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## Management of competencies in higher education: education facing economic issues

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***Benefits** (Building an expertise network for efficient innovation training systems) is a European Project, funded by Interreg IVA France-Channel [2008-2015], designed to create sustainable co-operation between Regions in Northern France and the United Kingdom. This paper is aimed at sharing knowledge between UK and French Universities, with a view to influencing new curriculum models that encourage and support the creation of sustainable enterprising, innovative and entrepreneurial mind sets in our students, through our Higher Education Institutions, and to increase economic opportunities that help to retain this talent regionally.*

### **Abstract:**

Higher education is a major issue in most of countries all around the world. With time, evolutions can take place with a view to match to the needs of the society from two points of view: human and economic. However, nowadays the need of evolution and adaptation seems to be deeper and more pressing than in the past. Indeed, the statement on the position and the purpose of higher education is an actual true question. Which kind of knowledge and competences do our societies need to be effective in? How to be able to capture the attention of the 'digital native' learners? What is the impact for the existing organizations in higher education? The present paper proposes to develop two levers dealing with these issues.

The first lever deals with the adaptation of the organization in higher education establishments due to the need to change the methods and the position of the teachers relative to the learners. In that case, we will sum up the principal characteristics of the most widespread new pedagogic approaches in order to describe the impact on the teachers work. Methods as Problem Based Learning (PBL) [1] or Massive Open Online Course (MOOC) [3-5] are radically new concepts that imply an organizational breakdown. In other words, the activities of the teachers are changing. The role of managers is to create favorable conditions by allocating technical and financial means and by enhancing the valorization of the performances of the teachers face these new undertakings. The last point is important to consider and it is an important levers to develop and sustain new approaches more favorable for the economic development of higher education establishments.

The second levers deals with the need of creation of new profiles of teachers. Higher Education to be useful and credible for the society needs to bring pragmatic answers in particular to enterprises. We propose to describe new profiles of teachers that may open possibilities of development to managers of higher education establishment.



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## **Introduction:**

Jean Jaures [6] thought that *we don't teach what we know or what we think we know: we are only able to teach what we are*. This idea is particularly interesting nowadays considering the new approaches developed to teach in higher education. Professional skills and experiences are becoming the most wanted needs by several actors. This is greatly due to the accessibility of the knowledge. Indeed, if you are connected knowledge is under a click. The teacher is not anymore the master standing on a platform. He is not the only one having access to the knowledge. And the students seated in front of him can easily connect their smartphones in order to collect or verify the informations delivered during the lesson. The memory can be stocked in a hand and the 'power' allows to those who find the fasters the most accurate information. The 'digital native' learners use a new model yet developed by the *old school*: the interconnection [7]. We can wonder who made first that the model changed. Nevertheless new opportunities have to be seized and different skills have to be used and developed for higher education regardless of the new pedagogic method chosen.

To face to this mutation, two levers are developed in this paper. The first one deals with the adaptation ways for the management of higher education establishments. The second one describes new profiles of teachers that may open possibilities of development to managers.

## **1. The management facing an hybrid pedagogic system :**

### **1.1 Impacts of emerging pedagogic approaches**

Methods as Problem Based Learning (PBL) [1] or Massive Open Online Course (MOOC) [3-5] for example are radically new concepts that are henceforth developed by higher education establishments. Indeed, PBL is developed for example by the Mc Master University (USA), the INSA (France) or the EPL (Belgium). The MOOCs crossed the ocean and very recently for example, the France dedicated its first national website for the French MOOCs. *FUN* (France Numeric University) proposed since the end of 2013 the MOOCs of famous higher education establishment (university and engineering schools).

The emerging pedagogic approaches are based on different economic models and pedagogic targets too. The purpose of this paper is not to discuss the economic models but to sum up the impacts of these two methods on the tasks and skills required for the teachers using these new approaches. First, we propose to simply describe these two methods:

- The PBL method consists in creating pedagogic activities for little groups of students. They have to work on problems with the assistance of a tutor. The assistance of the tutor is based on the questioning of the groups avoiding to give any solution to the problem. The pedagogic activity alternates periods with and without the tutor and it promotes teamwork [1].
- The MOOCs remains the most widespread new method. As its name indicates, the courses are thought to touch unlimited learners. A great autonomy is required for the



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students. However, assistance is often created by the existence of forums. Teachers and students create a community providing help for the users of MOOCs [8].

These two emerging pedagogic approaches are thought to make that the learner becomes more active in its training. They promote teamwork too. Therefore, one can easily understand that the tasks and the positioning of teachers are radically different during the 'course'.

