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Blended Learning: the transformation of Higher Education Curriculum

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Abstract
This paper is a review of literature and current information related to blended learning. It will deal with several primary research issues which will include the redefining of the role of student, the role of teacher/tutor, learning and the educational establishment. The paper will analyse and discuss the selection of strategies to increase interactivity and active learning, learner characteristics, learner support and operational issues.

Introduction
Every educational establishment and every learner/student in order to develop and improve should be able to adapt in the environment. In order to succeed in that in a way that will give results has to pick up a dynamic and flexible procedure in learning towards knowledge and skills in order to meet society's changes.

In parallel, the industrial society is developing so rapidly into the society of information. The introduction of information but also the telecommunication technologies, the high need and constant deployment of competition in the market but also the multiplication of professional skills consist a very important role in the lifelong learning of professionals. Lifelong learning of professionals has as a target the continuous improvement of knowledge and skills.

The classic approach in education shows a number of problems for both educational establishments and learners. Such problems can be the mobility of the learners, the waste of time that could be devoted to learning, the high direct and indirect cost is caused by the expenses of travelling and mainly the inability of the learner to accommodate his personal needs because they need to be informed at all times of the advancements around their profession. For these reasons the last years there is a new approach developed that seems to give some solutions in the above problems. This approach is based on the development of new technologies and more particularly bringing into play the use of multimedia and telecommunications. With regards to what technology is offering nowadays there has been a wide growth in educational approaches and there has been an adaptation of new educational standards that are based on educating with the use of educational applications through a computer and on the distance education approach. The use of a computer in education changes considerably the way in which education was conducted. The introduction of new educational material to the learners to gain a more knowledge and comprehend knowledge when and where they can. The communication between the learner and the computer creates appropriate ground for the active participation of the learner in learning. The learner stops being a viewer only in the educational process and participates with his/her own level of knowledge improving and increasing his/her experiences and understanding.

With the use of educational applications via a computer there is the option for the learners to be educated in their own pace, in their own environment and in many situations there is the possibility of adjusting the applications on their own needs. Additionally, technologies about distance education allow to the learners to observe teaching in places where they are far away from where they live. Hence, some examples the learner can have to support them in

their studies can be the World Wide Web, White Boarding, E-Mail, Point to Point Conferencing Audio and Video, Video Conferencing, Audio Conferencing etc.

Nevertheless, because of this inactivity in the change of the traditional model of education with the existence of the tutor in a classroom, where the learner doesn't have to go in the educational establishment, it has been caused a big delay in the spread of this style of teaching and learning and at the same time it didn't succeed in its prospective results. Therefore, it has been adopted a new model of education that combines the advantages of both ways of teaching – traditional teaching and distance learning with the use of technologies – and at the same time crosses out the weaknesses of those ways/styles. This model is named Blended Learning. It basically rounds up the best teaching styles with the best technologies in order to transfer knowledge the time that the learner needs it.

As such, in this document I will discuss and analyse how the curriculum in Higher Education has changed and how this new model of teaching and learning – blended learning – can support the new needs of Higher Education. Additionally, it will conclude on how information and blended learning in more general can be used as a tool for democratic skills.

But the question here is why to refer to democracy when discussing about the curriculum and what it the link between the two. Referring to Carr's (1998) paper is obvious that the curriculum for democracy will assist society to develop in the democratic side. The primary aim of a democratic education is to develop in pupils the habit of intelligence, the habit of confronting and resolving problems through reflective enquiry, collective deliberation and rational debate (Carr, 1998). As such, schools need to provide a democratic culture. The curriculum in any contemporary democratic society always reflects the definition of democracy which the society has accepted as legitimate and true.

The needs for transforming Higher Education

Hooker (1997) claimed that "Higher Education is on the brick of a revolution". Even in 1995 Zemsky (in Hooker, 1997) stated that higher education's core values will be at risk if a larger share of the market for undergraduate education is secured by non traditional providers. Education is not a service for a customer but an ongoing process of transformation of the participant (Harvey 2002, in D'Andrea & Gosling, 2005). As more students enter Higher Education than ever before traditional forms of teaching are under increasing pressure to change.

