SEMINAR ABOUT SERIOUS GAMES AND VIRTUAL WORLDS:
An Experience of International Collaboration And Reflection

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ABSTRACT

The educational possibilities of ICT, dizzying and exponentially growing every day, offer multiple alternatives of mediation for teaching, learning and communication.

Thus, the inclusion of video games and virtual worlds into educational context represents a qualitative leap that claims to significantly boost ways of communication and knowledge representation of the scenarios involved. Aware of this reality, in the framework of the Master of Technology Enhanced Learning at the National University of Cordoba, Argentina, a virtual seminar was offered to students to address the issue on the basis of invited lectures of worldwide recognized experts.

The format chosen for the seminar allowed the treatment of subjects not only through reading assignments and web quests to be discussed collaboratively but also included the state of the art experience of developers working in the field. The paper describes didactic design and technical solutions of the seminar format.

Keywords: Moodle, virtual classroom, educational games, virtual worlds, educational technology, game based learning, serious games.

INTRODUCTION

Actually it is certainly true that the majority of kids and teens enter the world of ICT by playing videogames which doesn't mean that adults are excluded from this development. Even the proportion of the silver generation using web facilities is rising continuously. Furthermore we can observe that videogames today are one of the most popular activities to spend leisure time. Videogames started in the late 80ties however step by step they crossed the restriction of pure entertainment to include educational content as well.

In addition to the rapid development of videogames for single and multiple users three dimensional applications, labelled virtual worlds, have been created. However their inclusion of educational applications is only relatively recent.

To analyze the upcoming potential of educational (or "serious") gaming and the educational components of virtual worlds it is necessary to study in depth the structure, content, technological concept, ideological background and the concrete applications with different user groups.

INSTITUTIONAL CONTEXT AND TECHNOLOGICAL ENVIRONMENT

The seminar formed part of the Master Program "Educational Processes Enhanced Through Technology (Maestría en Procesos Educativos Mediados por Tecnologías MPEMPT) offered as a distance education course by the Centre of Advanced Studies at the National University of Cordoba, Argentina.

The master program has a total duration of two years and aims at providing a knowledge of theoretical concepts as well as of practical tools and applications to support teachers in introducing innovative szenarios in their respective academic subjects and teaching context.

From this perspective and having in mind the increasing importance of videogames and virtual worlds in education we decided to plan a seminar about these topics and look for a pedagogical and technical solution to offer it entirely online as part of the distance education study program. In June 2010 we had a first meeting of the interdisciplinary team of the MPEMPT support team together with the facilitator and the subject matter expert (Dr. Wolfram Laaser) who was visiting the University of Cordoba for a series of conferences at that time. Laaser is ex Academic Director (Akademischer Direktor) of FernUniversität/ZMI in Hagen, Germany and member of the steering commitee of MPEMPT. During this meeting it was decided to invite five international experts to organize videoconferences to offer hands on experience as a basis for discussion and critical review. In close contact with the experts additional readings and supplementary activities were designed.

The seminar was scheduled for October 2010 and so immediatly the experts were contacted and the design of the learning platform and the suporting tools had to be prepared. We were glad to count with renowned experts working in different types of projects, having different institutional background and belonging to different countries:*Thomas Putz* (Austria) (mobile games and authoring systems), *Analía Segal* (Argentina) (serious games at school level), *Carolina Islas Sedano* (Finlandia) (hypercontextualized games), *Roger Esteller* (España) (games based on storytelling) and *Hanno Tietgens* (Alemania) (virtual worlds).

According to the external resources the seminar topics were structured as follows:

> - Development and use of videogames in an educational context
> - Game based learning using mobile devices
> - Relating games to user context
> - Videogames and intergenerational learning
> - Educational applications of virtual worlds

To provide a smooth functioning of the entire seminar on the Argentinean side a facilitator, Ing. Julio Gonzalo Brito, was nominated by the MPEMPT staff. His role comprised everything to make the seminar run technically smooth (visualization of documents, checking of links, access to resources etc.), to solve organizational issues (start of the module, time for submissions of assignments, starting and closing of discussion forums) and to give support in handling the learning platform for the specific purpose of the seminar (group activities, comunication channels). Furthermore in this particular case the facilitador also guided the specific platform design using the open source learning environment Moodle.With respect to the admission of participants the number of places was limited to 15 to guarantee a resonable number of attendencies during the videoconferencing sessions.

