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Soft Skills assessment through virtual environments in the university sector: A narrative review

Evaluación de competencias genéricas en el ámbito universitario a través de entornos virtuales: Una revisión narrativa

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Abstract

The paper presents a narrative on the state of the question about the teaching and assessment of generic soft skills through Virtual Environments (VEs) in universities, based on consultation of scientific journals in electronic and printed format published between 2000 and 2014, as well as research projects focused on the development of generic skills through VEs. The paper summarises the theoretical and empirical contributions as a way of providing a greater insight into a line of research that began barely a decade ago. Soft skills related to student training, when combined with specific skills, enable better performance in personal, academic, social and organisational settings. This premise implies the need to consider the development of new methodologies for teaching, learning and assessment of soft skills. Results include the value of soft skills in training university students, as well as the development of innovative projects focused on the provision of teaching and assessment procedures that are feasible and effective for the achievement of soft skills assessment in VEs.

Keywords: Soft skills, teaching, learning, assessment, virtual environments, higher education.

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Resumen

El artículo expone una revisión narrativa al estado de la cuestión sobre la enseñanza y evaluación de competencias genéricas a través de Entornos Virtuales (EV) en el ámbito universitario, a partir de la consulta en revistas científicas en formato electrónico e impreso publicadas entre el año 2000 y 2014, así como también de los proyectos de investigación centrados en el desarrollo de competencias genéricas a través de EV. Sintetiza las aportaciones teóricas y empíricas, como una forma de aportar un mayor conocimiento a una línea iniciada hace escasamente una década. Las competencias genéricas, relacionadas con la formación integral del estudiante, al conjugarse con las específicas permiten un mejor desempeño en los ámbitos personal, académico, social y organizacional. Esta premisa supone la necesidad de plantearse el desarrollo de nuevas metodologías para la enseñanza, aprendizaje y evaluación de las competencias genéricas. Entre los resultados se destaca el valor de las competencias genéricas en la formación de los estudiantes universitarios, así como también el desarrollo de proyectos innovadores centrados en la aportación de procedimientos de enseñanza y evaluación viables y eficaces para el logro de competencias genéricas en EV.

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Palabras clave: Competencias genéricas, enseñanza, aprendizaje, evaluación, entornos virtuales, educación superior.

The convergence with the European Higher Education Area (EHEA) suggests that universities reformulate teaching methods, orienting them towards an approach based on

skills and training assessment during the teaching and learning process. The key lies in university training shifting its focus from teaching processes delivered by academic staff

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towards learning processes developed by students.

This new conceptualisation highlights pedagogical aspects and has a direct impact on organisational and structural aspects of the curriculum. Assessment is a fundamental part of this model, especially when based on the possibilities offered by Information and Communication Technology (ICT) in today's educational sphere, specifically Virtual Environments (VE) for providing immediate information feedback to each student individually during the education process.

According to Sangrá (2001) and Peñalosa (2010) VEs facilitate flexibility, personalisation, collaboration and interactivity. Flexibility to respond to students' learning needs; personalisation to adjust the educational model to their particular profile, making the subject work plan broader and more open and opening up access to information sources; collaboration, enabling students to work in teams and focus on achieving shared goals; plus interactivity when exchanging data, processing relevant information, obtaining and offering feedback, adjusting teaching to learning and building knowledge. In short, VEs can be more flexible than the face-to-face environment for implementing pedagogic strategies, offering levels of interaction and enabling the reuse of learning resources and communication with a variety of computing applications (Sancho Thomas, 2009).

The study of skills is a current and relevant topic. Over the last decade it has generated a wide range of theoretical and empirical studies (Bolívar, 2008; Climent Bonilla, 2010; Delgado, Borge, García, Oliver & Salomón, 2005; Díaz Barriga, 2006; Guzmán & Irigoin, 2000; Mertens, 1997; Vargas, Casanova & Montanaro, 2001). Some of the first studies focused on looking at the understanding of the concept of skills and their typology. In this aspect, González and Wagenaar (2003) took an integrating view of skills and identified two fundamental types: specific and generic. Specific skills refer to a particular profession and are attached to the discipline concerned.

This has been, precisely, where the majority of theoretical studies (Attewell, 2009; Barberá, 1999; Bolívar, 2008; Bunk, 1994; Castro, 2011; Díaz Barriga, 2006; Escudero, 2008, 2009; García, Andrada, Martel & Dávila, 2003) have focused their attention, mainly attempting to clarify how they are conceptualised.

Generic skills, also known as cross-sector skills, combine cognitive and motivational aspects. They are common to all professions and are made up of the following types of skills: a) instrumental, comprising the abilities of communication, analysis, summary, organisation and planning, as well as those of management and information, amongst others; b) personal, including the ability to work in a team, the skills to handle interpersonal relationships and ethical commitment, amongst others; and c) systemic, comprising creativity, leadership, independent learning and adapting to new situations, amongst others. Despite its widely recognised importance for students' personal and professional training (Guitert, Romeu & Pérez, 2007; Martínez, 2008; Palmer, Montaña & Palou, 2009) soft skills have taken something of a back seat in terms of dealing with its development in Higher Education institutions.

This article concentrates on reviewing theoretical and empirical sources on teaching and assessment procedures for soft skills in virtual environments in universities, based on the conceptual and typological definition made by various authors. The aim is to address the state of the question and define the starting point at which knowledge and research should be advanced in this area.