There is a change between the relationship of governments and Higher Education institutions and the stakeholder interaction play an important role. All around the world governments work towards including the use of IC|T in their curriculum from primary school to Higher Education (Tondeur & Valcke, 2007). National policies identify ICT literacy as a set of competencies needed to participate in society. The findings of the eEurope 2002 committee are that all school leavers must be digitally literate in order to be prepared for a knowledge based economy (Commission of the European Communities, 2000). National government is setting goals for national Higher Education making strategic decisions and several national documents in many countries try to introduce and include ICT as a separate school subject to teach pupils a number of technical ICT skills with the view to prepare them for further studies. Such reports are the School of Education Action plan for the Information Society (EdNA School Advisory Group, 2001), the National Educational Technology Plan (US Department of Education, 2004), the Qualification and Curriculum Authority/Department for Education and Employment (1999) and the Alberta Learning (2000).

The Curriculum

What is curriculum? As with most things in education, there is no agreed definition of 'curriculum', although it is generally agreed that 'curriculum' is not the same as 'syllabus'. A syllabus is a statement of topics to be studied in the course. A 'curriculum' equally is not just a statement of intended outcomes, products, or competencies. A competent doctor, however, is one who recognises and works within the limits of their professional competence (GMC, 2006). Curriculum is much more than either of these. Theorists concern themselves with different types of curriculum (Coles and Gale, 1985). The curriculum on paper can be the statement of purpose, aims, content, experiences, materials etc. The curriculum in action is the way in which the curriculum in paper is put into practice. The curriculum learners experience is what learners do, how they study, what they believe they should be doing etc. Finally, the hidden curriculum (Snyder, 1971) includes the behaviours, knowledge and performances that the learner infers to be important.

In 1997 Hooker stated that "Higher education is on the brink of a revolution". It is true that educational institutions are microcosms of culture and the society that supports them. If the slogan in the 19th century was "education for those who don't know and don't have", if the slogan in the 20th century was "even more education for those who don't know and don't have" then in the 21st century the slogan should be "education needs to be accessible and offer more quality" (Lionarakis, 2001). Bridges (2000) has also observed the radically changing nature of higher education in the last 20 years of the twentieth century. These changes are significant, not just because they provide a changing context for the higher education curriculum, but because in the broader sense of the term, which includes all that is learned by the students, not merely that which is planned by their teachers, they change the curriculum itself. Bridges (2000) examined the boundaries that gave the definition to the university and to students' experiences. These are the identity of time, the identity of place, the identity of the scholarly community and the identity of the student community. I will first look at these and then examine why these identities have changed nowadays.

The identity of time

The idea of a tightly contained academic year of intense interaction broken by long periods of separation, or even of a day in which teaching was largely confined to a period between 9.00 and 5.00, has been broken by demands for part-time evening courses, short courses, day seminars at the weekend and summer schools as well as the need in, for example, health-related subjects (Bridges, 2000) and teacher training for years which match the schedules of hospitals and schools and give time for extended practical experience.

The identity of place

The rapid development of the traditional universities of distance or distributed learning systems and also of franchising, validation and accreditation, enable a student to study for a degree of University *X* at an FE college in the region, at a higher education institution overseas or at a computer at home has challenged the identity of the educational establishment. In the professional fields in more particular the development of work placements, work-based learning, school-based teacher education and clinical attachments (Bridges, 2000) have extended the Higher Education learning environment from the university into the working environment. Widespread access to email has rendered the face-to-face contact between student and tutor in the university and even visits to the library a rare rather than a routine part of the experience. `The distinction between distance education and regular instruction is beginning to disappear' (Burbules & Callister, 1999, p. 1).

The identity of the scholarly community

It has been extremely difficult to sustain as Higher Education institutions have grown exponentially and spread, to multiple sites, relied more heavily on part-time and short-term contract staff and entered into all sorts of partnerships in teaching with practitioners in the workplace (Bridges, 2000). There has been a shift from traditional collegial models towards a more managerial or corporate styles of management. As a result, faculty and staff have faced major changes to the environment in which teaching and learning takes place (D'Andrea & Gosling, 2005).

The identity of the student community

It has similarly been rendered more diffuse as it has become larger and topographically more dispersed and as students arrive on campus (if they come at all) at different times of the day and year, are largely non-resident, represent a wider span of ages and cultural backgrounds than ever before and combine part-time work with study.

So what we understand from the above points is that the curriculum needs to be accustomed in the wide-ranging environment. The industrial society is progressing towards the information society. There is a constant multiplication of the professional skills and there is a high need of constant training of the people and the enhancement of knowledge and skills. This is also supported Sir Francis Bacon (in Dziuban et al, 2006) who claim that "knowledge is power". So the question that arises at that point is how we, as educators, transfer the knowledge in today's demanding society.