Another requirement was the ability to understand and comunicate in English language as some of the videoconferences were given in English. Also reading comprehension of Portuguese language was required because some reference text was available only in Portuguese language. However main comunication language was Spanish. The technical requirements were broad band internet connection, ear phones and microphone as well as web cam. However the camera was a non-obligatory add on. To decide about the technical solution to be used for the videoconferences a series of tests were conducted with the following systems: (*Skype/Mikogo, DimDim, WizIQ*, Elluminate). Finally we opted for the virtual classroom system *Elluminate Live* because the stability and quality of the performance was good and a licence could be acquired at low cost from another university project.

PROJECT IMPLEMENTATION

To prepare for the videoconferencing sessions the different experts were asked to submit a PowerPoint (or other format) presentation of their lecture before giving the actual conference. In addition they had to send a detailed curriculum vitae to be included to their presentation. Also they were asked to name references and reading recomendations to prepare participants for their conference. These references had to be authorized by themselves or under a free access license. The rhythm of the seminar was weekly covering in total seven weeks including the six conferences and a final report written by each participant. So the pacing of the seminar was relatively strict due to the scheduled videoconferences. The platform design within Moodle allowed users to navigate by two independent access structures. On the left of the screenshot below you can observe two sections, the first one is dedicated to the presentation and organization of the seminar (welcome by the tutor, seminar program, how to work with the program, evaluation format and schedules for the proposed activities) the second one includes the interaction possibilities (actual news, forum for technical consultations, moderated by the facilitator, a forum concerning content related issues, moderated by the academic responsible of the seminar and finally a forum called cyber cafe for free and uncontrolled exchange of ideas among participants).

Figure: 1
Menu structure of the LMS

The second structure centered around the different topics of the seminar. For each theme four options are given: "*knowing the expert*", "*videoconference*", "*activities requested*", and "*resource material*".

The option "*knowing the expert*" includes a short CV and a photo of the expert.

Hanno Tietgens (Germany)

Hanno Tietgens

Hanno Tietgens, founder and owner of *BÜRO X Media Lab*, is a consultant for strategy and content creation in the fields of immersive education and interactive branding.

Hanno has initiated the Campus Hamburg in 3D project with a basic platform in Second Life since 2007. Some of Germany's leading universities collaborate here, supported by the City of Hamburg.

In an R+D-partnership with international engineering group TÜV NORD, Büro X breaks new ground using 3D virtual worlds to create and share knowledge.

BÜRO X has been pioneering solutions in crossmedia communications and 360° brand building since 1991, including work for public broadcaster ARD Das Erste, Munich Re, Digital Radio, Gruner+Jahr, documenta X, Nestlé and others.

In addition, Hanno ist actively promoting the convergence of classical and digital media in the Hamburg Chamber of Commerce, the government's Hamburg@work initiative and projects like zukunftslab.de.

Figure: 2
Section Knowing the Expert

Under "*videoconference*" the student finds the respective PowerPoint presentation (access 3 days before conference start) and direct links to the web site to access the conference. In addition two other links are given, one for later review of the conference recording (set up 30 minutes after ending of the conference) and another to download the recording.

The format of the conference was 40 minutes presentation followed by 20 minutes discussion. During the conference a chat was open to allow in between questions.