Skills in the university curricular area: conceptual definition

In recent years much has been written about the conceptualisation of skills in an attempt to offer a solid theoretical basis for the different proposals and innovations put forward from this approach. Despite intense specialist production, there is still no single or universal definition, instead a variety of accepted

descriptions of the concept, depending on the context in which they are framed. Plus, there is evidently still some conceptual and terminological confusion and lack of precision on the skill construct (Attewel, 2009; Bunk, 1994; Carabaña, 2011; Delors, 1996; De La Orden, 2011a; De La Orden, 2011b; Díaz, 2006; Escudero, 2008; Le Boterf, 2001; Perrenoud, 2004; Rodríguez, Hernández & Díaz, 2007; Sáez, 2009; Tejada, 2005; Zabalza, 2001).

In the literature review carried out on how skills are considered in the educational sphere, there is consensus on stating that they share two equally important meanings: a) at a theoretical level, it is a cognitive structure that enables specific behaviours to be developed; and b) at an operational level, it interrelates skills to enact knowledge, attitudes and thoughts in complex situations (Sáez, 2009). More specifically:

- It is a molar construct, a complex web of knowledge, skills and attitudes that individuals need to carry out some kind of activity in a concrete situation, or specific context, in which the actions derived from the skill being executed are shown (Zabalza, 2001).
- It is made up of a set of real abilities for achieving personal, group, work or organisational goals, through the mobilisation of aptitudes, abilities and skills (Vargas, 2006).
- It is a description of students' learning that includes cognitive, personal, social resources and values, which must be applied and properly integrated into situations within the context, taking social and ethical criteria into account (Escudero, 2008).
- It constitutes complex, adaptive and personal know-how, that is, it is not applied mechanically but reflexively. It is integrative and can be adapted to different contexts and situations, so it encompasses

knowledge, skills, emotions, values and attitudes (Pérez & Soto, 2009).

- It represents an underlying attribute that includes the knowledge, attitude, ability and skill to practice a profession, job or academic practice, enabling academic or work practice to be mastered at the required level (Ibarra Sáiz & Rodríguez Gómez, 2010).
- Comprehensive actions to identify, interpret, argue and resolve problems adequately and with ethical commitment, mobilising conceptual, procedural and attitudinal knowledge (Tobón, Pimienta & García, 2010).
- A set of knowledge, skills, procedures, attitudes and techniques that someone possesses and that are necessary for resolving problems, independently, freely and creatively (Jornet, González, Suárez & Perales, 2011).

So it could be said that the common position of the review undertaken leads us to deal with the skills construct in the university curriculum as a web of complex know-how (knowledge, abilities and skills) that combined with attitudes (motivation, interest, disposition, etc.) and values, enable someone to act assertively in a range of situations to tackle or solve situations likely to arise within the scope of the human being (individual, family, academic, organisational and social). To practice the skill, having suitable knowledge and know-how is fundamental, as is the person's ability to put into practice the behaviours that make up the skill (Ruíz Morales, 2013).

From this position, three aspects are emphasised: a) the skills are put into action in an articulated way to resolve complex problems; b) cognitive resources and attitudes are necessary for someone to develop suitable behaviours with responsibility; and c) the context in which the skill is executed plays an important role because this is where the fulfilment of established criteria or standards is determined.

Soft skills in university training

Generic, or soft, skills are common to all professions and are made up of three types of skills: a) instrumental, comprising the abilities of analysis and summary, organisation and planning, plus management and information; b) personal, including the ability to work in a team, the ability to handle interpersonal relationships and ethical commitment; and c) systemic, comprising creativity, leadership, independent learning and adapting to new situations, amongst other skills.

Experts agree on the importance of developing soft skills in the university context during a student's training, because they contribute towards effective performance in the academic sphere, and especially, in the workplace, as it is an element of adaptation and a driver of learning, enabling the person to continue learning throughout their lifetime. The conditions of today's professional practice demand, on the one hand, the specific knowledge and skills appropriate to exercising a profession (Le Deist & Winterton, 2005) but on the other hand, they also demand generic skills that enable the profession to be practised efficiently in a range of contexts, with independence, flexibility, ethics and responsibility (Concepción, 2012; González & González, 2008; McMurtrey, Downey, Zeltmann & Friedman, 2008; Villa & Poblete, 2011).

Although in the university sphere the greatest concern is the development of specific skills for the profession, there is no doubt that soft skills are significant for today's professional contexts, with interpersonal and socio-communicative skills being mainly in demand. Consequently, it seems necessary to connect the training and work contexts so that university graduates are equipped with higher levels of social and personal skills in order to adapt to professional contexts. This approach poses a challenge to teaching, that is, a reflection and evaluation of teaching, learning and assessment methods in university systems (Rogmann, 2008; Villa & Poblete, 2007).

The soft skills highlighted for good professional practice are usually common to a range of degree qualifications. Plus, although both teaching staff and students think that soft skills are important, they prioritise them differently. So, for example, students and teaching staff on the Business Science Diploma course at the University of Girona list the soft skills for their training profile in the following order: responsibility, self-education, planning, communication, interpersonal relations, creativity and leadership (Corominas, 2001). The teaching staff, however, prioritizes as important in students' training profile the soft skills referring to decision making, problem solving, communication, information management, teamwork, interpersonal relations, aptitude for quality and leadership (Corominas, Tesouro, Capell, Teixidó, Pélach & Cortada, 2006).

This approach highlights that if we want students to join the workplace better prepared, we need to promote training spaces within the university, as the precursor of high level professional experience, that serve to build knowledge in a particular area, as well as the skills and attitudes that will enable them to put that knowledge into practice in a range of real situations. University teaching staff bears major responsibility for designing and implementing methodological strategies offering students training scenarios oriented towards the learning and assessment of soft skills that are significant for their profession, thus contributing to the overall training of a professional with the ability to cope adequately with a range of personal, social and organisational contexts.

Virtual environments for developing soft skills: previous research in Spain

Although there is agreement on stating the importance of the various soft skills for the efficient development of students and professionals, how has the teaching and assessment of these skills been dealt with up to now in higher education?

