real-world inquiry practices based on authentic interactivity with simulated worlds and tools.” Researchers in (Sancho et al., 2009; Perera et al., 2010) conducted case studies collecting data about motivational aspects of the use of MUVEs in managed learning, i.e., as software tools and digital content specifically intended to support learning activities. Authors recognize that “maintaining student engagement is a major concern in higher education, especially when concepts become more sophisticated and coursework becomes more complex.” Other works report on in-field observation and evaluation studies on collaborative and virtual learning environments, both from a teacher’s point of view, stressing his/her habit changes (Marty & Carron, 2011), and from a student’s perspective (Jong et al., 2010), analyzing the “positive quantitative findings of the study, with a combination of quantitative and qualitative methods of inquiry.”

## The case-study

The four programs this paper is based upon are:

- SEE (Shrine Educational Experience); 2002-2004. In cooperation with the Israel Museum of Jerusalem, SEE involved over 1,400 middle and high school students from Italy, Israel and Belgium. It was about the Dead Sea Scrolls and related religious, political, historical issues. [www.seequmran.net](http://www.seequmran.net)
- Stori@Lombardia; 2005-06. With the support of the Regional Government of Lombardy (Italy), on the medieval history of the Lombardy region. More than 1,100 students from Northern Italy, aged between 12 and 19, were involved. [www.storialombardia.it](http://www.storialombardia.it)
- Learning@Europe; 2004-08. With the support of Accenture Foundation, as part of the Accenture Corporate Citizenship investment program, on European history. Since 2004 it has involved more than 6,000 high school students from 18 European countries and the USA. [www.learningateurope.net](http://www.learningateurope.net)
- Learning@SocialSport; 2007-09. In cooperation with the SBS Master Verde Sport (of the Italian fashion group Benetton), Fondazione Italiana Accenture and the Italian Olympic Committee (CONI) on ethical, social and psychological issues related to sport. Since 2007 it has involved more than 350 young athletes. [www.learningatsocialsport.net](http://www.learningatsocialsport.net)

All the programs shared the same approach, though of course changes were made over the years following monitoring and evaluation. The basic approach can be summarized as follows:

- Classes underwent collaborative educational experiences supported by *Multi-Users Virtual Environments* (figure 1)
- These *experiences were blended*, in the sense that they involved both off-line (more traditional) and online activities. Online meetings (called “sessions”) in the MUVEs were the core of the experience (figure 2).

- The whole educational experience would *last between 1 and 2 months*.
- There was always an overarching goal: a *competition*. Anything in the experience mattered to this end, from discussion to homework delivery, from ability games to the quality of interaction.
- Each experience comprised *4 different classes from 4 countries* (e.g., USA, UK, Poland and Italy). For each class, two avatars were present in the 3D environment (figure 1). In order to involve more students (and to allow for more in-depth discussion), in year 2007 a third environment was added: a 2D chat, where an additional student for each class was involved, answering difficult cultural questions.
- Each experience was managed by *two online guides*.
- *MUVEs were meant to support interaction* and to foster motivation. In MUVEs, games would alternate with cultural discussion and quizzes.
- *In the real world, substantial learning would happen* (assignments, research, etc.). To start from a fair basis, all the participants were provided with the same set of background content: documents derived from interviews to leading experts (historians, sociologists, etc., according to the subject at stake).



Figure 1. Learning@Europe's virtual world, with pictures of the students' countries

