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Enhancing graduates' employability skills through authentic learning approaches

Enhancing
Graduates'
employability
skills

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Abstract

Purpose – The purpose of this paper is to introduce a theoretical framework based on authentic learning approaches that can be taken into consideration in higher education (HE) contexts to design activities that enable students to develop employability skills.

Design/methodology/approach – Three methods were used to develop the framework: desk research on current demand and supply of new graduate's employability skills; interviews in four European HE institutions to identify authentic learning scenarios; and asynchronous online focus group to validate the framework.

Findings – The paper takes a competence-centred approach to the concept of employability skills and sets out a taxonomy of skills required to enhance new graduates' employability. It also gives criteria and examples of authentic learning scenarios in HE settings that promote the acquisition of these skills.

Research limitations/implications – The framework developed remains theoretical. In a second phase, the framework will be applied to implement authentic activities in different programmes and subjects of five HE institutions, and the results will be reported in future publications.

Practical implications – The framework gives directions to create real and practical ways to enhance new graduates' employability skills by improving the connection between HE curricula and the demands of the real world.

Originality/value – The added value of the paper lies in adopting a learner-centred, genuine and effective learning approach, such as authentic learning as a catalyst for bringing work experience to formal learning in HE institutions, in order to better develop graduates' employability skills.

Keywords Labour market, Graduates, Employability skills, Higher education, Authentic learning

Paper type Conceptual paper

Introduction

Youth unemployment has become one of the Europe's greatest challenges since the start of the economic crisis in 2008. In October 2017, according to Eurostat (European Commission, 2017), 3.722m young people (under 25) were unemployed in the 28 member states of the European Union (EU) (a rate of 16.5 per cent). This puts young people at the forefront of the Europe 2020 strategy's priorities for smart, sustainable and inclusive growth (European Commission, 2010a). Europe 2020 outlines concrete initiatives to support young people in getting jobs and dealing with current challenges, in particular making education and training more relevant and better preparing students for the transition from education to workplace.

At the policy level, the solutions are ambitious: the Education and Training Monitor 2014 (European Commission, 2014a) calls for all learners in all European countries to be equipped with the skills required to participate successfully in society and the labour market. Specifically, the report calls for: strengthening the quality and relevance of higher education (HE) programmes and focusing on enhancing graduates' employability; involving employers in the development and quality assurance of programmes as a means for

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linking the worlds of education and work more closely; combining innovative pedagogies with an effective use of digital tools and content to foster more innovative methods of learning; and far-reaching access to learning resources and learning opportunities.

Indeed, the high-level group on the Modernisation of Higher Education in Europe (European Commission, 2013) goes further:

Curricula should be developed and monitored through dialogue and partnerships among teaching staff, students, graduates and labour market actors, drawing on new methods of teaching and learning, so that students acquire relevant skills that enhance their employability (p. 41).

These recommendations have special significance considering that in most EU countries, a majority of employers (56 per cent) point out that they have never cooperated with HE institutions to discuss curriculum design and study programmes, while 29 per cent answer that they have cooperated sometimes (European Commission, 2010b). Furthermore, many HE graduates point out that one of the difficulties they find when entering the labour market is the design of the curricula, which they consider to be obsolete, relying too much on theory and lack practical activities (Tymon, 2013).

The Skill Up project – matching graduates' skills and labour world demands through authentic learning scenarios – tackles these issues head on[1]. The project aims to build scalable and replicable ways for connecting HE curricula with evolving labour market demands through a strategic partnership in the field of HE that involves six institutions from three European countries (Spain, Germany and Sweden). The specific objectives of the project are to:

- map good practices in matching graduates' skills and labour market demands through authentic learning scenarios in partners' HE settings;
- improve soft and hard employability skills of undergraduates by means of designing, developing, applying and evaluating authentic learning scenarios in various HE and VET programmes identified by partners as priorities;
- enhance access to career counselling and guidance services for undergraduates by training tutors in career counselling, with an emphasis on e-counselling; and
- implement and promote a virtual environment that acts as a hub for attracting stakeholders, offering guidance to labour market newcomers and real hands-on experiences in the professional world as part of students' learning.

This paper gives an account of the results obtained in the first phase of the project, linked to the first objective, in which the theoretical framework was established. The methods used in this phase included: desk research to build a state of the art on current supply and demand of new graduate's employability skills at a European level; focused interviews in the partners' institutions to identify good practices in authentic contexts in HE; and an asynchronous online focus group involving teaching staff, undergraduates, graduates, career counsellors and employers' representatives to discuss and validate the framework.

