"TIME TO INVEST IN NEW SKILLS!" – THOUGHTS ON THE SOCIAL RESPONSABILITY OF THE HIGHER EDUCATION INSTITUTIONS

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Abstract *– Higher Education Institutions need to grasp more directly both the challenges and the opportunities raised by the fast changing economy based on sustainable development. Appropriate insertion of university graduates on the labour market requires a global change of mindset and behaviours as well as the implementation of a new university management of the study programmes, learning outcomes etc. A European Qualifications Framework and its national correspondents should be an important step towards mobility and new skills acquired upon completion of a lifelong learning programme.*

Index Terms – competence-based higher education, learning outcomes, sustainable development, and qualifications framework.

THE GLOBAL CONTEXT AND THE SOCIAL EFFECTS OF SUSTAINABLE DEVELOPMENT

Investment in education means investment in the next generation and with it an investment in the source of future prosperity, future awareness and future possibilities for action. Countries look to higher education as a means for bringing about positive change and for contributing to global action. Higher education has to help the new generation develop the abilities to learn throughout life. The growing and fast-changing field of technology provides and will continue to provide opportunities for improving the skills of the university graduates. Upgrading skills is not just a luxury for the highly qualified in high-tech jobs: it is a necessity for all. We are witnessing the emergence of new industries which require new qualifications. For example, the shift to a low-carbon economy turned the environmental protection into a long-term priority: the energy crisis stimulates lower consumption and non-pollutant production. A worthy example is the aircraft industry which strives to promote the use of biofuels: on the 30th of January 2009, a Boeing 747-300 of Japan Airlines conducted a two-hours flight with one engine powered 50% by a mixture of jatropha, camelina and algae; at the end of 2009 Toyota marketed the Prius Plug-in Hybrid Concept, which can be recharged within two hours. What could be the meaning of these fast developments in looking for new un-polluting energy sources? It is a source of demand for developing innovative study programmes.

We need to learn how to change the way of teaching from being transmissible to becoming transformative. Besides skills and knowledge, values need to be shared, as do competences. The core characteristic of today higher education seems to be the interdisciplinary, so a holistic approach is essential.

Higher education is important to sustainable development for three main reasons. One is the immediate interface with employers where students go into work where the sustainability issues faced by society are met on a daily basis. The second reason is the unique research remit of higher education institutions. The third reason starts from the assumption that higher education institutions have direct links with businesses and the community where research could be disseminated, connections made, and social change brought about – all of which will be crucial to help society transform itself [1].

In the present, there is an expectation that everyone will face new, unimaginable circumstances in their lifetimes with which, one way or another they will have to learn to deal with by a lifelong learning individual programme. In September 2009, 40,000 well-qualified applicants have no places in the UK universities. The UK government was convinced to increase the number of universities places following a 2009 OECD Report saying "the university could be a way out of recession" [2]. From this perspective, achieving sustainable development requires a global change of mindset and behaviours, including the permanent structural reform of the higher education system and, of course, new skills attained through new study programmes.

MATCHING SKILLS TO LABOUR MARKET NEEDS

Worldwide, the shift to a low-carbon economy and the growing importance of the knowledge economy, in particular the diffusion of ICTs, new means of transport and nano-technologies demand new knowledge, skills and competences of graduates. The development of new skills and competences to fully exploit the potential for recovery is a priority and a challenge for the international and national public authorities, for education and training providers, companies, workers and students. Neither employees nor enterprises have an adequate level of competences in the

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required fields due to insufficient information and structural lack of flexibility, as well as to improper study provision, lagging behind the developments in fields such as those mentioned above. The composition of skills achieved in the training systems and the EU universities does not fully support a truly knowledge-based economy focused on innovation, as it should.

Education and training systems must generate new skills to respond to the nature of the new jobs which are expected to be created, as well as to improve the adaptability and employability of adults already in the labour force [3].

A solution for matching skills to labour market needs is that universities enhance their contribution by sharing knowledge with society and by reinforcing the dialogue with all stakeholders. Communication between scientific specialists and non-specialists is much needed but often absent.

Improving the monitoring and anticipation of labour market and skills requirements is necessary to help people return to the labour market, facilitate the match with existing vacancies and guide skill development in order to improve long-term job prospects. A substantial improvement in the Member States' and the Union's capacity to forecast, anticipate and match future skills and labour market needs is a prerequisite for the design of efficient employment, education and training policies and individual career choices. One way to respond adequately to these future challenges is to create a higher education based on learning outcomes. Learning outcomes are the focus, and provide a key role in organizing systemic aims, curricula, pedagogy, assessment and quality assurance, for making systems more learner-centred, organising institutions, curricula and for the roles and training of teachers and trainers.

