

REALISING PEDAGOGICAL POTENTIAL OF THE BOLOGNA PROCESS THIRD CYCLE

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Abstract

The European Higher Education Area (EHEA) has been established, at least in structure, remapping Higher Education as we know it. This scenario offers a new framework in which the role of universities can be rethought, independently of the field of the new degrees and post graduate studies. As part of this reconceptualisation, the roles of teachers and students need to be reconsidered. Achieving an enhanced doctoral experience for the next generation of PhD students represents a measurable practical outcome of the Bologna Process. This paper is contextualised within the issues of internationalisation, standards and standardization of degree credit ratings, with attention paid to collaboration and competition, and language and writing. We identify the main challenges of the emerging EHEA regarding third cycle students in order to capture the pedagogical essence of what has been, until date, just a structural change. The EHEA has many practical gains to offer, but it also has potential disadvantages that need be acknowledged and addressed.

Keywords - EHEA, Bologna Process, Doctoral education

1 INTRODUCTION:

The Halloween expression ‘Trick or treat’ encapsulates what the Bologna Process offers tertiary educators. Although the Bologna Process formally ended in 2010, its implementation within the emerging European Higher Education Area (EHEA) is still influencing the direction of higher education. We suggest that this is both a good opportunity for improvement, a step back in relation to higher educational quality. Will the EHEA prove to be a trick, or a treat?

In theory, it should be a treat: harmonization, transparency, mobility, European Credit Transfer System (ECTS) and competitiveness are the keystones of the construction of the EHEA. These are the five aims of the Bologna Process declaration [1]. At first sight, none would doubt that those five aims are consistent with an increase in the quality of higher education. It seems obviously advantageous that Europe would be united in these times, when the roots of our societies, and economies, are based on the knowledge of our citizens. Europe would be, again, leading trends in higher education, as it was doing when first universities appeared in Paris and, unsurprisingly, Bologna. But, if we take a closer look, things may not be as simple as they seem.

Even knowing that the Bologna Process, in fact, was not a treaty [2] we can observe that, nowadays, it is a reality that relies on the EHEA. Here is where things get tricky. The boundaries of the EHEA may extend beyond Europe. It may be a globalised area. The Bologna process has, perhaps inadvertently, spawned ideas and implications globally, not just in Europe [3]. Furthermore, it is still only a framework with possibilities and obstacles, nothing more, nothing less. In fact, what has been done to achieve that EHEA is not that significant because the structure, three cycles, were more or less implicit in most of the former systems [4]. Its construction is a logical consequence of the ideas of Robert Schuman, one of the most important founders of the European Union and the Euro-Power that offers the European economical union.

Most crucially, the economical and political agenda of the Bologna Process is undoubtedly [5], but the pedagogic agenda is not so clear – yet. The important question now is: what should EHEA stakeholders do inside that area? A structural change is only a reconfiguration of the framework. It could be for the better or it could be for

the worse, pedagogically speaking. How we realise the potential of the changes depends on the myriad actions taken by those individuals who are dealing with it: the teachers and the students.

It would be quite naïve to state that the EHEA is going to increase our students' competences because it was designed to do this. Laws and decrees derived from the Bologna declaration and subsequent ratifications [6-10] not only open up the possibilities for change, but also define the limitations of actions by players in the process. Potentially promising changes are relatively meaningless if teachers and students do not get involved in owning and driving them forward [11].

Coming back to that spooky Halloween question... We propose that no real treat could be achieved without the involvement of all stakeholders in the process. There is a justified fear of a trick, for example, through achieving the form but not the essence of intended change [12], or, even worse, the implementation of a Lampedusian Bologna Process in which everything apparently changes even as things remain unchanged where it matters, in the lived experiences of higher education.

Having emphasised the importance of people committing to this change, we are going to focus on the opportunities and hindrances that the implementation of the Bologna Process, and the emerging EHEA, offers to third cycle students and their supervisors. We will raise questions about how their roles might usefully be rethought.

