COLLABORATIVE AND SELF-DIRECTED LEARNING IN A VIRTUAL CAMPUS ENVIRONMENT: A POTENTIAL SOLUTION FOR OUR YEARS?

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Abstract
In the current society, where the information flow has a big impact on the learner, and the learning methods differ from student to student, it is important to understand a virtual campus and its benefits. Nobody can doubt the impact of the new technologies on the educational system. In this new reality, universities must learn to work and collaborate with other universities or groups of interest in order to prepare learners to meet the requirements of the 21st century. The solution can be a virtual campus that offers powerful tools, access to content and services, personal learning environment, enabling the student to acquire information and learn new skills.
This article offers on overview of a virtual campus and the prototype of learner that is suitable for it. The accent falls on two of the skills that a learner must have: self directed learning and of course collaborative learning. The first concept refers to the learner's capabilities to be responsible of his decisions regarding the learning process and to take the initiative while the second one is based on the fact that a virtual campus is built on collaborative processes that engage stakeholders to interact and learn from each other.

Key words: *collaborative learning; future education; lifelong learning; self-directed learning; virtual campus.*

JEL Classification: *D83, I21*

I. INTRODUCTION

In our society, where the information flow is abundant, and the learning methods are different from student to student, virtual campus can be a solution to the current needs. Nobody can doubt of the contribution of the new information technologies on the educational environment. They can be found inherently, in the new society that we live, called information and knowledge society, where expressions such as: economic and cultural globalization, ongoing renewal of knowledge, need for lifelong learning, ubiquity of social networks, new information and communication technologies, and mass media are daily.

In this new reality, the universities must adapt, work and collaborate with other universities or groups, giving them both the ability to gain information and share knowledge as well to make them more competitive. It can be said that, the universities success, will depend, on the transforming of the current conventional university structures in order to encourage teams to combine quality of the traditional teaching with the interaction through networks and mobile devices, and to cooperate for the design and distribution of materials and distance education courses so that they lead to real learning networks.

To have success, virtual universities, must develop self-directed learning skills to students. This involves from the student part, setting learning goals, planning them in time and space, assessment at predetermined time periods, re-planning objectives in harmony with the obtained results, and from the teacher part, his role is to guide students so that they can achieve their goals.

It can be observed, that the labor market, is seeking for more and more dynamic and well prepared persons on many domains, persons that are quick learners and can adapt to an immediate change, in short terms, are wanted youth prepared with the 21st century skills. In other words, people who: know how to work together, have IT knowledge, know many languages, are open to different cultures and have a participatory management, have flexible thinking, are creative, are responsible, and so on. The questions that arise are whether the learning environment is ready to provide such youth and if the courses format leads to this?

The solution would be supplementing the traditional learning offer, with the one of the virtual campus, that integrates the Web 2.0 concept, so that the content can be accessed anytime and anywhere and developing the required skills for this century.

II. THE VIRTUAL CAMPUS CONCEPT

The current term of virtual campus has made its presence felt in Europe around the 90's. First time was used in national programs and strategic documents of the European Commission. Its strategic reports indicate that "the new technologies" are a strategic asset in order to build a "university of the future".

In 1995 it appeared for the first time a virtual campus which is closer to what we know today. When it was Open University from Catalonia became the first virtual university from Europe that completely relies on telecommunications and computers. Followed by others, same projects have been developed in countries such as Finland, Portugal, Switzerland, Ireland, etc.

The concept of Virtual Campus supports many definitions, from the simplest to the most complex. E-learningeuropa.info portal defines virtual campus as part of a university or faculty that provides educational facilities at any time and any place through the Internet.

At the workshop which was held in Brussels on 23 November 2004 by the European Commission, entitled "The "e" for our university- virtual campus" one of the working group's proposed three definitions that meet several aspects of virtual campus:

- Collaborative perspective: virtual campus based on ICT resources of collaboration between different partners supporting at the same time, learning and research offers;
- The economic / business perspective: "virtual campus" term denoting a distributed ICT learning and research in business;
- Organizational perspective / network: in the sense that the "virtual campus" term brings together learning and research resources of several partners.

The word "campus" is used to highlight the learning environment, research and the work in the university. These elements include research activities through e-learning, administrative services and other functionalities.

In this sense virtual campus can be defined as an environment in which individuals can participate in practical training sessions anywhere, anytime, with available different formats of learning materials (written, audio and video) and may study at their own pace.