Learning outcomes can best be defined as statements of what a learner knows, understands and is able to do after completion of a learning process. Learning outcomes are best understood as a collection of useful processes and tools that can be applied in various ways in different policy, teaching and learning settings. The concept of qualifications framework was introduced based on the learning outcomes notion [3]. A qualifications framework constitutes active networking and a focal point for the stakeholders engaged in the complex task of sustainably reforming major aspects of an education system.

The key to successful application of learning outcomes is to be properly understood, converted to practical application and be applied in a coherent or holistic way. *Learning outcomes* can act as a tool of policy reform.

Learning outcomes contribute to every aspect of the Bologna agenda, means every action line, as the play an underpinning role in the clear expression of the teaching-learning-assessment relationship, as well as the transparent expression of qualifications, qualifications framework, quality, and their associated tools – cycle descriptors, levels, level indicators, qualification descriptors, subject benchmarks statements etc. [4]. This raises questions such as, to what extent and how are learning outcomes perspectives impacting on overall education and training policies, for instance for lifelong learning, and in the development of national frameworks of governance? Are learning outcomes approaches being developed or used to redefine curricula and learning programmes? Do universities want this? Are teachers ready to do something about it?

At European level there are obvious concerns and important documents have been developed. We can mention some of them:

- **Recommendation of the European Parliament and of the Council on the establishment of the European Qualifications Framework for lifelong learning** (23rd April 2008) which recommends that member states: "use the European Qualifications Framework as a reference tool to compare the qualification levels of the different qualifications systems and to promote both lifelong learning and equal opportunities in the knowledge-based society, as well as the further integration of the European labour market, while respecting the rich diversity of national education systems";
- **The Bologna process** established the important steps of building the Overarching Framework for Qualifications in the European Higher Education Area, highlighted by several Ministers declarations in *Bergen* (2005), *London* (2007), *Leuven* (2009).

TRENDS IN THE UNIVERSITY MANAGEMENT

In this very moment, the major challenge for the HE Institutions is to provide the labour market with skilled and competent workforce. To that purpose, universities should be able to reconfigure their study programmes management, the interaction with society, the reward of excellence and the graduate insertion on the labour market. Universities should be able to reconfigure their teaching and research agendas to seize the opportunities offered by new developments in existing fields and by new emerging lines of scientific inquiry. This means to develop a learning outcomes-based higher education. This requires also focusing less on scientific disciplines and more on research domains (e.g. green energy, nanotechnology), associating them more closely with related or complementary fields (including humanities, social sciences, entrepreneurial and management skills) and fostering interaction between students, researchers and research teams through greater mobility between disciplines, sectors and research settings [5].

Study Programmes Management

- *Diversification of types of study programmes*

On the one side universities should diversify their study provision and on the other hand should organise various types of study programmes. Besides initial education, universities should focus on lifelong learning as well. More

generally, universities need to grasp more directly the challenges and opportunities presented by the **lifelong learning agenda**. Lifelong learning presents a challenge, in that it will require universities to be more open to providing courses for students at later stages in the life cycle. It presents an opportunity for universities which might otherwise risk seeing enrolments of students directly from school fall over coming years in view of coming demographic change. Lifelong learning presents a challenge and a solution, in that it will require universities to be more open to providing courses for students at later stages in the life cycle.

- *Enhance interdisciplinarity and transdisciplinarity*

A multidisciplinary approach should also be encouraged, as well as providing the right mix of skills and competences for the labour market [6]. Universities have the potential to play a vital role in the Lisbon objective to equip Europe with the skills and competences necessary to succeed in a globalised, knowledge-based economy [7]. Most jobs in non-manual skilled occupations will require highly qualified workers; workers with medium educational attainment will increasingly fill skilled occupations. Since overall education rates increase at a faster rate than labour market changes, only half of elementary jobs will be held by workers with low educational attainment. In the service sector, there is a clear tendency towards the broadening of the required skills portfolio at all occupational levels, linked to "non-routine" tasks. For example, ICT professionals have to develop skills in marketing or management; services workers have to develop customer orientation skills and digital literacy. In many knowledge-intensive sectors, both managerial skills and scientific knowledge are needed. In social care and education, further skills upgrading is needed to improve the quality of services. Net job creation projections show a polarised job expansion among occupations, with a strong bias in favour of high-skilled jobs. Up to 2020, in EU25 17.7 million additional jobs could be created in high-skilled non-manual occupations such as administrative, marketing, logistics and sales managers, IT systems administrators, teaching professionals and technicians [3].