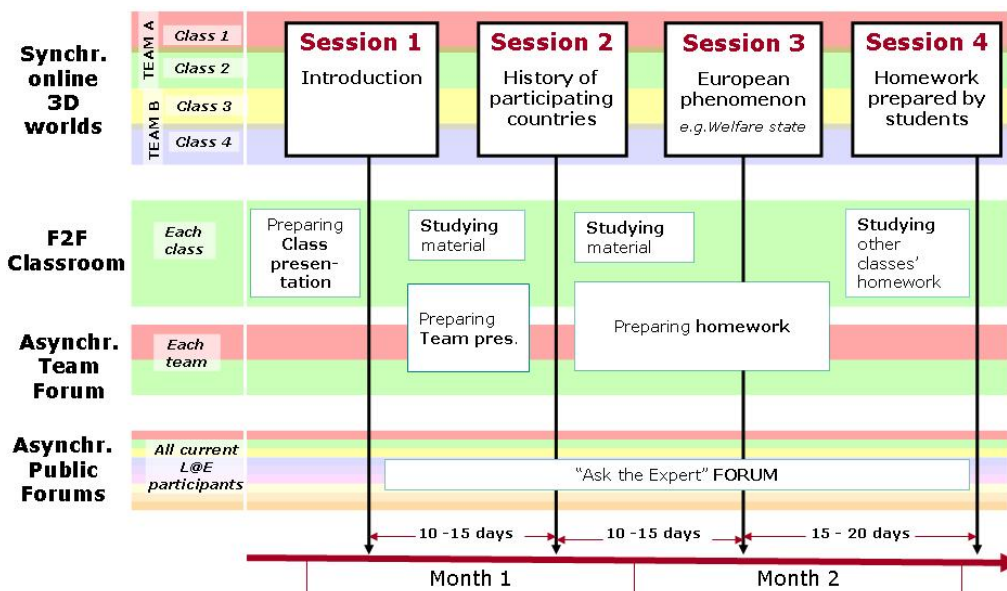


Figure 2. Overall plan of the Learning@Europe experience

The MUVes supporting all the programs were developed by HOC-LAB. The current version (WebTalkCube) of the platform is the result of a number of refinements over previous versions. The technical platform is presented in details elsewhere (Di Blas et al., 2012).

## **MUVes to support collaboration**

Collaboration was one of the main goals of all the programs; it came naturally, since MUVes are intrinsically collaborative (Bucciero et al., 2011). Making the experience collaborative was a pervasive requirement: almost all of the program's features were directly or indirectly affected by it. Let us see now some examples of experience's features meant to support collaboration.

### **Example 1: The assignments**

Students were asked to complete a number of assignments, especially in the Learning@Europe program. First of all, a class presentation had to be prepared before session 1: students had to transform it into an HTML page that would then be shown in the virtual world, together with pictures of the students' countries. This first assignment required collaboration inside the class. Between session 1 and session 2, a team presentation was required: the four classes taking part in an experience were paired into teams of two classes each, and each team had to collaborate remotely to create a "team presentation". Eventually, between the second and the fourth (last) meeting, the biggest effort was required; students were asked to:

- make a survey to people in the streets about their perception of their national identity;
- take pictures of monuments, streets, buildings of their town;
- prepare an essay discussing some aspects of their nation's history (e.g., the influence of religion in the formation of their nation-state);
- prepare in collaboration with their remote peers another essay, comparing their different points of view.

Task 1-3 implied collaboration within the class, task 4 implied collaboration with the remote peers.

Furthermore, students within the class were organized into groups for studying the background materials necessary to take part in the online discussions and quizzes.

All assignments thus required collaboration: both within the class and with remote peers.

### **Example 2: The treasure hunt game**

In all the programs, there always was a treasure hunt game, taking place in a labyrinth. The labyrinth was divided into two halves, one for each team. Each team had to look for its own set of objects, following cultural clues. The labyrinth contained a number of boxes: The user had to click on the box, see what the object was and decide whether it was the right one or not. As a consequence to her selection, a piece of a sentence would appear in the middle of the labyrinth: If all the four objects were right, the sentence would make sense. In SEE it immediately turned out that users would play individually and would select any object they found, just trying to make up a meaningful sentence. So both of our goals were not fulfilled: Users did not collaborate, nor did they think about the cultural clue. In the following versions of the programs, rules were changed, exploiting also a technical bug that allowed users to look through the eyes of other users. First of all, it was made compulsory that an object in the maze had to be selected by two users at a time. If one of the players found an object she thought was the right one, she had to call her mate via chat and ask her to look through her eyes so as to select the object together. In addition, points were taken for any wrong selection: In this way, guessing-game was avoided.

Thanks to this changes, the Treasure Hunt was turned into a collaborative game.

### **Example 3: "Find your way" game**

In the "Find your way" game, one user had to move through a maze full of obstacles she could not see; her remote team partner instead could see the obstacles, so she could give her directions, via chat. In addition, if the other team

partners who were discussing in the 2D chat were giving correct answers, the obstacles were made visible (figure 3). This game thus implied a lot of collaboration: each user's ability and knowledge would contribute to the team's success.