The creation of Blended Learning

Distance Learning/E-Learning

It is a new model of education that combines the advantages of both ways of teaching – traditional teaching and teaching with the use of technologies. The theoretical basis on which instructional models is based affects not only the way in which information is communicated to the student, but also the way in which the student makes sense and constructs new knowledge from the information which is presented. Currently, there are two opposing views which impact instructional design: symbol-processing and situated cognition (Bredo, 1994) but for the purpose of this document I will not go in depth in those types of design.

Until recently, the dominant view has been the traditional, information processing approach, based on the concept of a computer performing formal operations on symbols (Seamans, 1990). The key concept is that the teacher can transmit a fixed body of information to students via an external representation. She represents an abstract idea as a concrete image and then presents the image to the learner via a medium. The learner, in turn, perceives, decodes, and stores it. Horton (1994) modifies this approach by adding two additional factors: the student's context (environment, current situation, and other sensory input) and mind (memories, associations, emotions, inference and reasoning, curiosity and interest) to the representation. The learner then develops his own image and uses it to construct new knowledge, in context, based on his own prior knowledge and abilities.

The alternative approach is based on constructivist principles, in which a learner actively constructs an internal representation of knowledge by interacting with the material to be learned. This is the basis for both situated cognition (Streibel, 1991) and problem-based learning (Savery & Duffy, 1995). According to this viewpoint, both social and physical interaction enters into both the definition of a problem and the construction of its solution. Neither the information to be learned, nor its symbolic description, is specified outside the process of inquiry and the conclusions that emerge from that process. Prawat and Floden (1994) state that, to implement constructivism in a lesson, one must shift one's focus away from the traditional transmission model to one which is much more complex, interactive, and evolving.

Though these two theories are totally different in nature, effective designers usually start with empirical knowledge: objects, events, and practices which mirror the everyday environment of their designated learners. Then, with a firm theoretical grounding, they develop a presentation which enables learners to construct appropriate new knowledge by interacting with the instruction. To quote the AI researcher, Herbert A. Simon, "Human beings are at their best when they interact with the real world and draw lessons from the bumps and bruises they get" (Simon, 1994).

Schlosser and Anderson (1994) refer to Desmond Keegan's theory of distance education, in which the distance learning system must artificially recreate the teaching-learning interaction and re-integrate it back into the instructional process. This is the basis of their Iowa Model: to offer to the distance learner an experience as much like traditional, face-to-face instruction, via intact classrooms and live, two-way audio-visual interaction.

Perraton (1988) defines the role of the distance teacher. When, through the most effective choice of media, she meets the distance students face-to-face, she now becomes a facilitator of learning, rather than a communicator of a fixed body of information. The learning process proceeds as knowledge building among teacher and students. This is also supported by Lionarakis (2001) who states that the teacher becomes the educational material. The teacher basically supports the didactic material. The interaction between teacher and student becomes the main condition between the didactic material and the students.

Distance education systems now involve a high degree of interactivity between teacher and student, even in rural and isolated communities separated by perhaps thousands of miles. Moreover, virtual learning communities can be formed, in which students and researchers throughout the world who are part of the same class or study group can contact one another at any time of the day or night to share observations, information, and expertise with one another (VanderVen, 1994; Wolfe, 1994).

Blended Learning

Like many learning terms blended learning has the illusion of being a concrete concept. In practice it is a flexible term that means different things to different people. Shank 2006) gives a very interesting view on what blended learning is.
“Blended learning seems to mean that there will be some e-learning and some classroom learning. It is in vogue for a simple reason. No one wants to spend that much on e-learning and people in general what to preserve what they have so they made up this nice name for not changing much and called it blended learning.”

Hence, blended learning is a new model that combines the advantages of both ways of teaching – traditional teaching in the classroom and distance learning with the use of ICT. In the traditional curriculum we have tutors and the curriculum supports his work (Lionarakis, 2001). In distance learning the tutor supports the curriculum (Lionarakis, 2001).

Nevertheless, the question that arises is if blended learning is something new or old. The six major waves of technological innovation in learning (EPIC, 2003) are:

1. Writing
2. Presenting
3. Broadcast media
4. Consumer storage media
5. PC and CD-ROM
6. Internet technology

Blended learning is a custom approach that applies a mix of teaching and learning delivery options to teach, support, and sustain the skills needed for top learning performance. With blended learning, the traditional learning methods are combined with new technology to create a synergistic, dynamic learning structure that can drive learning to new heights.