The results presented here consist of a theoretical framework in which a competence-centred approach to the concept of employability skills was adopted (European Commission, 2014b; Yorke, 2006; Waltz, 2011). This implies understanding employability skills as a combination of personal qualities and beliefs, knowledge, skilful practices and the ability to reflect critically and productively on experience, and that need to be frequently renewed during a person's working life (Yorke, 2006).

The framework contains a taxonomy of employability skills crucial for HE graduates to acquire what was classified into four clusters: cognitive, methodological, social and subject-specific skills. Moreover, the perspective of authentic learning (Herrington *et al.*, 2010; Herrington and Herrington, 2006) as a catalyst for bringing work experience to formal

learning in HE settings was adopted. Generally, authentic learning has been defined as an authentic context that reflects the way the knowledge will be used in real life (Rule, 2006). This conceptualization focuses on designing real-life tasks and creating environments which reflect the manner in which the knowledge will be used in real-world contexts. In our approach, we expand this understanding of authenticity in learning, as a characteristic of learning tasks and environments, and assume authentic learning as a quality of educational processes that engage students in becoming more fully human (Scanlon, 2011). This broadened notion of authentic learning incorporates not only the epistemological dimension – what students are expected to know and be able to do – but also ontological – who students are becoming or learning to be.

Methodology

On an overall basis, the project adopts a collaborative action research approach that “seeks to bring together action and reflection, theory and practice, in participation with others, in the pursuit of practical solutions to issues of pressing concern” (Reason and Bradbury, 2001). This approach allows the sequentially linked spiralling of four action research cycles related to planning, acting, observing and reflecting, to produce the best results in the most efficient way. Each cycle is linked integrally with an outcome of the project (Figure 1).

In the first cycle, in which some of the results are reported in this paper, three main qualitative methods were used: desk research, focused interviews and an asynchronous online focus group. A brief explanation of each of the three methods follows.

The desk research phase comprised a thorough review of existing literature at European and international levels aimed to:

- build the concept of employability skills of HE graduates;
- define a taxonomy of employability skills required to promote graduates' employability in the twenty-first century; and
- identify from different points of view (academic, employers, graduates and students) to what extent the skills graduates are currently acquiring in HE institutions match the skills demanded by the labour market.

The objective of the interviews was to identify good practices in the partner institutions in order to develop students' employability skills from the perspective of authentic learning. A purposeful sampling (Patton, 2002) of 12 interviews was conducted. This involved identify and select individuals who were especially knowledgeable about the phenomenon studied (Cresswell and Plano Clark, 2011). The good practices identified were presented later in this paper to exemplify the elements constitutive of an authentic learning scenario.

The asynchronous online focus group involving 29 stakeholders (teaching staff, undergraduates, graduates, career counsellors and employers' representatives) from the three partner countries (Spain, Germany and Sweden) aimed:

- to discuss the findings from the first cycle of the project on the supply and demand of skills for the employability of new graduates and the taxonomy of employability skills defined;
- to present the identified good practices and to contrast the criteria used to identify them with a varied sample of stakeholders from the three partner countries; and
- to carry out a pilot test of a questionnaire to be applied with students in the second cycle of the project.

The online asynchronous focus group was chosen as a method to collect data much more effectively, quickly, flexibly, detailed and at a lower cost than a face-to-face focus group

Figure 1.
The four cycles of
the skill up project

producing the similar amount and quality of information, as shown by various research studies (Moore *et al.*, 2015; Turney and Pocknee, 2004). The focus group was developed in a Moodle platform and held over the course of four days, with participants choosing when it would be most convenient to participate in the activities. A time dedication of 30 min per day with a total of 2 h held over the course of four days was estimated, similar to the time they had dedicated to a face-to-face focus group.

The following provides an analysis of some of the results achieved through the application of the described methods.

A competence-centred approach to the concept of employability skills

There are many definitions and approaches established for employability. According to Yorke (2006, p. 8), employability is:

[...] a set of achievements – skills, understandings and personal attributes – that makes graduates more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy.

Hillage and Pollard (1998) point out that employability is about three abilities: gaining initial employment, maintaining employment and obtaining new employment if required.

In its report European Commission (2014b), the European Commission gives two types of definitions for employability which encompass the views of both Yorke (2006) and Hillage and Pollard (1998): employment centred and competence centred. From an employment-centred perspective, close to the approach of Hillage and Pollard, employability is “the ability [of graduates] to gain initial meaningful employment, or to become self-employed, to maintain employment, and to be able to move around within the labour market” (European Commission, 2014b, p. 63). As an alternative, a competence-centred approach focuses on the skills and competency graduates gain during their studies as formulated in Yorke (2006):

In terms of all definitions, however, it has to be emphasized that employability does not equal employment. Employment-centred definitions can sometimes blur the difference, especially when using employment rates as proxies for measuring employability. Competence-centred definitions – especially if formulated as in Yorke (2006) – can help to clarify the relationship between employability and employment: certain skills and competences make graduates “more likely” to gain employment, but do not guarantee it (European Commission, 2014b, p. 63).