To help participants and experts as well as to get acquainted to the virtual classrrom software Elluminate the facilitator developed a step by step tutorial using screen shots.
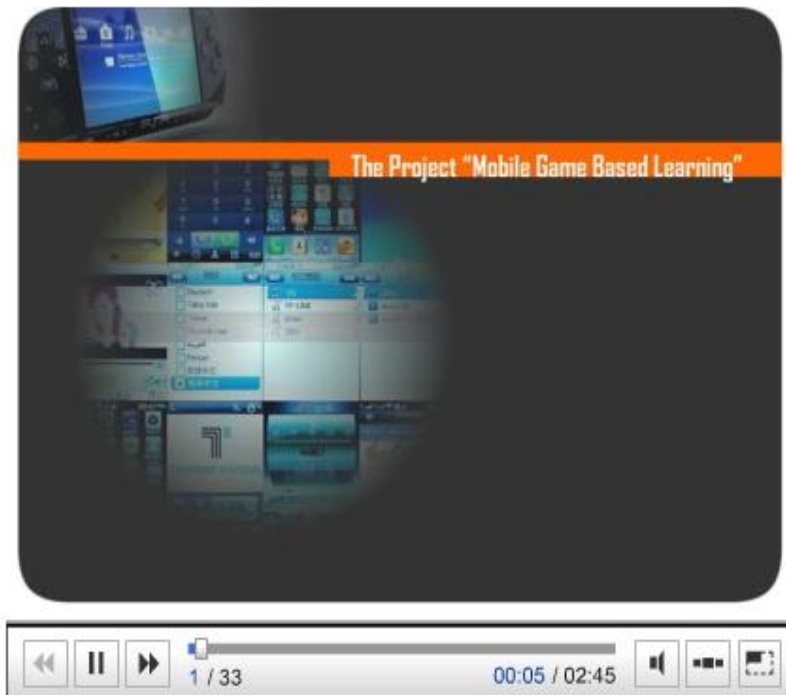
Furthermore a test session was scheduled before the first videoconference to test handling of the conference tools and to check the technical part.

Figure: 3
Section Videoconference

The experts could make a last check 30 minutes before start of their conference. This procedure is recommendable even if some experience with conferencing exists as the navigation and available tools vary across systems.
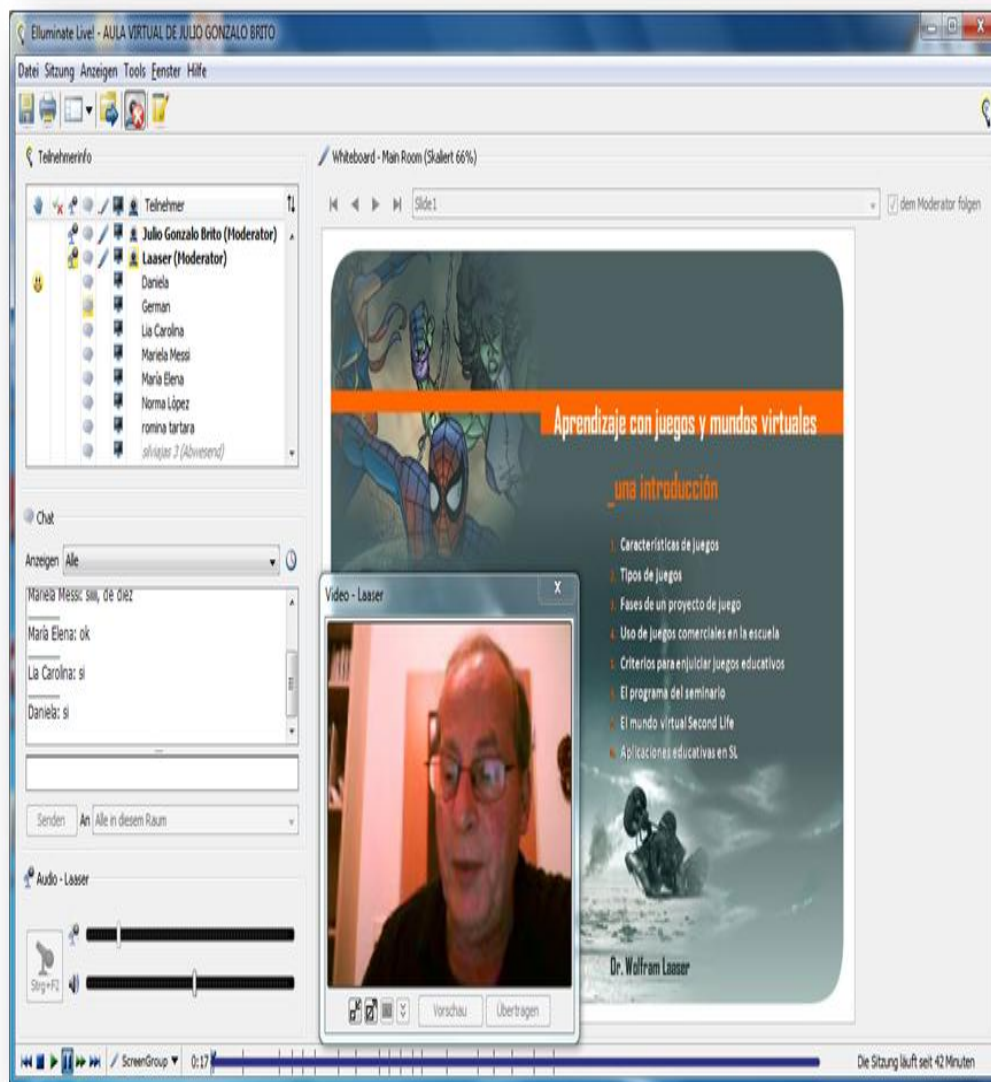
Figure: 4
A session using Elluminate Live!

