

## Features of student-lecturer interaction in e-learning<sup>1</sup>

A. Grandío Botella\*; R. Peris Pichastor; D. Pinazo Calatayud y A. Jiménez Ivars

Universitat Jaume I, Av. de Vicent Sos Baynat, s/n. 12071 Castellon, Spain

E-learning platforms in Higher Education are no longer expected to continue being data reservoirs but they are becoming central to the learning process. The intensive use of a blended learning strategy –virtual and lecturing- that includes audio and/or video recording of all learning situations leads to a new triadic and dynamic interaction: technology, lecturers and students. This interaction is resulting in the emergence of new psychosocial patterns within the teacher-student relationship but also within the student-student relationship and both with technology. An exploratory analysis based on quantitative and qualitative methodology –questionnaires, critical incident technique and participant observation – has revealed changes in the educational process: authority, leadership and relationship among teachers and students, teaching vs. learning, intrinsic and extrinsic motivation, feedback and autonomy. The sample is composed of about 400 university students of various branches: Business Administration, Labour Relations, Psychology and Translation and interpreting. The preliminary results show new meaningful patterns in the processes of “blended” education, and shed light on the trends and changing roles that the immediate future are bringing into play. Implications for future research are also discussed.

**Keywords:** e-learning, blended learning, higher education, changing psychosocial patterns

(Spanish abstract) Las plataformas de enseñanza aprendizaje virtual en la educación superior se encuentran abocadas a dejar de ser cómodos almacenes de materiales para convertirse en núcleos centrales del proceso educativo. Cuando se hace un uso intensivo de las propuestas de la enseñanza mixta (blended learning), que incluyen la difusión en video de las situaciones de aprendizaje, se establece una interacción triádica dinámica compuesta por la tecnología, el profesorado y los estudiantes. Esta interacción está dando lugar en el ámbito educativo universitario a la emergencia de nuevos patrones psicosociales en las relaciones profesor-alumno, alumno-alumno, alumno-profesor así como de todos ellos con la tecnología. A través de cuestionarios cuantitativos y otros métodos cualitativos como la técnica del incidente crítico y la observación participante se han analizado de manera exploratoria los posibles cambios en el proceso educativo: el concepto de la autoridad, el liderazgo entre profesores y estudiantes, la enseñanza aprendizaje, motivación intrínseca y extrínseca, feedback y la autonomía. La muestra está compuesta por 400 estudiantes universitarios de distintas titulaciones: Administración de Empresas, Psicología, Relaciones Laborales y Traducción e Interpretación. Los resultados preliminares sugieren la existencia de cambios significativos en cada uno de los procesos mencionados y arrojan luz acerca de las tendencias y roles cambiantes que el futuro inmediato nos depara.

**Palabras clave:** enseñanza virtual, educación superior, patrones psicosociales cambiantes

### 1. Introduction: the EVAI (Virtual Interactive Learning Environment).

The EVAI -Virtual Interactive Learning Environment [www.evai.net](http://www.evai.net)- is an e-learning platform based on Open Source software (PHP, MySQL and Javascript) [1]. Its development has been accomplished through

<sup>1</sup> Paper developed within the Project “Entornos Ampliados de “Blended E-Learning”. Estudio de las Estrategias Emergentes de Aprendizaje en Portales Interactivos Mixtos de Doble Dimensión: Virtual-Presencial y Universidad-Empresa” sponsored by the Generalitat Valenciana in 2005 by FEDER funds.

\* Contact Author: e-mail: [agrandio@emp.uji.es](mailto:agrandio@emp.uji.es) Tel.: +34 964728539

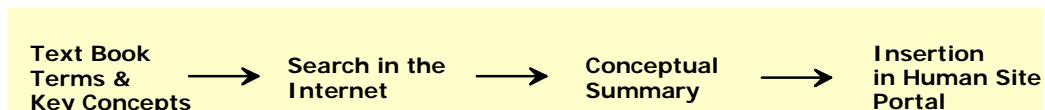
daily interaction between students and lecturers, especially within the Human Resources Management area ([www.humansite.net](http://www.humansite.net)). It has the usual tools included in most e-learning platforms: discussion forums, content management, day planner, groups, chats, assessment reports, etc. What makes this platform different is the way it deals with knowledge management which will be addressed hereinafter.