From a critical position, Brown *et al.* (2002) argue that even though the individual’s attributes affect the extent to which a person may be employable, the labour market and

other factors outside the jobseeker's control affect the probability of being hired. The authors then offer an alternative definition of employability as "the relative chances of finding and maintaining different kinds of employment" (Brown *et al.*, 2002, cited in Yorke, 2006, p. 10). In this sense, and following Yorke (2006), HE can contribute significantly in helping graduates maximise their chances for success in the labour market.

In addition, as Waltz (2011) points out, to truly prepare and empower graduates to enter the labour market, it is important to discuss issues beyond the values of corporate managers such as employee rights, explorations of personal values and critical analysis. Otherwise, we risk encouraging graduates "to believe that becoming and staying employed requires turning themselves into 'products' that conform to ever-changing market desires, which is certainly not a concept that should be left unchallenged" (Waltz, 2011, p. 4).

Along similar lines, if there are variations in the definition of employability, defining the term "skills" is also a challenge. Often, the terms "skill" and "competence" are used interchangeably, when they are not necessarily synonymous (Cinque, 2016).

According to Rychen and Salganik:

[...] a competence is defined as the ability to successfully meet complex demands in a particular context. Competent performance or effective action implies the mobilization of knowledge, cognitive and practical skills, as well as social and behaviour components such as attitudes, emotions, and values and motivations. A competence – a holistic notion – is therefore not reducible to its cognitive dimension, and thus the terms competence and skill are not synonymous (Rychen and Salganik, 2003, p. 2).

The European Qualifications Framework[2] provides a grid of eight reference levels based on learning outcomes which are defined in terms of knowledge, skills and competence, where:

- "knowledge" means the body of facts, principles, theories and practices that is related to a field of work or study and is described as theoretical and/or factual;
- "skills" mean the ability to apply knowledge and use know-how to complete tasks and solve problems and are described as cognitive (involving the use of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of methods, materials, tools and instruments); and
- "competence" means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development, and is described in terms of responsibility and autonomy.

In a similar vein, the Tuning project[3], which offers a concrete approach to implement the Bologna Process in HE institutions and subject areas, defines competence as "a dynamic combination of knowledge, understanding, skills and abilities". Tuning classifies competences into subject-specific and generic ones, and distinguishes three types of generic competences:

- (1) Instrumental competences: cognitive abilities, methodological abilities, technological abilities and linguistic abilities.
- (2) Interpersonal competences: individual abilities like social skills (social interaction and co-operation).
- (3) Systemic competences: abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge; prior acquisition of instrumental and interpersonal competences required).

Waltz (2011) points out that when employers talk about employability beyond the issues of sector-specific skills, they usually point towards the so-called "soft", "transferable" or

“generic” skills that they expect students will gain as a part of their learning process in HE, such as teamwork, communication, leadership, critical thinking or problem solving.

In this paper, we take a competence-centred approach to the concept of employability skills, understood as a combination of personal qualities and beliefs, knowledge, skilful practices and the ability to reflect critically and productively on experience, and that need to be frequently renewed during a person’s working life (Yorke, 2006).

A taxonomy of employability skills for HE graduates

Several studies have produced taxonomies of the skills required to promote graduates’ employability, classifying them under different labels – such as soft skills, transferable skills, generic skills and among others – but inherently referring to non-subject-specific skills.

As Cinque (2016) points out, despite the variety of studies and reports that in recent years have established a list of soft skills crucial for HE graduates to acquire, there is no one definitive list. Instead, the various existent lists seem to share six common elements:

- (1) basic/fundamental skills, such as literacy, numeracy and using technology;
- (2) people-related skills, such as communication, interpersonal, teamwork and customer-service skills;
- (3) conceptual/thinking skills, such as collecting and organising information, problem-solving, planning and organising, learning-to-learn skills, thinking innovatively and creatively, and systems thinking;
- (4) personal skills and attributes, such as being responsible, resourceful, flexible, able to manage one’s own time and having self-esteem;
- (5) skills related to the business world, such as innovation and entrepreneurial skills; and
- (6) skills related to the community, such as civic or citizenship knowledge and skills.