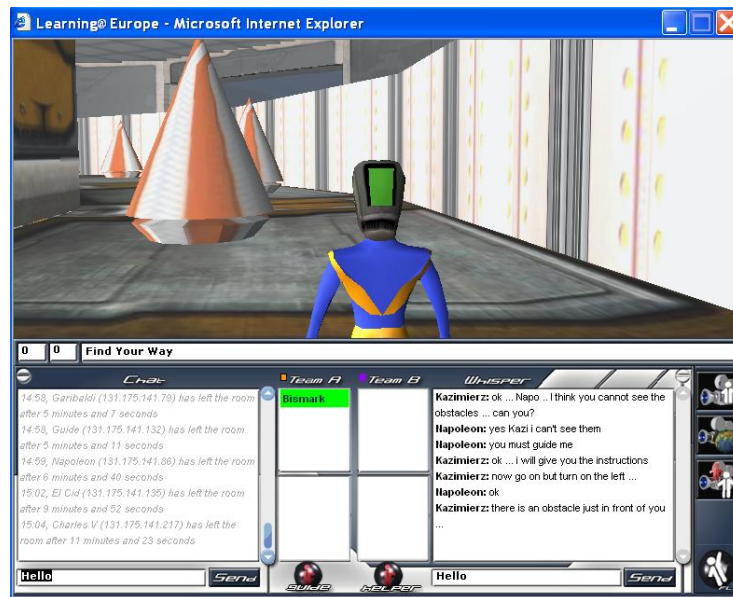


Figure 3. The “Find your way” game, where a “blind” user moves through a maze with obstacles following a remote partner’s directions via chat

## Evaluation

The four programs were extensively monitored over the years through a number of means:

- surveys to teachers, before the experience, after each online session and at the end of the experience;
- surveys to students, before and after the experience;
- session reports by the online guides after each online session;
- forum reports, weekly filled by the online guides;
- direct observations in the classes (4-5 classes per year);
- post-analysis of online sessions (recorded with Camtasia);
- assignments’ evaluation by the tutors.
- focus groups with teachers (20 on average) at the end of each year.

The programs proved effective into fostering a substantial educational benefits of various kinds, from increased knowledge of the subject matter to changes of attitude (e.g., “increase tolerance” towards other cultures, in the case of Learning@Europe). The main results are discussed elsewhere (Di Blas et al., 2009; Di Blas et al., 2012). We shall focus here on data about *collaboration*. Since over the years the evaluation systems evolved (e.g., scales and questions were adjusted), data will be taken from a specific program, Learning@Europe, in its last year of deployment, when the largest number of participants were involved.

The *surveys to teachers* (67 respondents) provide evidences of the collaborative activities that had taken place in the class. When asked to describe how activities had been organized, 76,9% of the teachers said that students were organized into *groups* to complete the assignments and a similar percentage (71,9%) said they had organized their students into *groups* also during the online sessions. In addition, 53,8% reported that their students had interacted with the remote peers through the team’s forum.

Data about how students worked in the groups are quite interesting. 39,1% of the teachers made the students take turn at the computers, in all other cases they let the students organize themselves according to their skills and

preferences. So, in the majority of cases (85,9%), students “specialized” in the sense that they performed specific roles.

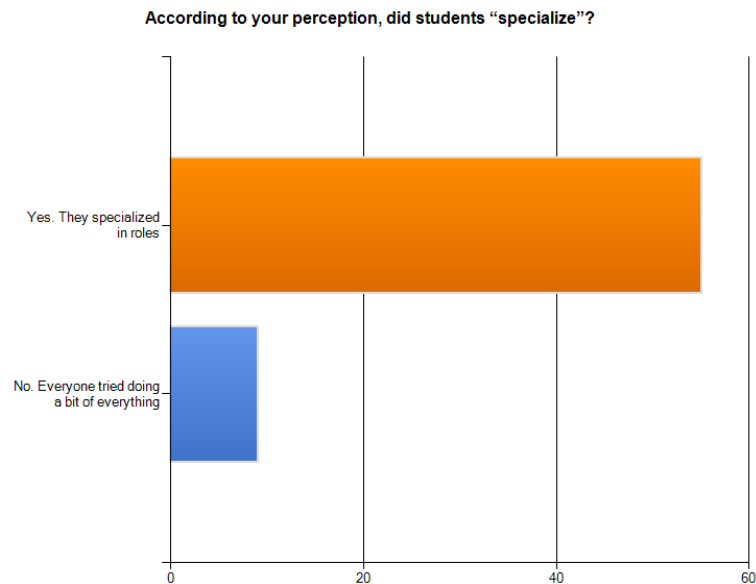


Figure 4. Whether students had specific roles in the experience; teachers’ opinion after the last online session; 67 respondents (on X axis)