The paper's theoretical approach is reflexive and to some extent exploratory in variance with the empirical or comparative studies commonly seen in specialised journals. We talk from experience and take a people perspective, towards the people engaged in education at doctoral level. We base our statements on the interpretation of our own lived worlds, supplemented by additional qualitative data: current legislation framework and the challenges of the EHEA as we found and interpreted them in three different geographical locations and tertiary teaching contexts. Our motivation is awareness that although discussion is ongoing at governmental levels, it occurs above the heads of many education practitioners who will be affected by changing legislation, and who might consider taking up some of the potential opportunities inherent in a rethinking of tertiary education. The following is intended to help new and current PhD students, and their supervisors, and to encourage a fresh point of view, focused positively on the essence of the EHEA and the potential it offers.

2 CHANGE IN CHANGING TIMES

Change happens often and rapidly these days. Political change is a reality; the climate is changing; and our economic framework worldwide has dramatically changed for the worse during the last couple of years. Society is changing dramatically as technology changes, and there is much pressure for academic practice to be updated as quickly as society changes, if not quicker. For a young and inexperienced lecturer, at the end of a PhD, who wants to make a career in the university, the simple fact of staying alive professionally in the academic world is a real challenge. This challenge is increased when implicit and explicit rules [13] are not so clear, and continuously changing, through the Bologna Process.

Spain provides an example. From a legal and structural point of view, things have changed in Spain since the start of the construction of the EHEA, and even before 1999 [11]. New degrees invite new teaching-learning methodologies, and new methodologies imply new roles and expectations of teachers and students. Nevertheless, Spain's accommodation within the EHEA and its principles is not fully accomplished yet [9,10] in part, because the basis of our reforms have, so far, been more political than pedagogical in nature. In addition, one of the most important laws after Bologna, RD 1393/2007, which legislates the establishment of the official university degrees, is not very precise at doctoral level, with some black holes and inconsistencies [14] that do not help the attractiveness of our Spanish third cycle.

However, we would like to emphasise potential benefits that readers may like to consider: the Bologna Process offers huge benefits for new academics. The possibility of and support for studying abroad, for example, is a way to develop those desired "ECTS" competences, including, among others, improved language competences, and the opportunity to collaborate with colleagues all over Europe.

We acknowledge that at the same time, future academics, and arguably whole higher education systems are put to the test by the Bologna Process. Sometimes it is not easy to be a part of the new internationalisation (or at least Europeanisation). Learning a foreign language is not an easy or quick task. External pressures could

make it seem more important to consider where to go than what to do, or where to publish instead of what it is important to discuss. It may be attractive to spend more time improving one's C.V. than improving students' learning, which, in the end, should be the main pedagogical aim of the EHEA. The following section further itemises some of the practical gains, the treats, and possible hindrances, the tricks, involved, before offering some tentative conclusions.

3 PRACTICAL GAINS AND POSSIBLE HINDRANCES

The construction of the EHEA has fostered an increase in investment in mobility during last decade. Obviously, mobility in higher education has not been discovered this century, but it a core tradition in higher education. When occidental universities were born in the Middle Ages, the Barbarossa Privilege enabled homeless European scholars, for the love of science, "amore scientie facti exiles", to travel from one country to another safely for the sake of knowledge and with the protection of the kings of each country [15]. More recently, since the late eighties (a decade before the Bologna Declaration), in Spain we have the Erasmus program working with ECTS credits. So, neither mobility nor ECTS are new.

What is new, however, is an awareness about the relevance of increasing mobility. The actual circumstances of mobility are, as is theorisation of what mobility means to education. Concepts such as Globalisation (even Glocalisation [16]), Internationalisation or Europeanisation now influence, and could even determine, educative actions at all levels. This is what Bologna really offers us in terms of mobility: a fresh scenario to think about, and theorise how mobility affects identities and communities of practice. It is not only the means to gain the economical support needed, but also the trigger that could motivate emerging academics to ask their universities for that support, and ensure that colleagues and postgraduate students are kept aware of the opportunities.

Some academics, particularly new academics, may apply for travel grants in response to external pressures, for example, for their evaluation and promotion purposes. But the essence of going abroad should not be improving the C.V. but improving our learning, our competences and enriching our experiences.