In order to develop the necessary competences for these requirements and to fulfil their mission of forecasting the market needs, universities need to focus on learning outcomes, not only on learning inputs. This will involve the development of an instrument which might be the qualifications framework, but it will require adequate structures, competence training management, learning outcomes management. This requires a change in the design of university curricula, in organising activities with students. All these lead to student-centred learning and competence-based education, but also to a need to cooperate with stakeholders.

We may mention several instruments developed to this purpose:

- European Qualifications Framework for Lifelong Learning - EQF and its national correspondents;
- Overarching Framework of Qualifications in the European Higher Education Area;
- Lifelong Learning Programme.

Learning Outcomes Management

Universities should offer innovative curricula, teaching methods and training/retraining programmes which include broader employment-related skills along with the more discipline-specific skills. Credit-bearing internships in industry should be integrated into curricula. This applies to all levels of education, i.e. short cycle, Bachelor, Master and Doctorate programmes. It also entails offering non-degree courses for adults, e.g. retraining and bridging courses for students not coming through the traditional routes. This should extend beyond the needs of the labour market to the stimulation of an entrepreneurial mindset amongst students and researchers.

Higher education should mainly focus on the development of core competences, namely those competences needed to live in a highly complex and interactive fast-changing society:

- Ability to study, to listen;
- Interact, communicate, be active and pro-active;
- Problem solving;
- Understanding other cultures, religions etc.

Universities should also provide their students behavioural models that would equally foster their personality development and their independence.

Training of adequate competences should allow everybody to understand the responsibility of fully achieving their own potential, of acting as a responsible member of society, in other words, of being aware of the social impact of their actions.

Management of graduates' insertion on the labour market

The interaction with the outside world will gradually make universities' activities in general, and their education, training and research agendas in particular, more relevant to the needs of citizens and society at large. It will help universities to promote their different activities and to convince society, governments and the private sector that they are worth investing in. In order to overcome persistent mismatches between graduate qualifications and the needs of the labour market, university programmes should be structured to enhance directly the employability of graduates and to offer broad support to the workforce more generally.

Development of national qualifications frameworks

Development of national qualifications frameworks is an important step towards the new skills and implementation of lifelong learning. The paramount goal is to ensure a

competitive higher education environment that can respond effectively to the challenges of the sustainable economy development. Those qualification frameworks should be designed so as to encourage greater mobility of students and teachers and improve employability. Student-centred learning requires empowering individual learners, new approaches to teaching and learning, effective support and guidance structures and a curriculum focused more clearly on the learner in all three cycles.

A NATIONAL QUALIFICATIONS FRAMEWORK FOR HIGHER EDUCATION. CASE STUDY: ROMANIA

The National Agency for Qualifications in Higher Education and Partnership with the Economic and Social Environment (ACPART) is the national authority for the establishment of the national qualifications framework in higher education and its regular updating. [8].

Principles of NQFHE design and implementation

In the design and implementation of NQFHE, ACPART *adopts* the following principles: *consensus and inclusion; research and forecast; quality assurance for NQFHE; facilitate change; international cooperation and transparency; autonomy and subsidiarity.*

Types and descriptors of competences

Each qualification shall be defined by means of **learning outcomes** expressed in terms of knowledge, skills and competences related to the respective level of university studies.

In the qualifications description one important factor shall be taken into account: the professional activity involves several competences with varying complexity:

- **professional competence** which is the proven capacity to select, combine and use adequately knowledge, skills and other attainments (such as values and attitudes) which are specific to a professional activity in order to solve successfully problem situations related to the respective profession, effectively and efficiently.
- **transversal competences** which are those capacities that transcend a certain field or study programme, having a transdisciplinary nature: teamwork skills, oral and written communication in mother tongue/foreign language, use of ICT, problem solving and decision making, recognition of and respect for diversity and multiculturality, learning autonomy, initiative and entrepreneurship, openness to lifelong learning, respecting and improving professional values and ethics etc.

