

Exploring how faculties use and rate Web 2.0 for teaching and learning purposes

Ramón Ovelar

Virtual Campus – University of the Basque Campus,
48940 – Leioa - Vizcaya
ramon.ovelar@ehu.es

Abstract. While some innovative practices have been identified and disseminated, a wider adoption of Web 2.0 tools in Higher Education (HE) teaching practices is not taking place. A study of the drivers and barriers of these technologies in HE outlines that implementing these approaches entails contradictions and conflicts with faculties' and students' beliefs and expectations. Based on a critical perspective of both the adoption of educational technology and Web 2.0 affordances for teaching and learning, this study analyzes the compatibility of Web 2.0 tools to the way that faculties understand learning and teaching.

Keywords: Web 2.0. Higher Education, Collaborative learning, Self regulated learning, Bologna process.

1 Introduction

The pervasive popularity that social networking applications and user generated content have acquired is probably the most important phenomenon in the evolution of the Internet over the past five years. The widespread use of the Web 2.0 tools that shape the “social Web” is significantly affecting the way we relate with others and how we access information and cultural content. In the field of learning, new tools for organizing, sharing resources and building communities are available and have shaped an alternative trend in educational technology [1][2] to the existing Virtual Learning Environment (VLE) model of educational technology in HE institutions. While many researchers have indicated that this model of educational technology has not lead to a substantial pedagogical change [3], a growing number of projects and initiatives inspired by the possibilities of social media seek to reformulate the methods and even the mission of HE [4][5]. According to this trend, Web 2.0 tools will foster collaborative learning, increase motivation and participation, help students to acquire skills for self-regulated learning and weave connections between formal and informal learning. Nevertheless, like other generations of educational technologies before, the adoption of Web 2.0 tools in HE practices need to overcome some tensions and barriers. Based on a critical perspective of the integration and impact of educational technology in HE, this study focuses on the specific drivers and barriers for the adoption of Web 2.0 tools from the point of view of faculties.

1.1 Identification of research questions and related significant problems

Web 2.0 tools and the new social behaviors brought about as a result of their uptake provide the basis for the development of new ways of learning and teaching in the field of HE. However, while some innovative practices have been identified and disseminated, a wider adoption of Web 2.0 tools in HE teaching practices is not being observed [3][7]. A study of the drivers and barriers of these technologies in HE outlines that implementing these approaches entails contradictions and conflicts with faculties' and students' beliefs and expectations [8]. Recent research has also highlighted that we cannot take for granted that the wide majority of young people are fluent in using ICT and interested in online learning [10].

The aforementioned issues allow us to conclude that wider research is needed in order to understand the drivers and barriers for the introduction of Web 2.0 tools in HE practices. Faculties play a very significant role in the adoption of technology enhanced learning (TEL) innovative practices [11] and this fact has motivated this doctoral research to focus on their perspective. Nevertheless, a research on drivers and barriers for the adoption of Web 2.0 in HE practices from the perspective of faculties need to be based on previous work on factors affecting the adoption of educational technology [37][38]

This new trend in educational technology converge in the European HE landscape with the Bologna Process, whose teaching methodologies principles, such as collaborative learning, self-regulated skills development, active learning methodologies and formative assessment, are directly or indirectly aligned with the affordances of the Web 2.0 tools for learning [6]. Self-regulated learning [12] is a core aspect in this topic. On the one side, Web 2.0 tools are critical in the development of digital and informational literacies [13]. On the other hand, the degree of development of these skills can also be critical for the effective integration of Web 2.0 tools in teaching and learning practices.

Thus, this study is focusing on faculties' perception of the benefits of Web 2.0 tools for learning and teaching in the context of HE and more precisely in the context of adaptation to Bologna teaching methodologies, particularly in aspects related to collaborative learning, self-regulated skills development, active learning methodologies and formative assessment. Moreover, based on the assumption that beliefs are crucial in faculties' adoption of innovative practices [14], this study will also explore faculties' utilization and rating of these tools for their personal learning.