A number of experiences show that various procedures have been designed and tested for the development and assessment of soft skills through VEs, with two factors being revealed: the first is the trend for using the e-portfolio for monitoring students' learning and assessment process, and the second is the exploration and development of electronic resources to support the dynamic, continuous, authentic assessment involving reflection and dialogue between all those concerned (students and teaching staff).

One of the first approaches is the use of the portfolio as a learning and assessment method based on technology. Barragán's work (2005) backs the use of the portfolio as a satisfactory assessment experience that enables the skills of creativity, ethical commitment, communication skills and the development of problem-solving skills to be achieved.

In addition, Bernal, Arráiz, Sabirón, Bueno, Cortés and Escudero (2006), based on theoretical references of social constructivism and authentic assessment, present the ethnographic e-portfolio as a versatile tool for skills assessment. This tool is key for the accompanying process and for developing the skills of dialectic thinking, dialogical behaviour, confrontation strategies and self-determination.

Capllonch and Castejón (2007) develop a networked collaborative, specifically an interactive e-diary used in the preliminary training of students on the Physical Education Teacher training course at the Complutense University of Madrid and at the University of Barcelona. The results of this work confirm the usefulness of this tool for self-assessment, as well as for sharing ideas, reflections and knowledge between peers.

Likewise, Guitert, Romeu and Pérez (2007) address the development of soft skills in university students through VEs. The experience reports favourable results in terms of acquiring skills related to the information society, especially in the search, analysis, synthesis and management of digital

information, as well as developing processing, organizing and presenting skills. Students equally show improvement in their learning of skills such as teamwork, planning and organising, both in individual and in group work.

Studies by Guasch, Guàrdia and Barberá (2009), Barragán, García, Buzón, Rebollo and Vega (2009), Barberá, Gewerc and Rodríguez (2009), Cabero, López and Llorente (2012), Aguaded, López and Jaén (2013), Valverde Berrocoso and Ciudad Gómez (2014) offer a panorama of innovation in learning assessment in the area of Higher Education, developing ways of using electronic portfolios as teaching tools for evaluating learning and opening up new lines of work in the field of soft skills assessment. These studies show that the e-portfolio is a teaching tool that allows skills to be assessed and provides advantages both for students and teaching staff, in the sense that it offers opportunities for: a) recording evidence of achievement, b) giving feedback throughout the learning process by monitoring evidence of achievement, c) promoting dialogue, reflection and collaboration between peers; d) interacting between students, teaching staff, skills and contexts; e) assessing, specifically, soft skills like planning, decision making and independence in the learning process; and f) continually assessing in order to improve and self-regulate learning.

Ibarra Sáiz (2008) directs the Evalcomix Project, focused on skills assessment in a b-learning context of official master's degrees in the area of Social and Legal Science, taught at nine Spanish universities. The result of this work was an Internet portal offering university teaching staff the chance to set up and share procedures, tools and practical instruments, criteria and indicators suitable for using in e-learning environments. This contribution is fundamental as it provides a methodological tool for monitoring and assessing skills in postgraduate students in the Social Sciences.

Other studies (Cebrián de la Serna & Bergman Stockholm, 2014; Lázaro & Torres, Ruíz Palomeque & González González, 2009;

Martín, León & García, 2014; Moreno-Crespo, López Noguero & Cruz Díaz, 2014; Olmos & Rodríguez, 2008) show the benefits brought by technology to the assessment process. In particular, students can evaluate their knowledge through self-assessment, immediate feedback and the chance to see the level of achievement attained. The results obtained confirm the independence gained by students with this type of internet-based training assessment.

The Evalhida Project (Rodríguez, 2008) addresses the analysis of the use of asynchronous dialogic interaction tools (the Spanish acronym for which is HIDA) to assess some of the students' soft skills in the active and participative execution of a task centred on Blogs, Forum and Wikis. The conclusions include the following: a) assessment of skills with an asynchronous dialogic interaction tool can be done by applying signatures, control lists and evaluation scales; and b) current asynchronous dialogic interaction tools do not allow for the application of assessment procedures, as they do not reflect how contributions to a wiki or a blog constitute proof of the skills attained.

Herradón, Blanco, Pérez and Sánchez (2009) produced a study focused on learning and assessment of soft skills at the Polytechnic University of Madrid. The training procedure used was b-learning, using the Moodle platform. Specifically, the study dealt with the skills of searching for and selecting information, defending arguments, teamwork and ICT handling. This experience confirms the importance of using signatures to assess skills, as they enable the assessment criteria to be clearly established and known by the students. What stands out from this experience is the difficulty of assessing the teamwork skill, due to students' reluctance to taking on responsibilities for decision-making and achieving common goals during the project.

In order to set up motivating and stimulating situations for students, Sancho Thomas (2009) designed a collaborative virtual learning scenario by means of a multi-

player role play game as part of the Physical Sciences degree course at the Complutense University of Madrid. The results showed a reduction in the student drop-out rate and a five-fold increase in the number of interactions via the virtual campus, compared to a traditional scenario. These results coincide with the approaches of Cabero and Llorente (2007), Gros, García and Lara (2009), Maldonado, Leal and Montenegro (2009) and Peñalosa (2010) who produce evidence of the benefits of technology for teaching interaction and student teamwork.

Based on results obtained by Sancho Thomas (2009) and projects run by the research group Evaluación en Contextos Formativos (Evalfor), the Evalsoft Project is an internet portal enabling the creation, storage and use of assessment procedures and instruments for four soft skills: commitment, communication, leadership and teamwork (García, 2010). The study provides pedagogical guidance for university teaching staff, no matter their area of work, for assessing the extent to which students have developed these skills.