In conclusion, we can say that there isn't a general valid definition for the concept of virtual campus. It all depends on context; target group objectives considered and involved technologies for defining the virtual campus at a time. It can be said that it is synonymous with an e-learning initiative at large scale. Different names are used for the same thing in different countries. Usually, terms like e-learning, distance learning, blended learning and open learning are being used to indicate small virtual campuses, projects or activities in a university or professional training courses or part of the job.

III. THE EXPECTED CHANGES IN EDUCATION FOR THE NEXT 20 YEARS

The new 21st century requirements are more and more requested, such as the ability: to have a critical thinking, to solve a problem, to facilitate the work with multimedia technologies, to have the knowledge of several foreign languages teamwork, risk-taking, to be life-long learning, to put the emphasis on learning with digital technologies. All of these skills can be found in The Key Competencies recognized by the European Commission.

Europe 2020 Strategy announces fundamental changes in the educational field. Among its priorities are included "Smart growth - an economy based on knowledge and innovation" involving Europe on the "Education, training and lifelong learning" and Digital Society - information and communication technologies.

To see how those goals can be achieved, Open University of the Netherlands conducted a focus group made up of 13 external experts in different fields, which highlighted the educational major changes that should be expected in the next 20 years. They came up with 203 ideas for completing the statement "One specific change in education in 20 years will be that: ..." which were divided into 12 themes and arranged according to the distance between them on a map as it can be seen on figure 1.

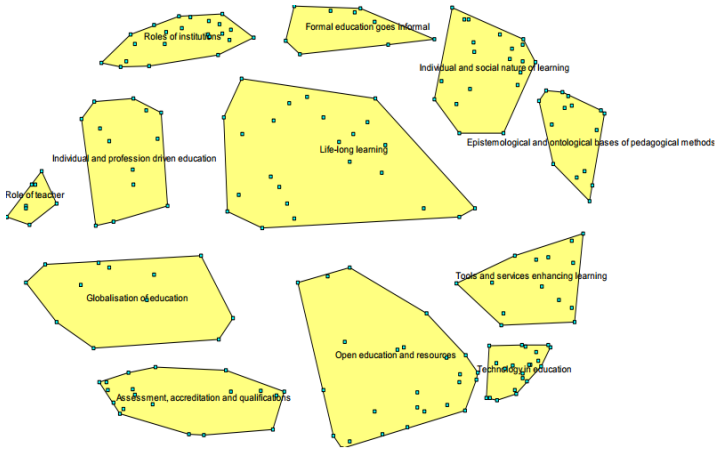

Figure. 1. The landscape of the future of learning; Source: European Commission's Joint Research Centre (JRC) available at: http://ftp.jrc.es/EURdoc/JRC59079_TN.pdf

In the center of the image is "life-long learning" as a point that connects the other clusters. It can be seen the abundance of technology in education through virtual reality that will be more and more used, mobile learning which will incorporate the PC, phone and reader in one device, augmentative reality will also be a tool more and more used, globalization of education – it is desired a single learning space for the whole Europe, where the best students to be helped regardless of their origin. The role of teachers and educational institutions tends to be an informal one, of guidance, that is in the center of the triangle technology-knowledge-student and the curriculum is intended to be an individual and personalized one, focused on practice, in which the collaboration between students can be performed internationally.

IV. VIRTUAL CAMPUS, A COLLABORATIVE EDUCATIONAL SYSTEM

A collaborative system is an application that communicates with people and provides solutions to increase the quality of a particular service. The aim is to bring together people and software and to increase performance and speed of response. Virtual campus architecture is oriented on collaborative processes (Ivan, 2010). One of the goals of virtual campus is to give to students more resources and social media communication tools to encourage collaboration both within a university and with other universities that are part of the same virtual campus (Zhang, 2007). Virtual campuses in the traditional learning helps inter-university collaboration by facilitating students and teachers exchange (Ciurea, 2009).

Collaborative educational system allows students from different locations to interact in a virtual space. Collaborative learning plays an important role in acquiring knowledge; students interact with educational material via computer.

Latest studies about collaborative learning show that the success of this type of learning is given by groups coordinated and co-regulated employment for a common goal. Collaborative learning involves self-motivation due to personality differences that arise between team members (Simone, 2009). An important issue in collaborative learning, it has the ability of learner to be self-directed learner when it comes to an issue, an issue that must be resolved in the shortest time.

Computer-teacher-student triangle, demonstrates communication and transmission skills of information. Collaborative educational system has the following main features:

- ✓ Shared virtual space;
- ✓ Conversations in real time;
- ✓ Students that can interact with educational material;

Teachers can collaborate with each other in producing the presentation materials for courses and when they are completed, tutors can give viewing rights of content to students.