To sum up, the objective of this study is to acquire a deeper understanding of the drivers and barriers for the adoption of innovative practices using Web 2.0 in the context of the adaptation to EHEA teaching methodologies from the faculties' perspective. The research question of my work states as follows: How do faculties rate Web 2.0 tools as instruments for self-directed learning and as instruments for teaching in the context of the adaptation to the Bologna teaching methodologies?

With this aim in mind, six secondary research questions have been identified: 1) Do faculties use or have the intention of using Web 2.0 tools in their teaching practices? 2) Do faculties use Web 2.0 tools for the personal learning? 3) How do faculties rate Web 2.0 tools affordances for their personal learning? 4) Do faculties believe that students should learn to use Web 2.0 in order to improve their self-regulated learning

skills? 5) How do faculties rate the affordances of Web 2.0 in their teaching? 6) How do faculties rate the role that Web 2.0 tools can play beyond the classroom scope?

1.2 Related work

The analysis of Web 2.0 adoption needs to take a wider perspective on the drivers and barriers for the adoption of educational technology in HE. Many researchers have outlined that the implementation of online learning environments in the HE institutions has not lead to an educational transformation [3][29][30]. Similarly, some authors have argued that strategies in the early stages of educational technology implementation in HE institutions misunderstood the affordances of online learning environments [31][32]. According to Salmon [32], in a second stage in the implementation of educational technology, HE institutions focus on providing cost effective procedures alternative scenarios or on combining traditional approaches with e-learning. Nevertheless, this author indicates that some weaknesses remain in HE strategies: 1) fragile business cases, 2) lack of best practices models, 3) higher incentives for research outcomes than teaching innovation and 4) weak transfer from research to implementation. As a conclusion of this analysis, Salmon [32] proposes a more complex model of diffusion of innovation than Rogers' [33], which take into account incremental and radical innovation.

Teachers play a key role in the adoption of educational technology based on innovative practices, as indicated by the results of Zhao et al [11]. These authors conclude that, while the aspects related to the context (facilitating conditions and culture) and to the innovation to be adopted (distance to practices, culture and resources) are very important, the aspects related to the teacher (technological skills, compatibility with current teaching practices and awareness of the organizational culture of the institution) remain the most determinant factors of success. Mumtaz [39] revision of factors affecting teachers' adoption of ICT comprises "inhibitors", such as "lack" of experience with ICT, on-site support, ICT specialist teachers, time, access, and financial support; causes of "teachers' resistance" (outside intervention, time management, lack of administrative support or organizational change, and teachers' perceptions linked with "personal and psychological factors"); and drivers, such as obtaining support for adapting their teaching practices to a more student centered approach, making the lessons more interesting, diverse and motivating, improving the presentation of materials, allowing greater access to computers for personal use, acquiring prestige, gaining in efficiency and developing their professional skills. In order to understand the particular position of faculties in the context of HE, other factors need to be taken into account, such as the high degree of autonomy [35], the differences existing in the academic culture of different disciplines [36] and the aforementioned pressure for research outcomes [32].

Web 2.0 specific affordances in education, as an alternative trend to current model of educational technology in HE, can be summarized at four different levels: 1) inquiry, or information literacy, as a result of new ways of searching and organizing resources in the Web, 2) digital literacy, expanding the writing scholar tradition to new modes of representation and expression, 3) collaboration, with different levels of engagement forming a continuum between trivial anonymous aggregation to strong coordination,

and 4) publication, which entails means for creation – read-write Web –, but also the fact of displaying to others, even beyond the scope of the classroom [5]. Therefore, as a sub-ensemble of educational technology with specific characteristics, general and particular drivers and barriers, and also some more specific ones affect the adoption of Web 2.0 tools.

A brief summary of the potential benefits of Web 2.0 tools in education identified by desktop research includes the ability to 1) foster collaboration and peer support [18][19], 2) increase motivation and participation [17][21][22], 3) promote the development of skills for self-regulated learning [19][23] and 4) help to bridge formal and informal learning spheres [18].