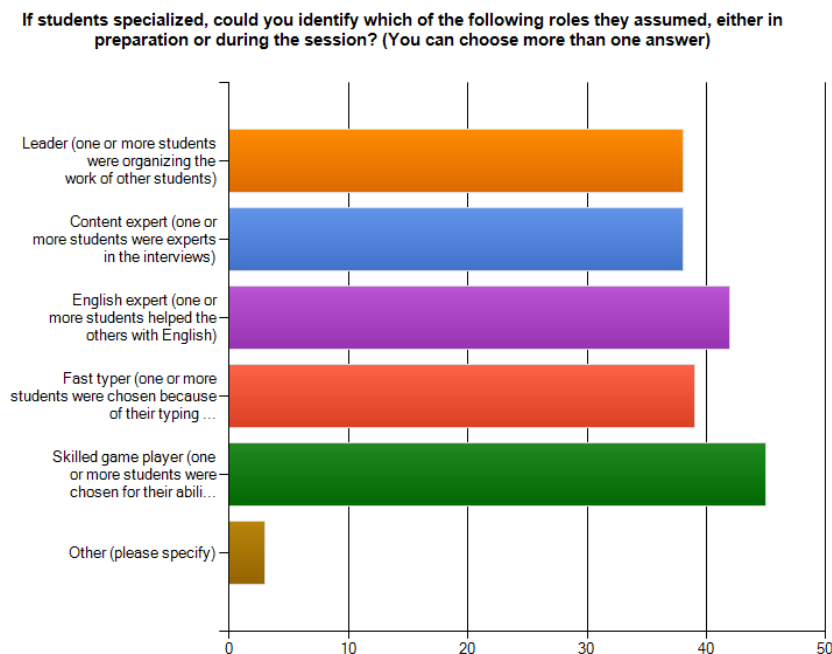


Figure 5. The roles played by the students during the experience; teachers’ opinion after the last online session; 67 respondents (on X axis)

The above data show that collaboration went with specialization: an occasion for all the students to show what they were good at, exploiting their natural talents. This brought about some unexpected benefits, like the rescuing of disaffected or marginalized students (Di Blas & Poggi, 2008; Di Blas & Ferrari, in press).

Collaboration was pervasive: Thus it comes as no surprise that the teachers’ rating of “group work” as educational benefit for their students is quite high: 3,80, on a scale from 1 to 5 (Figure 6).

A teacher reported: “Each one’s skills were resources for the class. They understood that, by playing their role well, the whole team would benefit. I saw none of the usual jealousy for those who controlled mouse and keyboard: They stood together, united to win.”

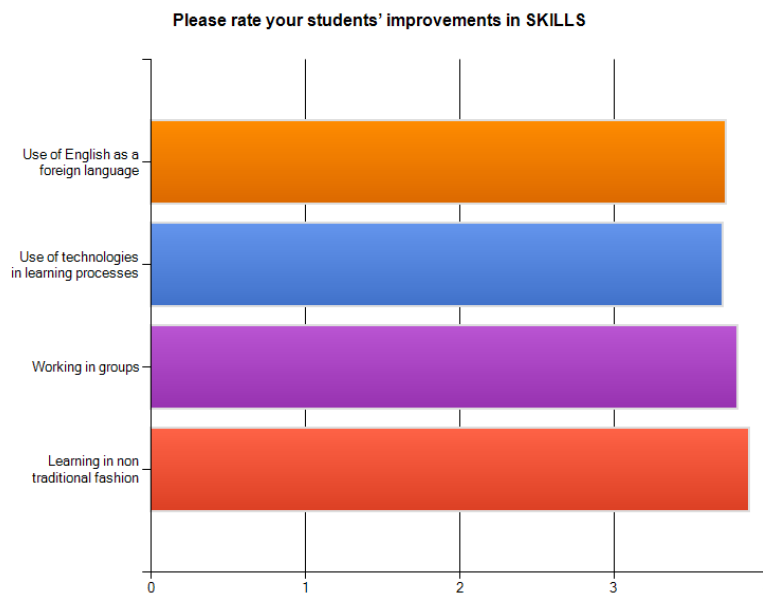


Figure 6. Teachers' rating of the students' improvements in terms of skills; group work scores quite high; scale from 1 to 5 where 5 is best, 67 respondents

Eventually, the relevance of the competition as a group activity also emerged from the surveys: 75,4% of the teachers either agreed or strongly agreed that “competition had motivated their students to learn” (23% partially agreed with this statement, 1,6% disagreed and none strongly disagreed).

The surveys to students (535 respondents) shed further light on how much and in what sense collaboration worked. First of all, quite surprisingly group work with class mates turned out to be more engaging than the games (Figure 7).

