T∪ning Journal for Higher Education

Echoes from micro and macro Higher Education Reform processes

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Tuning Journal for Higher Education (TJHE), Tuning Journal in short, is an international peer-reviewed journal publishing in English original research studies and reviews in all aspects of competence-based, student-centred, and outcome-oriented education reforms at university level across the globe. It is a joint initiative of the University of Deusto (Spain) and the University of Groningen (The Netherlands) that is run by the Tuning International Academy (http://tuningacademy.org/): an international meeting point for fostering innovative teaching, learning, and research in higher education.

The main goal of the Journal is to promote quality research into the 'Tuning Methodology' for designing, implementing, and assessing context-sensitive degree programmes and to subject the tools developed during Tuning projects and other educational projects to full academic scrutiny and debate among students, teachers, policy makers, administrators, and academics across societies, cultures, professions, and academic disciplines. To this end, the Journal invites applications for thematic issues, conference proceedings or monographs from all stakeholders. Guidelines for the preparation and submission of manuscripts are appended to this Issue and available at the web of the Journal: http://www.tuningjournal.org/

Tuning Journal for Higher Education (TJHE)

Echoes from micro and macro Higher Education Reform processes

Volume 3, Issue No. 2, May 2016

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Editorial

Editorial

Luigi F. Donà dalle Rose

Editor

Anna Serbati

Assistant Editor

The present issue highlights successes and weaknesses, lights and shade, occurring worldwide within the epochal process of reforms investing higher education and its actors and stakeholders.

The epochal paradigm shift, from input-centered to student-centered education, which in the last decades progressively penetrated the sequence of all educational levels from primary school to tertiary education, is experiencing a tumultuous and highly non-linear implementation process at university level. The general process regards huge numbers of people, whether actors or stakeholders, and its duration can hardly be predicted or even envisaged. Nevertheless, several related area processes, both at a macro and at a micro level are steadily in progress. In the present issue we present a number of successful micro-level initiatives and processes as well as the problematic messages which come from a fresh attempt to monitor the extent of the macro-process in the European area.

As to Europe, the macro-process is under debate and scrutiny since 1999, when a group of European Ministers of University and/or Education started the so called Bologna process. This latter soon became not only a process of convergence of several European HE systems, but a great 'laboratory' for the overall modernization of HEIs and for the concrete implementation of the educational paradigm shift. Operational activities underlying this specific most important aspect were already present in a limited number of countries, but the novelty here was the internationalization of the process, through a deep and convinced methodological dialogue and the identification of common reference points, in terms of competences and learning outcomes. The Tuning project and its promoters were key actors in such an overall process, at first in Europe but soon also in other world areas. This gave origin to a worldwide Tuning community, whose distinctive character was the dialogue and the common growth around shared concepts and methods,

which could easily be implemented at grass root level. In any case, the Tuning methodology gained universal reputation and can offer by now several concrete tools, which help implementing micro-processes of relevance in the general scenario of the paradigm shift. Moreover, the Tuning communities around the world enjoy the proactive thrust of the Tuning Academy, which promotes projects in several world areas and foster research initiatives, both within projects (e.g. the recent research forum held within the Tempus project Tuning MEDA) and with the DITA (Deusto International Tuning Academy) fellowships program. Do notice that as many as three articles of the present issue are a fruit of those fellowships (see below).

In the frame of this wide and articulated scenario, the first three articles of the present issue deal with the successful application of the Tuning methodological tools in three different and quite concrete, micro-cases, i.e.:

- *Defining the degree profile for a new interdisciplinary degree course*. The article by Ann-Marie Hughes, Chris Freeman, Tom Banks, Hans Savelberg, and Mary Gobbi represents an example of the use of Tuning methodology to construct benchmark learning outcomes and competences in an interdisciplinary area of healthcare practice. The experience described shows a collaborative process of European specialist rehabilitation technologists and educationalists aimed at developing the core competences and learning outcomes required by future Master's graduates in the new discipline of Advanced Rehabilitation Technologies. Future employability needs are determined through an imaginative, technological, and cost conscious entrepreneurial approach to education.

- *Assessing the quality of the degree programme* for Teacher Education at Alexandria University in Egypt by means of the Tuning survey tool "relevance vs achievement", applied to the programme generic and subject specific competences. The research article by Alsaeed Alshamy, based on the survey results in four groups of interested stakeholders plus some semi-structured interviews, evidences the significant gap existing between the deemed importance of the competences and their actual achievement. The author is led to interpret the gap in terms of missing paradigm shift from staff-centered to student oriented programmes and suggests a rich set of appropriate measures to reverse the situation in Alexandria, with an eye to extend the process to other African universities. This article was conceived and prepared with the support of DITA fellowships program.

- *Curriculum design by use of the Tuning methodology at two different institutions: commonalities and differences*. The article by Letícia

Soares de Vasconcelos Sampaio Suñe and Roberto de Armas Urquiza offers insights on competence-based curriculum development through the comparison of models applied at Deusto University (Spain) and at Tiradentes University (Brazil). The analysis deepens several aspects such as educational theories, curriculum design, psycho-pedagogical guidelines, teaching, learning, and evaluation methodologies. Authors present and discuss convergences of the approaches used in both institutions, but also differences and challenges of competence-based education, highlighted for mutual learning and for the purpose of transferability to other contexts. Again, this article is a fruit of the DITA fellowship program.

The remaining articles deal with more general aspects, in a musical '*crescendo*', which rises from a well tuned composition to a modern assemblage of sounds, seemingly out of tune.

The article by Sabina Hodzic *"raises the important and topical subject of developing generic competences in Doctoral students to prepare them better become entrepreneurs"*. It gives substance to the often discussed issue whether doctoral training may have jobs perspectives other than pure research. The research carried out by Hodzic investigates the expectations regarding "entrepreneurial competences ", in a group of entrepreneurs based in Bilbao area, many of them belonging to the University of Deusto's first Technology Based Business Nursery (TBBN). The 20 most important competences out of a set of 40 competences, selected from the specialized literature, were then assessed by a larger group of doctoral candidates in terms of relevance and achievement, mirroring a well-established Tuning surveying practice and leading to a shared proposal of the set "entrepreneurial competences". This article, again, was conceived with the support of a DITA fellowship.

The article by Maria Cinque offers an updated systematic overview regarding generic competences. The article is also based on a couple of related European projects. It focuses on the soft skills development in European countries, exploring some classifications and presenting best practices and methods for teaching and learning strategies, which at University level can promote and foster the development of generic competences. The Author offers a cross-institutional analysis and identifies the most important soft skills needed for a successful transition from University to the labour market. Starting from a chronological excursus of relevant studies in the literature on employability skills, she presents quantitative (surveys) and qualitative (focus groups) research from Europe and Third Countries, identifying the range of soft skills relevant for newly graduates.

Finally, the last article in the issue, by Tim Birtwistle, Courtney Brown, and Robert Wagenaar tries to answer the question "Where are we now in Europe in the actual provision of student centered learning opportunities?" The article explores the achieved changes in university education following the start of the Bologna process 15 years ago and the role played by methodologies (not only Tuning) related to the already discussed educational paradigm shift and based on learning outcomes and competences. The authors describe their research tool, based on *ad hoc* surveys and on-site visits at a group of universities. The research was carried out in both Europe and USA. The article describes the EU findings, with some limited hints to US results in the "surveys part" of the study. The report on the "visits part" of the study (visits at 14 universities in Europe) confirms the poor penetration of the learning outcomes-based approach in the European academic world and at varying extent in its several components, which show worrying gaps or "disconnects*"* in the actual relevance and/or perceived awareness of the macro process. In the optimistic wording of one reviewer, the article "*brings a fresh picture of the situation and some important conclusions, even alerts. The article is open and provocative, and therefore it can be expected to stimulate a debate among researchers in this field*".

As a conclusion to this editorial, we recall here, as a metaphor, the physical phenomenon of metal melting. A large piece of metal does not become liquid all of a sudden, but the transition from solid to liquid occurs via the formation of many tiny liquid islets around promoting sites. The islets become progressively larger and, when they start overlapping among themselves, that is the time for the metal to become liquid. No macro melting occurs without growing micro islets. In our view, this can represent the processes happening in higher education nowadays and we hope that institutions can learn from each other's micro practices and build common platforms of reflection and development towards the macro growth of the higher education worldwide area.

Articles

Using the Tuning Methodology to design the founding benchmark competences for a new academic professional field: the case of Advanced Rehabilitation Technologies

Ann-Marie Hughes, Chris Freeman, Tom Banks,
Hans Savelberg, and Mary Gobbi*

Abstract: Designing innovative high quality educational programmes to meet the workforce needs in emerging interdisciplinary areas of practice can present challenges to academics, students, employers and industrial partners. This paper demonstrates how the Tuning Process successfully helped to construct benchmark learning outcomes and competences in the area of healthcare practice where advanced technologies are used to improve movement namely Rehabilitation Technologies (RTs). The paper also discusses the engagement of patients, carers and carer organisations within the development of competences.

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Due to changing demographics, limited resources and the availability of technology, rehabilitation technologies are starting to be used for the assessment and treatment of patients. However there are currently no European transnational Bachelor or Master programmes targeted at educating people for the design, development, use and evaluation of these technologies. The contemporary field is predominantly staffed and resourced by engineering scientists and clinicians who were primarily educated in their primary discipline. The first generations of rehabilitation technologists have established this specialist field through invention, perseverance, and collaborative working. However, there is now a recognition that new and complementary skill sets are required by future graduates, whether engineering scientists or clinicians, so as to better meet the needs of clients and the employment market whether in the domains of industry, research, academia or clinical practice.

This project demonstrates how a group of European specialist rehabilitation technologists, supported by educationalists, collaborated to identify and develop the core competences and learning outcomes required by future Master's (second cycle) graduates in this new discipline. Building on the work of the Tuning Process and applying the principles embedded in the Bologna Process, future employability needs are determined through an imaginative, technological and cost conscious entrepreneurial approach to education.

I. Introduction

In this paper we demonstrate how a group of European specialist rehabilitation technologists, supported by educationalists, collaborated to identify and develop the core competences and learning outcomes required by future Master's (second cycle) graduates in the new discipline of Advanced Rehabilitation Technology (ART). Building on the work of the Tuning Process, and applying the principles embedded in the Bologna Process, future employability needs were determined through an imaginative, technological and cost conscious entrepreneurial approach to education. This paper presents a case study illustration to demonstrate how the Tuning methodology was adapted successfully to elicit the core competences in a new field of practice at the intersection between engineering scientists and clinicians. The paper also discusses the involvement of patients, carers and patient organisations to help develop the core competences.

Rehabilitation Technology (RT) illustrates the challenges and trends within contemporary higher education. Higher education, and its associated graduate workforce, is characterised by increasing interdisciplinary, shifting

boundaries within, and between, disciplines and the emergence of hybrid and new fields of study and work. The rapid advances in science and technology have already led to new disciplines being formed at the intersections of existing disciplinary research for example with biomedical scientists, biomedical engineers and interdisciplinary health research teams. While interdisciplinary education between clinical healthcare professions is not new,[1,2] interdisciplinary education between clinical professionals and engineering disciplines is a relatively new phenomena.

At the heart of this approach is the concept and application of collaborative working to develop the next generation of clinicians and scientists in the field. As Nissani argued, interdisciplinarity brings together distinctive features of two or more disciplines which are then applied to the domains of knowledge, research, education and theory and, in this case, clinical context and practice. Some of the known benefits of interdisciplinary research and knowledge are: creativity; new contributions brought by newcomers to the field; the avoidance of errors made by those from a single disciplinary field whose disciplinary knowledge/perspective may be inadequate; the capacity to address research and practical issues that lie at the intersections of the disciplines and require a more holistic approach.[3] Such interdisciplinarity needs facilitation, the use of a common framework of competence and programme development to mitigate any disciplinary discourse challenges. These challenges are themselves situated within a broader context of the skills required by a future healthcare workforce, economic trends and the health of the population.

I.1. *Economic, health, well-being, and educational drivers*

Within the European Union (EU) and other global economies, healthcare is one of the largest economic sectors, particularly in developed countries. The healthcare workforce absorbs a significant part of the labour force, for example within the EU-27 in 2010 there were approximately 17 million (8%)

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[1] Debra Humphris and Jill Macleod-Clark, "Shaping a Vision for a 'New Generation' Workforce" (University of Southampton: Institute for Public Policy Research Project Paper, 2002).
[2] Cath O'Halloran et al., "Developing Common Learning: The New Generation Project Undergraduate Curriculum Model," *Journal of Interprofessional Care* 20, no. 1 (2006).
[3] Moti Nissani, "Ten Cheers for Interdisciplinarity: The Case for Interdisciplinary Knowledge and Research," *The Social Science Journal* 34, no. 2 (1997).

related jobs.[4] To supply the global workforce it has been estimated that approximately 1 million new doctors, nurses, midwives and public health professionals are trained annually. Associated global annual expenditure for health professional education has been estimated at US $100 billion for medicine, nursing, public health and allied professions - less than 2% of health expenditure worldwide.[5] Significant drivers are influencing the sector with respect to the need for new skills and competences namely, changes in demography, a rise in non-communicable diseases particularly long term conditions, the legacies of conflicts and the emergence of innovative technologies. The EU Action Plan for the Health Workforce recognises these challenges with one action line specifically focussed upon the need to anticipate future skills needs with accompanying continuous professional development and learning to update and refresh the workforce.[6]

One example of the increase in both the incidence and prevalence of long term conditions are those associated with stroke. In the EU, over six million people with stroke require care and two thirds of these have impairment of their affected arm four years post-stroke, resulting in an annual cost of €38 billion.[7] Within the field of rehabilitation, the rapid rise in the proliferation of technologies to support rehabilitation not only poses challenges for the current healthcare workforce, but also raises questions concerning the need for new roles within this sector to meet future needs. The challenge therefore was to develop a new educational programme to equip students and staff for novel healthcare roles and expertise at the interface between healthcare professionals, currently assessing, delivering and evaluating rehabilitation solutions, and engineers and researchers designing, developing, implementing and evaluating innovative technologies, as well as those adjusting and customising existing devices.

In essence, the field of RT has emerged through the work of pioneers with primary discipline backgrounds in science, engineering and healthcare practice (typically physiotherapy or occupational therapy). What became apparent to these pioneers was the need to 'pass on' their expertise to develop the future, and thus create an expanded specialist workforce for rehabilitation

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[4] Eurostat, "Nace Rev.2 Categories 86 & 87," (2011).