The potential for oncoming doctoral students is significant. As an example, we focus on third cycle competences in Spain, following the Royal Decree 1393/2007, modified by the RD 861/2010 and articulated by the RD 99/2011, which is a consequence of the so-called Dublin Descriptors [18]. In its annexes we observe that all doctoral students, at the end of the doctorate, should:

- a) Have demonstrated a systematic understanding of a field of study and mastery of competences and research methods related with that field.
- b) Have demonstrated the ability to conceive, design, implement and adopt a substantial process of research academically serious.
- c) Have made a contribution, through original research, that extends the boundaries knowledge developing a substantial corpus (body) which deserves publication indexed at national or international level.
- d) Be able to conduct a critical analysis, evaluation and synthesis of new and complex ideas.
- e) Be able to communicate with their colleagues, with the academic community as a whole, and the society about their areas of knowledge.
- f) Be able to promote, in academics and professionals environments, the technological, social and cultural advancement within a knowledge-based society.

As we have mentioned before, these competences are a consequence of the implementation and construction of the EHEA. Now the question is: how could the Bologna Process help doctoral students to actually achieve these competences? Has the Bologna Process enough synergy to keep the EHEA moving ahead? Or will it suffer because the principles are not coherent with the actions of those involved in doctoral education?

3.1 The EHEA: fostering standards, not standardization

The first objective, a), of the Dublin Descriptors is premised on the idea that an increase in mobility and transparency would improve understanding of a field of study because the doctoral student could have the opportunity of meeting key authors and visiting other institutions in close relation with his or her area of study as well as going to congresses, conferences, symposium and so on. If someone does not go abroad he or she will still have national and international books, articles and paper to read and learn from, but those documents

are only tools. Written materials rarely give you feedback or hear concerns about your research in the way that people can.

It could be also argued that new technologies could solve this problem. Wikis, podcasts, blogs and other 2.0 Web Tools [18], or even a regular e-mail, could put you in contact with anyone easily, and in a cheaper way than going there physically. The potential of this new learning and social software should be taken into account and used wisely inside this new teaching-learning scenario, but it should be in a complementary way. Computers, and what they enable, should help human contact, not substitute for it. It remains the case that personal contact in real time offers experiences and has dimensions that virtuality cannot duplicate.

Mobility could increase excellence in research [9] and cooperation between people, but also enhance the reputations of institutions, enlivening competition. These improvements will also foster the competitiveness of the EHEA all over the world, help stop the European brain drain and even help attract the brightest students to our higher education system. The potential of travel to enable the lived dimension of international communities to come to fuller existence is likely to mean that disciplines and academic communities benefit significantly.

On the other hand, there are some critical voices who think the implementation of the Bologna Process could be at the expense of excellence [4]. If change is a homogenization process instead of a harmonization one, if universities do the same thing, in the same way, everywhere, this could result in a default to the lowest common denominator, a step back in terms of quality. The risk is the loss of what makes higher education higher. If, instead, academics establish what other universities are doing and try to complement it, making all European studies comparable, the quality of our future European degrees will be increased. At the same time, there is increased potential for universities to learn from each other's weak and strong points, improving quality by sharing experience. The EHEA fosters cooperation between institutions, as well as competition. The Bologna Process must be held to the goal of improving standards, not a process of standardization.

3.2 Research training inside the Bologna Process: only for doctorates?

Another issue is the acquisition of research competences, which in Dublin Descriptor objectives a), b) and d). Doctoral studies are about research but maybe doctoral students could have been better prepared for the demands of research when they arrive at the doctoral stage. Although this is not the focus of this paper, we are interested in the possibility that everyone, even first year students, should be researchers, learning through research [19].

Competencies underpin discussion of post degree curriculums and are particularly relevant to debate about doctoral studies [14]. Competencies are reasonably clear when academics and scholars talk about the new degrees derived from Bologna; they have a reference in the labour market. One of the most recent Communiqués [9] has mentioned:

... European higher education will strive for innovation on the basis of the integration between education and research at all levels... Consequently, the number of people with research competences should increase. Doctoral programmes should provide high quality disciplinary research and increasingly be complemented by inter-disciplinary and inter-sectoral programmes. Moreover, public authorities and institutions of higher education will make the career development of early stage researchers more attractive.