Virtual Campus is a collaborative structure in which interact five groups (Zurbagiu, 2009):

- ✓ Students- participate in courses, exams, post homework and essays, documentaries, online meetings, forums, etc.;
- ✓ Teachers- are responsible for multimedia-learning materials, assessment of student homework submitted online;
- ✓ Persons outside the virtual campus- interacting with groups of students, are informed about campus performances;
- ✓ Organizations- are involved in the learning process by bringing knowledge from practice in a campus;

- ✓ Campus management-defined development strategy, monitor and moderate the discussion, researching labor market, select teachers for courses that will take place and set their prices;

Information and communication technologies have shown their potential in connecting people internationally to collaborate and to make knowledge more accessible and to be shared for teaching and learning.

V. SELF-DIRECTED LEARNING

Self-directed Learning has been widely studied over the years and it was determinate that it is mainly found in the adult education (Long, 1992). Self-directed learning has known many definitions in literature; terms like: self-education, self-planning learning, self-teaching, self-guidance, self-regulated learning and independent study, were used to define the same concept (Knowles, 1975; Hiemstra, 1994; Long, 2000).

The term self-directed learning is defined as a "process in which individuals take the initiative, with or without the help of others, in diagnosing their learning needs, formulating learning goals, identifying human and material learning resources, choosing and implementing the most appropriate learning strategy and evaluating the results“ (Knowles, 1975). Even more, it suggests that when an individual takes his own learning process initiative, the whole process is enhanced in contrast to those who wait passively to be taught.

Also, self-directed learning is a rich term around which are found factors such as "the student is responsible for planning, implementation and evaluation of learning", "personality characteristics that lead to accepting responsibility for their own thoughts and actions as a learner” (Brockett and Hiemstra 1991).

The main idea for this type of learning is that the learner witch learns from his own will, takes control over the learning situation and the results that are arising from it. So, he must be responsible of his learning process in order to carry out of his previously set objectives.

Higgins (2009), highlights the need for "learning to learn", saying it is an important concept for the next 30 years of education. This involves citizens’ responsibility in the educational process, finding their own potential, and involves many skills such as "thinking", "self-regulation", "self-esteem", "self-efficacy".

We can conclude that self-directed learning is a complex concept, a competence that must be developed in the coming years, which refers to the learner's ability to assume responsibility for the learning process by setting goals, planning them in time and space, finding the right materials, self-assessment, ability to ask relevant people for guidance on a given topic, the ability to be critical thinking, and finding inner resources for self-motivation. If motivation does not exist, than self-directed learning cannot take place.

VI. EDUCATIONAL PROSPECT

It is hard to predict the direction in which it heads the education; a sure fact is that, education is meant to foreseen the changes of the future and to train learners to acquire the new skills required. As Europe’s 2020 strategy states, education will be lifelong with the help of technology and virtual campuses.

If nowadays the physical space, classroom, still exists, but it is increasingly digitized, in the future, is desired that the learning experience to be performed in a virtual space, where students from different countries can collaborate in projects and the teacher’s role is a mentor one.

In figure 2 (a), are emphasized six major trends in education and their components. It tends more and more to augmentative reality, to wearable technologies which will have a big impact on learner and it will help him in his engagement regarding his personalized learning process.

Researches concerning augmentative reality and how can it helps education, they already exists. In April 2013, it took place in Valencia, Spain a conference, called Aumentame where were discussed ideas, projects and implementations of AR in education. Another international conference on technology, applications and use of Virtual and Augmented Reality will be held in November 2013 in Tenerife. Projects such as: SCARLET (Special Collections using Augmented Reality to Enhance Learning and Teaching) used to access manuscripts and rare books, and conducted at the University of Manchester, which won the award in 2013 for innovation in education, Health CARE (Creating Augmented Reality in Education) designed for learning and teaching spores healthcare system, already were developed, and the examples may continue.