[5] Julio Frenk et al., "Health Professionals for a New Century: Transforming Education to Strengthen Health Systems in an Interdependent World," *The Lancet* 376, no. 9756.

[6] European Commission, "Commission Staff Working Document on an Action Plan for the Eu Health Workforce Report No. Contract No. Swd 93 Final," (Strasbourg2012).

[7] Nick Townsend, Mike Nichols, Ramon Luengo-Fernandez, Jose Leal, Alastair Gray, Peter Scarborough and Mike Rayner,"European Cardiovascular Disease Statistics 2012," (2012).

technology. A group of renowned experts in the field of Rehabilitation Technology collaborated to develop the competences required in this new discipline through the Life Long Learning EU grant: (2012-3375/001-001). Facilitated by a Tuning expert, the team applied the Tuning methodology to establish the core competences for this new discipline. The paper proceeds by situating this development in the healthcare and educational context, before demonstrating the application of the Tuning methodology to competence and curriculum design. In the final section of the paper we address the barriers, obstacles and enablers that were encountered during the project.

I.2. *Educating for a 'new' academic discipline*

The field of RT is new. It is has been defined as the "systematic application of technologies, engineering methodologies, and scientific principles to meet the needs of, and address, the barriers confronted by individuals with disabilities. Relevant areas that are addressed are: education, rehabilitation, employment, transportation, independent living, and recreation. The term includes rehabilitation engineering, assistive technology (AT) devices, and assistive technology services".[8] Rapid technical advances are being made. Evidence is growing for the use of ATs to reduce impairments and in some cases improve function; technologies are increasingly used to augment conventional therapies, however translation into general clinical practice is still relatively limited. These advances, combined with the fragmentation caused by geographically dispersed academic and health centres, isolated disciplines and different health systems have led to the following consequences:

- Graduates entering the EU labour market were not equipped with the skills and expertise employers needed in this field.[9]

- Partly as a consequence of the first point, translation of technologies into clinical practice is limited, as stakeholder needs are not considered.

- From an education perspective, individuals working in the field of Rehabilitation Technology receive their first cycle education in their home discipline, primarily from an engineering/science base or a health

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[8] Rehabilitation Engineering and Assistive Technology Society of North America, "Resources and Definitions," http://www.resna.org/resources-definitions.
[9] European Commission, "White (Coat) Jobs: The Eu Health Workforce," in *Jobs for Europe: The Employment Policy Conference*, ed. European Commission (Brussels: European Commnission, 2012).

professional base. The individuals then practise in the field, and usually engage with second cycle education within their primary discipline. This meant that neither group gains significant understandings of the holistic needs of the stakeholders.

In light of these various drivers, it was evident that a collaborative venture was essential as there was no single academic or industrial partner sufficiently equipped to run a viable interdisciplinary education programme at European Master level. The EU Life Long Learning funding stream provided the vehicle to enable the expert group to collaborate and use the Bologna and Tuning process to develop a second cycle programme specifically geared to addressing this unmet need for an interdisciplinary Master in Advanced Rehabilitation Technologies, using the existing EU Tuning methodology. The ambition was to produce the next generation of RT leaders who could advance this growing market for clinical, research, technical and commercial purposes. In so doing, it was anticipated that the programme would bring together European partners with a track record of delivery in education and research in the field. Sharing best practice was an important goal, along with innovative methods of teaching and delivery, contributing to a high quality common standard. The process of collaboration was envisaged to facilitate cooperation and synergies between universities and companies. Through the development of benchmark competences, the transference of competencies gained within the rehabilitation industry would be possible.

I.3. *Interdisciplinary principles*

Interdisciplinary projects can be fraught with problems, and so the project identified key principles to underpin the collaboration. These included:

- A commitment to implement the Bologna Process through a training component to enable all partners to appropriately use the Tuning methodology and share common understandings of competences, learning outcomes and programme design.

- Ensuring that questionnaires and other key materials were amenable to translation in local languages to reflect differing educational and research cultures.

- Contributing to researcher and student mobility and transfer of qualifications.

- Linking existing research centres, strengthening and building collaborations to design, develop, assess and evaluate technologies which will help in addressing the major challenges of coping with an ageing population.

- Sharing the educational knowledge gained with external colleagues so they could use, enhance and comment on the competences developed through the website.

The importance of improving the interaction between front line clinicians, basic scientists, and research consortia in this field to improve translation was a key finding of the Cumberland Consensus Working Group (2009).[10] Similarly, Burridge and Hughes (2010) who reviewed development and preliminary clinical testing of novel technologies including those from non-medical fields, such as the internet, virtual reality, and sensor and control engineering found that the translation of research into clinical practice has been impeded by an absence of robust clinical effectiveness and usability evidence.[11] The main users here of course are patients, their carers and front line staff. Bringing together interested stakeholders was considered a stepping stone towards addressing the hitherto lack of a strategic approach to the design, development, assessment and evaluation of new technologies. While there are economic consequences associated with competition for small grants, and reduced competitiveness of the European Industry, more crucially co-design of new technologies is critical to ensure they are appropriate for the stakeholders. This meant that the 'designers' needed not only collaborative working skills, but also skills in relating to user groups like patients and their carers. While the involvement of stakeholders is intrinsic to the Tuning Methodology, in this project the stakeholder group was extended to involve patient, carers and patient and carer organisations, students, clinicians, and small and medium sized enterprises. These groups have traditionally not been consulted about future workforce skills. Their engagement was essential to fully understand the way this discipline was emerging; to gather information about the perceived educational and skill needs of this 'new' workforce and to ensure that the users' needs were addressed positively.

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[10] Group Cumberland Consensus Working et al., "The Future of Restorative Neurosciences in Stroke: Driving the Translational Research Pipeline from Basic Science to Rehabilitation of People after Stroke," *Neurorehabil Neural Repair* 23, no. 2 (2009).

[11] Jane Burridge and Ann-Marie Hughes, "Potential for New Technologies in Clinical Practice," *Current Opinion in Neurology* 23, no. 6 (2010).

I.4. *Application of the Tuning Process: Programme and Competence Design*

While the Tuning methodology is well documented,[12] its use to create a new professional workforce at post-graduate level has not been reported. The Tuning methodology comprises five crucial action lines around which the project plan work packages were constructed. These were adapted to develop the programme as Table 1 demonstrates. A summary of these stages now follows.

Table 1

Application of Tuning action lines

Tuning Action Lines	Adaptation and interpretation Stages of Project
1. Generic academic competences	1. *Establishing benchmark competences and programme learning outcomes*
2. Subject-specific competences	
3. The role of ECTS as an accumulation system	2. *Establishing the ECTS modular framework* for the programme
4. Approaches to learning, teaching and assessment	3. *Programme design work packages*
5. The role of Quality enhancement in the educational process (emphasizing systems based on internal institutional quality culture)	4. *Inter-institutional Quality Governance:* Establishing institutional quality mechanisms and how they could inter-relate

The actual programme design similarly adapted the ten steps outlined by Lokhoff et al. , incorporating the five action lines.[13] Many of the activities ran concurrently, particularly once the programme learning outcomes had been developed. Step 10, which included the implementation and evaluation stage, was replaced by the Quality Framework and Inter-institutional quality governance work package which was necessary to enable a double award and European Master programme to be developed. Analysis of this component of

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[12] *Universities' Contribution to the Bologna Process. An Introduction*, ed. J; Wagenaar Gonzalez, R., 2nd ed., Tuning Educational Structures in Europe (Bilbao, Spain: University of Deusto Press, 2008).
[13] Jenneke Lokhoff et al., eds., *A Tuning Guide to Formulating Degree Programme Profiles. Including Programme Competences and Programme Learning Outcomes* (Bilbao: Universidad de Deusto, 2010): 15.

the project is beyond the scope of this paper. The working definitions of both competence and learning outcome were those used within the Tuning methodology and European Qualifications Framework.

Step 1: Determine need and potential

While the application for funding had articulated the need for the programme, this was continually revisited with stakeholders throughout the project. For this project the partners agreed on five stakeholder groups which together included students, patients and carers, potential employers, academics and healthcare professionals (working clinically). This included verifying the existence of new or emergent programmes internationally and inviting open comments via the website to interested parties. The universities within the consortium recruited students and academics from their existing clinical or engineering disciplines. Specifically, students who might be interested in this field were sought as there were no existing interdisciplinary RT students. The consortium members and their research or professional networks were used to recruit patients using rehabilitation technologies and employers and industry partners.

Step 2: Defining the profile and the key competences & Step 3: Formulate the Programme Learning Outcomes

In these stages, the project partners generated a set of draft competences through a series of interactive workshops. In these workshops partners first established the profile of the graduate they wished to develop and then identified the programme competences from both an interdisciplinary and monodisciplinary perspective. Key generic competences were also recognised. They considered the nature of the person they wished to develop, the competences and skills that they should have, and the roles/health settings and employment environments in which the person might work. The competences were further refined to be clustered as either being specific to those with a predominantly clinical or engineering background or those that were competences core to both groups and all future RT professionals. These were expressed as simple statements that could then become either competences or intended learning outcomes. For example:

- Outcome core to all students: understands the impact of disability on people and society.

- Outcome specific to clinicians: can use healthcare knowledge to develop advanced rehabilitation technology.
- Outcome specific to engineers or scientists: can identify the healthcare aspects of advanced rehabilitation technologies.

Prior to the questionnaire going 'live', awareness was raised at RT conferences and open days, and people were invited to leave contact details if they wanted to have further information.

Finally, a list of draft benchmark statements was formulated through consensus that would be tested with stakeholders through the on-line Tuning questionnaire. Each project partner had responsibility for identifying their key stakeholders and building relationships. The questionnaire was translated into French and Italian, and then back translated to check for accuracy. The questionnaire was piloted with a sample of 20 people, including representatives from all stakeholder groups. Subsequent refinement occurred and the final questionnaire was distributed from 11th June 2013 until the 5th August 2013. The questionnaire was administered and analysed by the University of Deusto according to the traditional Tuning methodology and the findings are found in the next section. Once the final competences had been designed, they were then converted into programme learning outcomes (PLO).

Step 4: Modularisation

It was self-evident that modularisation was necessary to enable student and staff mobility between four universities. The key issue was determining the ECTS equivalence in terms of module size and accommodating the different academic terms employed by the respective partner institutions. Finally the basic module size was agreed at 10 ECTS with a 2 year full time programme credit value of 120 ECTS. Four semesters of 30 ECTS were agreed, comprising six core compulsory modules, 30 ECTS for optional modules and a required 30 ECTS empirical research dissertation.

Step 5: Identify competences and formulate learning outcomes for each module

Using the table matrix design of Programme Competences (PC) and Progamme Learning Outcomes (PLO), the partners first clustered the PLOs into groups that represented core research, core engineering or clinical pathways, identifying any generic competences that could be developed in

more than one area. The remaining PC and PLOs were then clustered and debated. In this debate, cognizance was taken of the development of student learning and those competences which relied on prior learning: hence the sequence of modules could then be determined. Once the modules were developed in outline, a similar programme matrix was developed for the generic competences so that specific modules were identified to include generic competence acquisition (also known as key skills).

Step 6: Determine the approaches to teaching, learning and assessment

Once the draft module learning outcomes had been identified for each module, module leaders then created the module profile identifying what their ideal learning, teaching and assessment strategies would be.

Step 7: Verifying the extent to which the key generic and subject specific competences are addressed throughout the programme

In this final validation step, a group workshop of all the partners critically reviewed the modules in their entirety and mapped the generic and subject specific competences to ensure there was constructive alignment, coherence of student progression and integrity of the programme.

Step 8: Description of the programme and modules

A programme description and module descriptions were developed on the basis of the profile, key Programme Competences, Programme Learning Outcomes, allocation of credits and the teaching, learning and assessment approaches identified.

Step 9: Balance and feasibility

Once the final pedagogies and credit structure was in place, it was possible to check the balance and feasibility of the programme ensuring that the programme was realistic in expectation of the students both in terms of their academic and clinical achievements, but also their workload and time management.

I.5. *Application of the Tuning Process: Analysis and determination of the benchmark competences*

The questionnaire developed can be found in Appendix 1 and the results are in the next section.

II. **Ratings and rankings of the generic and subject specific competences**

For each competence respondents were asked to rate:

a) how **important** they thought it was that a student should acquire the competences in his/her education at a level of Master of Science, using the values 1 to 4 according to the following key: 1= Not important, 2= Slightly important, 3= Moderately important, 4= Very important.

b) how **achievable** the competence was through the use of an education at MSc level, using the values 1 to 4 according to the following key: 1= Not achievable, 2= Slightly achievable, 3= Moderately achievable, 4=Very achievable.

Respondents were then asked to rank the five most important competences according to their opinion in order of importance by assigning them a score from 1 to 5 (where 1 was most important). To analyse the results, the first chosen competence was assigned 5 points, the second one 4 points, the third one 3 points, the fourth 2 points and 1 point to the fifth and last one. Competences not chosen were assigned zero points.

III. **Results**

Consent to participate was assumed following completion and submission of the online questionnaire (Appendix 1). A total of 485 questionnaires were returned. These comprised 199 (41%) academics, 36 (7%) employers, 95 (20%) students, 134 (28%) clinicians, and 21 (4%) patients and carers or patient organisations. Responses were anonymous. Not all respondents completed the questionnaire for both the subject specific and the generic competences; the numbers of respondents are presented for each in Table 2.

Table 2

Response frequencies in groups and types of competences

Stakeholders	Competencies	
	Subject specific	Generic
Academics	199	192
Employers	36	35
Students	95	87
Clinicians	134	130
Patients	21	19
Total	485	463

III.1. *Ratings and rankings for Subject Specific and Generic Competences*

Ratings: Importance and achievement ratings for each competence are displayed in Figure 1. All stakeholders rated all the competencies as important with scores over 2.7, and achievable with scores over 2.1. Importance ratings were higher than achievement ratings for all competencies except for the following subject specific competences 15 (Specialise in an area of rehabilitation technology) voted by academics, clinicians, employers, and students), 14 (Knows the processes of innovation and commercialisation) voted by students alone, and 4 (Can create technologies to meet the needs of different patient populations), 12 (Can work towards commercial exploitation of advanced rehabilitation technologies) and 14 (Knows the processes of innovation and commercialisation) voted by patients, carers and patient organisations alone.