Del Canto et al. (2010) implement the Atenea digital campus, which enables work submitted by university students to be managed. This virtual space facilitates student assessment, monitoring and learning feedback. In particular, it allows teaching staff to: a) set the tasks to be done by students; b) define submission dates; c) digitally manage the submission of work; d) give feedback on each piece of work, with qualitative comments that should be taken into account in subsequent submissions for later grading; and e) set up teacher-student communication.

On the topic of actively involving students in assessment processes using ICT, Nicol and Macfarlane (2006) and Nicol (2009a; 2009b; 2010) developed the PEER Projects (assessment by peer review) and REAP (re-engineering assessment practices), offering students the opportunity to evaluate their own work and that of others. Implementing this system highlights the fact that peer

assessment, feedback and feedforward foster the development of critical thinking in students, as well as the ability to supervise, assess and manage their learning. Likewise, it confirms that collaborative assessment is a plausible strategy if the aim is to generate new ways of getting university students to take part and become involved as agents of their own learning.

García (2009) developed the Web Portal “Ecompetentis” for assessing transversal skills. This tool allows university teaching staff to include, evaluate and disseminate pedagogic activities aimed at the training and assessment of the following skills: oral and written communication, teamwork, problem-solving and the use of foreign languages. It also provides assessment tools and research and innovation projects that can be absorbed into university course subjects.

In the reference framework of learning oriented assessment (Carless, Joughin & Liu, 2006), Gómez Ruíz, Rodríguez Gómez and Ibarra Sáiz (2013) describe e-learning oriented assessment (e-LOA) “as a learning process, mediated by ICT, that promotes the development of useful skills for students' academic present and workplace future” (p. 1). From this premise they undertook a quasi-experimental research study, using a pretest-posttest design, with experimental and control groups to ascertain the impact of e-LOA on the perception of the skill level of university students in the Social and Legal Science area. The results revealed that the skill level rose in the experimental groups and that there were significant differences between their pretest-posttest outcomes. They also found that the soft skills showing the most significant improvement were: independent learning, problem-solving and creativity.

Based mainly on the results of the Evalcomix Project (Ibarra Sáiz, 2008) and the Evalsoft Project (García, 2010), Ruíz Morales (2013) presents a virtual pedagogic environment supported by Moodle and in the b-learning education mode, which constitutes a methodology for teaching, learning and

assessment in the university sphere. Specifically, using electronic self-assessment procedures, peer assessment and teacher assessment, they show that a collaborative VE favours the development of the soft skills of communication, leadership, commitment and, in particular, teamwork.

The study carried out by Myers, Blackman, Andersen, Hay and Lee (2014) shows that teamwork is a skill that can be developed and assessed by means of ICT. Specifically, by using social media, blogs and Facebook, students communicate with each other and work together to produce research work, accompanied by the feedback given by the member of teaching staff via tutorial mediation.

Of the studies reviewed, focusing on the development of learning-assessment via VEs and on the effects of VEs on improving training skills, four aspects stand out that might guide the approach taken by new research projects on soft skills learning and assessment:

- Up to now, soft skills learning and assessment by means of technology and specifically using VEs has frequently focused on developing skills related to the information society, work planning, decision-making, problem-solving and teamwork. However, very little research has been done on the teaching, learning and assessment of the ability to communicate adequately in writing, which is necessary for the correct use of technical and academic language. Similarly, there is insufficient development in terms of skills for leading work teams and for innovating by generating ideas and experimenting with them.
- The e-portfolio seems to be a suitable instrument for soft skills assessment in the university sphere. It is particularly appropriate for self-assessment and peer assessment, as it enables the systematic recording of evidence of learning acquired and the monitoring of work produced by

students during technology based education process.

- Students taking part in collaborative virtual experiences show increased satisfaction, involvement, and perception of the learning achieved and how to make improvements. Plus, teaching staff also reports greater satisfaction with the results and the achievement level skills attained by their students.
- The current trend is to use training assessment with self-assessment and collaborative assessment, by means of a set of interactive educational actions and electronic resources that offer students educational and training opportunities for learning social skills through their own assessment and with the support of technology.

According to Suárez, Pérez, Boza and García-Valcárcel (2013), this panorama imposes profound changes to the processes of integrating ICT into the world of education, in particular VEs for learning and evaluation. On the one hand, it demands changes be made to the role and pedagogic practice of teaching staff, who have the responsibility for planning, designing and implementing interventions, from the perspective of diversity, focused on students' activity and participation using the technology that society makes available to them. On the other hand, it is essential that students develop abilities that enable them to continue learning more effectively and independently, according to their needs and goals and in a changing social and cultural environment. This means that students are no longer accumulators or reproducers of knowledge; instead, they must learn to adapt to a changing reality. Today's students must be able to work and contribute along with their peers to achieve common goals, and they must and be intelligent users of information. They also need to be flexible and able to adapt to change throughout their lives.

Changes are also brought about in education institutions when they opt to

incorporate VEs for the purpose of training people who are independent, effective, critical, reflexive, with a command of oral and written language and who can efficiently resolve situations that crop up in everyday life. As Martín Sánchez and López Meneses (2012) show, the question is to foster educational virtual environments that allow for interaction and educational relationships with few spatial, geographical and time constraints, that encourage knowledge building, experimentation and problem-solving, at both individual and group level.

Conclusions

Incorporating VEs in the university curriculum and particularly in the teaching, learning and assessment of a range of skills, is on the increase due to the connectivity, flexibility, interaction, independence, collaboration and motivation provided by ICT in teaching environments (Iriondo & Gallego, 2013). However, we need to go further than the use of VEs as repositories of information, which is their most frequent use, and this requires a rigorous and well-planned internet training programme. It is essential to have a systematic process in place that governs the educational goals and learning objectives that students must attain, as well as the tasks, means, tools and resources assigned for electronic learning and assessment.