In our study, after identifying, analysing and clustering the multiple skills that emerged from the different frameworks, taxonomies and lists of the European and national reports and studies reviewed in the phase of desk research, a non-definitive set of employability skills relevant for new graduates from the perspective of both the worlds of education and work was established.

To define this taxonomy, we have considered those skills that are vital to succeed in the workplace and that should be developed mainly throughout HE training. Therefore, we have not included those skills that from our point of view should be acquired throughout compulsory education (i.e. basic skills) or the skills that are more likely to be developed throughout professional life (i.e. leadership or negotiation). As shown in Table I, we have sorted these skills into four clusters: cognitive, methodological, social and subject-specific skills.

The list of skills was discussed and validated by the stakeholders participating in the online focus group carried out. The taxonomy is not intended to be a definitive list but a starting point for carrying out a more in-depth analysis of the supply and demand of new graduates’ employability skills at European and partner countries national levels. Furthermore, the taxonomy will support all the actions developed within the project’s framework aimed to give directions to HE institutions on how to enhance graduates’ employability skills and improve the transition from education to work.

Authentic learning to develop skills for employability of undergraduates

The Skill Up project combines a learner-centred, genuine and effective learning approach, such as authentic learning (Herrington and Herrington, 2006), with an effective use of digital technologies as a catalyst for bringing work experience to formal learning in HE

Enhancing Graduates' employability skills

Skill	Definition
<i>Cognitive</i>	
Analytical thinking	Gathering, analysing and articulating information from different sources for solving problems and decision making
Creative thinking	Thinking outside the box in order to bring new ideas to solve problems
Foreign language	Intercultural understanding and performing in a language different from the mother tongue
<i>Methodological</i>	
Learning to learn	Effectively managing one's own learning process and needs
Problem solving	Engaging in the actions or thoughts necessary to find solutions to a difficult or complex question or situation and resolve conceptual problems
Decision making	Thinking of several choices, relevant information and predicting the consequences
Digital skills	Being digitally competent in 4 areas (Vuorikari <i>et al.</i> , 2016): information and data literacy; communication and collaboration; digital content creation; and safety
Results-oriented performance	Ability to make organisational efforts according to the goals pursued (Haselberger <i>et al.</i> , 2012)
Self-management	Setting goals and priorities through the selection and distribution of tasks and resources. Time management, organisation, responsibility and self-reliance
<i>Social</i>	
Communication and interpersonal skills	Articulating, transmitting and defending effectively arguments, ideas, feelings or information. Listening, understanding and being receptive to others
Teamwork	Working collaboratively with others both face-to-face and online
Cross-cultural and diversity competence	Working with people of different ethnicities, religions, cultural background, genders, etc.
Ability to cope with changes	Dealing with changes and uncertainty and adapting to new situations
Conflict management	Taking control of a conflict between two or more parties in an assertive way
Stress management	Showing endurance in complicated or stressful situations, workloads while maintaining the same quality level in the tasks accomplished (Haselberger <i>et al.</i> , 2012)
<i>Subject specific</i>	The set of knowledge and abilities required to successfully perform a specific occupation (i.e. lawyer, accountant and teacher)

Table I.
Skill Up taxonomy
of employability
skills required for
new graduates

institutions, in order to better develop graduates' employability skills. Generally, authentic learning has been defined as an authentic context that reflects the way the knowledge will be used in real life (Rule, 2006). This conceptualization focuses on designing real-life tasks and creating environments which reflect the manner in which the knowledge will be used in real-world contexts.

Some authors (Savery and Duffy, 1996) have argued that only real-problem contexts should be presented to guarantee authenticity. Others, that authentic learning approaches can suffer from artificial or stage management (Stein *et al.*, 2006). However, as Alessi (2000) has shown that maximum fidelity does not necessarily lead to maximum effectiveness in learning. Furthermore, cognitive authenticity, rather than physical authenticity, is the key principle (Smith, 1987). Authenticity is not a neutral component. Rather, it occurs when various components – such as the learner, the learning environment and the task – interact (Barab *et al.*, 2000).

According to Herrington *et al.* (2010), an authentic learning environment should promote and provide different elements, namely:

- authentic contexts;
- authentic activities;
- access to expert performances and modelling of processes;

HESWBL

- multiple roles and perspectives;
- collaborative construction of knowledge and reflection;
- articulation;
- coaching and scaffolding; and
- authentic assessment.

The following describes briefly each of the elements constitutive of an authentic learning scenario and illustrates examples of good practices identified in the HE partners institutions through the interviews carried out.