Yet a nest of factors make the attraction less secure. In Spain, and more specifically in Social Sciences studies in Spain, a student often arrives at this third cycle with few research competences. The gap between technologically oriented degrees and non-technologic degrees is arguably increasing, even when, theoretically speaking, all fields are research oriented and they are simply different styles of research. With changes due to the Bologna Process, the post degree curriculum could be consciously based around initiation into these research competences (RD 56/2005). However, the key point is that rigorous attention to sound initiation is provisional on those responsible for change at individual institutions, rather than being obligatory. The post-Bologna-Process scenario could well lead to the same situation we had before Bologna [11].

If a future doctoral student is not personally confident about his or her research training, the attractiveness of this third cycle could be reduced significantly.

3.3 What to publish? or where and when to do it?

In earlier decades, doctoral students used to hide their research until they got the doctoral degree and, only after that, try to benefit by publishing as many articles and papers they could. The originality of the PhD was jealously guarded. But things are changing, as the production of knowledge is getting faster and faster; nowadays in some instances a couple of high impact papers stapled together, with an introduction section, could be seen as a successful thesis dissertation because it proves that the student has achieved recognition in the research field.

In relation to this, the Dublin Descriptor objective c) talks about expanding the boundaries of the field of the doctoral student. This is usually achieved when the student is able to publish in high impact and indexed journals, but reaching this stage implies more than knowing how to do research. The opportunities of the Bologna Process should help students to learn how to research more efficiently.

The Bologna Process is about transparency, mobility and competitiveness. An implication of PhD transparency is that perhaps candidates should be encouraged not to wait until completion to communicate early results. Early publication is also consistent with mobility. Publications usually take a long time in the review processes (sometimes years) and it can be better to go to international congresses or conferences to communicate and learn what is at the cutting edge of the field, the latest scientific discoveries or technologic developments. This offers an immediate benefit. And, of course, a transparent PhD process could increase the competitiveness of our higher education system, at least in quantity (number of communications and papers) and hopefully, in quality (more experience should lead to a better work).

But students could have again the same problem: little research training in the curriculum before doctoral studies. If they barely know how to conduct their research projects, how could they know what congresses are more important for their work? Where are they to learn about the sometime covert practices behind the processes of publishing a paper? Maybe if they were in contact with this academic world from first year, as others have suggested [20], they could be better prepared not only to write a PhD efficiently but also to make it successful, in terms of publications, perhaps even before finishing it. As we have mentioned before, we are living in an era where everything is changing extremely quickly and the academic world has to make an effort to adapt their actions to the needs of this new century and its new societies.

The objective d) reminds us of the need to help our students to learn new and complex topics from a critical point of view. Real problems could help doctoral students to be more creative when expanding the boundaries of their field, above all when technologic evolution is producing a more complex society. Once again, mobility is a good opportunity to learn what key academics are dealing with and which congresses, conferences and symposiums are the best place for presenting and learning about hot issues.

3.4 English: the lingua franca of the EHEA

Most high impact factor journals are written in English, and it is a fact that young academics have strong external pressures to publish in these journals if they want to get the recognition they need professionally. It is simple: if you want to work at university these days, you need to publish in English. In relation to the Dublin Descriptor objective e), we should bear in mind that the academic community as a whole will be speaking, most probably, in English. This should lead to an increasing awareness about institutional quality [3] and attention to the methodological and ethical implications in order to avoid language obstacles for English as Additional Language (EAL) students [24]. English has been established as the language of the Bologna Process. We only need to take a glance to the communiqués of the ministers to see that, mainly, they are written in English.

Maybe someone could argue that Chinese, or Mandarin dialect, could take the lead in a near future, but the reality is different. Even accepting that English and Chinese journals dominate university shelves, China lecturers have external pressures as well and also need to publish in English. More than two decades ago, China moved to accept English as the universal academic language [21].