How does blended learning achieve this? To answer that, we have to go back to the question of what learning is, and how it achieves performance improvement—regardless of delivery mechanism. The learning model follows 4 stages

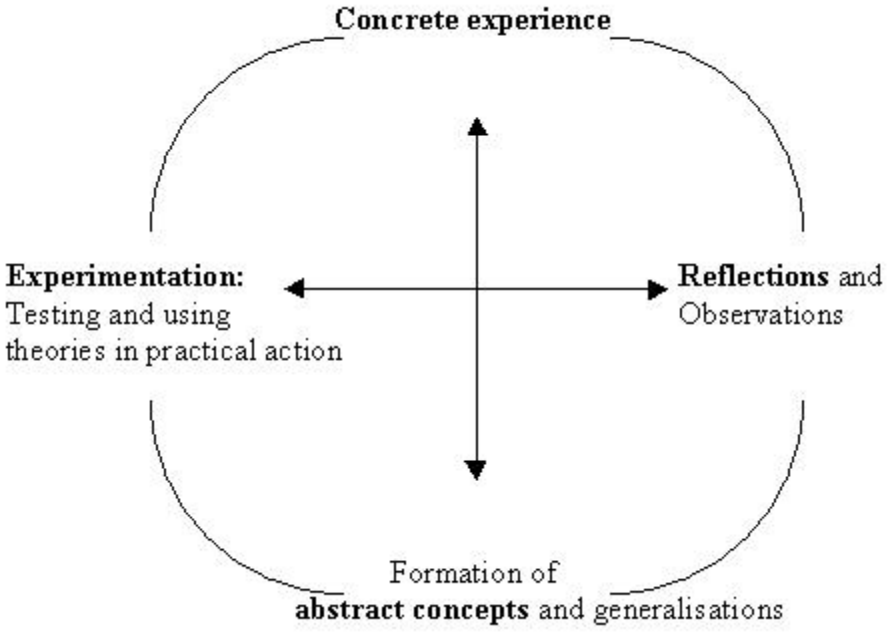

Figure 1. (Stephen Bostock, 1998)

Deep learning occurs over time. It is a process rather than an event. Only through complete processing of information, on the job practice opportunities, and feedback, will learners develop skills. Additional time is needed for the performance change to be sustained through reinforcement on the job and skill refreshers. Learner motivation and concentrated attention to learning are also key factors in the success of this learning continuum. This takes time. Therefore, it sounds as though effective learning must also be expensive. The good news,

however, is that technology can compress the time spent on learning. E-learning eliminates travel time and provides individualised teaching.

The classroom provides the organisational framework and motivation, and enables people to learn through their peers' experiences. These aspects of learning can be simulated online, but classroom training will strengthen the learning experience and is the best place to deal with subtle organisational differences in practice, as well as exceptions to the rules.

Blended learning acknowledges that some stages of learning require the input and feedback of peers and the specifics of organisational approaches in order for behaviours to become embedded. Once knowledge is acquired, skills practiced, and a certain level of expertise achieved, classroom training can provide an added organisational experience to the learning process.

A blended learning approach is flexible, using the most effective delivery options for each stage of learning. It is more effective than any single form of learning at creating the results you want such as sustained behavioural change that increases the return on your training investment (EPIC, 2003).

Other views of Blended Learning

So far I have discussed how the traditional curriculum performs and what blended learning can bring into the learning in Higher Education. Consequently, this is a good place to say that there are some researchers/authors who believe that although it is widely used it can have some implications. Oliver and Trigwell (2005) argue that the term blended learning is "ill defined". They offer two arguments. In terms of philosophy blended learning relies on the idea of dichotomies which are suspect within the context of learning with the environment and becomes ineffective as a discriminating concept and it thus without purpose. The second position of the authors is that learning from the perspective of the learner is rarely the subject of blended learning. What is actually being addressed are forms of instruction, teaching and pedagogies. Both arguments have some implications as well. In the first argument there is the implication that using the term blended learning should either be abandoned or fundamentally reconceived. In the second argument, the term learning should be abandoned.

So what Oliver and Trigwell (2005) try to express through their research is that blended learning is not being used correctly. Although its popularity is expanding its clarity is not. Blended pedagogies could usefully be applied to situations where different intensities of interaction between tutors and students need to be considered. What they support is that this term lacks an analysis from the perspective of the learner. What is needed is to research and move away from manipulating the blend as seen by the teacher to an in depth analysis of the variation in the experience of the learning of the student in the blended learning context (Oliver & Trigwell, 2005).