Authentic context

Herrington *et al.* (2010) call attention to the importance of moving away from lectures, discussions, text readings and examinations in traditional courses at university. They stress an approach to courses where an authentic task or a project (Herrington *et al.*, 2010) is the entire focus. Schön (1983, 1987) shows how professional education can use reflection to prepare students to handle unpredictable and complex problems of actual practices. In resemblance with his research, authentic learning environments should provide authentic context that reflect the way the knowledge will be applied in real life.

Good practice

UOCom is a virtual communication agency designed by lecturers in the Faculty of Information and Communication Sciences at the Open University of Catalonia (Spain) – one of the world's premier online HE universities – to provide a response to the specific challenges that arise from the need to offer professional internships in a distance HE setting. The agency is a part of the ComCity project, a teaching innovation proposal created to respond to the needs of a significant part of the UOC students who are not available to do their professional internships on-site. ComCity is a set of 2.0 learning environments in which the dynamics of a real-world professional context in the field of communication is reproduced into a virtual internship, such as teamwork, problem solving under limited conditions or deadlines, customer orientation and so forth. The objective of the agency is to provide students with learning experiences that imply facing the complexity and unpredictability of a real professional context, going beyond a simulated environment and giving students the opportunity to really interact with/act on the real world.

Authentic activities

Influenced by constructivist pedagogy and technological progress, authentic learning has a growing interest in authentic activities as the basis for learning in both face-to-face and web-based courses. Herrington *et al.* (2010) stress the need to develop realistic and complex tasks that are not real but cognitively real. According to Herrington and Herrington (2006), university courses activities often are decontextualised and abstract. Tasks are formulated by teachers rather than students. They are well-defined and largely adapted to the university practice and bear little resemblance to real-world activities. Herrington and Herrington (2006) highlight the necessity in the learning environment to “comprise ill-defined activities which have real-world relevance, and which present complex tasks to be completed over a sustained period of time” (p. 4).

Good practice

The Technical University of Applied Sciences (TUAS) Wildau is one of the five universities of applied sciences in the federal state of Brandenburg (Germany). The modern and future-oriented range of degrees at the TUAS Wildau includes courses in business, administration and engineering. In the Business Informatics, bachelor's degree students who attend the courses Projects I and II are challenged as a whole with the task of solving a real business problem or completing a project that a real corporation is working on. The corporation becomes the client and hands the job over to the students, so that they can develop and implement the necessary solutions. A group of 15–20 students works together to solve the problem and complete the given real-life task. The authentic task is very complex and often ill-defined, so that students have to identify and define sub-tasks. The tasks that have to be completed and the decisions that have to be taken mirror and are by definition those performed in real-world settings. In order to fulfil the tasks and take decisions, students have to research information, decide what is relevant for them and how this information could be useful to the project. For example, students have to conduct market/competitive research, look for possible programming tools, etc.

Access to expert performances and modelling of processes

The authentic learning environment has to provide access to expert thinking. It needs to provide access to learners in various levels of expertise and the observations of real-life episodes. Resnick (1987) pays attention to a gap between the real-life application of knowledge in the work environment and the theoretical learning in the formal instruction in the classroom, where students are taught in a largely fragmentized and decontextualised manner. According to Herrington and Herrington (2006), it is common in many university courses to disregard to give the examples of expert performances to enable students to model real-world practice. In order to develop professional performance, “[...] the required skills or performance could be modelled in real-world context” (Herrington and Herrington, 2006, p. 5).

Good practice

At TUAS Wildau in the Business Informatics, bachelor's degree every second week representatives from the company that provided the task is present at the student team meetings, and discusses and evaluates the results of the last two weeks. Furthermore, experts are invited to hold a lecture or are consulted when special technical questions and matters arise. For example, when the scrum framework began to be employed, an expert was invited to familiarise the lecturer and the students with this kind of project management. In other cases, students consulted experts to discuss legal or cyber security questions with them.

Multiple roles and perspectives

Authentic learning environments provide learners the opportunity to examine a problem or a topic from various theoretical and practical perspectives and points of view. The use of a range of resources and media require students to examine and distinguish relevant from irrelevant information (Herrington and Herrington, 2006; Herrington *et al.*, 2010).

Good practice

The Institut Obert de Catalunya (IOC) is the vocational education and public training e-learning institution of reference in Catalonia (Spain). It is affiliated with the Government of Catalonia's Ministry of Education. The VET courses are grouped into different professional families that can be of an intermediate or advanced level of training. In the advanced-level programme in administration and finance, an online business simulation course was designed to reproduce a real working environment, where students can use the knowledge acquired in other administration and finance courses. Empresaula is a realistic company network created and managed by VET teachers. It is especially adapted to real-world business environments and is used by more than 100 schools from all over Spain. When running the company, students perform multiple roles in different departments. Thus, they acquire an overall vision of all the job posts of the company. They can act as a head of department or a mere employee, carrying out different tasks throughout the company and handling a variety of resources and information to solve problems and make decisions.