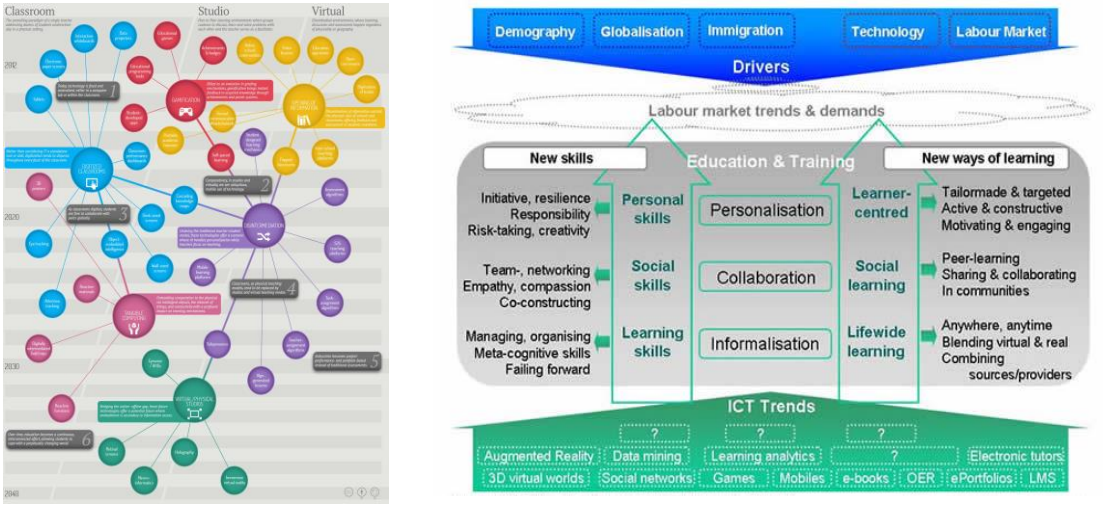

Figure. 2. (a) Envisioning the future of education technology according to Michell Zappa and TFE Research available at http://envisioningtech.com/education/ ; (b) Conceptual map of the future of learning. Source: European Commission's Joint Research Centre (JRC) available at http://ftp.jrc.es/EURdoc/JRC66836.pdf

As it can be seen in the figure 2 (b), the future of learning is concentrated on a personalized collaborative informal education with the help ITC tools, driven by world's perspectives so that it can be achieved new skills and new ways of learning.

Since 2008, it talks about MOOC, massively open online courses, free high quality web based courses in which participants can access the platform from anywhere in the world and can collaborate with each other. Such initiatives have been developed, some examples are: edX, Cousera, Udacity.

Overall, the learning experience, both the content and the assessment process, will be improved with the help of technology. The learners will collaborate with other learners from different countries, with different mindsets, for their personalized and job-related curricula. Education needs to be a step ahead so, many skills will need to be learned in order to fit the 21st learner profile.

VII. CONCLUSIONS

No doubt we are seeing changes in the higher education landscape, in terms of globalization, changing the dynamics of research and innovation and the influence of information and communication technologies on universities. In Europe, universities adopt more and more lifelong learning and adult learning perspective. This has lead to the growth of this kind of initiatives. Traditional education institutions, reshapes their educational strategies more and more to virtualization of the courses, offering life-learning distance programs.

This paper is meant to underline the expected educational changes, providing an overview on the virtual campus concept, and the skills requested for the 21st century: putting the focus on life-long learning, collaborative and self-directed learning.

Virtual campus solution type comes as a response to the needs of an adult learning, especially in this century, when multidisciplinary knowledge is even more necessary and in this way can be reached at the population segments, which for various reasons cannot access higher education. They are offering an alternative to higher education and other opportunities. In a world where the demand for such opportunities is increasing, the importance of virtual campus should not be underestimated.

The education process will be a life-long learning journey based on the ubiquity of the information and communication technologies. This will make possible the globalization of education and it will facilitate the inheritance of new skills from all over the world. The education will be informal, where the professor's role will be mentoring in an open education guided by open resources in which the learning activities will be personalized and flexible. In conclusion, after all of these, we will be able to constantly update our skills in order to be competitive in the labor market.