The highest rated subject specific competences in terms of importance across the different stakeholder groups were by academics 18 (Can collaborate with engineers and scientists), by employers 21 (Can collaborate with health professionals) and 6 by the group categorised as 'patients' which this included patients, carers and patient organisations (Can combine knowledge from different specialisations). The highest rated generic competencies in terms of importance were for employers 2 (Can work with experts from different professions), for patients 3 (Can problem solve, make decisions and adapt to change), and for clinicians 9 (Can work safely, effectively, and ethically).

The most striking difference of opinion for subject specific competencies was on competence 13 (Can advise policy makers in the use of rehabilitation

technologies) with patients and carers and carer organisations rating this as more important and more achievable than the other stakeholder groups especially employers. The most striking difference of opinion for generic competencies was for both importance and achievability on competence 7 (Do not impose their personal views and are sensitive to cultural differences) with patients and carers and carer organisations rating this as more important that the other stakeholder groups especially employers, whilst clinicians rated it as more achievable than all other groups, especially employers.

Ranking: The five top ranked competencies across each stakeholder group are displayed in Table 3. Across all stakeholder groups the key common top ranked subject specific competencies were: Understands the impact of disability on people and society, Can design rehabilitation technologies to meet individual's needs. Where priorities differed: Patients, carers and patient organisations prioritised a holistic approach, patient needs and health and safety. Other groups prioritised technologies to improve health outcomes (Students, academics and clinicians), combined knowledge (employers, students, academics only), using research and theory (academics and clinicians), interdisciplinary working (employers only), technologies to improve patient population needs (students only) and roles and responsibilities (clinicians only).

Across all stakeholder groups the key top common top ranked generic competencies were: can communicate effectively, can work with experts from different professions and can work safely, effectively, and ethically. Where priorities differed: patients, carers and patient organisations prioritised high standards and learning from experience to develop self and professions. Employers, students, academics and clinicians all prioritised problem solving and learning from experience to advance technology.

III.2. *Agreement between stakeholder groups*

For each result (importance, achievement and ranking) the correlations among the means are given by stakeholder groups in Table 4. It can be observed that the correlations across all competencies for importance, achievement and rankings between the other groups and patients, carers, and carer organisations are the lowest. For subject specific competencies: across ratings for importance and achievement, and rankings the highest correlation is between academics and clinicians and the lowest between employers and patients, carers and patient organisations. With generic competencies the case was more complex: across ratings for importance the highest correlation

Subject Specific

1ᵃ Importance
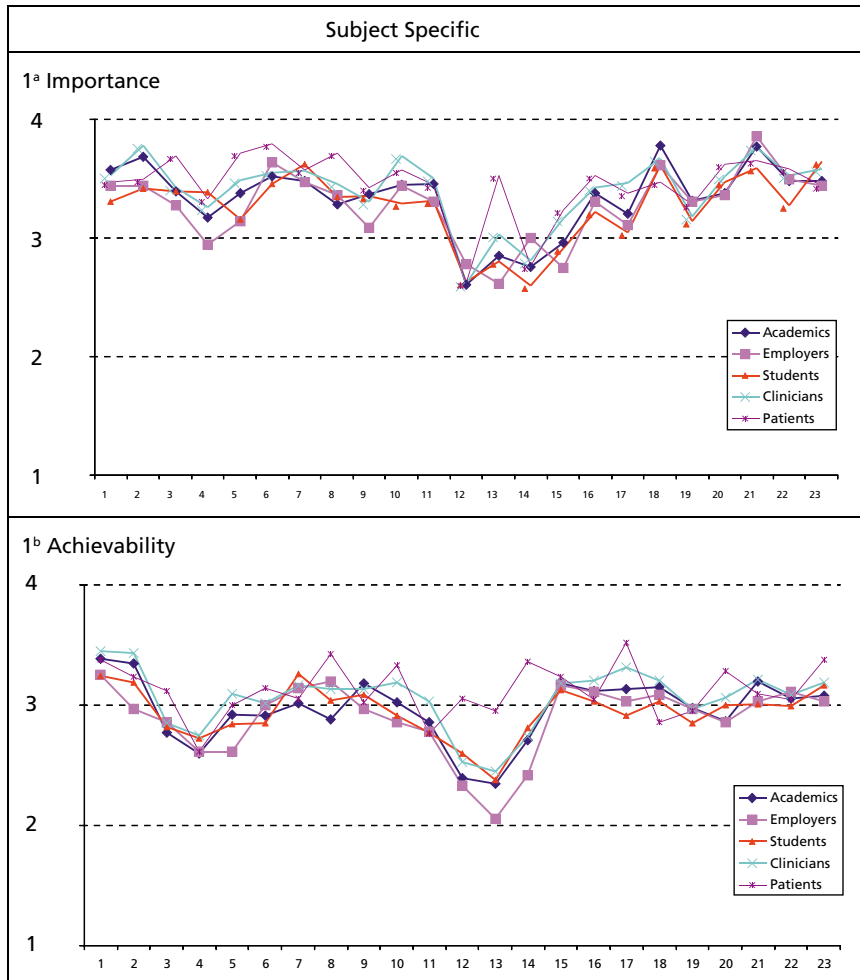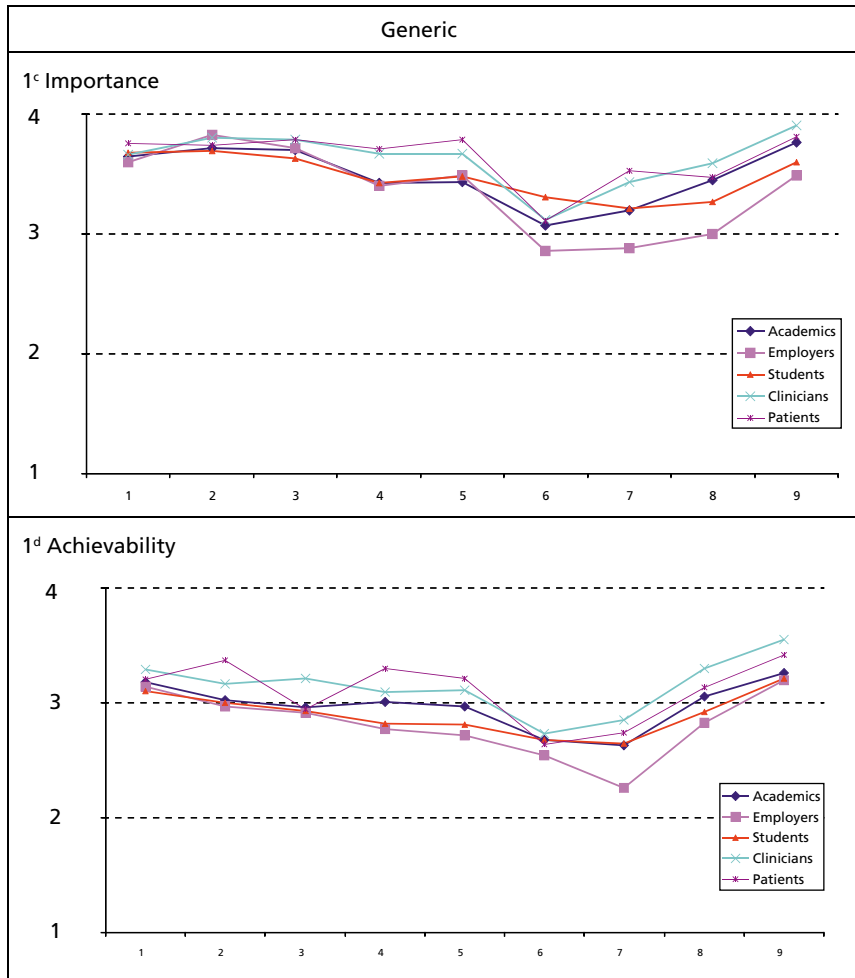
1ᵇ Achievability

Figure 1

Mean stakeholder ratings of competencies for subject specific and generic competencies: importance and achievability

(Responses were weighted so that the factors identified as most important were scored 5 and those of least importance scored 1. The competences not chosen were assigned zero points). For ease of reading "Patients, carers and patient organisations" responses are categorised as "Patients".

Table 3

Top five ranked subject specific and generic competencies for each stakeholder group

Subject specific Rankings	Employers	Patients, carers, and patient organisations	Students	Academics	Clinicians
1	Engineering pathway: Can collaborate with health professionals	Understands the impact of disability on people and society	Can design rehabilitation technologies to meet individual's needs	Can design rehabilitation technologies to meet individual's needs	Understands the impact of disability on people and society
2	Can design rehabilitation technologies to meet individual's needs	Takes into account physical, psychological, spiritual, and social well-being. Takes into account physical, psychological, spiritual, and social well-being	Can combine knowledge from different specialisations	Can combine knowledge from different specialisations	Can use technology to improve health outcomes
3	Understands the impact of disability on people and society	Can create technologies to meet the needs of different patient populations	Can create technologies to meet the needs of different patient populations	Can use research and theory to advance the use of rehabilitation technologies in clinical practice	Understands the specific role and responsibilities of a rehabilitation technologist
4	Can combine knowledge from different specialisations	Can design rehabilitation technologies to meet individual's needs	Can use technology to improve health outcomes	Understands the impact of disability on people and society	Can design rehabilitation technologies to meet individual's needs
5	health professionals pathway: Can collaborate with engineers and scientists	Is able to conduct a health and safety risk assessment of rehabilitation technologies	Understands the impact of disability on people and society	Can use technology to improve health outcomes	Can use research and theory to advance the use of rehabilitation technologies in clinical practice

Generic Rankings	Employers	Patients, carers, and patient organisations	Students	Academics	Clinicians
1	Can problem solve, make decisions and adapt to change	Can work with experts from different professions	Can problem solve, make decisions and adapt to change	Can communicate effectively	Can problem solve, make decisions and adapt to change
2	Can communicate effectively	Can work safely, effectively, and ethically	Can work with experts from different professions	Can work with experts from different professions	Can work safely, effectively, and ethically
3	Can work with experts from different professions	Can work within relevant codes of conduct to achieve a high standard	Can communicate effectively	Can problem solve, make decisions and adapt to change	Can communicate effectively
4	Can learn from experience to improve the use of advanced rehabilitation technology in healthcare	Can communicate effectively	Can work safely, effectively, and ethically	Can work safely, effectively, and ethically	Can work with experts from different professions
5	Can work safely, effectively, and ethically	Can learn from experience for their own and their profession's development	Can learn from experience to improve the use of advanced rehabilitation technology in healthcare	Can learn from experience to improve the use of advanced rehabilitation technology in healthcare	Can learn from experience to improve the use of advanced rehabilitation technology in healthcare

Table 4

Correlation between groups for subject specific and generic competencies

	Subject specific					Generic				
	Academics	Employers	Students	Clinicians	Patients	Academics	Employers	Students	Clinicians	Patients
Importance										
Academics	1.0000					1.0000				
Employers	0.8848	1.0000				0.8707	1.0000			
Students	0.8904	0.7883	1.0000			0.8630	0.9476	1.0000		
Clinicians	0.9387	0.8098	0.8587	1.0000		0.9329	0.8137	0.7152	1.0000	
Patients	0.7247	0.5660	0.7180	0.8067	1.0000	0.8247	0.8277	0.7089	0.9299	1.0000
Achievement										
Academics	1.0000					1.0000				
Employers	0.8478	1.0000				0.9441	1.0000			
Students	0.8725	0.8684	1.0000			0.9353	0.9609	1.0000		
Clinicians	0.9605	0.8546	0.8725	1.0000		0.9439	0.8716	0.9258	1.0000	
Patients	0.3486	0.3133	0.4054	0.4134	1.0000	0.8795	0.7606	0.7599	0.7994	1.0000
Ranking										
Academics	1.0000					1.0000				
Employers	0.8478	1.0000				0.9134	1.0000			
Students	0.8725	0.8684	1.0000			0.9462	0.9796	1.0000		
Clinicians	0.9605	0.8546	0.8725	1.0000		0.9624	0.8726	0.9018	1.0000	
Patients	0.3486	0.3133	0.4054	0.4134	1.0000	0.3505	0.0823	0.1853	0.2391	1.0000

The closer the value to 1 the higher the agreement between stakeholders.
For ease of reading "Patients, carers and patient organisations" responses are categorised as "Patients".

is between academics and clinicians and the lowest between students and patients, carers and patient organisations; for achievement the highest correlation is between employers and students and the lowest between students and patients, carers and patient organisations; and for rankings the highest correlation is between employers and students and the lowest between employers and patients, carers and patient organisations.

IV. **Discussion**

This questionnaire provides evidence of stakeholders' views on the competencies which should be used in the design of a European Master in Advanced Rehabilitation Technology (ART) and a benchmark from which future developments in the field may be compared. ARTs will become increasingly important in the drive to deliver cost-effective improvements in rehabilitation and to satisfy, for example EU legislation concerning medical devices, consumer choice, freedom of movement of staff and clients.

Despite the increasing reference to ARTs in healthcare policy, research into effectiveness and investment in commercial development, no previous questionnaire has sampled or compared what stakeholders' views are regarding course competences. Our questionnaire has generated new information about the importance and achievability of competences, and highlighted where stakeholder groups have different priorities. Based on our findings, we discuss how opportunities can be exploited and barriers overcome. We also discuss the influence our sample may have had on our findings, the strengths and limitations of the questionnaire and how it will impact on future work.

The correlations between groups for subject specific and generic competencies highlight the value of using the Tuning tool to capture views from the range of stakeholders to identify where key differences in rating and rankings lie. In this example the main differences between what is important and achievable to patients, carers and patient organisations and the other groups, particularly employers is noteworthy. The key differences in priorities for the former in terms of importance and achievability were "advising policy makers in the use of rehabilitation technologies" and "do not impose their personal views and are sensitive to cultural differences" with patients and carers and carer organisations rating this as more important that the other stakeholder groups especially employers, whilst clinicians rated it as more achievable than all other groups, especially employers. Patients, carers and patient and carer organisations prioritised in the rankings for subject specific

competences, a holistic approach, patient needs and health and safety. Within the generic competencies the group prioritised high standards and learning from experience to develop self and professions. It should not be taken that employers do not think that these competencies are important, however they merely prioritised other areas. The high rating and ranking of these competencies does highlight differences which a Master Programme can address.