Collaborative construction of knowledge and reflection

The core in the collaborative construction of knowledge is not simply working together but solving real problems or creating products. The ill-defined authentic task is complex and could not have been completed independently. The collaboration on authentic task enables reflections to become apparent and complete a given real-life task (Herrington and Herrington, 2006). According to Herrington *et al.* (2010), reflection is "both a process and a product" (p. 31). Consequently, it is action oriented (Schön, 1987). In a learning environment, there are many possibilities to provide reflection by avoiding a step-by-step approach and giving students opportunities to choose their own ways through the authentic activities.

Good practice

In the Openlab master course Challenges for Emerging Cities of the Stockholm University (Sweden), students are taking part in the development of solutions to the challenges that the growing capital of Sweden will meet. The students identify and analyse complex phenomena, evaluate and convert them into solutions and new ideas that can be developed and produced, and apply an interactive and creative working methodology to handle unresolved real problems. The examples of real-world challenges could be the growing ageing population, altering disease landscape in healthcare and medical services as well as sustainable urban development. The course offers students the chance to work with people from different disciplines. Together they identify and analyse societal challenges put forth by Stockholm City itself, Stockholm County Council and the County Administrative Board. The students approach challenges from a variety of perspectives and they learn to explore various outlooks. Knowledge is generated among students, researchers and stakeholders.

Articulation

The authentic learning environment ensures that classroom tasks are completed within a social context. In such a context, the students are discussing, interviewing, sharing pictures or stories and presenting talks to make sure that they have the possibility to articulate, negotiate and defend their understanding in process. In order to enable tacit knowledge to

be explicit the authentic learning environment has to promote articulation. The process of articulation enables expression, consciousness, development and refinement of thought (Herrington and Herrington, 2006; Herrington *et al.*, 2010).

Good practice

In the Openlab master course Challenges for Emerging Cities of the Stockholm University, the design thinking workshops, seminars, exhibitions, bookable rooms, flexible work spaces and prototype studios enable different opportunities for discussions and articulation of arguments in a very high degree. While co-creating together with stakeholders, users and students and researchers from different universities, the students are expected to articulate their arguments.

Coaching and scaffolding

In the authentic learning environment, teachers are coaching and scaffolding. They provide resources, observe student activities, offer reminders and hints, model and provide different kinds of feedback. According to Herrington *et al.* (2010), “[...] the teacher is able to focus on support for students at the metacognitive level” (p. 118). Teachers provide different skills and strategies that their students are not able to provide themselves to complete tasks in class. When the students are able to do that by themselves the coaching or scaffolding is removed. Scaffolding can also be provided in collaboration with other students who are more able in certain skills or knowledge than their colleagues.

Good practice

In the UOCom virtual communication agency, all the departments work under the coordination of a course instructor who assumes the role of a department manager and is responsible for structuring the work dynamics and guiding the students in the development of their internship.

Authentic assessment

Authentic learning environments should even provide for integrated and authentic assessment of students’ learning within specific tasks. Authentic activities and assessment seamlessly complement each other in a way that reflects real-world assessment, which gives students the chance to be effective performers with the knowledge acquired and to present finely tuned performances or products that are of value in their own right rather than as a part of training for something else (Herrington and Oliver, 2000).

Good practice

In the UOCom virtual communication agency, although the tasks are seamlessly integrated with assessment, as students work with real projects for real clients, the coordinating professor of the internship course highlights the difficulties involved in assessing real professional performance academically. In this sense, the final report of the course includes a reflective and critical self-assessment of the students’ performance and the learning acquired.

In the Openlab master course Challenges for Emerging Cities of the Stockholm University, further assessment takes place in the form of a public presentation that includes the evaluation and feedback of the client that posed the challenge, such as hospitals or pre-schools.

Conclusion

This paper has described a conceptual framework based on authentic learning approaches as a catalyst for developing employability skills of new HE graduates. Presently, many HE graduates attribute part of the difficulties they find when entering the labour market to the design of the curricula, which they consider to be obsolete, rely too much on theory and lack practical subjects. Some of the students participating in the online focus group of the Skill Up project pointed out that skills such as communication, self-management, teamwork or critical thinking were not taught by lecturers, instead it is something they need to learn by themselves in order to successfully manage their studies and the transition to professional settings.