Conclusion

The information revolution is transforming Higher Education. Applications of digital technology are having stunning effects on the quality and quantity of pedagogical material available for the transmission of new knowledge. The traditional mode of delivery it has been that the lecturer stands in front of a group of students and talks. There two assumptions there

according to Hooker (1997). The first one is that every student comes to class with the same level of background preparation. Nevertheless, no two students bring the same knowledge base to class, either in a specific field of study or in additional areas which provide a richer contextual understanding of the subject being studied. The second assumption is that all students have the same learning style and proceed at the same pace. It is true that two learning styles may be exactly the same ant that no two students learn at the same pace. Additionally, individual students will have varying levels of attention and different degrees of motivation from day to day. Hence it is clear and obvious that technology in combination with pedagogy offer us the opportunity to overcome the negative effects of both these misleading assumptions.

So why blended learning? As stated above "knowledge is power". Knowledge is a commodity and access to it is the key. The new or next generation of learners (Dziuban et al, 2006) uses sociological, cultural, economic and political perspectives rather than individual preferences. There is a fundamental difference in the way knowledge is approached today by the students. Today's students are increasingly more diverse than ever before (Dziuban et al, 2006). They are more technologically proficient and they are very often employed and more non-traditional. Therefore, students are approaching Higher Education with responsibilities above and beyond what they encounter in their classrooms. So the question that arises is if Higher Education can meet the needs of the present generation learner and the future one. How can Higher Education be transformed to rebuild the curriculum to meet the above needs? The solution to that is to use blended learning approaches, in other words a combination, a mixture of teaching and learning styles – a combination of web and face-to-face approaches. Some educators define blended learning approaches as "finding a harmonious balance between online access to knowledge and face-to-face human interaction" (Osguthorpe & Graham, 2003) or the "thoughtful integration of classroom face-to-face learning experiences with online experiences" (Garrison & Kanuka, 2004).

In conclusion, through education we transmit values and principles such as equality individual rights etc. The curriculum in Higher Education needs to transmit appropriate skills to encourage democracy. Democracy does not depend only on political conditions and processes in society. Participating persons or citizens are also important and of course dialog is necessary for democracy. Democracy in essence is a dialog between people. That means that people search for solutions to their problems by thinking together with others. The skills we need into the curriculum of Higher Education are self-critical thinking, internal dialog (systematic thinking), dialog with others and that will give us the democracy in education. In education programs we can teach the structure and processes of democracy and dialog. We can train people to participate in a meeting, to know how to make propositions and motions.

With blended learning we identify two major components for students satisfaction: learning engagement and perceived ability to communicate effectively. There is an inherent benefit in the use of educational technology for both children and teachers. This paper has critically evaluate how ICT can support the Higher Education curriculum and how it affects it. Apple (2003) noted that "ICT is part of the problem and part of the solution". Hardware alone will not enhance learning. Educators need to incorporate instructional changes, foster students' critical thinking skills and process constructivist pedagogies. Computers can engage and motivate students to learn more. Pedagogical principles are not necessarily irrelevant, but they are less sharply defined of the outset such that educators are more willing to modify their teaching strategies with different tools. Therefore there is a need to have Higher Education transformation and reform since students learn faster, better and most extensively with

computers (Cuban, 2001). Referring again to Dziuban et al (2006), there is another metaphor that can be used, “knowledge is teamwork”. Hence, the educator’s challenge is to develop teaching and learning strategies for the blended learning environment and promote democratic skills including equal opportunities to knowledge.

The paper has tried to explore and critically analyse those areas of Higher Education that affect curriculum, how the Higher Education curriculum has been transformed because of the use of ICT and how to promote democratic skills through blended learning. By looking at the different identities involved in Higher Education – identity of time, identity of place, identity of the student community and the identity of scholarly community – I managed to distinguish what are the requirements of today’s Higher Education and how Higher Education needs to meet those requirements.

Blended learning has changes significantly the Higher Education curriculum but also the needs of the society and the cultural dynamics (Apple, 2001)have affected Higher Education. So can Higher Education create a new social order? Apple (2002) is using Bernstein’s notion “pedagogic device” to demonstrate the cultural configuration that enables is to uncover what exactly are the needs and when, how and why we should use blended learning techniques.

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