One of the most current and widespread, but understudied, trends focuses on designing actions aimed at developing soft skills by means of electronic procedures. This, as has been shown, requires the continued use of teaching groups that are linked to research and enable innovations in the field of learning and assessment of this kind of skills to be viable in the university sphere. It seems to be one of the best ways of producing educational knowledge as well as making theoretical, methodological and practical contributions to this area of interest for Higher Education and of extreme importance for future professionals who will have to prove themselves in today's society.

Research on the learning and assessment of soft skills using virtual environments only started in the last decade, so it is still early to have a consistent theory or sufficiently viable and effective procedures. However, the review carried out shows that this research work is producing new knowledge along on three lines: 1) learning-oriented assessment, 2) skills assessment using virtual and collaborative tools, and 3) training teaching staff to develop skills for implementing e-assessment in the teaching and learning process.

Likewise, both the theory and research work undertaken up to now suggest that a soft skills learning and assessment process for university students should be addressed by a system that a) is participative, reflexive and critical for teaching staff and students; b) evaluates performance in the areas of knowledge, know-how and coexistence; c) uses contextualised methods and procedures; d) discovers and reinforces individual strengths and features that should be improved in a personalised way, as well as opportunities detected during the learning process; and e) uses agreed assessment criteria and achievement indicators that are known and shared with students.

The results suggest that VEs can support learning of communication, planning and teamwork skills, and that students and teaching staff who have used this type of environment for developing skills in the university sphere are satisfied with the outcomes. However, as of now there is no conclusive evidence in respect to the usefulness or viability of VEs for addressing soft skills learning and assessment (Ruiz Morales, 2013). Generally speaking, the way that most soft skills are learned, taught and assessed through VEs is a topic that still requires improvement, further work and development in the Higher Education sphere. Research on this subject is still in the early stages and consistent theories and effective procedures have yet to be produced.

To sum up, although it is still necessary to ask what kind of investment is involved in the

development and assessment of soft skills in virtual environments, the results suggest that it is important to continue investigating new forms of teaching and learning in the university sphere, making the most of the potential of virtual environments to generate and build pedagogical content knowledge. The most effective ways and actions are yet to be defined, but it seems that the journey is underway

References

- Aguaded, J.I.; López, E. & Jaén, A. (2013). Portafolios electrónicos universitarios para una nueva metodología de enseñanza superior. Desarrollo de un material educativo multimedia. *Revista de Universidad y Sociedad del Conocimiento*, 10(1). doi: <http://doi.org/10.7238/rusc.v10i1.1333>
- Attewell, P. (2009). ¿Qué es una competencia? *Pedagogía Social Revista Interuniversitaria*, 16; 21-44. doi: https://doi.org/10.7179/PSRI_2009.16.03
- Barberá, E. (1999). *Evaluación de la enseñanza, evaluación del aprendizaje*. Barcelona: EDEBÉ.
- Barberá, E.; Gewerc, A. & Rodríguez, J.L. (2009). Portafolios electrónicos y educación superior en España: Situación y tendencias. *Revista de Educación a Distancia*. doi: <http://doi.org/10.7238/rusc.v10i1.1333>
- Barragán, R. (2005). El Portafolio, metodología de evaluación y aprendizaje de cara al nuevo Espacio Europeo de Educación Superior. Una experiencia práctica en la Universidad de Sevilla. *Revista Latinoamericana de Tecnología Educativa*, 4(1), 121-139.
- Barragán, R.; García, R.; Buzón, O.; Rebollo, M.A. & Vega, L. (2009). E-portafolios en Procesos Blended-learning: Innovaciones de la Evaluación en los Créditos Europeos. *Revista de Educación a Distancia*, Retrieved from: <http://www.um.es/ead/red/M8/us.pdf>
- Bernal, J.L.; Arráiz, A.; Sabirón, F.; Bueno, C.; Cortés, M.P. & Escudero, T. (2006). El Portafolio-Etnográfico de evaluación de