The good practices identified in the partners' institutions and presented here to illustrate the eight elements that comprise an authentic learning environment provide further directions on how to enhance various employability skills of undergraduates by giving them the chance to put the multi-disciplinary knowledge acquired during their studies into practice to solve real-world problems. In these scenarios, the dynamics and circumstances of a real professional setting in the field are reproduced. These approaches aim to enhance not only the development of subject-specific skills, but also transferable skills such as analytical and creative thinking, communication and interpersonal skills, teamwork, problem solving, results-oriented performance, decision making, conflict management and digital skills.

Furthermore, the development of the conceptual framework is based on critical approaches to the concept of employability (Brown *et al.*, cited by Yorke, 2006; Reid, 2016; Waltz, 2011) that move away from the neoliberal agenda and the market imperatives for HE (Hill, 2002; Waltz, 2011) and towards a new understanding of employability as a process to be achieved and that involves a set of policies and practices that must be addressed collaboratively by a range of stakeholders, namely undergraduates, graduates, universities, employers representatives and policy makers (Reid, 2016).

This critical vision also implies a competence-centred approach to the concept of employability skills as formulated in Yorke (2006), assuming that the possession of a range of desirable skills makes graduates more likely to gain employment but does not convert employability into employment, since the condition of local, national and international labour markets and other socio-economic variables affect the probability that the graduate will be successful. Also that employability skills are not just an attribute of the new graduates but it needs to be permanently renewed throughout a person's professional life.

Notes

1. The project is funded by the Erasmus+programme of the European Union and has the participation of six institutions from Spain, Sweden and Germany (four universities, one vocational education and training school, and an employer representative). More information is given in the website of the project: skill-up-project.eu.
2. <https://ec.europa.eu/ploteus/en/content/descriptors-page>
3. www.unideusto.org/tuningeu/competences.html

References

- Alessi, S. (2000), "Designing educational support in system-dynamics interactive learning environments", *Simulation and Gaming*, Vol. 31 No. 2, pp. 178-196.
- Barab, S.A., Squire, K.D. and Dueber, W. (2000), "A co-evolutionary model for supporting the emergence of authenticity", *Educational Technology Research and Development*, Vol. 48 No. 2, pp. 37-62.

- Cinque, M. (2016), "Lost in translation. Soft skills development in European countries", *Tuning Journal for Higher Education*, Vol. 3 No. 2, pp. 389-427.
- Cresswell, J.W. and Plano Clark, V.L. (2011), *Designing and Conducting Mixed Method Research*, 2nd ed., Sage, Thousand Oaks, CA.
- European Commission (2010a), "Europe 2020. A strategy for smart, sustainable and inclusive growth", Brussels, available at: <http://ec.europa.eu/eu2020/pdf/COMPLET%20EN%20BARROSO%20%20%20007%20-%20Europe%202020%20-%20EN%20version.pdf> (accessed 2 January 2018).
- European Commission (2010b), "Employers' perception of graduate employability", The Gallup Organisation, available at: http://ec.europa.eu/commfrontoffice/publicopinion/flash/fl_304_en.pdf (accessed 13 February 2017).
- European Commission (2013), "High level group on the modernisation of higher education. Report to the European commission on improving the quality of teaching and learning in Europe's higher education institutions", available at: http://ec.europa.eu/education/library/reports/modernisation_en.pdf (accessed 13 February 2018).
- European Commission (2014a), "Education and training monitor 2014", available at: http://ec.europa.eu/education/library/publications/monitor14_en.pdf (accessed 5 March 2018).
- European Commission (2014b), "Modernisation of higher education in Europe: access, retention and employability", Eurydice report, Publications Office of the European Union, Luxembourg.
- European Commission (2017), "Eurostat newsrelease euroindicators", 30 November, available at: <http://ec.europa.eu/eurostat/documents/2995521/8491608/3-30112017-BP-EN.pdf/5206b358-348f-416b-877e-70a75d58f1ef> (accessed 15 January 2018).
- Haselberger, D., Oberhuemer, P., Pérez, E., Cinque, M. and Capasso, F. (2012), "Mediating soft skills at higher education institutions: guidelines for the design of learning situations supporting soft skills achievement", available at: www.modesproject.eu/en/the-modes-handbook.aspx (accessed 10 April 2017).
- Herrington, A. and Herrington, J. (2006), "What is an authentic learning environment?", in Herrington, A. and Herrington, J. (Eds), *Authentic Learning Environments in Higher Education*, Information Science Publishing, Hershey, PA, pp. 1-13.
- Herrington, J. and Oliver, R. (2000), "An instructional design framework for authentic learning environments", *Educational Technology Research and Development*, Vol. 48 No. 3, pp. 23-48.
- Herrington, J., Reeves, T.C. and Oliver, R. (2010), *A Guide to Authentic E-learning*, Routledge, London.
- Hill, D. (2002), "Global neo-liberalism and the perversion of education", available at: www.ieps.org.uk/media/1044/hill2002.pdf (accessed 25 January 2018).
- Hillage, J. and Pollard, E. (1998), *Employability: Developing a Framework for Policy Analysis*, Department for Education and Employment, London.
- Moore, T.E., McKee, K. and McLoughlin, P. (2015), "Online focus groups and qualitative research in the social sciences: their merits and limitations in a study of housing and youth", *People, Place and Policy*, Vol. 9 No. 1, pp. 17-28.
- Patton, M.Q. (2002), *Qualitative Research and Evaluation Methods*, 3rd ed., Sage Publications, Thousand Oaks, CA.
- Reason, P. and Bradbury, H. (2001), *Handbook of Action Research. Participative Inquiry and Practice*, Sage, London.
- Reid, J. (2016), "Redefining employability as something to be achieved: utilising Tronto's conceptual framework of care to refocus the debate", *Higher Education, Skills and Work-Based Learning*, Vol. 6 No. 1, pp. 55-68.
- Resnick, L. (1987), "Learning in school and out", *Educational Researcher*, Vol. 16 No. 9, pp. 13-20.
- Rule, A.C. (2006), "The components of authentic learning", *Journal of Authentic Learning*, Vol. 3 No. 1, pp. 1-10.
- Rychen, D.S. and Salganik, L.H. (Eds) (2003), *Key Competencies for a Successful Life and a Well Functioning Society*, Hogrefe and Huber, Göttingen.