In the introduction to this paper, we drew attention to a number of challenges that we envisaged could be addressed by using the Tuning process when developing competences for an interdisciplinary Master programme in a new academic discipline. We identified the challenges of multidisciplinarity, combining expertise in care, technology and science, and students being well prepared for the labour market. The results of the study show that different stakeholders set different priorities. Traditionally, (often monodisciplinary) programmes were designed by academics, who have their (limited) view on competences required. The discrepancy between stakeholders that we found when applying the Tuning approach makes the limitations in the view of academics explicit and shows that relying on academics alone could lead to programmes that are not optimally tuned to the wide range of societal requirements.

The second important point to note is the crucial role that interdisciplinary collaboration and dialogue plays. This is most evident when there is concurrent development of interdisciplinary competences for shared core competences and specific competences related to the student pathway as clinician or engineer. This brings a new dimension to interdisciplinary competence development as both groups of academics and students need to comprehend the pathway of their professional collaborators. It will be interesting to witness whether this changes as RT emerges over the next decade.

The study has several strengths. It is based on an international questionnaire of a large number of stakeholders (n = 485). The competencies were developed using data generated by two meetings with the core group and subsequently pilot tested to ensure relevance, comprehensiveness and to minimise bias. However there were limitations. There is a selection bias in the way the questionnaires were designed and potentially how participants responded to them. The respondents, being a self-selected sample, mean that the results are biased towards the views of people interested in ARTs. Also the patient, carer and carer organisation respondents constituted only 4% of the respondents.

People may also have been more likely to look for and complete the questionnaire if they had an interest in ARTs. Additionally, the response rate cannot be specified for the online version of the questionnaire. The number

of individuals involved is uncertain, for instance we cannot guarantee that individuals have not completed more than one questionnaire. Moreover, a social desirability bias (adapting responses to meet what people believe they should be thinking) cannot be ruled out.

V. Conclusions

This study has enabled benchmark competences to be identified for a European Master of Science in Rehabilitation Technologies. The results of this consensus study will inform the development of a European Master ensuring the programme developed meets stakeholder needs, as well as providing a benchmark ensuring best practice for the emerging field, which can be reassessed in the future. We have also demonstrated how adapting the Tuning methodology in this context revealed the crucial role played by stakeholders in the design of new emerging fields. It is clear that the quality of programmes, and consequently the postgraduate workforce, can be strengthened through the engagement of a wide range of international stakeholders.

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Annexes

A) Questionnaire

EU MSc in Advanced Rehabilitation Technologies

European Questionnaire on Subject Specific and Generic Competences

This EU funded project hopes to design and implement a master's level degree in advanced rehabilitation technologies. The project team have created the following questionnaire to help capture your views on what skills and competences you believe are appropriate for a graduate of the programme in order to design a course that fits the needs of individuals, society and the healthcare industry.

The survey has been split into two parts: Subject Specific competences and Generic competences. Please complete both sections. **Please complete ALL questions, DO NOT leave any blanks.**

Many Thanks.

For further information on the EU project please visit www.rehabtech. soton.ac.uk/

> We are interested in your opinions. There are no right or wrong answers. Most of the questions will require you to either tick the box, or circle the number which most accurately reflects your own opinion using a BLUE or BLACK ball-point. If you make a mistake, do not worry. Just cross through the answer you DO NOT want and make your selection as before.

European Questionnaire on Subject Specific Competences

Below are presented a series of specific competences to your area. Please answer all the questions. Please select the best option in each case by ticking the box.

1) I am a

	Student (from health/biomedical/neuro sciences, psychology, or engineering background)
	Researcher / Academic / Lecturer (from health/biomedical/neuro sciences, psychology, or engineering background)
	Clinician (any health professional working with patients)
	Patient, Carer, and Patient Support Organisation
	Current or Potential Employer / Provider (e.g. from an engineering, supplier, technology, healthcare, or industrial company)

2) Country or Region you live in:

	Finland
	France
	Ireland
	Italy
	Romania
	Switzerland
	The Netherlands
	United Kingdom

For each of the skills listed below, please indicate:

a) how **important** you think it is that a student should acquire the competence in his/her education at a level of Master of Science. Please use the values 1 to 4 according to the following key: 1= Not important, 2= Slightly important, 3= Moderately important, 4= Very important.
Please, circle the number which most accurately reflects your own opinion

b) how **achievable** you think that the competence is through the use of an education at MSc level. Please use the values 1 to 4 according to the following key: 1= Not achievable, 2= Slightly achievable, 3= Moderately achievable, 4=Very achievable.
Please, circle the number which most accurately reflects your own opinion

Programme Competences		Importance 1 (not important) - 4 (very important)	Achievability 1 (not achievable) - 4 (very achievable)
Specific Competences			
1	Understands the specific role and responsibilities of a rehabilitation technologist.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
2	Understands the impact of disability on people and society.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
3	Can design rehabilitation technologies to meet individual's needs.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
4	Can create technologies to meet the needs of different patient populations.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
5	Takes into account physical, psychological, spiritual, and social well-being.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
6	Can combine knowledge from different specialisations.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
7	Can use technology to improve health outcomes.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
8	Can use technology to improve the overall experience of rehabilitation.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
9	Can do research in rehabilitation technologies	1 – 2 – 3 – 4	1 – 2 – 3 – 4
10	Can use practical knowledge and theory to advance rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
11	Can use research and theory to advance the use of rehabilitation technologies in clinical practice.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
12	Can work towards commercial exploitation of advanced rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
13	Can advise policy makers in the use of rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
14	Knows the processes of innovation and commercialisation.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
15	Specialise in an area of rehabilitation technology.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
16	Is able to conduct a health and safety risk assessment of rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
17	Understands legal requirements related to a rehabilitation technology.	1 – 2 – 3 – 4	1 – 2 – 3 – 4

For each of the skills listed below, please indicate:

a) how **important** you think it is that a student should acquire the competence in his/her education at a level of Master of Science. Please use the values 1 to 4 according to the following key: 1= Not important, 2= Slightly important, 3= Moderately important, 4= Very important.
Please, circle the number which most accurately reflects your own opinion.

b) how **achievable** you think that the competence is through the use of an education at MSc level. Please use the values 1 to 4 according to the following key: 1= Not achievable, 2= Slightly achievable, 3= Moderately achievable, 4=Very achievable.
Please, circle the number which most accurately reflects your own opinion.

EITHER health professionals pathway			
18	Can collaborate with engineers and scientists.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
19	Is aware of engineering aspects of advanced rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
20	Can use healthcare knowledge to develop advanced rehabilitation technology.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
OR Engineering pathway			
21	Can collaborate with health professionals.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
22	Is aware of the healthcare aspects of advanced rehabilitation technologies.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
23	Can use engineering and science knowledge to develop advanced rehabilitation technology.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
The blank spaces below may be used to indicate any other competences that you consider important but which do not appear on the list. (optional fields)			
24			
25			
26			

46

Please rank below the five most important competences according to your opinion. Please write the number of the competence (1 to 23 competences suggested) within the box. Mark on the first box the most important, on the second box the second most important and so on.

1	Competence Number	
2	Competence Number	
3	Competence Number	
4	Competence Number	
5	Competence Number	

Many thanks for your cooperation in the first part.

European Questionnaire on Generic Competences

Below are presented a series **of generic competences** to your area. Please answer all the questions. Please select the best option in each case. **For each of the skills listed below, please indicate:**

a) how **important** you think it is that a student should acquire the competence in his/her education at a level of Master of Science. Please use the values 1 to 4 according to the following key: 1= Not important, 2= Slightly important, 3= Moderately important, 4= Very important.
Please, circle the number which most accurately reflects your own opinion

b) how **achievable** you think that the competence is through the use of an education at MSc level. Please use the values 1 to 4 according to the following key: 1= Not achievable, 2= Slightly achievable, 3= Moderately achievable, 4=Very achievable.
Please, circle the number which most accurately reflects your own opinion

	Generic Competences	Importance 1 (not important) - 4 (very important)	Achievability 1 (not achievable) - 4 (very achievable)
1	Can communicate effectively.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
2	Can work with experts from different professions.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
3	Can problem solve, make decisions and adapt to change.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
4	Can learn from experience for their own and their profession's development.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
5	Can learn from experience to improve the use of advanced rehabilitation technology in healthcare.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
6	Able to work in different environments, organisations and countries.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
7	Do not impose their personal views and are sensitive to cultural differences.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
8	Can work within relevant codes of conduct to achieve a high standard.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
9	Can work safely, effectively, and ethically.	1 – 2 – 3 – 4	1 – 2 – 3 – 4
The blank spaces below may be used to indicate any other competences that you consider important but which do not appear on the list. (optional fields)			
10			
11			
12			

Please rank below the **five most important competences** according to your opinion. Please write the number of the competence (1 to 9 competences suggested) within the box. Mark on the first box the most important, on the second box the second most important and so on.

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1	Competence Number	
2	Competence Number	
3	Competence Number	
4	Competence Number	
5	Competence Number	

Many thanks for your cooperation.

NOW PLEASE RETURN THE COMPLETED QUESTIONNAIRE IN THE ENVELOPE PROVIDED

Teacher Education Programmes at Alexandria University with reference to Tuning Methodology[*]

Alsaeed Alshamy[**]

Abstract: The study aims at using the outcomes of Tuning Africa Project — I to propose implications for policy and practice for enhancing the quality of Teacher Education Programmes in Egyptian higher education. It investigates the views of different stakeholders — academics, students, graduates and employers — who relate to three faculties in charge of Teacher Education at Alexandria University. The study focuses on the generic competences and the key subject-specific competences which future teachers should be acquainted with. The data have been collected through questionnaires administered to 384 participants and through semi-structured interviews with 10 academics. The main findings show that, across all different stakeholders, there are significant gaps for both generic and subject-specific competences between what is deemed important and what is deemed as the level of achievement at Alexandria University. The average ranking for both generic and subject-specific competences was 3.75 in terms of importance but only 2.54 in terms of achievement. This is an indication that effort and intentional strategies needed to be put in place to minimize the gaps of the relevant Teacher Education Programmes. This calls for a paradigm shift from input and staff-centered programmes to output and student oriented ones. In order to achieve such a paradigm shift, several actions concerning policy and practice should be promoted. Among them, the study proposes changing the regulations of existing programmes; revising programmes in order to allow inclusion of the Tuning determined generic and subject-specific competences. The study further proposes raising awareness about the importance of competence-based learning among academics, students, graduates, employers and the society at large as well as involving all stakeholders in the process of curriculum design and quality enhancement. All these are potential in promoting capacity building and

training for academics who are equipped to incorporate new competences in the existing programmes/courses. Such academics will be able to initiate new courses with commonly agreed structures; they will be able to incorporate the needed competences in such a way that comparability and equivalence of learning outcomes between Alexandria University and other African universities become possible.

Keywords: teacher education; higher education; Alexandria University; Tuning Africa Project I; competence-based learning; generic competences; subject-specific competences; internationalization; regionalization; policy learning.

I. **Introduction**

This paper starts with a brief introduction, which sets out the research problem and the related research questions. Subsequently, a brief overview of Tuning approach and Tuning Africa Project — I between internationalization and regionalization is presented, followed by a brief articulation on Competence-based Learning. This leads to a section on policy learning vs. policy borrowing approach. The research design is, then, discussed including: the methodological stance and approach and methods of data collection. The results of the empirical enquiry are reported, followed by discussion, concluding remarks and implications of the study for policy and practice.

II. **Rationale for the study**

The recognition that higher education is a major driver of economic competitiveness in the global economy has made its quality ever more important, contributing to social and economic development in four main ways. Firstly, it makes an economic contribution through the formation of human capital, primarily by training a qualified and adaptable labour force. Secondly, it builds the knowledge base through research and development. A third way is through the dissemination and use of knowledge through interactions, such as consultancy, with the wider economy. Fourth, it contributes to the maintenance of knowledge via inter-generational storage and transfer.[1] However, there are multiple

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[1] OECD, "Tertiary Education for the Knowledge Society: OECD Thematic Review of Tertiary Education: Synthesis Report", (2008), Accessed April, 1 2014, http://oecd-conference-teks.iscte.pt/downloads/OECD_overview.pdf.

challenges facing higher education in Egypt, most notably issues of finance, quality and governance, reinforced by massive numbers of students and demographic pressures for more expansion, which are detrimental to the quality of provision.[2]

Egypt's increasing population is accompanied by increasing unemployment rates as graduates' skills do not satisfy employers and market needs. Approximately 600,000 school and university graduates are competing over 200,000 jobs every year,[3] which led to increasing unemployment rates reaching 12.8% in 2015, as indicated in Figure 1.[4]

Source: CAPMAS.[5]

Figure 1

Unemployment rates in Egypt (2012-2015)

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[2] Alsaeed Alshamy, *Quality, Finance and Governance in Egyptian higher Education: A Comparative Analysis* (Berlin: LAP Lambert Academic Publishing, 2013), 6.

[3] See: Ghada Amin, "Egypt Country Report: Policies and Mechanisms for Integration into the Workforce and Job Creation" (paper presented at the 2014 Ministerial Conference on Youth Employment: How to Improve, through Skills Development and Job Creation, Access to Africa's Youth to the World of Work, Abidjam, Côte d'Ivoire, July 21-23, 2014) and Amr Ezzat Salama, "Addressing the Challenges of the Education/Skills and Jobs Mismatch" (Education partnerships and work skills on the menu at ECOSOC, Coordination Segment Pane II Issue Note, New York, 10-12 July, 2012), accessed April, 1, 2014, http://www.un.org/en/ecosoc/julyhls/pdf12/un_presentation-dr_amr_salama.pdf.

[4] Central Agency for Public Mobilization and Statistics (CAPMAS), *Egypt Statistical Yearbook 2015* (Cairo: CAPMAS, 2015).

[5] Central Agency for Public Mobilization and Statistics (CAPMAS), *Egypt Statistical Yearbook 2015* (Cairo: CAPMAS, 2015).