**Table I : Estimation of the repartition of the time for a course comparing the classical face-to-face teaching, the PBL method and the MOOC.**

[INSERT TABLE I ABOUT HERE]

Even if the purposes are different, the first step is always to prepare the activities for the learners. The supports and resources can be various and are often numeric resources especially for PBL and MOOCs. However, interviews of experts are often promoted too. For the teacher, the radical difference stand in the fact that the time dedicated to the design and preparation part is greatly modified compared to the time dedicated to the animation part. Indeed, most often, the time for the animation part is considerably reduced from the teacher, point of view. This is naturally due to the fact that the learners have to work by themselves during sessions without the teacher.

The Table I gives an estimation of the time necessary, for the pedagogic team, in each steps of the life of a pedagogic activity. Very few analyses are available in the literature in order to compare the time necessary to elaborate the pedagogic activities. Moreover, even for a same pedagogic method, the time repartition can, of course, greatly vary. For MOOCs for example, the development of the support can include the contribution of several developers with different specialties (videography, editing, graphic design, instructional design, and so one). The notion of team is important for this recent method. That is the raison why the table I uses the mention 'pedagogic team' instead of 'teacher'.

Several sequences are presented in the last mentioned Table. The first one is for the design and achievement of the supports. Then the animation part takes place. This second step reflects the interaction with the learners. The evaluation part is the following sequence. For this last mentioned part, it is assumed that the supports for the evaluation were previously prepared during the first step of design. Finally, a sequence for updating the supports is proposed too. This last step is important for the classical face-to-face approach. However, the notion of updating the supports appears to be more crucial for methods mostly based on numeric resources, often online, and combining an important autonomy of the learners.

From the learner's point of view, the pedagogic activities, considering PBL and MOOC, is thought to develop its own experience of learning. He can experiment different ways to find a solution to an issue as described the users of MOOC [9]. The learners can work with a team of others learners. Even



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if the teacher previously imagined the pedagogic activity, the learners are most of the time autonomous. By their work, they find information and solutions and memorize their experience for further pedagogic activities or real life issue.

The purpose of the Table I is only to tent to give to managers an approximate idea of the time needed for each methods previously described. However, since the targets of the methods are really different it is essential to describe only ranges of worked time.

Clearly, the animation and the evaluation of the learners are the most time-consuming parts for the classical face-to-face teaching method. On the opposite these two parts are the less time-consuming for the MOOCs because the tests are automatized online [9]. Moreover, considering the animation part, there is a real difference between to be a teacher during the classical approach and to be a tutor for the PBL method for example. As presented in the guide for tutor edited by the University of McMaster University in the Canada [10] the switch from disseminator of information to facilitator of learning can be challenging for those new to tutoring. Moreover, it is not necessary to be an expert of the domain to work with a group in PBL as showed Neville [11] thanks to a review of literatures published. The skills needed and used by the tutors are completely different and can induce resistant to change by some teachers.

To sum up, emerging pedagogic approaches are changing the way of working for the teachers in higher education establishments. From a technical point of view, the use of numeric and interactive supports is promoted to design and elaborate the pedagogic supports. Moreover, the positioning and the behavior of the lecturer evolve to give more autonomy to the learners. Then we speak of tutors.

## 1.2 Toward new indicators

For higher education establishments, the choice to develop new approaches based on autonomy seems to be unavoidable since the phenomenon is yet widely shared across the borders. Also, it is important to professionalize this dynamics by choosing adapted indicators for the performance of the institute. The quality and the efficiency of the new supports dramatically depend on the choice of those indicators.

As it was developed before and considering emerging new pedagogic approaches, the tasks of teachers to build and animate a pedagogic activity are radically different. First the promotion of the design and manufacturing time is an important key to tend to high quality activities. Indeed, the teachers will be employed not only to be in the classroom the most of the time. However, nowadays, the most common criterion to evaluate the performance of a teacher is only the time of animation. This criterion cannot be adapted anymore, especially for the MOOCs, and can slow down the development of new pedagogic supports with a high quality.

The quality is an important concept but not easy to apply to the pedagogic team of a higher education establishment [12-13]. However, the number of the graduate students cannot be the only one indicator to evaluate the performance of a pedagogic activity. MOOCs offer a unique possibility to evaluate a 'course' using a statistic approach. Indeed, the big number of learners is a remarkable



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lever to tend to the improvement of the pedagogic activities. The exploration and exploitation of the experience of the learners is an interesting tool to identify good practices for new approaches. Moreover, this could participate to enhance the sense of community for the learners [14].

The identification of the items evaluated is, of course, a key point. It is difficult to imagine to strictly use the same items regardless the pedagogic approach. Indeed, the items have to be chosen with a good accuracy to give significant results. For example, the item 'animation' could be interpreted with difficulties by the learners for recent approaches with an important part of autonomy.