Those whose first language is not English have two options for publication success; pay for a translation each time, or learn English. The first option might seem feasible, at one level, if you do not have economical limitations. But, even well-funded academics will find that most usually translation is an inadequate option: translation is not only about grammatical issues but also about specific professional terms that could be misunderstood if they are not expressed precisely by an academic writer. This last rationale is increased when dealing with specific scientific degrees. There are some nuances of meaning and discipline-specific usages of

language that an expert in translation who is not an expert in the field would not be able to understand or translate accurately.

The second option is a personal investment. Becoming proficient in written academic English is likely to take more time than desired and the results will only slowly improve with experience. No-one can learn a whole language, to a professionally acceptable level, in a short term.

A third option that works well is to collaborate with a native English academic inside what are called communities of practice [22,23]. In this way young academics will improve their English skills and, at the same time, will be getting the benefits that we have mentioned in previous paragraphs. This paper, along with others listed in the references, are cases in point, as the co-authorships indicate. To get the words, we need contact, need mobility and, in short, we need to live out the Bologna Process principles.

Another result of English being the language of the EHEA is that other English higher education systems, as for example the US system, are going to lose their exclusiveness to teach in this language.

3.5 From a knowledge based society towards a wisdom based society

It is a cliche that information is power, but this is only true if you know what to do with that information. The term ‘information society’ belongs to the second half of the XX century [24]. Nowadays it is more common to hear and talk about the ‘knowledge society’ or, from a more commercial point of view, the ‘knowledge economy’. While the first concept focuses only on the information, the last emphasises how the individual works with that information and adapts it to his or her circumstances. There is little point in learning if you do not learn to do [26]. A well-known Spanish philosopher, Fernando Savater, distinguishes between these two kinds of societies but also goes further and talks about the ‘wisdom society’ [27]. This is a more complex (and perhaps utopian) society combining those ideas about learning to live together and learning to be wise. However, it seems that a knowledge based society is ahead of the information one. As the general sub-director of the UN (United Nations), Abdul Waheed Khan, states [28]:

Information society is the building block for knowledge societies. Whereas I see the concept of „information society“ as linked to the idea of „technological innovation“, the concept of „knowledge societies“ includes a dimension of social, cultural, economical, political and institutional transformation, and a more pluralistic and developmental perspective. In my view, the concept of „knowledge societies“ is preferable to that of the „information society“ because it better captures the complexity and dynamism of the changes taking place ... the knowledge in question is important not only for economic growth but also for empowering and developing all sectors of society

The Dublin Descriptor objective f) is based on the belief that knowledge based societies are the perfect setting to maximise the advancements achieved by our doctoral students. How could they do it in a globalised world without mobility, or a shared language, as it happens, English?

4 CONCLUSIONS

Although our rationale depends on a theoretical discussion rather than an evidence-based research, and has its limitations as an inter-subjective interpretation, we stress that the EHEA is a unique (and maybe unrepeatable) opportunity to improve the quality of the European higher education system. The Bologna Process has formally ended, but scholars concerned about the quality of our universities will inevitably continue to pursue their interests under other processes and other declarations and to actively use the relevant issues raised in the Bologna Process to advance pedagogical practice.

The structure of the EHEA is already -almost- accomplished. What is needed now is the pedagogical vision, the will and the commitment of all the stakeholders in the process, especially teachers and students. A pedagogical vision is, however, less common in scientific degrees, but it should be enhanced as well [29]. Without commitment to rethink how we teach, the danger is they could be doing the same old thing under an ECTS label without really changing. Without conscious pedagogical change, there is the risk of turning the Bologna Process into a Lampedusian Process.

The Bologna Process is about improving standards, not standardization. It is a harmonization process which tries to increase the quality of our higher education system and, therefore, make it more competitive. Academics should be alert to the dangers of changing their methodological approaches at the expense of excellence. We cannot lose what makes higher education higher.

Research training should be reconsidered not only from a doctoral point of view but from the very first year of university. The European system should learn from other experiences [19] and rethink the importance of research training for undergraduate students inside the EHEA [11]. In Spain, legal consequences seem to be according to the Bologna Process principles but they could be improved in order to achieve the essence and not only the form [12]. To use a Spanish proverb, the same dog with a different collar (what could really happen with our Spanish new degrees) is not a different dog.