Before introducing the different experts Wolfram Laaser was setting the scene by giving an overview about the definition and types of games and virtual worlds, project development and project teams in game development, quality assessment and evaluation of such products and about experiences with users.

This introductory session with delivered by virtual classroom technology from Hagen, Germany.

Under the heading of "resource material" links to obligatory readings, additional useful references and access to multimedia resources, especially to games and virtual worlds are offered.

Figure: 5
Section Resource Material

With each theme of the seminar a number of proposed activities was formulated, e.g. prepare for the next videoconference with the proposed readings or create an avatar en SL and meet your co-students to get a sense of immersion into virtual worlds. Furthermore a specific forum was established for the discussion of each theme. Also the invited experts and the tutor were participating in these forums.

Figure: 6
Section Activities

Finally a permanent Wiki was offered to let students collect web links and hints to interesting projects concerning the theme of the seminar. This was meant to create a data base to be extended in other upcoming seminars.

The multimedia resources and the educational games formed the backbone of the seminar. We used some freely available games from the internet to be studied as examples in addition to the games developed by the invited experts themselves. The fact that the experts could describe and comment their own developments was beneficial for a critical and in depth discussion of the "making of". As an introduction to the game world – for many of the participants a relatively unknown field – we asked them to play and analyze the simple games *Pong* and *BurgerLand* . Games developed by the experts in the framework of their proper development teams were among others *Urgente Mensaje, Villa Girondo, Fastest First, MOGABAL, Bloque del Este/Oeste, Turismo, Trabajo, Ocio.*

Figure: 7
Serious games used

In the block about virtual worlds we collected some tutorial links how to participate and navigate in Second Life. One of our participants actually writing her master thesis was already very well familiar with Second Life.

So she developed introductiory guides using audio commented screenshots to support participants in creating their avatars and showing them how to access a given meeting point. We organized this meeting in the virtual building of the Universidad de Madrid and had a vivid discussion about usefulness and value added of educational offers as part of virtual worlds.

The conference about virtual worlds was given by Hanno Tietgens, Hamburg, owner of the software company "Büro X Media Lab".

He demonstrated interesting applications as part of Second Life such as an immersive tour into a fuel cell and a game based learning installation that used a ground penetrating radar to detect environmental waste.

Figure: 8
Videotutorial in Second Life

EVALUATION OF THE SEMINAR

The evaluation of the seminar had to be in conformity with the accreditation guidelines of the master program. Therefore the individual document that each participant had to submit contained a detailed analysis of two of the seminar topics and was counted with 50 % for the final grade.

The other contributions included the participation in conferences and discussion in the forums.

- ➢ **Participation of videoconferences: 15%**
- ➢ **Comments in discussion forums and activities: 35%**
- ➢ **Final essay: 50%**

To check the quality of the seminar itself we developed a questionnaire to be filled in anonimously that covered organizational issues, relevance of the themes, support and guidance provided by tutor and facilitator and assessment of the six videoconferences.

To implement the questionnaire into the virtual learning environment we chose the freely available software *JotForm* which provides a userfriendly interface as well as easy calculation and presentation of results.

Feedback to the process ...

For evaluation of the process developed in this seminar, it is very important to know how you experienced the seminar. It will also help to improve future learning activities.

Except for the "*Comments*" field, all items should be answered. Please, complete each section required and then click "*Submit Survey*".