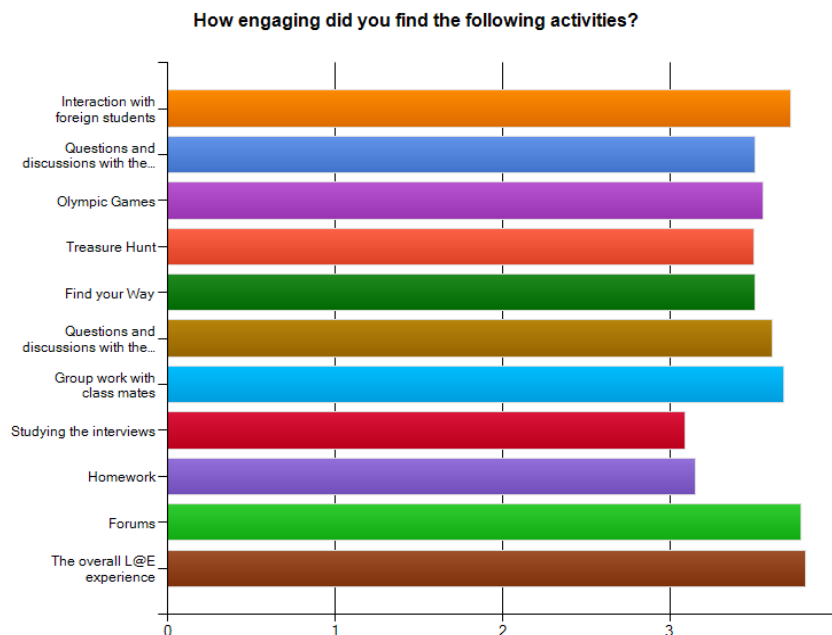


Figure 7. Students' rating of the most engaging aspects of Learning@Europe; scale from 1 to 5 where 5 is best, 535 respondents



Students were also happy to interact with remote peers and rated it as the main reason why they appreciated the online sessions. When asked to self-assess their improvements in skills, students acknowledged they had learnt how to work in groups (Figure 8).

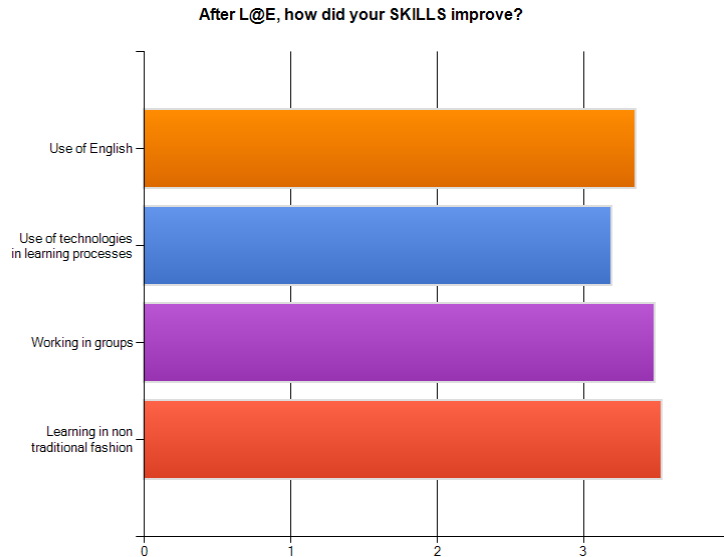


Figure 8. Students’ self-assessment of their improvement in skills; scale from 1 to 5 where 5 is best, 535 respondents

Exchanging ideas with remote peers was an eye-opening experience for many, like for example a girl who took part in Learning@SocialSport, who wrote in the forums: “In my opinion it is great to meet young athletes coming from different places, who practice sports that are different from mine. There are many differences, due to the different geographical locations, but the great thing is that you can see that a rugby player has an infinite sense of fair play, that a basketball player is willing to pass the ball to his team mate, that a canoeist rows with all her might to make her team win and that a tennis player, even if she plays alone, feels part of a big family. It is the team and the team spirit that unites us”.

The reports by the online guides (79 respondents) pinpoints how chatting with remote peers is the third most successful aspect of the online sessions (being the exploration of the environment first and the promptness in following the guides’ directions the second).