- competencias: alternativa a la evaluación en el Espacio Europeo de Educación Superior. *Anuario de Pedagogía, Universidad de Zaragoza*, 8, 11-34.
- Bolívar, A. (2008). El discurso de las competencias en España: Educación Básica y Educación Superior. *Revista de Docencia Universitaria*, 6(2). Retrieved from: http://www.um.es/ead/Red_U/m2/bolivar.pdf
- Bunk, G. P. (1994). La transmisión de competencias en la formación y el perfeccionamiento profesional de la República Federal Alemana. *Revista Europea de Formación Profesional*, 2, 8-14.
- Cabero, J. & Llorente, M. (2007). La interacción en el aprendizaje en red: uso de herramientas, elementos de análisis y posibilidades educativas. *Revista Iberoamericana de Educación a Distancia*, 10(2), 97-123. doi: <http://doi.org/10.5944/ried.2.10.995>
- Cabero, J.; López, E. & Llorente, M. (2012). E-Portafolio universitario como instrumento didáctico 2.0 para la reflexión, evaluación e investigación de la práctica educativa en el espacio europeo de educación superior. *Revista Virtualidad, Educación y Ciencia*, 3(4). Retrieved from: <http://revistas.unc.edu.ar/index.php/vesc/artic le/view/1886>
- Capllonch, M. & Castejón, F.J. (2007). La adquisición de competencias genéricas a través de una comunidad de práctica y aprendizaje. En J. L. Rodríguez (coord.), *Comunidades virtuales de práctica y de aprendizaje. Revista Electrónica Teoría de la Educación: Educación y Cultura en la Sociedad de la Información*, 8(3). Retrieved from: http://gredos.usal.es/jspui/bitstream/10366/56586/1/TEE2007_V8N3_P168.pdf
- Carabaña, J. (2011). Competencias y Universidad, o un desajuste por mutua ignorancia. *Bordón*, 63(1), 15-31.
- Carless, D. Joughin, G. & Liu, N.F. (2006). *How assessment supports learning: learning-oriented assessment in action*. Hong Kong University Press. doi: <https://doi.org/10.5790/hongkong/9789622098237.001.0001>
- Castro, M. (2011). ¿Qué sabemos de la medida de las competencias? Características y problemas psicométricos en la evaluación de competencias. *Bordón*, 63(1), 109-123.
- Cebrián de la Serna, M. & Bergman Stockholm, Ma. E. (2014). Evaluación formativa con e-rúbrica: aproximación al estado del arte. REDU. *Revista de docencia Universitaria*, 12(1), 15-22. Retrieved from: <http://red-u.net/redu/index.php/REDU/article/view/807>
- Climent Bonilla, J. (2010). Reflexiones sobre la Educación Basada en Competencias. *Revista Complutense de Educación*, 21(1), 91-106.
- Concepción, Y. (2012). Modalidades de evaluación de competencias genéricas en la formación universitaria. *Didac*, 60, 15-19.
- Corominas, E. (2001). Competencias genéricas en la formación universitaria. *Revista de Educación*, 325, 299-321.
- Corominas, E.; Tesouro, M.; Capell, D.; Teixidó, J.; Pélach, J. & Cortada, R. (2006). Percepciones del profesorado ante la incorporación de las competencias genéricas en la formación universitaria. *Revista de Educación*, 341, 301-336.
- De La Orden, A. (2011a). El problema de las competencias en la educación general. *Bordón*, 63(1), 47-61.
- De La Orden, A. (2011b). Reflexiones en torno a las competencias como objeto de evaluación en el ámbito educativo. *Revista Electrónica de Investigación Educativa*, 13(2), 1-21. Retrieved from: <http://redie.uabc.mx/index.php/redie/article/view/278>
- Delgado, A.M.; Borge, R.; García, J.; Oliver, R. & Salomón, L. (2005). *Competencias y Diseño de la Evaluación Continua y Final en el Espacio Europeo de Educación Superior*. Madrid: Ministerio de Educación y Ciencia. doi: <http://doi.org/10.13140/2.1.4874.5928>

- Delors, J. (1996). *La educación encierra un tesoro*. Madrid: Editorial Santillana. UNESCO.
- Del Canto, P.; Gallego, I.; López, J. M.; Mochón, F.; Mora, J.; Reyes, A. ... Valero, M. (2010). La evaluación en el contexto del Espacio Europeo de educación Superior. *Revista de Educación a Distancia*. Retrieved from: <http://www.um.es/ead/reddusc/1/valero.pdf>
- Díaz Barriga, A. (2006). El Enfoque de Competencias en la Educación. ¿Una alternativa o un disfraz de cambio? *Perfiles Educativos*, 28(111), 7-36.
- Escudero, J.M. (2008). Las competencias profesionales y la formación universitaria: posibilidades y riesgos. *Revista de Docencia Universitaria*, 1. Retrieved from: http://umd.upla.cl/cursos/fmdelbuey/marco_competencias/competencias_profesionales_for_macion_universitaria.pdf
- Escudero, J.M. (2009). Las competencias profesionales y la formación universitaria: posibilidades y riesgos. *Pedagogía Social Revista Interuniversitaria*, 16, 65-82. doi: https://doi.org/10.7179/PSRI_2009.16.05
- García, M., Andrada, J., Martel, M. & Dávila, N. (2003, 11-12 de septiembre). *Una propuesta de evaluación continua para Matemáticas I. Análisis de los resultados*. Comunicación presentada en las XI Jornadas de ASEPUMA, Oviedo. Retrieved from: <http://www.uv.es/asepuma/XI/33.pdf>
- García, M. (dir.) (2010). *Proyecto Evalsoft: Evaluación de Competencias Interpersonales en Entornos Virtuales de Aprendizaje*. Programa de estudios y análisis para la mejora de la calidad de la enseñanza superior y de la actividad del profesorado universitario. Secretaría de Estado de Universidades. Universidad Complutense de Madrid.
- García, M.J. (coord.) (2009). *Desarrollo de la herramienta eCompetentis para la evaluación de competencias transversales*. Programa de Estudios y Análisis destinados a la mejora de la calidad de la enseñanza superior y de la actividad del profesorado universitario. Madrid: Servicio de Publicaciones de la Universidad Politécnica de Madrid.
- Gómez Ruíz, M. Á.; Rodríguez Gómez, G. & Ibarra Sáiz, M^a.S. (2013). Desarrollo de las competencias básicas de los estudiantes de Educación Superior mediante la e-Evaluación orientada al aprendizaje. *Revista Electrónica de Investigación y Evaluación Educativa*, 19(1). doi: <http://doi.org/10.7203/relieve.19.1.2457>
- González, V. & González, R. (2008). Competencias genéricas y formación profesional: un análisis desde la docencia universitaria. *Revista Iberoamericana de Educación*, 47, 185-209.
- González, J. & Wagenaar, R. (eds.) (2003). *Tuning Educational Structures in Europe. Informe Final*. Fase Uno. Bilbao: Universidad de Deusto.
- Guitert, M.; Romeu, T. & Pérez, M. (2007). Competencias TIC y trabajo en equipo en entornos virtuales. *Revista de Universidad y Sociedad del Conocimiento*, 4(1). Retrieved from: <http://www.raco.cat/index.php/RUSC/article/view/58126/68218>
- Guzmán, V. & Irigoien, M.E. (2000). *Módulo de Formación para la Empleabilidad y la Ciudadanía. Documento de Base para el Diseño Curricular*. Organización Internacional del Trabajo (Cinterfor/OIT), Montevideo. Retrieved from: http://ilo-mirror.library.cornell.edu/public/spanish/regi-on/ampro/cinterfor/publ/mod_form/pdf/doc_base.pdf
- Gros, B.; García, I. & Lara, P. (2009). El desarrollo de Herramientas de apoyo para el Trabajo Colaborativo en Entornos Virtuales de Aprendizaje. *Revista Iberoamericana de Educación a Distancia*, 12(2). doi: <http://doi.org/10.5944/ried.2.12.903>
- Guasch, T.; Guárdia, L. & Barberá, E. (2009). Prácticas del portafolio electrónico en el ámbito universitario del Estado Español. *Revista de Educación a Distancia*,