The situation is made worse by skills mismatch as 15% of employers state that graduate specializations do not meet the requirements of the labour market and 30% of graduates believe their specializations are not relevant to the labour market. More than 60% of employees are not working in their specialization field. Only 21% of employers say there is a sort of cooperation between their organizations and educational institutions. 57% of private enterprises indicate that training centres' facilities are not adequate to provide quality training. 60% believe that training programmes do not meet the needs of the labour market and that training centers are supply-driven rather than demand-driven.[6]

Skills mismatches are a structural labour market problem in North Africa, which can be illustrated using unemployment rates by educational attainment. The unemployment rates for persons with tertiary-level education are among the highest in the world, at 21.4 %, 18.9 % and 17.4 % in 2010 in Algeria, Egypt and Morocco, respectively. In Algeria and Egypt, they are higher than for persons with primary or secondary education, pointing at a mismatch between the supply of and demand for skills and education. In most advanced economies, persons with higher levels of education are less likely to be unemployed, but this does not seem to apply to North African economies, as prospects of finding jobs for those having completed tertiary education are unpleasant.[7]

The mismatch continues as those challenges facing education in Egypt are accompanied by massive numbers of students and demographic pressures for more expansion, which are detrimental to the quality of provision and thus put pressures on all aspects of social and economic development. Therefore, the impact of providing adequate and quality schooling and education puts teacher education on the front line with health services. Thus, there is a crucial need for educational reform and most importantly for improving Teacher Education programmes, which are the main focus of this paper.

However, Egypt is not alone in facing such challenges as many countries of Middle East and North Africa face similar challenges in their educational systems, skills mismatch and high rates of youth unemployment. As a result, in virtually every country in the continent, committees and reports recommend the review and modernisation of the existing curricula with a broadening of the view of the teacher education curriculum. Many such

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[6] Salama, "Education/Skills and Jobs Mismatch."

[7] International Labour Organization, *Global Employment Trends for Youth 2013: A Generation at Risk* (GENEVA: ILO Cataloguing in Publication Data, 2013).

reports emphasise the need for teachers to acquire skills in analysis and reflection and to achieve greater articulation / integration between theory and practice. Some people stress the need to give greater value and relevance to teaching practice while others, in consonant with the Harmonisation and Tuning objectives, call for a more competence-based approach to teaching/learning and assessment of quality. Yet others call for experimentation with more diversified types of professional development appropriate to a competence-based approach.[8]

Several national, regional, continental and international transformative initiatives took place in the African Higher Education system, among which is the African Higher Education Harmonization and Tuning Project, which is part of the Africa-EU strategic partnership. The Tuning Africa Project — I (2012-2014) ended up with several findings, most importantly among them are the two lists of generic competences and key subject-specific competences for which future teachers should be acquainted with.

Building on the outcomes of Tuning Africa Project — I, this paper aimed at investigating the views of different stakeholders — academics, students, recent graduates and employers — of the three faculties (Faculty of Education, Faculty of Kindergarten and Faculty of Specific Education) in charge of Teacher Education at Alexandria University. The investigation focused on the generic competences and the key subject-specific competences for which future teachers should be acquainted with. It also aimed at exploring the stakeholders' views on the applicability of the generic competences and the key subject-specific competences and the possibility of reforming the higher education system by including such competences in the curriculum design, student assessment and evaluation systems.

There are multiple challenges facing higher education in Egypt, most notably: issues of finance, quality and governance, reinforced by massive numbers of students and demographic pressures for more expansion of the system. These challenges are detrimental to the quality of education provision. It is also recognized that Egypt is not alone in facing such problems. Therefore, the literature component of the study draws upon wider international experience of higher education reforms and examines their implications for Egypt.

The main aim of this study, therefore, is to investigate options for enhancing the quality of Teacher Education Programmes in Egyptian higher

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[8] Matete Madiba et al., "Teacher Education," in *Tuning and Harmonisation of Higher Education: The African Experience*, eds. Charles Onana Awono et al., (Bilbao: University of Deusto, 2014), 315-374.

education taking into consideration the societal context and the international experience of Tuning Africa Project — I through investigating the Tuning approach in the selected faculties at Alexandria University.

The aim is generally threefold:

• Designing common curriculum development frameworks to enable comparability and equivalence of learning outcomes between Alexandria University and other African universities

• Enhancing graduate mobility and employability

• Enhancing the quality of Teacher Education Programmes in Egyptian higher education

These objectives were developed into three research questions:

1. What are the perceptions of different stakeholders of Alexandria University on the generic competences which future teachers should be acquainted with?

2. What are the perceptions of different stakeholders of Alexandria University on the key subject-specific competences which future teachers should be acquainted with?

3. What are the foreseeable implications — according to study findings — for policy and practice to enhance the quality of Teacher Education Programmes in Egyptian higher education?

III. **Tuning Africa Project — I: internationalization and regionalization**

III.1. *Tuning Approach: philosophy and methodology*

Tuning is a methodology with clearly designed steps with a dynamic perspective that allows for adaptation to different contexts. It has a clear objective: to build compatible and comparable descriptions of degrees that are relevant to society and that are intensively focused on maintaining and improving quality. It explicitly calls for the process to value and preserve diversity among different countries. These requirements demand a collaborative approach, based on a consensus being developed by experts from backgrounds as varied as possible. These experts are expected to have the capacity to understand the negotiable and non-negotiable geographical realities as much as they must understand essential elements of the discipline

and the degrees themselves. The Tuning methodology has four lines of work which help to organize discussion in specific subject areas: identifying relevant generic and subject specific competences and elaborating a meta-profile for the subject area; exploring how a mutually agreed cumulative credit system can facilitate degree comparability, graduate mobility and employability; exchanging good practices in approaches and techniques in teaching learning and assessment; and finally exploring how quality assurance frameworks can be used at programme level to enhance student learning. Accordingly, the European Union in collaboration with Tuning Academy had a series of partnership agreements with many regional bodies and organizations, so that the project could expand from the European level to a global scale, to include both: Africa, Australia, Europe, Latin America, Georgia, Kazakhstan, Russia, United States and Canada. There are other countries in the process of adopting Tuning methodology to join the "Tuning Family".[9]

III.2. *Tuning Africa Project — I*

The African Higher Education system is undergoing a tremendous transformation process including a number of national, regional and continental initiatives. One of the most important transformation initiatives which links institutional, national, regional, continental and international endeavors is the African Higher Education Harmonization and Tuning Project,[10] which is part of the Africa-EU strategic partnership. This project uses Tuning internationally established methodology to enhance degree comparability, graduate mobility

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[9] See: "Tuning Academy," http://tuningacademy.org/tuning-projects; "Tuning Academy Brochure," http://tuningacademy.org/wp-content/uploads/2015/01/Tuning_Academy_brochure.pdf; The European Higher Education Area, "The Bologna Declaration of 19 June 1999: Joint declaration of the European Ministers of Education," (1999), accessed May 11, 2015, http://www.ehea.info/Uploads/Declarations/BOLOGNA_DECLARATION1.pdf; Berlin Communiqué, "Realising the European Higher Education Area" (Communiqué of the Conference of Ministers responsible for Higher Education, Berlin, 2003), accessed May 11, 2015, http://www.ehea.info/Uploads/Declarations/Berlin_Communique1.pdf; Julia Gonzalez and Robert Wagenaar, Tuning Educational Structures in Europe. Final Report: Pilot Project — Phase 1 (Bilbao: University of Deusto, 2003); Julia Gonzalez and Robert Wagenaar, Tuning Educational Structures in Europe. Universities' Contribution to the Bologna Process. Final Report: Pilot Project — Phase 2 (Bilbao: University of Deusto, 2005); and Julia Gonzalez and Robert Wagenaar, Tuning Educational Structures in Europe. 2nd ed. (Bilbao: University of Deusto, 2008).

[10] Madiba et al., "Teacher Education," 191.

and employability in five subject areas: Medicine, Teacher Education, Agriculture, Mechanical Engineering and Civil Engineering.[11]

Tuning Africa Project — I ended up with several findings, most importantly among which were the two lists of generic competences and key subject-specific competences which future teachers and graduates of the other four subject areas should be acquainted with.[12] However, the main focus of this study was on Teacher Education. To validate the lists of competences, different stakeholders — academics, employers, students and graduates — were consulted on the degree of importance of those competences to future teachers and the level of achievement of the competences as a result of having completed a university degree.

III.3. *The main findings of Tuning Africa Project — I*

Overall, it was striking to note that for the generic competence "professionalism, ethical values and commitment to Ubuntu" (#2) was placed in the top five most important competences across all subject areas while "environmental and economic consciousness" (#13) was ranked among the least important competences by all groups.

As for Teacher Education subject specific competences, the main findings are summarized in Tables 1 and 2.

Table 1

The Highest and Lowest Rated Subject-Specific
Competence in Terms of Importance

	Highest	Lowest
Academics	1	13
Employers	1	4
Students	6	4
Graduates	1	4

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[11] Karola Hahn and Damtew Teferra, "Tuning as Instrument of Systematic Higher Education Reform and Quality Enhancement: The Africa Experience," *Tuning Journal for Higher Education* 1 (2013): 127-163.

[12] "Joint Africa-EU Strategy Tuning Seminars, Second General Meeting," Cape Town, 15-17 May (2012), accessed May 11, 2015, http://www.tuningafrica.org/images/stories/documentos/documento_cape_town_ingles_final_para_colgar_final.pdf.

Table 2

The Highest and Lowest Rated Subject-Specific
Competence in Terms of Achievement

	Highest	Lowest
Academics	1	13
Employers	1	13
Students	6	13
Graduates	1	13

The specific competences are:

- (#1) Understanding of the subject(s) to be taught
- (#4) Understanding of the local and international social, political, economic, cultural and environmental contexts of education
- (#6) Understanding of the language(s) of instruction
- (#13) Ability to develop one's own and learners' entrepreneurial skills

The above results imply that the academics, employers and graduates perceived a similarity both in the competences considered to be the most important and how successfully they were achieved. However, the students' data show a discrepancy between what they considered important and how well they felt it was achieved during their teacher education programs. The average ranking for all competences was 3.5 but achievement was 2.5. This finding implies that Teacher Education Programmes have gaps in instructional service delivery.

The respondents singled out as poorly achieved (1) professionalism, (2) ethics and values, (3) ability to understand and abide by the ethics values of the teaching profession and (4) ability to develop one's own and the learners' entrepreneurial skills. Yet these are some of the most important competences a teacher should possess. The most striking revelation in the findings is that academics rate "develop one's own and learners' entrepreneurial skills" (#13) as both of least importance and least successfully achieved.

It is worth noting that, in all subject areas and among the different surveyed groups, significant gaps were found between what is deemed important and what is deemed as the level of achievement for both generic and specific competences. This is an indication that effort and intentional strategies need to be put in place to minimise the gaps. However, in order to validate the findings, further research is needed. Tuning Africa's final report

suggested that further research is needed to validate the findings of that pilot project,[13] which adds to the importance of the current study.

As stated in the introduction, the main focus in this study was on using findings of Tuning Africa Project — I to propose implications for policy and practice for enhancing the quality of Teacher Education Programmes in Egyptian higher education.

IV. **Why competence-based learning?**

Thinking on competences has evolved in conceptual terms among higher education policymakers and different stakeholders in the last two decades, particularly with regard to generic competences, largely as a result of demands to make graduates better equipped for the rapidly changing world of work. Barriers to education attainment due to the rising costs of postsecondary education, coupled with unemployment of recent graduates, has made students, institutions, employers, and policymakers ask questions about how prepared students are for today's workplace and how much they are learning. The recognition that education in general and higher education in specific are major driver of economic competitiveness in the global economy and key to both national competitiveness and individual success has fueled a sense of urgency in overcoming affordability barriers to postsecondary education. Competence-based education and particularly, higher education are major determinants of the quality and employability of graduates. Competence-based Learning (CBL) is now increasingly being embraced as panacea for multiple pressing issues in higher education. It is often seen as having the potential to address accessibility, affordability, transparency, and improved learning outcomes, all of which relevant to graduates' employability and great strength to the workforce.[14]

IV.1. *CBL: a conceptual framework*

Before addressing the concept of Competence-based Learning, it is crucial to note that learning objectives/learning outcomes are sometimes

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[13] Madiba et al., "Teacher Education," 354-355.

[14] Patricia A. Book, "All Hands on Deck: Ten Lessons from Early Adopters of Competency-Based Education" (Boulder, CO: WICHE Cooperative for Educational Technologies (WCET), 2014).

confused with competences. To remove this possible confusion, Tuning approach distinguishes between learning outcomes and competences.

The intended learning outcomes of a programme or unit of learning are formulated by academic staff. They may also be informed by the input of internal and external stakeholders, including — ideally — student representatives, but essentially they are what academics intend the students to learn. Learning outcomes are thus statements of what the teacher intends that the learner know, do, understand and be able to demonstrate after the completion of learning. Competences, on the other hand, are developed by students during the process of learning and represent a dynamic combination of knowledge, understanding, skills and abilities that the student builds on and develops during a period of study. Fostering competences is the object of educational programmes. Competences will be developed over the course of a number of units and assessed at different stages.[15]

Wagenaar added that competences should be understood as a dynamic representation of demonstrated knowledge, understanding/insight/comprehension, (subject specific and generic) intellectual, practical and interpersonal skills and (ethical) values. They cover the whole spectrum of capabilities from pure theoretical and methodological knowledge to vocational knowledge/insight and from research abilities to practical abilities. Fostering these competences is the object of all educational programmes. Competences are formed during the process of learning by the student in succeeding course units or modules and are assessed at different stages. Competences are therefore owned by the student / learner. A learning outcome, on the other hand, is understood as a statement of what a learner is expected to know, understand and be able to demonstrate after completion of a process of learning. Learning outcomes indicate the level of competence that is desired and should be achieved. They are in other words the specifications of the results and outcomes of a learning process. The learning process again is based on an identified set of competences. Learning outcomes are distinguished in degree programme learning outcomes and module and/or unit learning outcomes. Learning outcomes are defined by academic staff preferably involving student representatives. Learning outcomes are therefore mostly owned by academic staff.[16]

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[15] Madiba et al., "Teacher Education," 345-346.

[16] Robert Wagenaar, "Competences and Learning Outcomes: a Panacea for Understanding the (New) Role of Higher Education?" *Tuning Journal for Higher Education* 1, nº 2 (2014): 127-163.