Generally, the classic and the new pedagogic approaches coexist. Also, it is likely that this situation will remain like that for several years. Indeed, the economics models are not so easy to find [15] and the skills of the 'classic' teachers are not always well adapted to a complete mutation of the system. Resistance to change is present in the institutions. And more proofs of performances of recent pedagogic approaches are necessary for the most refractory to change persons. However, in this context, the task of the manager, from a human resources point of view, is to choose the more adapted levers to professionalize the adaptation of the pedagogic activities. No investment from the leaders in higher education establishment will only tend to slows down the mutation of the system. This strategy would be risky especially for the international reputation of the institutions.

## **2. Toward new teacher profiles for the new community pedagogic approaches**

New expertizes are needed to guide the connected learners in higher education establishments with the aim to give to the society adapted skills for its organization. The new emerging pedagogic approaches developed are based on the creation of a community. The place of the teacher is radically modified and new job descriptions have to be identified. We propose here to bring out three axes.

### **2.1 – Designer and developer of pedagogic supports**

The design part will remain an important task. This work could be made by a single person but it is most likely if a multidisciplinary team work on projects. The quality of the supports is an important issue as explained above. And a team composed of members with many knowledge and skills is an unavoidable lever to tend to high quality supports. In the same way, the team in charge of the design and the manufacturing of the supports should have to elaborate appropriate indicators to study the experiments of the learners during the training. This will tend to a continuous improvement model.

### **2.2 – Online pedagogic and community manager**

Communication and marketing are widely employed for the enterprises. Their visibility on the network is a crucial work and the job of community manager appeared few years ago. Communication and marketing are becoming key points in higher education establishments too.



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In that context, to delegate teachers in order that they play the role of community manager makes sense. Indeed this would have an impact on the communication and marketing area. Indeed, MOOCs, for example, constitute a brand extension. It can contribute to the international reputation of the establishment as it is recommended by the nonprofit membership association *Educause* in the USA [15]. To be present on the web becomes a true issue and 'community manager' is a new profession. It appeared with the development of the social networks a few years ago [16]. The non-exhaustive tasks of a community manager are to develop the notoriety of its establishment and to animate and enhance the community. A community manager plays an important role in the economic intelligence of its field of activity since he or she has to analyze the behavior of the users. This last point has a strong link with the quality issue developed in the previous paragraph. However the management dimension of the community takes a more important place [17, 18]. The manifestations on the web are important elements for the learners. This activity can enhance their investment in the training. Indeed, as Schmidt and Moust identified in their work, the social congruence and the cognitive congruence are important parameters during the learning process [19]. Social congruence is the term given to *how well a tutor is socially aligned with the students; whether they are interested in the students' lives, in what they are doing* as explained the last authors mentioned. For a Pedagogic Community Manager, it would consist to share the experiment of the learners. This could tend to co-construction of new supports by the learners and the community manager. Meanwhile the cognitive congruence, it measures *how well a tutor is able to present the curriculum content in such a way that it is accessible enough to engage the students in learning*. To give answers on a forum associated to MOOCs for example could fully participate to this cognitive congruence.

### 2.3 – Teacher with a previous professional experiment in enterprises

The aim of the higher education establishments remains to give pragmatic answers to the society. The connection with the enterprises is a key point to make that the young undergraduate students become well employed. The job of the teacher will change to become a tutor. A real experiment of the work in enterprise would be a real asset to further interactions with the learners. This kind of hybrid profile should be promoted and it would have a real added value from a pedagogic point of view especially to create problem based pedagogic activities.

Moreover, the well-adapted recruitment of a significant percent of this kind of profiles may enhance the relationship between the local economic networks. One of the purposes to do that is to improve by updating the existing training. Also, this kind of profile can contribute to develop others trainings. A commercial dimension enters in the composition of this kind of profile. This kind of profile could be an answer to the government policy changes to make that the higher education establishment become more autonomous from an economic point of view [20].

### Conclusion:

New pedagogic and business models are influencing the higher education establishments all around the world. In this paper, we first discussed the impact on the tasks of the *teachers* of two emerging new pedagogic methods, the PBL one and the MOOCs, to the traditional face-to-face teaching. It is



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clear that the lecturers are becoming tutors. This huge mutation takes time but the need for the establishments to reduce the cost of the training, to be more visible in an international context and to propose the use of numeric supports for the 'digital native' learners are three factors that are driving the mutation of the establishments. In that complex local, national and international, context managers and leaders have to create favorable conditions to allow this mutation and to tend to reduce the resistance to change. Employing novels indicators is a first step to give the possibility to reach performing supports according to the chosen pedagogic approach. The second part to this paper deals with a projection of next jobs descriptions for higher education establishment. Hybrid profiles of teacher/ tutor would have a commercial and a marketing role join to their pedagogic missions.

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