Professional competences are the integrated and dynamic unit of knowledge and skills:

- **Knowledge,** as cognitive dimension and structural element of the competence, is expressed in terms of the following descriptors:
  (1) Knowledge, understanding and use of specific language;
  (2) Explanation and interpretation;
- **Skills**, as functional-actional dimension and structural element of the competence, are expressed in terms of the following descriptors**:**
  (3) Application, transfer and problem solving;
  (4) Critical and constructive reflection;
  (5) Creative-innovative conduct;

Transversal competences are values and attitudes that transcend a certain study programme/field and are expressed in terms of the following descriptors:

(6) Autonomy and responsibility;
(7) Social interaction;
(8) Personal and professional development.

General and specific professional competences are:

a) ***General professional competences,*** which are developed in the wider context of the *study field*;

b) ***Specific professional competences,*** which are developed in the narrower context of the *study programme*.

National Qualifications Framework for Higher Education Matrix

The NQFHE matrix includes: qualification levels, learning outcomes expressed in terms of knowledge, skills and competences as well as the level descriptors for qualifications in higher education.

The level descriptors for each type of learning outcomes detail the generic descriptors for each type of competence and for each qualification level: Bachelor, Master's, and Doctorate.

From a structural point of view, the NQFHE matrix integrates professional and transversal competences, each of the two categories of competences having its legitimacy and importance in practising a profession. They form a solidary couple that expresses the professional efficiency and effectiveness of a study programme graduate.

Professional competences are expressed in terms of knowledge and skills which cover comprehensively the professional expertise for any qualification.

In the matrix the **transversal competences** are structured as: role competences and personal and professional development competences. These take into account the social and group context of practising a profession, as well as the awareness of the continuing training need.

The generic descriptors introduced in the matrix indicate expected activities, outcomes and performance for each qualification level. They allow for the ***description*** of qualifications and, at the same time, formulate the necessary landmarks for the ***assessment*** of the competence level.

The matrix is an integrative approach of higher education qualifications and it provides two perspectives for the analysis of these qualifications:

- The **vertical one** which indicates the progress in professional competences from the level of ***knowledge and understanding***, the basic level of a learning outcome, **to the *creative and innovative level***, as well as the **transversal competences**.
- The **horizontal** perspective which presents a generic descriptor against the three university cycles: Bachelor, Master's and Doctorate. In this case, the descriptors highlight the competence development and the added value in the professional qualification level.

The vertical perspective emphasizes that a certain level of competence can be reached only if the subordinated levels have been achieved and consolidated.

The horizontal perspective demonstrates that each level of competence related to the three study cycles must integrate the previous levels. As a result, each level of a given competence has a relative autonomy, being conditioned by prior attainments, both horizontally and vertically.

Transversal Projects on Qualifications Framework and Lifelong Learning

In order to help universities and business communities to put together their means and efforts for the common benefits, ACPART has been implementing several projects funded by the European Commission through the Lifelong Learning Programme:

Developing key methodological units for the implementation of EQF by the means of NQFs – EQF by NQFs: www.eqfbynqfs.eu

Validating Learning for an Inclusive Society – InLearning: www.mqc.gov.mt

Building bridges between EQF and EHEA – HEQ_Bridges

EQF – adapted educational elements in a predictable framework of change – PREDICT

Using the great opportunities provided by the European Social Fund to Romania, ACPART is implementing a project named **Development of an operational system of qualifications in higher education in Romania (DOCIS),** in partnership with National Commission for Qualifications (France), and two major Romanian universities.

CONCLUSIONS

For the time being we can put together the four key concepts of our paper: *competence-based higher education, learning outcomes, sustainable development and qualifications framework.* Irrespective of the various ways we might choose to combine these concepts, there are some important conclusions that are worth mentioning:

- The higher education reform must be **a transformation of substance in order to really change the training of young people** and create the competences required by the knowledge society;
- Promoting the good governance of HE institutions means to give them instruments to solve and anticipate problems, to enhance the role and responsibilities of decision makers and transparency;
- In the process of knowledge transfer, **the university-industry interaction** becomes **crucial**;
- **The NQF should be an opportunity to define new skills for new direct jobs** in the existing industry and also for indirect or induced jobs for the sustainable development economy and as a consequence **to re-design the learning programmes and curricula** and develop a student-centred higher education.

One of the choices should be to invest in new skills in order to assure the employability of universities graduates and to respond more adequately to the labour market needs, today and moreover tomorrow.

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