Klein-Collins summarizes important points about Competences versus learning outcomes and suggests that: 1) Competences are at a higher categorical level requiring students to process learning in a way that enables them to apply it in a variety of situations; 2) Competences are assessed at different levels that a student might be required to demonstrate depending on the educational level of the student; and, 3) Competences are considered more objectively measurable.[17]

Sanchez and Ruiz went in line with Klein-Collins and expanded the meaning of competences to imply good performance in diverse, authentic contexts based on the integration and activation of knowledge, rules and standards techniques, procedures, abilities and skills, attitudes and values. They ensure the notion that competences require students to process learning in a way that enables them to apply it in a variety of diverse and authentic situations.[18]

The notion of a competence-based approach to teacher education is not new and has been in use in teacher education in a number of countries for some considerable years. It has, however, often led to exaggeratedly long lists of competences to be achieved by the trainees.[19]

CBL is based on an analysis of the professional requirements that will help to define and prioritise the fundamental competences required for a given professional and/or specialty area. It is an approach to teaching and learning that necessarily starts from an academic and professional profile featuring all knowledge and competences that need to be developed by students pursuing a given course of studies. Their programme of studies must spell out the generic and specific competences desired, and distribute them over the entire degree course in question. This approach calls for a great deal of co-ordination and co-operation among faculty to contribute effectively and efficiently to the development of the academic-professional profile through each subject or course.[20]

The Main characteristics of CBL are summarized as follows:[21]

- CBL focuses on learning, pushing students toward mastery rather than a grade, and it brings needed emphasis on the assessment of learning.

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[17] Rebecca Klein-Collins, "Competency-Based Degree Programs in The U.S.: Postsecondary Credentials for Measurable Student Learning and Performance" (Council on Adult and Experiential Learning, 2012).

[18] Aurelio Villa Sánchez and Manuel Poblete Ruiz, (eds), *Competence-based learning: A proposal for the assessment of generic competences* (Bilbao: Deusto University Press, 2008).

[19] Madiba et al., "Teacher Education," 348.

[20] Sánchez and Ruiz, *Competence-based learning*, 34.

[21] Ibid.

- CBL is student-centered approach.

- CBL focuses on what students know and can do rather than on what is taught.

- CBL consists in developing the necessary generic and specific competences pertaining to each profession.

- The aim is to endow students with scientific and technical knowledge, and to enable them to apply such knowledge in diverse complex contexts.

- To this end, knowledge is integrated along with attitudes and values in ways that are appropriate for each student's personal and professional life.

- CBL builds on a teaching-learning system that steadily develops students' autonomy and ability to learn how to learn.

- Last but not least, CBL is valued by employers as it better enables students to apply their knowledge.

IV.2. *CBL and employability*

One aspect of the CBL approach that has been criticized is its apparent emphasis on the workplace. There is concern that some academic objectives might be abandoned such as the overall humanistic education of students. Sanchez and Ruiz argue that this fear is unfounded, since CBL emphasizes individual growth and development as well as reflective thinking about what one learns and its application. Emphasis on humanism depends more on the way in which academics integrate these aspects into CBL than on the approach itself.

Competence-based learning is valued by employers because it better enables students to apply their knowledge. No one doubts that a university education should provide students with a good academic background, meaning good conceptual information and mastery of knowledge is expected to develop abilities and skills that can be applied to situations at work and in society that students will encounter when they finish their studies. The literature on this topic clearly suggest that having an education means not only having knowledge, but know-how, and learning to be and to live together, as memorably stated in the Delors Report on education.

Thus, the idea of competence includes the knowledge and know-how of certain subjects in different domains, as well as skills or abilities understood as practical or applied knowledge, and the personal attitudes and values that shape and guide people's conduct. As expressed in the 1988 World Higher Education

Conference, there is a great need for life-long learning that will provide the competences that people must have if they are to contribute to the cultural, social and economic development of society[22]. The same aim was formulated in the Bologna Declaration to promote European citizens' employability. However, to avoid any misunderstandings it stipulated at the same time that this should be read in conjunction with the role higher education institutions have for personal development of the student as well as preparing them for citizenship.[23]

Linking the competences and learning outcomes gave a unique focus to the Tuning approach. The basic idea in Tuning was and is that the role of education is primarily to make the student / learner more *competent* as a result of a learning process. This is wider than knowledgeable and skilled, it also involves acting and 'how to be'. This is relevant for personal development, preparing for citizenship as well as positively affecting the learner's employability.[24]

V. 'Policy learning' vs. 'policy borrowing' approach

Given the rationale for investigating the wider international experience of higher education reform, including the Tuning Africa Project — I, it is clear that the study adopts *a policy learning approach* as it aims to support the development of tailored national policies rather than policies taken off-the-peg, as is the case with *a policy borrowing approach* which searches the international experience for examples of unique, transferable best practice.[25]

Adopting *a policy learning approach* served a broader range of purposes for the study, including using the comparative perspective to learn about the researcher's own country/system, learning from its history and context, illuminating its strengths as well as weaknesses, identifying common trends and pressures that affect all systems, identifying alternative policy options, testing their feasibility, understanding processes and dynamics of change and anticipating issues that possible options would raise and tailoring those policy options to suit national aims, needs and circumstances of the Egyptian context.[26]

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[22] Ibid., 49.

[23] Wagenaar, "Competences and Learning Outcomes," 285.

[24] Ibid., 294.

[25] David Raffe, *Policy borrowing or policy learning? How (not) to improve education systems* (Centre for Educational Sociology: The University of Edinburgh. CES Briefing, No.57, 2011).

[26] See: David Raffe, *Policy borrowing or policy learning?*, 1-4. Borhene Chakroun, "*What can we learn from policy learning,*" in *Yearbook 2008. Policy Learning in Action*

The main outcome of this study is proposing common curriculum development frameworks to enable comparability and equivalence of learning outcomes between Alexandria University and other African universities. Through a careful process of policy learning, the paper draws implications for policy and practice, for the researcher's own university, other public universities in Egypt and for other countries having similar contexts.

VI. **Research design**

VI.1. *The Methodological stance of the study*

The study is located within a broadly interpretive methodology, using a case study approach with questionnaires on both generic competences and key subject-specific ones and semi-structured interviews with different stakeholders of Alexandria University as the main methods of data collection, utilizing qualitative and quantitative data and approaches in all its components.

The interpretive methodology is viewed as suitable as it is believed that there are multiple interpretations of, and perspectives on, single events and situations (generic and subject-specific competences future teachers should be acquainted with) and that reality is multilayered and complex. An interpretive approach is primarily concerned with human understanding, interpretation and intersubjectivity, in essence lived experience or lived truth in its natural social context from the standpoint of individuals who are part of the ongoing action being investigated.[27] However, precautions have been taken to overcome the risk of bias and subjectivity.[28] These include data triangulation (through gathering multiple view points: academics, students, graduates and employers) and cross-referencing cases within the sample together with other precautions to enhance validity and reliability and ensure rigour of the findings that will be discussed later in the study.

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(Turin: European Training Foundation, 2008), 11-18. David Phillips and Michele Schweisfurth, *Comparative and International Education: An introduction to theory, method, and practice,* 2nd ed. (London: Continuum International Publishing Group, 2008).

[27] See: Noella Mackenzie and Sally Knipe, "Research Dilemmas: Paradigms, Methods and Methodology," *Issues In Educational Research* 16, nº 2 (2006): 193-205 and Cohen et al., *Research Methods in Education*, 6th ed. (London: Routledge, 2007).

[28] Norman K. Denzin and Yvonna S. Lincoln, *Handbook of Qualitative Research* (London: Sage, 2002).

VI.2. *A case study approach*

This study is a detailed investigation of the views of different stakeholders — academics, students, graduates and employers — of three faculties at Alexandria University — as a case study — on the generic competences and the key subject-specific ones future teachers should be acquainted with. In addition to questionnaires administered to different stakeholders of Alexandria University, semi-structured interviews were conducted with academics with a view to an analysis of the context and processes involved in the phenomenon under study. The selected cases have enabled the researcher to develop detailed knowledge of the experience of participants on Teacher Education Programmes at Alexandria University and an examination of the strengths and weaknesses of existing systems, leading to an identification of implications for policy and practice for enhancing the quality of Teacher Education Programmes in Egyptian higher education.

A case study approach is viewed as suitable as case studies examine relationships between cause and effect but do not claim to establish a direct causal link. The strength of a case study is that it enables researchers to observe effects in real contexts, recognizing that context is a powerful determinant of both causes and effects. Another strength of the approach is that it provides fine-grain details[29] as means for seeing situations through the eyes of participants. They are widely used in organizational studies in the social sciences.[30] Lastly, the multiplicity of the variables and sources of evidence that characterise a case study inquiry are a holistic approach which investigates the case as a whole, recognizing its real-life context, rather than dealing with isolated factors.[31]

2.1. Context: Teacher Education Programmes in Egypt

Teacher Education Programmes have a long history since the establishment of the Modern State in Egypt (19th Century) till present. It is worth noting that every educational reform agenda included reforming Teacher Education Programmes. Teacher Education Programmes in Egypt

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[29] Cohen et al., *Research Methods in Education*, 253-254.

[30] Christine Benedichte Meyer, "A Case in Case Study Methodology," *Field Methods* 13, nº 4 (2001): 329-325.

[31] See: Robert K. Yin, Case Study Research: Design and Methods, 3rd ed. (London: SAGE, 2003) and Martyn Denscombe, *The Good Research Guide: for small-scale social research projects*, 3rd ed. (Maidenhead: Open University Press, 2007).

have gone through two major stages. The first stage started from early 19th century till 1872, where there were no professional institutions in charge of Teacher Education Programmes. At this stage Arabic and Religion teachers used to come from Al-Azhar; Teachers of foreign languages, History and Geography used to come from Al-Alsun schools; Teachers of Art and Mathematics used to come from Al-Muhandisakhana Schools. Stage two which started from 1872 till present was marked with the advent of professional institutions in charge of Teacher Education Programmes.[32]

During that stage several institutions, under different titles, were established including: "Central Teachers' School" in 1880 for primary school teachers; "Khediwi Teachers' Schools" in 1905, which was renamed "Sultan Teacher's Schools" in 1915; "Teachers' High Institute" in 1922, for secondary and middle school teachers. In 1929, "Teachers' High Institute" was replaced with "Teachers' Institute of Education", which was a two year programme for graduates from Faculties of Arts and Sciences who would like to work as teachers. This institute has opened two new departments, one for Arts and the other for Physical Education. In 1954, the first "Teachers' College" was established in Cairo, which was later renamed "Faculty of Education" in 1965 and was affiliated to Ain Shams University. In 1970, all institutes and colleges of Teacher Education in Egypt were given the title of "Faculties of Education". Since then, several Faculties of Education were established in Egypt reaching 28 faculties affiliated to all Twenty Egyptian public Universities.[33]

Alexandria University is the second oldest university in Egypt after Cairo University. In 1938, the nucleus of Alexandria University (formerly known as Farouk University) had its beginning in the form of two faculties: Arts and Law. In the light of the need for developing more disciplines for higher learning and with a view to meeting the needs of the people of Alexandria, Alexandria University became a separate entity in August 1942 with four additional faculties: Science, Commerce, Medicine and Agriculture. In 1952, it became "Alexandria University". Since then, the University has witnessed growth and expansion in several fields with its number of faculties

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[32] See: Hassan Elfeki, *The Cultural History of Education in Egypt*, 2nd ed. (Cairo: Daar Al-Maarif, 1971) and Saeed Ismail Ali and Zeinab Hassan, *Developing First Stage Teachers' Programme in Egypt* (Cairo: Daar Al-Thaqafah, 1983).

[33] See: Ahmed H. Ebaid, *Philosophy of the Educational System and Its Political Background* (Cairo: Al-Anglo Al-Misreyah, 1979); Arfaat Abdelaziz Soliman, *Teacher and Education* (Cairo: Al-Anglo Al-Misreyah, 1991); Saeed Ismail Ali, *The History of Education in Egypt* (Cairo: Aalam Al-Kutob, 1985); and Ahmed Ismail Heggi, *Developing Faculties of Education and Teacher Education Programmes in Australia, Asian and African Countries: Methodological Perspectives and Applied Methods* (Cairo: Aalam Al-Kutob, 2011).

and higher education institutes now numbering twenty-two. In 2012, Alexandria University won the award of excellence in scientific publishing from the Continuous Improvement and Qualifying for Accreditation Project of Egypt's Ministry of Higher Education.

There are three faculties in charge of Teacher Education at Alexandria University: Faculty of Education, Faculty of Kindergarten and Faculty of Specific Education. Alexandria University's Faculty of Education is the third oldest institution in Egypt among twenty-eight faculties affiliated to Egypt's twenty universities. The Faculty of Education consists of fourteen departments: seven for educational sciences, three for the basic sciences, three for linguistic sciences, and one for social sciences. It offers three different programmes leading to five different degrees. Teacher Education Programmes in Faculty of Education, Alexandria University, go into two tracks: the undergraduate level (the Integrated System) and the graduate level (the Consecutive System).

The undergraduate level (the Integrated System):

- The General Programme (for secondary school teachers): Graduates of this programme obtain the degree of *B.A. & Education* in: Arabic — English — French — Social Sciences; *B.Sc. & Education* in: Mathematics — Physics and chemistry — Biology and Geology.

- The Basic Education Programme (for primary and middle school teachers): Graduates of this programme obtain the degree of *B.A.* in Basic Education in: Arabic — English — Social Studies; *B.Sc.* in Basic Education in: Mathematics — Sciences.

- The Childhood Education Programme (for Kindergarten teachers): Graduates of this programme obtain the degree of *B.A.* in Childhood Education.

The graduate level (the Consecutive System):

This is a one-year programme for graduates from Faculties of Arts and Sciences, who would like to work as teachers. Graduates of this programme are awarded the degree of "General Diploma in Education". They are eligible to teach in both middle and secondary schools.[34]

The Faculty of Kindergarten and Faculty of Specific Education were established in 1988 and joined Alexandria University with the Republican

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[34] Madiba et al., "Teacher Education," 322-323.

decision no.389 in 1998. The period of study is 4 years. The Faculty of Kindergarten consists of three departments: Basic Sciences; Psychological Sciences and Educational Sciences. It offers one programme (for Kindergarten teachers). Graduates of this programme obtain the degree of *B.A.* in Childhood Education.