For all academics, but especially for those who have just started to work in universities, there are now external pressures which force them to focus on where and when to publish as well as what to research about. At the same time, they are experiencing biased expectations; how can they try to improve their methodological "ECTS" approaches when quality assurance institutions value better research results rather than teaching and learning development? English is already the lingua franca of the EHEA and academics should foster the creation of international and intercultural groups of work inside universities in which young lecturers should have an important role. They will all need to improve their language skills if they want to be part of the European community.

The establishment of the EHEA, with the pedagogic implications that the student is the centre of the learning-teaching process, should help to stress the role of a knowledge based society as a step towards a wisdom based one.

REFERENCES

- 1 Bologna declaration, The european higher education area. 1999,
HTTP://WWW.OND.VLAANDEREN.BE/HOGERONDERWIJS/BOLOGNA/DOCUMENTS/MDC/BOLOGNA_DECLARATION1.PDF . [accessed 16th January 2009].
- 2 M. Clement; L. McAlpine and K. Waeytens, Fascinating Bologna: Impact on the nature and approach of academic development, *International Journal for Academic Development*, Vol 9(2), 2004, pp. 127-131.
- 3 S. Carter; J. Fazey; J. L. Geraldo and C. Trevitt, The Bologna Process third cycle: mapping the dimensions and impact of the European Higher Education Area, *Journal of Research in International Education*, Vol 9(3), 2010, pp. 245-258.
- 4 H. Fearn, The long and the short of it, *Times Higher Education*, 2008,
<HTTP://WWW.TIMESHIGHEREDUCATION.CO.UK/STORY.ASP?STORYCODE=403750>, [accessed 5th May 2009].
- 5 Bologna declaration, The European higher education area. 1999,
HTTP://WWW.OND.VLAANDEREN.BE/HOGERONDERWIJS/BOLOGNA/DOCUMENTS/MDC/BOLOGNA_DECLARATION1.PDF . [accessed 16th January 2009].
- 6 M. Clement; L. McAlpine and K. Waeytens, Fascinating Bologna: Impact on the nature and approach of academic development, *International Journal for Academic Development*, Vol 9(2), 2004, pp. 127-131.
- 7 Bologna declaration, The european higher education area. 1999,
HTTP://WWW.OND.VLAANDEREN.BE/HOGERONDERWIJS/BOLOGNA/DOCUMENTS/MDC/BOLOGNA_DECLARATION1.PDF . [accessed 16th January 2009].

- 8 M. Clement; L. McAlpine and K. Waeytens, Fascinating Bologna: Impact on the nature and approach of academic development, *International Journal for Academic Development*, Vol 9(2), 2004, pp. 127-131.
- 9 S. Carter; J. Fazey; J. L. Geraldo and C. Trevitt, The Bologna Process third cycle: mapping the dimensions and impact of the European Higher Education Area, *Journal of Research in International Education*, Vol 9(3), 2010, pp. 245-258.
- 10 H. Fearn, The long and the short of it, *Times Higher Education*, 2008,
<HTTP://WWW.TIMESHIGHEREDUCATION.CO.UK/STORY.ASP?STORYCODE=403750>, [accessed 5th May 2009].
- 11 V. Tomusk, Smart but naked, *(East) European Universities Conquering the Global Market of Higher Education Services*, Oxford, 2008, Research Seminar of the Oxford Learning Institute.
- 12 Prague Communiqué, Towards the European Higher Education Area
HTTP://WWW.OND.VLAANDEREN.BE/HOGERONDERWIJS/BOLOGNA/DOCUMENTS/MDC/PRAGUE_COMMUNIQUE.PDF, [accessed 16th January 2011].
- 13 Berlin Communiqué, Realising the European Higher Education Area,
http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/MDC/Berlin_Communique1.pdf, [accessed 16th January 2011].
- 14 Bergen Communiqué, The European Higher Education Area - Achieving the Goals,
http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/MDC/050520_Bergen_Communique1.pdf, [accessed 16th January 2011].
- 15 London Communiqué. Towards the European Higher Education Area: responding to challenges in a globalised world,
http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/MDC/London_Communique18May2007.pdf, [accessed 16th January 2011].
- 16 Louvain-la-Neuve Communiqué, The Bologna Process 2020: The European Higher Education Area in the new decade,
http://www.ond.vlaanderen.be/hogeronderwijs/bologna/conference/documents/Leuven_Louvain-la-Neuve_Communique_April_2009.pdf, [accessed 10th July 2011].
- 17 Budapest-Vienna Report. Budapest-Vienna Declaration on the European Higher Education Area,
http://www.ond.vlaanderen.be/hogeronderwijs/bologna/2010_conference/documents/Budapest-Vienna_Declaration.pdf, [accessed 15th March 2011].
- 18 J. L. González Geraldo; C. Trevitt; S. Carter and J. Fazey. Rethinking the Research-Teaching nexus in undergraduate education: Spanish laws pre- and post-Bologna, *European Educational Research Journal*, Vol 9(1), 2010, pp. 81-91.
- 19 A. Veiga and A. Amaral. A Survey on the implementation of the Bologna process in Portugal. *29th Annual Eair Forum*, Innsbruck, Austria, 2007.
- 20 Y. Engestrom; R. Miettinen and R. L. Punamäki, *Perspectives on Activity Theory*, Cambridge: Cambridge University Press, 1999.