On the other hand, it is also necessary to acknowledge that there are also significant challenges to Web 2.0 integration in teaching practices. As Crook (2007, p5) [5] has outlined, the “slow educational uptake [...] reflects the fact that adoption of Web 2.0 creates a number of practitioner tensions”. Very frequently, many of the affordances of Web 2.0 for learning rely on self-motivation, but the driver for participation when such approaches have been applied in formal learning setting is strongly connected with summative assessment [24][19]. Besides, motivation for using these tools can decrease when students are requested to use them for academic purposes [25]. It is also convenient to remember that not all HE students and faculties are equally fluent in using online environments [26][18]. Furthermore, introducing these tools in teaching practices increases faculties’ workload, as they need to develop creative approaches in order to face the aforementioned students’ lack of motivation and deal with the settings of distributed environments not supported by their institutions [5]. In addition to this, while there is a position arguing that the real potential of Web 2.0 for education relies on working in an open and networked environment [27], other studies highlight that some students are reluctant to publish in open environments [28].

2 Preliminary approach and methodology

The first phase of the research is conducted through an online questionnaire sent to faculties of the University of the Basque Country (UPV / EHU) in order to obtain a minimum of 200 participants filling in the survey correctly . The number of participants by area of knowledge (Arts and Humanities, Social Sciences and Law, Health Sciences, Sciences, Engineering) must also be proportional to the number of faculties in the different areas. This ratio between the sample and the total number of faculties in the university will apply also for different age groups.

The questionnaire consists of 30 questions split into four groups. The first group includes questions on personal data and aspects of knowledge, use and value of Web 2.0 tools by faculties, the second group includes questions about the use of Web 2.0 tools by faculties for personal purposes, the third group includes questions relating to the rating of faculties of the drivers and barriers related to the use of Web 2.0 tools in the classroom, and finally, the fourth group includes questions related to the affordances of Web 2.0 tools for supporting learning networks and communities beyond the classroom.

The results of this questionnaire will be further processed by the researcher and presented to a group of faculties with advanced knowledge on the subject of study for an analysis following the methodology of focus groups.

3 Phd's project contribution

This study proposes a detailed review of specific aspects related to the integration of these tools in the classroom and analyzes how these technologies fit in with the teaching methodologies marked by the convergence process to the EHEA. From this point of view, this research hopes to obtain a complementary perspective to previous related work based on the theory of planned action and the unified theory of acceptance and use of technology (Ajjan et al., 2008; Usluel et al. 2009). The results of this research can also be seen in two different axes: the diagnosis of the skills and attitudes of teachers regarding the educational use of Web 2.0 tools and the reflection and subsequent construction of knowledge. On the one hand, the data obtained through the questionnaire will be used to assess the impact Web 2.0 tools have in the educational community from different perspectives (awareness, rating, utilization, scope of utilization), and to evaluate the relation between these perspectives.

On the other hand, using a focus group methodology for the subsequent analysis of the responses to the questionnaire provide the means for a deeper interpretation because it provides a framework for contextualization and validation of results. Moreover, engaging a group of faculties with extensive experience in innovative practices based on educational technology in the discussion of these data brings the opportunity new relevant aspects related to the research questions.

Acknowledgments: This work has been supported by University of the Basque Country (EHU09/34) under the project "Social Networks for enhancing Life-Long Learning"

References

1. Downes, S.: E-learning 2.0. Elearn magazine. (2005).
2. Alexander, B.: Web 2.0 a new wave of innovation for teaching and learning. *Educause Review*. 15, 30-37 (2006).
3. Bates, T., Understanding Web 2.0 and its Implications for E-Learning. In: Lee, M. and McLoughlin, C. *Web 2.0-Based E-Learning: Applying Social Informatics for Tertiary Teaching*. IGI Global, Hershey PA (2010).
4. Kieslinger, B., Wild, F., Grodecka, K.: *How to Use Social Software in Higher Education*, (2008)
5. Crook, C., Cummings, J., Fisher, T., Graber, R.: *Web 2.0 technologies for learning: The current landscape – opportunities, challenges and tensions*, (2008).
6. Esteve, F.: *Bolonia y las TIC : de la docencia 1.0 al aprendizaje 2.0*. *La Cuestión Universitaria*. 59-68 (2009).
7. Ajjan, H., Hartshorne, R.: Investigating faculty decisions to adopt Web 2.0 technologies: Theory and empirical tests. *The Internet and Higher Education*. 11, 71-80 (2008).