- Monográfico VIII. doi: <http://doi.org/10.1111/j.1467-8535.2007.00803.x>
- Herradón, R.; Blanco, J.; Pérez, A. & Sánchez, J.A. (2009). Experiencias y metodologías b-learning para la formación y evaluación en competencias genéricas en Ingeniería. *La Cuestión Universitaria*, 5, 33-45. Retrieved from: http://www.lacuestionuniversitaria.upm.es/web/grafica/articulos/imgs_boletin_5/pdfs/LC_U5-4.pdf
- Ibarra Sáiz, M^a.S. (dir.) (2008). Proyecto Evalcomix: *Evaluación de competencias en un contexto de aprendizaje mixto (blended-learning)*. Programa de estudios y análisis para la mejora de la calidad de la enseñanza superior y de la actividad del profesorado universitario. Servicio de Publicaciones de la Universidad de Cádiz.
- Ibarra Sáiz, M^a.S. & Rodríguez Gómez, G. (2010). Los procedimientos de evaluación como elementos de desarrollo de la función orientadora en la universidad. *Revista Española de Orientación y Psicopedagogía*, 21(2), 443-461. doi: <https://doi.org/10.5944/reop.vol.21.num.2.2010.11558>
- Iriondo, W. & Gallego, D. (2013). El currículo y la educación a distancia. *Revista Iberoamericana de Educación a Distancia*, 16(1), 109-132. doi: <http://doi.org/10.5944/ried.16.1.2062>
- Jornet, J.M.; González, J.; Suárez, J. & Perales, M^a.J. (2011). Diseño de procesos de evaluación de competencias: consideraciones acerca de los estándares en el dominio de las competencias. *Bordón*, 63(1), 125-145.
- Lázaros y Torres, M.L.; Ruíz Palomeque, M.E. & González González, M.J. (2009). *La utilización de Hot Potatoes en el Campus Virtual. Moodle como herramienta de autoevaluación*. Comunicación presentada en la V Jornada Campus Virtual UCM: Buenas prácticas e indicios de calidad, Madrid. Retrieved from: http://eprints.ucm.es/9957/1/10_lazaro.pdf
- Le Boterf, G. (2001). *Ingeniería de las competencias*. España: gestión 2000.
- Le Deist, F.D. & Winterton, J. (2005). ¿What is competence? *Human Resource Development International*, 8, 27-46. doi: <https://doi.org/10.1080/1367886042000338227>
- Maldonado, L.F.; Leal, L.A. & Montenegro, M. (2009). Análisis e interacciones en foro y chat: consolidación de grupo y liderazgo comunicativo en un curso de lógica matemática. *Revista Iberoamericana de Educación a Distancia*, 12(2), 189-210. doi: <http://doi.org/10.5944/ried.2.12.907>
- Martín, A.; León, C. & García, A. (2014). Innovación docente para la integración de Autoformación y autoevaluación en la plataforma WEBCT. *Píxel-Bit. Revista de Medios y Educación*, 44, 201-214. doi: <http://dx.doi.org/10.12795/pixelbit.2014.i44.14>
- Martín Sánchez, M.A. & López Meneses, E. (2012). La sociedad de la información y la formación del profesorado. E-actividades y aprendizaje colaborativo. *Revista Iberoamericana de Educación a Distancia*, 15(1), 15-35. doi: <http://doi.org/10.5944/ried.1.15.775>
- Martínez, J. (2008). Competencias genéricas y transversales. La opinión de los profesores universitarios. In C. Hué García (coord.), *Competencias genéricas y transversales de los titulados universitarios*. Retrieved from: <http://www.unizar.es/ice/images/stories/publicacionesICE/Col.%20Documentos%2008.pdf>
- McMurtrey, M. E., Downey, J. P., Zeltmann, S. M. & Friedman, W. H. (2008). Critical skill sets of entry-level IT professionals: An empirical examination of perceptions from field personnel. *Journal of Information Technology Education*, 7, 101-120.
- Mertens, L. (1997). *Competencia Laboral: sistemas, surgimiento y modelos*. Montevideo: Organización Internacional del Trabajo (Cinterfor/OIT). Retrieved from: http://www.oei.es/etp/competencia_laboral_sistemas_modelos_mertens.pdf