- 21 M. Valcárcel and B. Simonet, El posgrado en el marco del Espacio Europeo de Educación Superior, *La cuestión universitaria*, Vol 5, 2009, pp. 91-98.
- 22 C. Thoben, The European Higher Education Area, *German Policy Studies*, Vol 2(3), 2002, pp. 1-13.
- 23 R. Robertson, *Glocalization: Time-space and homogeneity-heterogeneity*, Sage Publications, London, 1995.
- 24 Dublin Descriptors. The framework of qualifications for the European Higher Education Area, <http://www.ond.vlaanderen.be/hogeronderwijs/bologna/documents/QFEHEA-May2005.pdf>, [accessed 3rd June 2011].
- 25 G. Solomon and L. Schrum, *Web 2.0, new tools, new schools*. Washington DC: ISTE, 2007.
- 26 P. Scott, A lot to learn: we are all researchers now, Education Guardian, <HTTP://WWW.OND.VLAANDEREN.BE/HOGERONDERWIJS/BOLOGNA/DOCUMENTS/QFEHEA-MAY2005.PDF>, [accessed 1st June 2011].
- 27 Boyer Report). *Reinventing Undergraduate Education: A Blueprint for America's Research Universities*, 1998.
- 28 J. R. Schrock, China: Publishing in English creates western industry, University World News, 80, <http://www.universityworldnews.com/article.php?story=20090611224150392>, [accessed 3rd June 2011].
- 29 A. Brew, Teaching and research: New relationships and their implications for inquiry-based teaching and learning in higher education, *Higher Education Research & Development*, Vol 22(1), 2003, pp. 3-18.
- 30 E. Wenger. *Communities of Practice. Learning, meaning and identity*, The Press Syndicate of The University of Cambridge, Cambridge, UK, 1999.
- 31 S. Carter, Volunteer support of English as an Additional Language (New Zealand Qualifications Authority) doctoral students, *International Journal of Doctoral Studies*, Vol 4, 2009, pp. 13-25.
- 32 D. Bell. *The coming of post-industrial society: A venture in social forecasting*, Basic Books, New York, 1973.
- 33 J. Delors, *Learning: The treasure within*, UNESCO, Paris, 1996.
- 34 F. Savater, *Las preguntas de la vida*, Ariel, Barcelona, 1999.
- 35 UNESCO. *Towards Knowledge Societies. An Interview with Abdul Waheed Khan*, 2003, <HTTP://PORTAL.UNESCO.ORG/CI/EN/EV.PHP-URL ID=11958&URL DO=DO TOPIC&URL SECTION=201.HTML>, [accessed 4th July 2011].
- 36 B. Amante García and M. Martínez Martínez, Teaching innovation and its role in crafting the classroom of today and the future, *Journal Of Technology and Science Education*, JOTSE Vol 1(1), 2001, pp. 1.

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