Conceived in a “blended” learning framework (class lectures plus a guided virtual environment), Human Site works as a complement to the theoretical syllabus of a number of subjects from different degrees. Students have to do a thorough and selective websearch of key concepts taught in class [2] and insert a related and appropriate URL address (link) in the platform. Each link contains a summary of the webpage content written by the student who inserted it. Each link is permanently associated to the student’s identity (a public personal profile with a photography, video streaming and additional data). S/he is the only one who can edit the summary or even delete the link. Students attending a course have to assess each others’ contribution by means of an anonymous polling system –they know who they vote for but they do not know who votes for them- updated in real time with statistics (means and standard deviation related to both link and identity). Therefore, every student knows at any given time how many votes s/he has and the statistics related to her or his contributions.

Between October 2001 and November 2006 the web portal has received about 35.800 links in its database mostly related to Human Resources Management but also related to other career courses like Creativity, Social Influence or Translation and Interpretation.

## 2.- A New Interaction: Guided Virtual Learning

As mentioned above, the lectures, which are video recorded and made available to students in the platform, are complemented with the “Guided Virtual Learning“. This process begins with a list of “key concepts“ stated in either the text books, syllabi or from the lectures. The flowchart is as follows:



**Fig. 1** Procedimental Sequence of Knowledge Management in Human Site

This process is accomplished through the combination of a software tool we call the IKM: Interactive Knowledge Manager (a tool that enables the insertion of links, summaries and key words associated to the student performing the tasks) and the active role of the lecturer at computer laboratory seminars. This combination shapes what we have named "*Guided Virtual Learning*". This can be summarized as follows:

- Computer Laboratory with beamer and audio.
- The Speech Engine (TTS –Text to Speech SAPI 5.0, and MS Agent Magic Merlin) announces in real time with voice:
  - Each new inserted link and its title.
  - The name of the student who has inserted it.
  - The group that s/he belongs to and its “motto” (i.e. “we’re the best”).
  - The name of the student who has inserted the higher count of links (every 5 minutes).

- Simultaneously the screen displays a list of links with their summary and the picture and name of the student.
- The lecturer tracks individual processes and progress: guiding, suggesting concepts, authors, theories etc.
- Learning becomes a cooperative task in which everybody - including the lecturer- learns.

### 3. New Features (emerging patterns).

The intensive use of a blended learning strategy –virtual and class lecturing- that includes audio and/or video recording of all learning situations leads to a new triadic and dynamic interaction: technology, lecturers and students. The lecturers involved in this methodology have delved into it both as observers and participants of the whole interaction. Records of virtual communication between students and lecturers have enabled us to explore the critical incidents of the interaction. A closer analysis of those incidents has revealed the emergence of new psychosocial patterns.

#### 3.1 Emerging features in the Online Poll.

The platform has an anonymous online questionnaire that gives us feedback about the opinions of students. We have 368 answered forms so far completed by university students who use the platform in different degree courses: Business Administration, Labour Relations, Psychology and Translation and Interpretation. Here is a sample of the most significant answers:

- 1.- I believe that education in the future is going to be this way
- 2.- A quality education should include this way of working
- 3.- With Human Site, learning implies less effort and it is funnier.
- 4.- It enhances the autonomy of the student.
- 5.- It enhances the feedback of the student.

#### 3.2 Emerging features found within the interaction.

**1. Synergy between the European Space for Higher Education and the emerging patterns.** The European Tuning Project emphasises the shift from teaching to self-learning.

**2. Loss of the knowledge monopoly on the part of the lecturer** (i.e. Guided Virtual Learning in Human Site). The Internet is a huge source of information and knowledge. It is simply impossible for any lecturer to know all about any subject. Students are continuously finding web pages on certain topics the lecturers are not acquainted with.

**3.- The lecturer becomes a learner as well.** Because of the previous fact, the relevant sources of knowledge tend to diversify and the lecturer becomes more of a coordinator than the unique source of authority and knowledge.