8. Conole, G.: *New Schemas for Mapping Pedagogies and Technologies*. Ariadne. (2008).
10. Bennett, S., Maton, K., Kervin, L.: The 'digital natives' debate: A critical review of the evidence. *British Journal of Educational Technology*. 39, 775-786 (2008).
11. Zhao, Y., Pugh, K., Sheldon, S., Byers, J.L.: Conditions for Classroom Technology Innovations. *Teachers College Record*. 104, 482-515 (2002).
12. Zimmerman, B.: *Self-Regulated Learning and Academic Achievement: An Overview*. Educational Psychologist. (1990).
13. Hague, C., Payton, S.: *Digital literacy across the curriculum: a Futurelab handbook*, (2010).
14. Pajares, M.: Teachers' beliefs and educational research: Cleaning up a messy construct. *Review of educational research*. 62, 307 (1992).
17. Armstrong, J., Franklin, T.: A review of current and developing international practice in the use of social networking (Web 2.0) in higher education, (2008).
18. Redecker, C., Ala-Mutka, K., Bacigalupo, M., Ferrari, A., Punie, Y.: *Learning 2.0: the impact of Web 2.0 Innovations on Education and Training in Europe*, (2009).
19. Minocha, S.: *Study on the Effective Use of Social Software by UK FE & HE to Support Student Learning & Engagement*, (2009).
21. Rau, P., Gao, Q., Wu, L.: Using mobile communication technology in high school education: Motivation, pressure, and learning performance. *Computers & Education*. 50, 1 - 22 (2008).
22. Cavallaro, F., Tan, K.: Computer-Mediated Peer-to-Peer Mentoring. *AACE Journal*. 14, 129-138 (2006).
23. Barth, M.: From e-Learning to the Acquirement of Competencies: Wiki-based Knowledge Management and Complex Problem Solving. *Proceedings of the EDEN Annual Conference*. , Naples, Italy (2007).
24. Kerawalla, L., Minocha, S., Conole, G., Kirkup, G., Schencks, M., Sclater, N.: Exploring students' understanding of how blogs and blogging can support distance learning in Higher Education. *ALT-C*. , Nottingham, UK. (2007).
25. Anderson, P.: *What is Web 2.0?: ideas, technologies and implications for education*, (2007).
26. Hughes, A.: *Higher Education in a Web 2.0 World*, (2009).
27. Leslie, S., Landon, B.: *Social Software for Learning: What is it, why use it?*, (2008).
29. Bell, M., Bell, W.: It's installed ... now get on with it! Looking beyond the software to the cultural change. *British Journal of Educational Technology*. 36, 643-656 (2005).
30. Westera, W.: On strategies of educational innovation: Between substitution and transformation. *Higher Education*. 47, 501-517 (2004).
31. Zemsky, R., Massy, W.F.: *Thwarted innovation: What happened to e-learning and why*, (2004).
32. Salmon, G.: Flying not flapping: a strategic framework for e-learning and pedagogical innovation in higher education institutions. *Alt-J*. 13, 201-218 (2005).
33. Rogers, E.: *Diffusion of innovations*. The Free Press, New York (1983).
35. Prosser, M., Trigwell, K.: *Understanding learning and teaching: the experience in higher education*. Open University Press, Buckingham (1999).
36. Becher, T., Trowler, P.: *Academic Tribes and Territories: intellectual enquiry and the cultures of disciplines*. Open University Press/SRHE (2001).
37. Grunwald; H: *Factors Affecting Faculty Adoption and Sustained Use of Instructional Technology in Traditional Classrooms*, (2002).
38. Somekh, B.: Factors affecting teachers pedagogical adoption of ICT. In: Voogt, J. and Knezek, G. *International Handbook of Information Technology in Primary and Secondary Education*. pp. 449-460 Springer (2008).
39. Mumtaz, S.: Factors affecting teachers' use of information and communications technology: a review of the literature. *Technology, Pedagogy and Education*. 9, 319-342 (2000).