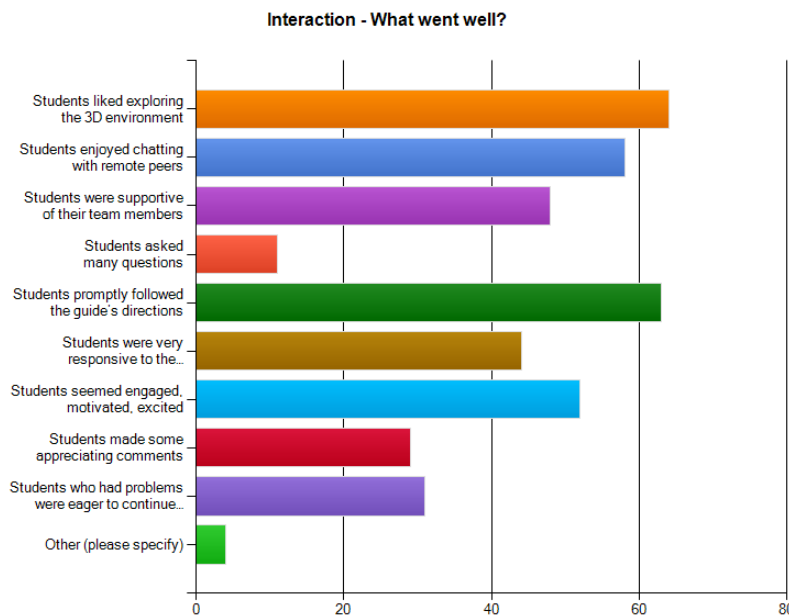


Figure 9. Online guides’ assessment of the most successful aspects of the online sessions; 79 respondents (on X axis)

The *analysis of the forums* confirm the above data: socialization is the best-achieved goal (scoring 3,21 – on a scale from 1 to 5 where 5 is best; 39 respondents) among all the goals the forums were supposed to fulfill (figure 10).

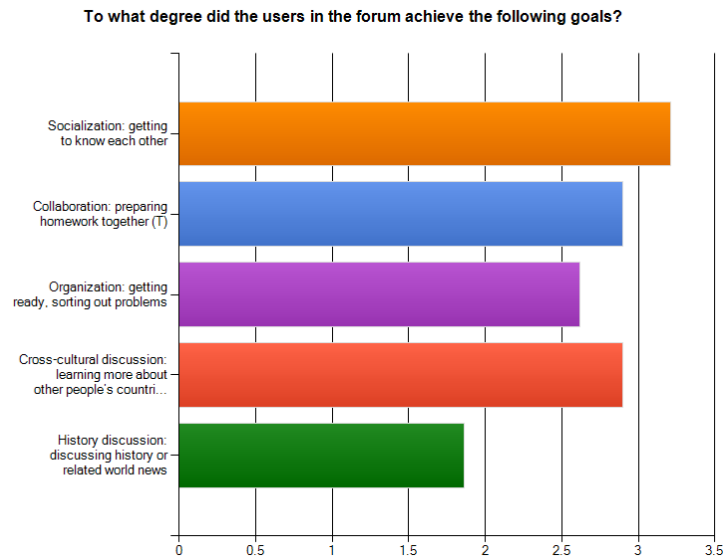


Figure 10. Assessment of the forum's outcomes by the online tutors; scale from 1 to 5 where 5 is best, 39 respondents

An online tutor reports: “they liked talking about their lifestyle and everyday life. They exchanged opinions about the homework and collaborated in doing it. They were always friendly to each other”.

Eventually, *direct observation in the classes* revealed that students would group around the computers, cheering, suggesting answers and moves, supporting the players, etc. (figure 11).



Figure 11. Screenshot from a video taken in a class during a Learning@Europe's session

A number of collateral benefits related to team-work were detected (during focus groups with teachers and through comments in the surveys): By working on a common task, users can get benefits in the ethical and affective sphere, like increased social commitment (my task is important for my community), sense of responsibility, understanding of deadlines, capability of working in groups and negotiating with peers. Teachers rated 3, 93 (on a 1 to 5 scale, where 5 was the best score) the efficacy of “group work” to develop their students' sense of responsibility. A teacher reports: “My students are learning to take into consideration their peers' opinions.”

## Conclusions and lessons learned

In this final section we discuss some “lessons” on how to foster collaboration in MUVES’ based educational experiences. These lessons derive from our experience as designers, were refined over the years following our users’ evaluation and were confirmed by the positive outcomes discussed before (for a thorough description see Bucciero et al., 2011).

The reader may note that many of the lessons that follow can actually be applied in other situations, where different kinds of technology are used: it is also the authors’ experience, for example with digital storytelling in formal education (Di Blas & Paolini, 2013).