**4. A new lecturer's role: from knowledge transmitter to learning catalyst** (coordinator, mentor, coach and leader). Instruction is evolving into a learning community prevailing over traditional lectures.

**5. Increasing responsibility and autonomy for the student** too: learning is now more than ever student-centred. There has been a displacement of the locus of control which is now internal instead of external. Moreover, the video recording of lectures and their subsequent logging on the web may put an

end to class attendance. This fact poses a challenge for lecturers that hitherto does not have a conclusive answer.

**6.- Hierarchical authority is substituted by a more casual relationship.** This is also a consequence of using the communication tools of the environment, especially the Instant Messaging (Human Site has its own Instant Messaging tool that allows sending messages and even files when the user is offline).

**7. Tendency to more flexible working hours.** Once a user is logged on, the time of the day becomes irrelevant. Instant messaging, forum and e-mail tend to replace traditional lecturer's office hours. This leads to increasing fuzzy boundaries between work and leisure both for students and lecturers.

**8. Identity Declaration.** Degree of Immersion. We have found out an association between the motivation to learn within the e-learning platform and the degree of immersion or involvement in the environment. The concept of immersivity emerges from the field of Virtual Reality, mostly related to computer simulation and games. A definition could be "*the process by means the user believes to be a part of the Virtual Reality*" [4]. However, in a wider sense, it could be closer to the concept of "engagement" or even the recent concept of "flow". Engagement has been defined as a "*positive motivational construct related to work and characterized by vigour, dedication and absorption*" (Schaufeli, Salanova, González-Romá & Bakker, 2002). Finally, flow can be described as "*the feeling of complete and energized focus in an activity, with a high level of enjoyment and fulfilment*" [5].

The degree of "Identity Declaration" has proved to be a crucial factor in the immersivity concept. We have introduced this term to refer "*the degree to which a user exposes its identity within the environment*". It is a sort of "*self-presentation*". The "declaration" concept is used in the same sense as in programming language like in "*declare a variable*". Hence, in our case the user "*declares her or himself to the system*".

In Human Site, this goal is accomplished encouraging students to present a full personal profile filling in compulsory fields like: "photography", "more about me" (additional information about oneself), "interesting" (anything that could be considered interesting about oneself), "wow!" (something personal that would arouse an exclamation), and a personal video presentation where the student has to blend informal with formal (work perspectives, for example) issues. Pictures, videos and the whole profile are subject to public poll, so that everybody receives their own score granted by classmates.

**9. Virtual (social) reference as coordination mechanism.** There has to be a link between immersivity and responsibility, partially by means of some kind of social sanction. The greater the declaration the greater the student uses others as a reference for her or his behaviour. Furthermore, the more information is presented, the more information is received within the environment. The amount of information is positively related to the extent and deepness of relationships.

**10. Online/offline motivation vs. degree of implication.** Finally, a debate has emerged about whether motivation in virtual environments is a "logged on/off" issue (as being online or offline) or whether there is an involvement continuous, a degree issue. We have found out bases to support both stands, so most likely both phenomena may occur simultaneously.

#### 4. Conclusions

With the emerging of the Internet together the e-learning platforms and the subsequent possibilities of managing digital multimedia contents, we are witnessing the beginning of a new era in education. Yet, we are probably only at embryonic stage. The best is yet to come. But one thing is for sure: although

many voices proclaim the opposite, information and communication technologies are key factors in the emancipation from routines and memory and ultimately they will encourage and enable creativity.

### References

- [1] Platform developed and implemented by A. Grandío Botella. A. Grandío I Jornadas de Innovación Educativa de la Universidad Jaume I (2000)
- [2] A. Grandío; D. Pinazo & M. A. Gimeno. 26th International Congress of Applied Psychology. Athens (2006)
- [3] D. Gundry & L. Rousseau. *Human Relations*, Vol. 47, No. 9, 1063 (1994).
- [4] M. Bricken, Virtual Reality Learning Environments: Potentials and Challenges. *Computer Graphics: SIGGRAPH 91*, 25(3), 178 (1991).
- [5] M. Csikszentmihalyi. *Finding Flow: the Psychology of Optimal Experience*. New York: Harrer and Row (1990).