- Moreno-Crespo, P.; López Noguero, F. & Cruz Díaz, M. (2014). Portafolio digital: un nuevo formato de aprendizaje. *Didáctica de las Ciencias Experimentales y Sociales*, 28, 83-94. doi: <https://doi.org/10.7203/dces.28.3182>
- Myers, T., Blackman, A., Andersen, T., Hay, R. & Lee, I. (2014). Cultivating ict students' interpersonal soft skills in online learning environments using traditional active learning techniques. *Journal of Learning Design*, 7(3), 38-53. doi: <https://doi.org/10.5204/jld.v7i3.194>
- Nicol, D. (2009a). Assessment for learner self-regulation: enhancing achievement in the first year using learning technologies. *Assessment & Evaluation in Higher Education*, 34(3), 335-352.
- Nicol, D. (2009b). Transforming assessment and feedback: enhancing integration and empowerment in the first year. *Quality Assurance Agency, Scotland*. Retrieved from: <http://www.reap.ac.uk/Portals/101/Document/s/REAP/transforming-assessment-and-feedback.pdf>
- Nicol, D. (2010). From monologue to dialogue: improving written feedback in mass higher education. *Assessment & Evaluation in Higher Education*, 35(5), 501-517. doi: <https://doi.org/10.1080/02602930802255139>
- Nicol, D. & Macfarlane, D. (2006). Formative assessment and self-regulated learning: a model and seven principles of good feedback practice. *Studies in Higher Education*, 31(2), 199-218. doi: <https://doi.org/10.1080/03075070600572090>
- Palmer, A., Montañó, J. & Palou, M. (2009). Las Competencias Genéricas en la Educación Superior. Estudios comparativo entre la opinión de empleadores y académicos. *Psicothema*, 21(3), 433-438.
- Olmos Migueláñez, S. & Rodríguez Conde, M.J. (2008, 1-13 de octubre). Autoevaluación online a través de Perception como estrategia orientadora del aprendizaje de los alumnos. En A. B. Gil, J. A. Velázquez & F. J. García (Coords.), X Simposio Internacional de Informática Educativa SIIE, 133-139, Salamanca.
- Peñalosa, E. (2010). Evaluación de los aprendizajes y estudios de la interactividad en entornos en línea: un modelo para la investigación. *Revista Iberoamericana de Educación a Distancia*, 13(1), 17-38. doi: <http://doi.org/10.5944/ried.1.13.886>
- Pérez, A. & Soto, E. (2009). Competencias y Contextos Escolares: Implicaciones Mutuas. Organización y Gestión Educativa: *Revista del Fórum Europeo de Administradores de la Educación*, 17(2), 17-21.
- Perrenoud, P. (2004). *Desarrollar la práctica reflexiva en el oficio de enseñar*. Barcelona: Grao.
- Rodríguez, G. (dir.) (2008). Proyecto Evalhida: *Evaluación de competencias con Herramientas de Interacción Dialógica Asíncronas (foros, blogs y wikis)*. Servicio de Publicaciones de la Universidad de Cádiz.
- Rodríguez, R.; Hernández, N. & Díaz, M.A. (2007). *Cómo planificar asignaturas para el aprendizaje de competencias*. Documentos Instituto de Ciencias de la Educación, Universidad de Oviedo.
- Rogmann, J.J. (2008). *Evaluating Computer-Supported Social Learning An Integrative Study of the Development of Soft Skills in a University-based mediation training programs*. Hamburg, Germany: Universität Hamburg, Fachbereich Psychologie.Germany: Hamburg University..Tesis Doctoral.
- Ruiz Morales, Y. (2013). *Evaluación de competencias genéricas en la universidad. Estudio comparativo en entorno b-learning y presencial*. Madrid: UCM Tesis Doctoral.
- Sáez, J. (2009). El enfoque por competencias en la formación de los educadores sociales: una mirada a su caja de herramientas. *Pedagogía Social Revista Interuniversitaria*, 16, 9-20. doi: https://doi.org/10.7179/PSRI_2009.16.02

- Sancho Thomas, P. (2009). *Un Sistema para el Aprendizaje Virtual Colaborativo Escenificado a través de un Juego de Rol Multi-Jugador*. Madrid: UCM Tesis Doctoral.
- Sangrá, A. (2001). Enseñar y aprender en la virtualidad. *Educar*, 28, 117-131.
- Suárez, J.M.; Pérez, A.; Boza, A. & García-Valcárcel, A. (2013). Educación 2.0. Horizontes de la innovación en la educación. In C. Jiménez; J.L. García; B. Álvarez & J. Quintana (eds.): *Investigación y educación en red*, (19-60). Madrid: McGraw Hill.
- Tejada, J. (2005). El trabajo por competencias en el prácticum: cómo organizarlo y cómo evaluarlo. *Revista Electrónica de Investigación Educativa*, 7(2). doi: <http://doi.org/10.3916/C44-2015-06>
- Tobón, S.; Pimienta, J. & García Fraile, J.A. (2010). *Secuencias didácticas: aprendizaje y evaluación de competencias*. México: Pearson.
- Valverde Berrocoso, J. & Ciudad Gómez, A. (2014). El uso de e-rúbricas para la evaluación de competencias en estudiantes universitarios. Estudio sobre fiabilidad del instrumento. *REDU. Revista de docencia Universitaria*, 12(1), 49-79. Retrieved from: <http://red-u.net/redu/index.php/REDU/article/view/724>
- Vargas, F. (2006). De las virtudes laborales a las competencias clave: un nuevo concepto para antiguas demandas. *Boletín Cinterfor: Boletín Técnico Interamericano de Formación Profesional*, 149, 13-29.
- Vargas, F.; Casanova, F. & Montanaro, L. (2001). *El enfoque de competencia laboral: manual de formación*. Organización Internacional del Trabajo (Cinterfor/OIT), Montevideo. Retrieved from: http://temp.oitcinterfor.org/public/spanish/reunion/ampro/cinterfor/publ/man_cl/index.htm
- Villa, A. & Poblete, M. (2007). *Aprendizaje basado en competencias. Una propuesta para la evaluación de las competencias genéricas*. Bilbao: Mensajero.
- Villa, A. & Poblete, M. (2011). Evaluación de competencias genéricas: principios, oportunidades y limitaciones. In A. De La Orden (Coord.), *Educación y competencias*. *Bordón*, 63(1), 147-170.
- Zabalza, M.A. (2001). *Competencias personales y profesionales en el prácticum*. Resúmenes del VI Simposium Internacional sobre el Prácticum. Desarrollo de Competencias Personales y Profesiones en el Prácticum. Lugo: Unicopia.

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