### Lesson 1

*Provide a common, overarching goal perceived as meaningful*

In the case of the above described programs, all the student knew they were involved in a competition in which points would be given and taken for any action, ranging from the quality of the discussion (which meant gaining points) to misbehaviors (which meant losing points). At the end of the experience, one team would be “crowned” as winner. That a competition can be motivating is known: one of Caillois’ category of game is “agon,” i.e., competition (Caillois, 1961), and “challenge” is one of the 11 elements on the taxonomy of fun by Prensky (Prensky, 2001). As shown above in the evaluation section, the large majority of the teachers agreed that the competition had been a strong motivator for their students. A teacher reports: “during the last online meeting the guide declared us winners: the children roared as if they were at a soccer match. People would come into the classroom asking what all the excitement was about”. There is wide discussion about the relation between motivation, technology, gaming activities and learning (Tran et al., 2012): in our case, we used a (multi-faceted) extrinsic motivation to somehow lure students into studying the serious subject-matters at stake.

### Lesson 2

*Split activities into doable tasks*

In a collaborative experience, it is fundamental to split the activity into bitable chunks so that participants feel that they can handle it. Moreover, if there is a competition, participants who are not performing well can feel that there is space for improvement (Di Blas, Garzotto & Poggi, 2009). Surveys had shown that teachers would split the class into groups and that students would specialize in different roles: thus, the “bitable chunks” were the perfect solution to fit this pedagogical implementation. Teachers could assign the different tasks to the different groups/students like in an orchestra, where everyone plays a different instrument thus contributing to the final result.

One example are the assignments in the Learning@Europe program: there were assignments between one session and the following (e.g., preparing the class’ presentation, preparing the team’s presentation...) and the final assignment consisted of different chunks: a survey to people in the streets about their perception of their national identity, a reportage with pictures of relevant monuments, streets, places in the students’ home town, an essay about the students’ own national identity and eventually a collaborative essay about similarities and differences between the two essays by the different classes in the same team.

### Lesson 3

*Link tasks together*

Linking the tasks means that the success of one user’s task affects, in some way or another, another user’s task. The more activities are interdependent and coordinated, the more evident the need for collaboration is. This is a low-level design requirement deriving directly from the high-level requirement “enhance collaboration” (Bucciero et al., 2011), and its positive effect is backed up by all the data about students’ collaboration shown in the section about evaluation.

One example is the interplay between the discussion in the 2D chat and the “Find your way” game: When correct answers are given in the 2D chat, the obstacles hindering the player in the “Find your way” are removed. This tight relation between performances inside the team makes it clear that collaboration is essential to reach the common goal.

#### **Lesson 4**

*Support the expression of diverse talents*

A class gathers students with diverse talents: If team-building is the aim, it is highly advisable to design different activities so that every single student can feel her contributing to the team’s success. Surveys show that most of the times teachers let students specialize, that is, take the roles that would best fit them.

Examples from our program are the ability games in the 3D world, typically performed by the “video-gamers” in the class, vs. the in-depth, cultural discussion in the 2D chat, where reading and understanding of the background materials was crucial.

The reader may wonder: Is this “blending” of talents collaboration or rather cooperation? Our answer is that it is a form of collaboration: Participants “play like a soccer team,” where players are assigned different roles, but all deeply influencing one another.

As regards this lesson, a warning must be made: Supporting diverse talents leads to the inclusion of all the students in the experience, not in the sense that everyone is learning the same things but that everyone is involved and tries to do her best. This can be a desirable outcome, for motivation is likely to last beyond the boundaries of the experience and boost the students’ performances; still, it must be kept in mind what was said above: different tasks assigned according to different talents does not mean that the students are all learning reaching the same educational goals.

#### **Lesson 5**

*Provide (even compulsory) collaboration “sparks”*

Collaboration, especially in the frame of formal education where students are under the teachers’ control, is not likely to bootstrap spontaneously: It needs to be triggered, even making it compulsory. This is the case of many activities in our programs where collaboration was made the only way for achieving the final goal. One example is the “Treasure hunt” game. Students were supposed to roam a maze where various objects were scattered, some “right” and some “wrong,” according to a cultural riddle they were to solve. In the first version of the game, it turned out that students did not collaborate at all but each individual player tried to solve the riddles by herself. A new rule was thus introduced: that an object in the maze could only be selected by two avatars together. In this way, students were forced to collaborate and discuss, via chat, whether the object was the right one or not.

#### **Lesson 6**

*Deal with multi-faceted rather than “square” topics*

In all our four programs a lot of collaboration was about the subject-matters: history (medieval history, European history...), national identities, religion and society, ways of living, sport. All these subjects have in common that they provide ground for discussion, comparison, exchange of ideas. Surveys to students confirm how much getting into contact with remote peers was appreciated. Some of the most intense moments of the experiences were the ones in which participants would exchange their opinions and sometimes discover that their ways of living were similar, that their historical roots were common, etc. After discussing about how they spent the week-ends, what music they listened to, what they liked to do in their free time, a French student wrote in the chat: “The Polish are like us!” A US cadet, from the West Point Academy (taking part in the last edition of Learning@Europe) wrote: “Learning@Europe opened me up to a new perspective of history, seeing it from the eyes of people in the countries we study, instead of

just from a book” and “... there’s more to Europe than what we read in textbooks! Other nations have a different perspective on history, which I didn’t realized until working with them.”