- Savery, J.R. and Duffy, T.M. (1996), "Problem based learning: an instructional model and its constructivist framework", in Wilson, B.G. (Ed.), *Constructivist Learning Environments: Case Studies in Instructional Design*, Educational Technology, Englewood Cliffs, NJ, pp. 135-148.
- Scanlon, L. (2011), "Becoming a professional", in Scanlon, L. (Ed.), *Becoming a Professional: An Interdisciplinary Analysis of Professional Learning*, Springer, Dordrecht, pp. 13-32.
- Schön, D. (1983), *The Reflective Practitioner. How Professionals Think in Action*, Basic Books, New York, NY.
- Schön, D. (1987), *Educating the Reflective Practitioner*, Jossey-Bass, San Francisco, CA.
- Smith, P.E. (1987), "Simulating the classroom with media and computers", *Simulation and Games*, Vol. 18 No. 3, pp. 395-413.
- Stein, S., Isaacs, G. and Andrews, T. (2006), "Incorporating authentic learning experiences within a university course", *Studies in Higher Education*, Vol. 29 No. 2, pp. 239-258, doi: 10.1080/0307507042000190813.
- Turney, L. and Pocknee, C. (2004), "Virtual focus groups: new technologies, new opportunities, new learning environments", in Atkinson, R., McBeath, C., Jonas-Dwyer, D. and Phillips, R. (Eds), *Beyond the Comfort Zone: Proceedings of the 21st ASCILITE Conference*, Perth, 5–8 December, pp. 905-912, available at: www.ascilite.org.au/conferences/perth04/procs/turney.html (accessed 6 May 2017).
- Tymon, A. (2013), "The student perspective on employability", *Studies in Higher Education*, Vol. 38 No. 6, pp. 841-856.
- Vuorikari, R., Punie, Y., Carretero Gomez, S. and Van den Brande, G. (2016), "DigComp 2.0: the digital competence framework for citizens. Update phase 1: the conceptual reference model", Luxembourg Publication, Office of the European Union, EUR 27948 EN, doi: 10.2791/11517.
- Waltz, M. (2011), "Improving students' employability", available at: www.jobs.ac.uk/media/pdf/careers/resources/improving-student-employability.pdf (accessed 22 March 2017).
- Yorke, M. (2006), *Employability in Higher Education: What it is – What it is Not*, Learning and Employability Series 1, The Higher Education Academy, York.

Further reading

- Brown, J.S., Collin, A. and Duguid, P. (1989), "Situated cognition and the culture of learning", *Educational Researcher*, Vol. 18 No. 1, pp. 32-42.
- Brown, J.S., Collins, A. and Newman, S.E. (1989), "Cognitive apprenticeship: teaching the crafts of reading, writing and mathematics", in Resnick, L.B. (Ed.), *Knowing, Learning and Instruction. Essays in Honour of Robert Glaser*, LEA, Hillsdale, NJ, pp. 453-494.

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