The Faculty of Specific Education consists of five departments: Home Economics; Art Education; Educational and Psychological Sciences; Music Education and Education Technology. It offers four programmes (for Specific Education teachers). Graduates of this programme obtain the degree of *B.A.* in Specific Education in: Home Economics — Art Education — Music Education — Education Technology.[35]

2.2. Sampling

Non-probability sampling was adopted as the researcher has deliberately chosen three faculties in charge of Teacher Education at Alexandria University: Faculty of Education, Faculty of Kindergarten and Faculty of Specific Education which are not representative of the overall population of higher education in Egypt. This choice is due to several reasons: (a) the researcher has chosen Alexandria University because access to staff, students, recent graduates and employers is easier as he is an assistant professor at the University; (b) Alexandria University is the second oldest university in Egypt after Cairo University; (c) expense and time are limited for one researcher doing such a large scale research; (d) non-probability sampling is suitable for case studies as they do not aim to generalize findings to the whole population; (e) purposive sampling has also been used to access students in the latter years of their degree programme and recent graduates who graduated within the last 3 to 5 years.

The initial plan was to investigate the perceptions of around 360 stakeholders of the three selected faculties divided into four categories: 90 academics; 90 students; 90 recent graduates and 90 employers, who employ graduates of those three faculties. However, the study ended up with investigating the perceptions of 384 stakeholders: 71 academics; 137 students; 85 recent graduates and 91 academics. The number of academics was minimized from 90 to 71 as the total number of academics in Faculty of Kindergarten and Faculty of Specific Education is 33 and 36

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[35] Alexandria University, "Faculties & Institutes," (2009-2015), accessed May 11, 2015, http://www.alexu.edu.eg/index.php/en/2015-11-24-10-39-04/faculties-institutes.

respectively. The number of recent graduates was minimized from 90 to 85 as 5 questionnaires have been excluded because of missing data. The number of students was expanded from 90 to 137 to enable the researcher to cover students from the different programmes provided at Faculty of Education.

A mixed sample of academics, students, graduates and employers was approached for two main reasons. Firstly, to avoid a methodological problem identified by Stensaker[36] and Kis[37] concerning the possibility of academics having an interest in creating a successful image of the programmes provided at their faculties to show a good impression of their own effort. Secondly, having a mixed sample allows for triangulating the data through comparing the perceptions of participants on issues under investigation.

2.3. Generalisability

The extent to which the findings of this study can be applied to people or settings more widely may be questionable. Its main limitation is its limited ability to make generalizations, owing to non-probability sampling. While the purpose of 'generalization' is attached to the logic and power of probability sampling, 'in-depth understanding' is attached to non-probability sampling.[38] According to Patton, the proposals of this study could be implemented only at Alexandria University as the case included in the study.

However, the researcher argues that generalisation of the findings to the other 19 public universities in Egypt is feasible as there are many similarities between Alexandria University and Egypt's other universities. They are all funded publicly, follow the regulations of the Supreme Council for Universities (SCU) and have been subject to the same reforms of quality assurance. Moreover, the legislative framework for finance, governance and quality management is the same for all public universities. So, Alexandria

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[36] Bjrn Stensaker, "Trance, Transparency and Transformation: the impact of external quality monitoring on higher education," *Quality in Higher Education* 9, n° 2 (2003): 151-159.

[37] Viktoria Kis, "Quality Assurance in Tertiary Education: Current Practices in OECD Countries and a Literature Review on Potential Effects" (paper presented as a contribution to the OECD Thematic Review of Tertiary Education, 2005), accessed July, 1 2012, http://www.oecd.org/dataoecd/55/30/38006910.pdf.

[38] Michael Quinn Patton, *Qualitative Research & Evaluation Methods*. 3rd ed. (Thousand Oaks: Sage Publications, 2002).

University might be a "typical case", as proposed in,[39] with similarities that warrant such generalisations.

VI.3. *Data collection methods*

Questionnaires and semi-structured interviews have been used as the principal methods of data collection. The study has used triangulation of different methods to map out or explain more fully, the richness and complexity of human behaviour. The aim is to study phenomena from more than one standpoint as a way of gaining different insights into the same situation.

3.1. Questionnaires

As stated earlier, the current study has used the same questionnaire for Generic Competences and Subject-specific ones future teachers should be acquainted with, which was developed in Tuning Africa Project — I. Different stakeholders of the three selected faculties at Alexandria University were consulted on the degree of importance of those competences to future teachers and the level of achievement of the competences as a result of having completed a university degree.

Although 'It is impossible for research to be 100 % valid; that is the optimism of perfection',[40] precautions have been taken to secure different aspects of validity. Content validity is demonstrated through a careful process of piloting and re-piloting the questionnaire in Tuning Africa Project — I. This has increased validity by making sure that the instrument measured what it purported to measure. Construct validity is demonstrated through triangulation, which involved the use of a twofold method for data collection to enhance rigour: questionnaires and semi-structured interviews. Moreover, it combined quantitative and qualitative data. The multi-method approach adopted increased the validity or search for truth of the research and also helped overcome the problem of method-boundedness. Internal validity is demonstrated through ensuring that the findings were drawn from the data and accurately described the phenomena under investigation. External validity is demonstrated through the choice of Alexandria University as 'a typical case study' which has similarities

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[39] Martyn Denscombe, *Ground Rules for Good Research: a 10 point guide for social researchers* (Buckingham: Open University Press, 2002).

[40] Cohen et al., *Research Methods in Education*, 133.

with the other cases that warrant generalisations to the other public universities in Egypt.[41] The questionnaire has been translated into Arabic so that it could be applied in Egypt. The translated version of the questionnaire has been revised by experts in the field and the required changes were done before the field work.

3.2. Semi-structured interviews

Semi-structured interviews were conducted with 10 academics, from Educational Sciences departments, from Faculty of Education as it is the third oldest Faculty of Education in Egypt and has experts in all fields of education. They have been used as a secondary method of data collection. Although the researcher using this technique has some established topics (questions) for investigation, the method allows for exploring emergent themes and ideas. The researcher used a standardized schedule but was free to pursue and probe for novel and relevant information through additional questions.[42]

Those interviews were conducted with academics directly after responding to the questionnaire. The interview schedule was brief and mainly included the following questions:

1. Are Teacher Education Programmes at Alexandria University compatible with competence-based learning?

2. To what extent do they cover both generic competences and subject-specific ones included in the questionnaire?

3. Are those competences included in the questionnaire fair enough for future teachers?

4. Are the intended learning outcomes of the available programmes measurable? If yes, do they get measured?

5. Is there any similarity between the content of the available programmes and the list of competences in the questionnaire?

6. Would you like to add any competences to the available list of competences?

7. Is there a possibility of reforming the system by including such competences in the curriculum design, student assessment and evaluation systems?

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[41] Ibid.

[42] Hilary Arksey and Peter T. Knight, *Interviewing for Social Scientists* (London: Sage Publications, 1999).

After transcribing the data, it has been organized it into retrievable sections. Each interview has a number and a code and given interviewees pseudonyms (AS: Academic Staff) with a file which helped link pseudonyms to the original informants (e.g. AS10: means Academic Staff number10).

VII. **Findings and discussion**

The main findings show that, across all different stakeholders, there are significant gaps between what is deemed important and what is deemed as the level of achievement for both generic and subject-specific competences. The average ranking for all generic competences in terms of importance was 3.72 but achievement was 2.51. In addition, the average ranking for all Subject-specific competences in terms of importance was 3.78 whereas achievement was 2.57. This finding implies that Teacher Education Programmes at Alexandria University have gaps in instructional service delivery. This is an indication that effort and intentional strategies need to be put in place to minimise the gaps of Teacher Education Programmes at Alexandria University.

This section starts by discussing and analyzing the key findings generated from questionnaires (quantitative data), followed by discussing and analyzing the key findings generated from semi-structured interviews (qualitative data).

VII.1. *Quantitative Data*

Concerning the first research question "*What are the perceptions of different stakeholders of Alexandria University on the generic competences which future teachers should be acquainted with?*", the findings came as follows.

For the generic competences, it was interesting to note that "professionalism, ethical values and commitment to Ubonto" (#2) was ranked the most important competence across all groups except for graduates where "ability for creative and innovative thinking" (#10) was considered the highest important, followed by (#2).

On the other hand, "environmental and economic consciousness" (#13) and "ability to work in an intra and intercultural and/or international context" (#14) were ranked the least important competences by all groups. Figure 2 shows importance ratings across all groups and Table 3 shows the highest and lowest generic competence in terms of importance across all groups.

Figure 2

Generic Competences' Importance Ratings across All Groups

Table 3

The Highest and Lowest Generic Competence in Terms of Importance

	Highest	Lowest
Academics	2	14
Employers	2	14
Students	2	13
Graduates	10	13

This finding corresponds with findings on the generic competences of Tuning Africa Project — I where the generic competence (#2) was placed in the top five most important competences and the generic competence (#13) was ranked among the least important competences by all groups.[43]

In terms of achievement, the generic competences "communication and interpersonal skills" (#12) and "professionalism, ethical values and commitment to Ubuntu" and (#2) were perceived to be the highest achieved generic competences by all groups. Academics perceived "ability to communicate effectively in official/national and local language (#7) to be the

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[43] Madiba et al., "Teacher Education," 354.

highest achieved generic competence. On the other hand, "ability to work in an intra and intercultural and/or international context" (#14) and "self-confidence, entrepreneurial spirit and skills" (#17) were perceived to be the least achieved competences by all groups. Figure 3 shows achievement ratings across all groups and Table 4 shows the highest and lowest generic competence in terms of achievement.

Figure 3

Generic Competences' Achievement Ratings across All Groups

Table 4

The Highest and Lowest Generic Competence in Terms of Achievement

	Highest	Lowest
Academics	7	14
Employers	12	14
Students	12	14
Graduates	12	14

The above results imply that the perceptions of academics, employers, students and graduates were similar both in terms of which generic competences were the most important and how successfully they were achieved during Teacher Education Programmes at Alexandria University. Interestingly, this was the same case among all groups in Tuning Africa

Project — I. This finding therefore validates the findings of Tuning Africa Project — I.

Concerning the second research question "*What are the perceptions of different stakeholders of Alexandria University on the subject-specific competences which future teachers should be acquainted with?*", the findings came as follows.

As for the subject-specific competences, it was interesting to note that "maintain equity and fairness among learners and promote inclusive education" (#24), "continuously upgrade their own knowledge and skills" (#25), "be a role model" (#26), "develop schemes of work and teaching plans" (#7) and "select, adopt and use appropriate teaching methods and learning activities" (#8) were ranked among the most important competences across all groups. What is remarkable about this finding is the general agreement across all groups on five competences three of which are related to values and ethics of the teaching profession (#24, #25 and #26) and two of them (#7 and #8) are related to educational practice and skills.

On the other hand, it was notable that "the local and international social, political, economic, cultural and environmental contexts of education" (#4), "national and institutional policies relating to education" (#5), "develop own and learners' entrepreneurial skills" (#13) and "participate in basic educational research" (#17) were ranked among the least important competences across all groups. Figure 4 shows importance ratings across all groups and Table 5 shows the highest and lowest subject-specific competence in terms importance across all groups.
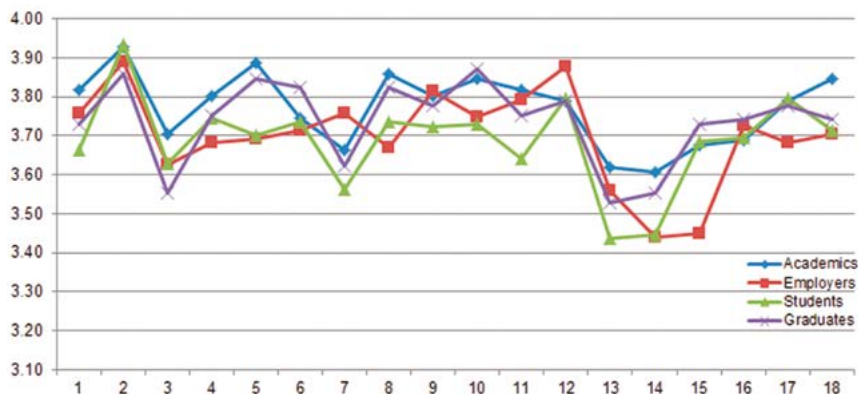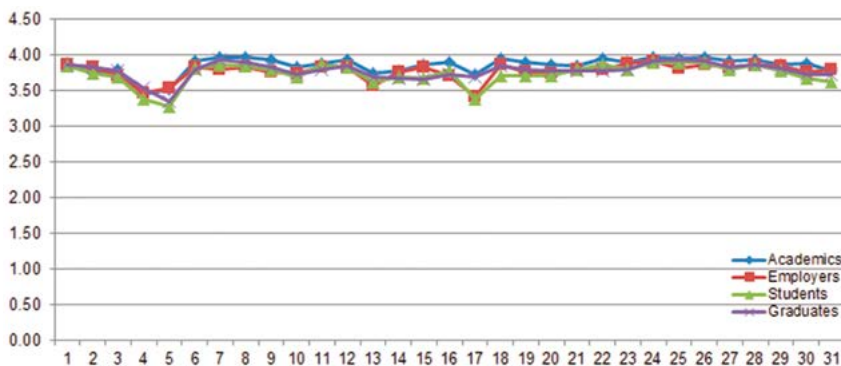

Figure 4

Subject-specific Competences' Importance Ratings across All Groups

Table 5

The Highest and Lowest Subject-specific Competence in Terms of Importance

	Highest	Lowest
Academics	7	4
Employers	24	17
Students	24	5
Graduates	7	5

This finding corresponds with findings on the subject-specific competences of Tuning Africa Project — I where the competences (#4 and #13) were placed among the least important competences by all groups.[44] On the other hand, in terms of the highest important competences, the findings from this study do not go in line with findings of Tuning Africa Project — I where the competences "The subjects to be taught" (#1) and "The language(s) of instruction" (#6) were ranked among the most important competences by all groups.

In terms of achievement, it was exciting to note that "the subject(s) to be taught" (#1), "the underlying principles of the foundations of education" (#2), "develop schemes of work and teaching plans" (#7) and "select, adapt and use appropriate teaching methods and learning activities" (#8) were ranked among the highest achieved subject-specific competences across all groups.