8 January 25, 2008

## Community Features and Photos

# Chatting across Continents: History goes “Live”

By Maj. Ray Kimball  
Center for  
Company-Level Leaders

“Can you tell me some reasons for nationalism?”

“It creates a sense of identity that fosters unity.”

“When you feel your identity isn’t recognized.”

“To create a sense of opposition against foreigners.”

Any history teacher would love to have this type of exchange among students. What makes this particular conversation all the more remarkable is that it took place across three time zones and among students from four different countries.

For the past two months, 24 of the top students in the Plebe Western Civilization course here have been

participating in a pilot program that allows them to have these kinds of conversations routinely. “Learning@West Point” is a cutting-edge educational program that blends intellectual rigor with leading technologies to create an environment that allows students to bridge cultural barriers while wrestling with complex historical questions.

During their live sessions, the cadets communicate online, via both Internet chat and 3D virtual worlds, with European students of a comparable age to discuss questions relating to the role of nationalism in European History.

The cadets also have the opportunity to continue the conversation outside of class in a specially prepared on-line forum. The other participating countries



Cadets 4th Class Eric Schweppe and Martin Lee (foreground) take part in Learning@West Point. PHOTO BY SGT. 1ST CLASS ROGER JONES/PAO NCOIC

in the program are Poland, Latvia, Italy, France and the United Kingdom. All sessions are held in English.

Although this program has been running as a pilot in Europe for a few years, West Point is the first American school to participate in the program.

The experience is hosted by

a European consortium ([www.learningateurope.net](http://www.learningateurope.net)) that was created to help teach history from a European perspective and has been running programs there for the last few years. After seeing their presentation, the Center for Company-level Leaders (a USMA organization with a mission of exploring new and innovative methods of online learning) asked “Learning@Europe” to come up with a similar program for cadets.

The Department of History agreed to have cadets from one of its courses participate, the International Academic Affairs Division funded the program as part of its mandate to encourage cultural immersion among cadets, and the Center for Teaching Excellence provided assessors to help evaluate the program’s impact. The result is

a new and exciting way for cadets to interact internationally with their peers and get a different perspective on how others view history.

The cadets will finish the program by conducting interviews among their peers about the impact of certain national symbols and events, as well as writing about how wars have shaped American nationalism. They will then integrate their answers with those provided by their international teammates in the online forums and present their work in a final session.

The lessons learned by cadets in this environment will go well beyond historical fact and analysis. The insights they gain while working and collaborating with peers of other nationalities will serve them well in their future service on known and unknown battlefields.

Figure 12. The West Point Academy participates to the Learning@Europe program

This fruitful exchange of ideas always took place when the subject at stake was multifaceted: It is unlikely to work with subjects that by their nature have just one side, like for example mathematic, where there is no room for different opinions.

## Lesson 7

### *Give space to the teachers’ contribution*

Teachers played a fundamental role: They managed the groups, assigned the roles, checked that deadlines were met, supervised the homework and made sure that online sessions would run smoothly. In a word, they were the experience designers in the class, from a pedagogical point of view. An online tutor wrote: “at one point, the students of class x started paying less attention. I could immediately detect that the teacher had gone out of the class, as the students themselves confirmed”.

Two final remarks must be made. First of all, that what may be called the “novelty factor” very likely did play a role in engaging the students; novelty regarded the overall “package”: Technology, taking part in a competition, collaboration with remote peers, collaboration within the class and even a new relationship between the teacher and the students.

Second, that educational experience based on MUVES like the ones described in this paper are likely to be special event breaking the school’s routine and requiring a significant effort. They are not – not so far, at least – examples of smooth and full technology integration into the classroom, to support everyday activities: only relatively few schools around Europe “dared” to embark in this demanding activity. This can be seen as a serious pitfall, since it makes the adoption of MUVES in education difficult, unless a totally different kind of experience (less demanding, more pervasive....) were designed.

Our future research plans include better understanding the relation between technology-based activities and collaboration, trying to shed light on the issue of group work and diverse talents. From a practical point of view, a new MUVES base program is planned for year 2013, again about history, in which social media for remote collaboration will be introduced.

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