Thanks in advance for completing the form! 😊

Seminar Serious Games and Virtual Worlds 2010
Tutor: Wolfram Laaser

1) Aspects of the Seminar

Actuality and relevance to your current or future teaching *
☆☆☆☆☆

Clarity in the presentation of the contents *
☆☆☆☆☆

Accessibility to library materials *
☆☆☆☆☆

Clarity in the formulation of work instructions *
☆☆☆☆☆

Timeliness and relevance of content and examples *
☆☆☆☆☆

Figure: 9
Questionnaire to check seminar performance

All in all the seminar can be considered as very successful. When the dates of the seminar were published in a week all 15 places were filled. Twelve of them completed the entire seminar, two had to interrupt their activities due to personal inconveniences.

The mayority of participants had no prior knowledge of the seminar topics. Nevertheless the final essays submitted were of good quality and some of the students indicated that they intend to use games and virtual worlds immediately in their teaching environment. The activities proposed and the permanent support given by the facilitator and the course tutor were obviously responsible to reach the seminar objectives.

The following comment is taken from the questionnaire responses:

"…the seminar not only presented a new type of learning but raised our awareness and reflection about topics that seemed to be out of reach concerning our present teaching but now it lloks much more simple than I thought it would be".

"…excelent preparation, clear assignments, good and accessible literature references, …much food for thought (…) information was not too much but I will need more time to digest it and to put it into practise.

All in all the seminar received 95.2 points out of 100 from the participants. Especially the videoconferences received a very positive feed-back not only for offering the possibility to discuss directly with renowned experts of the field but also for having the option to listen once more to the recorded session. This was also essential for those who missed one of the conferences. Conferences were transmitted at 17.00 Argentinean time which meant for European experts that they had to give the conference at 22.00. The recordings will be used in other upcoming seminars.

Another asset of the seminar was that the mayor part of the recommended readings were proposed by the experts themselves and not by the academics responsable for the seminar.

So the references could be perfectly linked to the content of the respective conference. The multimedia examples permitted to play and to experience directly the games discussed in the conferences and helped to create a change in attitudes towards educational use of games and virtual worlds. One participant expressed it like that: "I have been remembering the words of Wolfram at the end of the seminar when he said that to him it seems as if some of us changed attitudes towards educational use of gaming and virtual worlds. This is exactly my case. At the beginning I was not very enthusiastic about the theme of the seminar because I did not see any usage in my current teaching. However finally I got envolved and enjoyed the seminar very much…".

CONCLUSIONS

In view of the increasing relevance of educational games and educational applications as part of virtual worlds this seminar had a model character for the entire master program of MPEMPT.

The seminar not only provided an innovative teaching model both pedagogically as well as technically but generated also some general results that could be gained from the intense discussions.

It seems obvious that Argentina is still in a premature phase of applying the potential of games and virtual worlds in educational settings if compared with Europe and the US where educational applications are promoted already with substantial government funding. To invent and implement successfully educational applications it is necessary to form interdisciplinary teams (content expert, designer, programmer, audiovisual expert, speakers). Furthermore games have to be incorporated to the curricula of formal education. Last not least teachers have to be trained how to use or create educational games. This is especially necessary to bridge the gap between unexperienced teachers and game experienced learners.

Also, it seems necessary to give more public financial support to projects in this domain because otherwise the economic gap can not be bridged between high cost comercial development with world wide distribution on one hand and the technically less attractive publicly supported educational games on the other hand which will discredit their educational use.

It is observable that the educational objectives of commercial games are often not explicit but indirectly are promoting violence, intolerance, individualism and agressive ideologies. Furthermore their development is mostly ignoring the needs and objectives of the potential users. Instead some of the projects presented in the seminar put a strong focus on direct user participation in game development. Hopefully the future development of user friendly game authoring software will ease the construction of games by small development teams. With respect to virtual worlds all prognostic studies forecast an increasing amount of educational applications given the rich potential that three dimensional representations offer for educational applications (Horizon Report, 2011). However up to now there is still a certain gap observable between the enthusiastic expert discussions on one hand and the real usage for education on the other (example Second Life).

As a kind of resume we claim that it is indispensable to follow the developments dealt within the seminar and to discuss critically the actual state of art and to open up the minds for future perspectives. However it is not only necessary to know about the topics but it is even more important to motivate teachers to implement such educational applications in their proper teaching environment. To reach these objectives it is indispensable to get the institutional backing of their respective institutions which means also that the institutions have to undergo some organizational changes. Last but not least critical research of the area is still needed urgently not only in Latin America but in the so called developed countries as well.

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