VIII. REFERENCES

1. *** (2005). *The 'e' for our universities – virtual campus. organizational changes and economic models*. Brussels: EUROPEAN COMMISSION, Directorate-General for Education and Culture.
2. Bailly, S., Carette, E. (2006). *Introducing self-directed learning in an innovation-friendly institutional context*. Porta Linguarum: Revista Internacional De Didáctica De Las Lenguas Extranjeras, (6)
3. Bijnens H., De Gruyter J., Op de Beeck I., Bacsich P., Reynolds S., Van Petegem W. (2008). *Re-defining virtual campuses: From a "fully-fletched" virtual campus to a blended model*. Lisbon. , EDEN
4. Bloxham, J. (2013). *Augmented reality in education: Teaching tool or passing trend?* Retrieved May, 20, 2013, from http://www.guardian.co.uk/higher-education-network/blog/2013/feb/11/augmented-reality-teaching-tool-trend .
5. Brockett, R. G., Hiemstra, R. (1991). *Self-direction in adult learning: Perspectives on theory, research, and practice. routledge series on theory and practice of adult education in north america*. New York: Routledge, Chapman and Hall.
6. Carrió Pastor, M. L. (2007). *Ventajas del uso de la tecnología en el aprendizaje colaborativo*. Revista Iberoamericana De Educación, 41(4)
7. Cator, K., Adams, B. (2013). *Expanding evidence approaches for learning in a digital world*. .U.S. Department of Education Office of Educational Technology.
8. Chen, C., Tsai, Y. (2012). *Interactive augmented reality system for enhancing library instruction in elementary schools*. Computers & Education, 59(2), 638-652. doi:http://0-dx.doi.org.columbus.uhu.es/10.1016/j.compedu.2012.03.001
9. Ciurea C. (2009). *A metrics approach for collaborative systems.* Economy Informatics Journal, 13, 44-47.
10. Ciurea, C, (2009). *The virtual campus – A collaborative system*. Economy Informatics Journal, 1, 39-47.
11. Gavel, D. (2011). *HKS dean discusses global universities in the economist.* Retrieved April, 23, 2013, from http://www.hks.harvard.edu/news-events/news/articles/ellwood-economist-global-campus
12. Guitert i Catasús, M., Pérez-Mateo Subirà, M. (2013). *La colaboración en la red: Hacia una definición de aprendizaje colaborativo en entornos virtuales.* Teoría De La Educación: Educación y Cultura En La Sociedad De La Información, 14(1), 10-31.
13. Hiemstra, R. (1994). *Self-directed learning*. The International Encyclopedia of Education.
14. Higgins, S. (2009*). Learning to learn*. Retrieved May, 15, 2013, from http://www.academia.edu/589476/Learning_to_Learn
15. Infante Moro, A., Aguaded Gómez, J. I., López Meneses, E. (2011). *Campus andaluz compartido (CAV): 10 universidades en un solo click.* Pixel-Bit: Revista De Medios y Educación, (38), 215-224.
16. Ivan, I., Ciurea, C., Milodin, D. (2010). *Collaborative educational system analysis and assessment. Advances in Computer-Human Interactions*, ACHI '10. Third International Conference, , 160 - 165.
17. Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., and Ludgate, H. (2013*). NMC horizon report: 2013 higher education edition.* Texas: The New Media Consortium.
18. Johnson, L., Adams Becker, S., Cummins, M., Estrada, V., Freeman, A., Ludgate, H. (2013). *Technology outlook for community, technical, and junior colleges 2013-2018: An NMC horizon project sector analysis*. Austin, Texas: The New Media Consortium.
19. Karakas, F., Manisaligil, A. (2012). *Reorienting self-directed learning for the creative digital era*. European Journal of Training and Development, 36(7), 712-731.
20. Knowles, M. (1975*). Self-directed learning: A guide for learners and teachers*. New York: The Adult Education Company.
21. Noss, R. (2012). *21st Century learning for 21st Century skills: What does it mean, and how do we do it?* Springer Berlin Heidelberg, 7563, 3-5.
22. Redecker, C., Leis, M., Leendertse, M., Punie, Y., Gijsbers, G., Kirschner, P., Hoogveld, B. (2011). *The future of learning: Preparing for change*. Seville, Spain: European Commission Joint Research Centre Institute for Prospective Technological Studies.
23. Redecker, C., Punie, Y., Ferrari, A. (2012*). eAssessment for 21st Century learning and skills*. Springer Berlin Heidelberg, 7563, 292-305.
24. Robertson, J. (2011). *The educational affordances of blogs for self-directed learning.* Computers & Education, 57(2), 1628-1644. doi:http://0-dx.doi.org.columbus.uhu.es/10.1016/j.compedu.2011.03.003
25. Skilton, L. (2013). *Team scarlet wins an award for innovation!* Retrieved May, 25, 2013, from http://teamscarlet.wordpress.com/2013/05/20/team-scarlet-wins-an-award-for-innovation/
26. Stoyanov, S., Hoogveld, B., Kirschner, P. (2010). *Mapping major changes to education and training in 2025.* Seville, Spain: European Commission Joint Research Centre Institute for Prospective Technological Studies.

27. Volet, S., Summers, M., Thurman, J. (2009). *High-level co-regulation in collaborative learning: How does it emerge and how is it sustained?* Learning and Instruction, 19(2), 128-143. doi:10.1016/j.learninstruc.2008.03.001
28. Zurbagiu, B., Popescu, L. (2009). *Security of virtual campuses – collaborative systems*. Journal of Applied Collaborative Systems, 1