On the other hand, it was notable that "the local and international social, political, economic, cultural and environmental contexts of education" (#4), "national and institutional policies relating to education" (#5), "develop own and learners' entrepreneurial skills" (#13) and "participate in basic educational research" (#17) were ranked among the least achieved competences across all groups. Figure 5 shows achievement ratings across all groups and Table 6 shows the highest and lowest subject-specific competence in terms achievement across all groups.
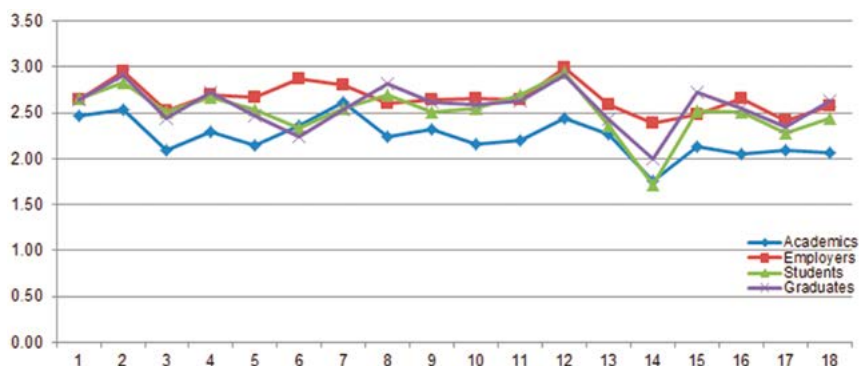
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[44] Ibid.
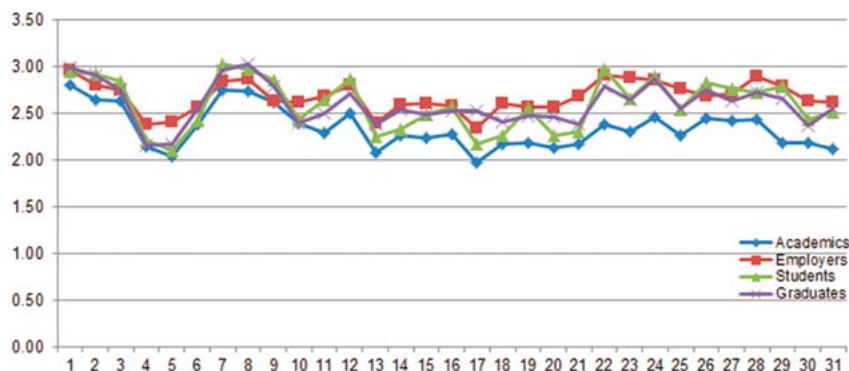
Figure 5

Subject-specific Competences' Achievement Ratings across All Groups

Table 6

The Highest and Lowest Subject-specific Competence in Terms of Achievement

	Highest	Lowest
Academics	1	17
Employers	1	17
Students	7	5
Graduates	8	4

This finding corresponds with part of the findings on the subject-specific competences of Tuning Africa Project — I where the competences (#1 and #6) were placed among the most achieved competences by all groups. In terms of the least achieved competences in Teacher Education Programmes, the findings of this study correspond with findings of Tuning Africa Project — I where the competence (#13) was ranked among the least achieved competences across all groups. This finding also corresponds with employer studies from Ghana, Senegal, Egypt, Namibia, Botswana, and South Africa all stress a serious problem with skills gaps, noting gaps in the basic skills and entrepreneurial skills of young people.[45]

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[45] Monika Aring, "Paper commissioned for the EFA Global Monitoring Report 2012, Youth and skills: Putting education to work" (UNESCO, 2012).

The above results imply that the perceptions of academics, employers, students and graduates were similar both in terms of which subject-specific competences were the most important and how successfully they were achieved during Teacher Education Programmes at Alexandria University. Interestingly, this was the same case among all groups in Tuning Africa Project — I. This finding thus validates the findings of Tuning Africa Project — I.

VII.2. *Qualitative Data*

After responding to the questionnaire on both generic competences and subject-specific ones future teachers should be acquainted with, ten academics were interviewed with a view to an analysis of the context and processes involved in the phenomenon under study. The selected cases have enabled the researcher to develop detailed knowledge of the experience of participants on Teacher Education Programmes at Alexandria University and an examination of the strengths and weaknesses of existing systems, leading to an identification of implications for policy and practice for enhancing the quality of Teacher Education Programmes in Egyptian higher education.

As stated earlier, the interview schedule was mainly comprised of seven questions. Concerning the first question: "*Are Teacher Education Programmes at Alexandria University compatible with competence-based learning?*". There was a general agreement among interviewees that Teacher Education Programmes at Alexandria University are not compatible with competence-based learning. They added that the vision behind those programmes is vague as was put in the words of one of the interviewees "A complete absence of paradigm" (AS, 2). It is not even based on tracks where each track has its own philosophy and methodology. One of the interviewees added that the current programmes are inheritance of old regulations which were based on the regulations of Faculties of Arts and Science where academic subjects were taught with a light dose of educational subjects. This light dose of Educational subjects has been expended in the eighties and nineties before going back to its normal size (20% of the taught subjects) through Faculties of Education Project (FoEP) in 2003 (AS, 1).

Thus, Teacher Education Programmes at Alexandria University are not competence-based as they are not built according to a plan of what is expected of the graduate or the competences which s/he should be acquainted with. Another reported issue which is totally against competence-based learning approach is that the 20% allocated for educational subjects is

divided equally among Educational departments regardless of the graduate's needs, which again confirms that the vision behind those programmes is vague. For example, "There are some subjects from Comparative Education Department which should be taught in postgraduate programmes but actually they are taught in undergraduate programmes just because it's their share of the 20% allocated for Educational Departments" (AS, 2). However, the way this 20% is divided should be based on the graduate's needs.

As for the second question: "*To what extent do they cover both generic competences and subject-specific competences included in the questionnaire?*", they agreed that the level to which generic competences are developed through Teacher Education Programmes at Alexandria University are between (1) none and (2) weak as the development of such competences depends mainly on academics although it should be covered in all modules. On the other hand, they perceive that the level to which most subject-specific competences are developed through Teacher Education Programmes are between (2) weak and (3) moderate. One of the interviewees added that:

> The importance for most of the generic and subject-specific competences included in the questionnaire stands at (4) strong whereas the level of achievement for most of them will not exceed (2) weak or (3) moderate. This means that students in Teacher Education Programmes are not provided with the content, teaching methods, learning chances or assessment which provides them with authentic sustainable learning which makes them professional teachers in the future. This mainly goes back to the fact that most of the teaching methods used are based on indoctrination and most exams measure the students' ability to recall what they have learnt. (AS, 2)

In regard to the third question: "*Are those competences included in the questionnaire fair enough for future teachers?*", they agreed that the lists of generic and subject-specific competences included in the questionnaire are more than fair enough for future teachers to be acquainted with and they wished that they could be covered in Teacher Education Programmes.

Concerning the fourth question: "*Are the intended learning outcomes of the available programmes measurable? If yes, do they get measured?*" They agreed that every programme has general aims which are translated into specific objectives for each module in the programme. Each module has those specific objectives or intended learning outcomes (ILOs) which are measurable but they do not get measured properly as student assessment systems measures the content of the module rather than its ILOs. It is reported that "Most exams assess students' ability to recall parts of the content. It is as if students are asked to re-vomit what they know about the

content" (AS, 7). Another interviewee added that "When academics update the syllabus by changing some parts of the content, student assessment systems still measures the content not the general ILOs of the module or the subject being taught" (AS, 5). The same point was confirmed by another interviewee stating that "Teacher Education Programmes are staff-centered instead of student-centered. In other words, it is based on teaching and do not maximize the students' chances of learning" (AS, 8).

As for the fifth question: "*Is there any similarity between the content of the available programmes and the list of competences included in the questionnaire?*". They agreed that there is a similarity between the available programmes and the lists of competences especially for subject-specific competences most of which are covered between (2) weak and (3) moderate. However, the list of generic competences is not covered well in the content of the available programmes. It was added that some existing course structures in Teacher Education Programmes can incorporate the identified lists of competences whereas others lack that ability given their current structures, staff perspectives and regulations.

Concerning the sixth question: "*Would you like to add any competences to the available list of competences?*". Two interviewees (AS, 2 and AS, 9) added the competence of "Good command of English as a second language" which they perceived to be so important for students' lifelong learning and professional development.

In regard to the last question: "*Is there a possibility of reforming the system by including such competences in the curriculum design, student assessment and evaluation systems?*" There was a general agreement that there is a big possibility of reforming the system as most of the specific-competences are already covered in the available programmes but the level of achievement is weak or moderate. However, those competences need to be included in the curriculum design, student assessment and evaluation systems, which means a paradigm shift from input and staff-centered programmes to output and student-centered ones. For that paradigm shift to be achieved regulations of the available programmes need to be changed and the chance for this change happens once every five years. Second, awareness about the importance of competences and competence-based learning should be raised among all education stakeholders among which are students and academics. Such awareness will help in overcoming resistance for change. Third, different stakeholders — academics — students — graduates and employers — should be involved at certain stages of curriculum development and design. Last, but not least, the number of hours allocated for each programme should not be divided equally among different departments, they

should, instead, be divided among different departments according to graduates' actual needs.

VIII. **Concluding remarks**

The average ranking for all competences was 3.75 but achievement was 2.54. This finding implies that Teacher Education Programmes at Alexandria University have gaps in instructional service delivery. The mean for achievement is always lower than the mean for importance. This is no surprise as this is the case in all other previous Tuning studies, and most studies using this double scale of 'importance' and 'achievement' show similar results.

It is worth noting that respondents across all groups singled out the following generic competences as poorly achieved: "ability to work in an intra and intercultural and/or international context" (#14) and "self-confidence, entrepreneurial spirit and skills" (#17). They also singled out the following subject-specific competences as poorly achieved: "the local and international social, political, economic, cultural and environmental contexts of education" (#4), "national and institutional policies relating to education" (#5), "develop own and learners' entrepreneurial skills" (#13) and "participate in basic educational research" (#17). Yet, these are some of the most important competences teachers should be acquainted with.

It is also worth noting that respondents across all groups singled out the following generic competences as the least important ones: "environmental and economic consciousness" (#13) and "ability to work in an intra and intercultural and/or international context" (#14). They also singled out the following subject-specific competences as the least important ones: "the local and international social, political, economic, cultural and environmental contexts of education" (#4), "national and institutional policies relating to education" (#5), "develop own and learners' entrepreneurial skills" (#13) and "participate in basic educational research" (#17). The most striking revelation in the findings is that academics rate "develop one's own and learners' entrepreneurial skills" (#13) and "ability to participate in basic educational research" (#17) as both of least importance and least successfully achieved. This implies that academics themselves are not keen on helping future teachers to be acquainted with such crucial competences.

It is worth noting that, across all the different groups, there are significant gaps between what is deemed important and what is deemed as the level of achievement for both generic and subject-specific competences. This is an

indication that effort and intentional strategies need to be put in place to minimise the gaps.

Semi-structured interviews have enabled the researcher to develop detailed knowledge of the experience of participants on Teacher Education Programmes at Alexandria University and an examination of the strengths and weaknesses of existing systems, leading to an identification of implications for policy and practice for enhancing the quality of Teacher Education Programmes in Egyptian higher education.

IX. The way ahead: implications for policy and practice

This section addresses the third research question: What are the proposed implications — according to study findings — for policy and practice to enhance the quality of Teacher Education Programmes in Egyptian higher education?

Based on the analysis and discussion of key findings of the study and through the insights from a comparative perspective that can arise from a careful process of policy learning, this section draws out their emergent implications for policy and practice to enhance the quality of Teacher Education Programmes in Egyptian higher education.

The theoretical framework and the key findings of the study confirmed the importance of competence-based learning and the importance of generic competences and subject-specific ones future teachers should be acquainted with. Those competences need to be included in the curriculum design, student assessment and evaluation systems in Teacher Education Programmes at Alexandria University to enhance degree comparability, graduate mobility with other African universities and employability. This means a paradigm shift from input and staff-centered programmes to output and student oriented ones. For that paradigm shift to be achieved, several implications for policy and practice should be addressed:

- Regulations of the available programmes need to be changed and adapted to allow the inclusion of those generic competences and subject-specific ones future teachers should be acquainted with in curriculum design, student assessment and evaluation systems. The chance for changing regulations of programmes normally happens once every five academic years. A report of the findings of the current study is to be sent to the University Council, the committees in charge of regulations and to the Faculty Council of the three faculties involved in the study to be considered properly before reforming regulations.

- Several conferences and workshops should be held to raise awareness about the importance of competences and competence-based learning for academics, students, graduates, employers and for the society at large.

- All stakeholders including academics, students, graduates, potential employers and professional organizations should be indirectly involved at different stages in the process of curriculum design and quality enhancement.

- To achieve those proposals, attention should be given to staff development and training. Thus, the study proposes a project on capacity building and training for academics in the three faculties involved in the study to enable them to incorporate new competences in the existing programme/course structures. Training package should cover the processes of curriculum design, student assessment and evaluation systems.

- In addition to the importance of restructuring the existing programme/ course structures to provide space for incorporating new competences future teachers should be acquainted with, new courses with structures that can incorporate necessary competences should be initiated, for the sake of realizing the harmonisation target.

- On the long run, changing regulations, raising awareness about the importance of competence-based learning and capacity building and training for academics will facilitate designing common curriculum development frameworks to enable comparability and equivalence of learning outcomes between Alexandria University and other African universities.

Last, but not least, the proposed implications for Policy and Practice provided for the researcher's own university might be of relevance for other public universities in Egypt and for other countries having similar education context. Finally, working according to a new paradigm or coping with a new paradigm requires time and effort but the outcome would be worthwhile, hopefully in respect of enhancing the quality of Teacher Education Programmes in Egyptian higher education.

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Compared education study: curriculum design for the development of competences (Tiradentes University — University of Deusto)

Letícia Soares de Vasconcelos Sampaio Suñé
and Roberto de Armas Urquiza[*]

Abstract: A comparative education analysis between the competence-based curriculum deployed at the Deusto University and the Tiradentes University was done. The analysis has focused on the following aspects: Educational theories; Curriculum design; Psycho-pedagogical guidelines; Teaching, learning and evaluation methodologies; Planning of execution; Results/Impacts. The set of information of the Tiradentes University was coming from a pilot project on the implementation of competence-based education, which was conducted by the authors of this article during 2012 and 2013. The data and information from the Deusto University were collected from: reading of institutional and course documents (Administration and Company Direction); Monitoring of classes; and interviews. The results indicated broad convergence of methodologies used and the contribution of both to the improvement of the quality indicators of the courses in these institutions. Moreover, in certain respects each institution has effective contributions of teaching-learning methodologies that can be embraced by the mutual enrichment of competence-based education as practiced by the two universities.

Keywords: competences; curriculum design; integration; active learning; educational theories.

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I. **Introduction: background and context**

The Latin America Tuning Project, during its two phases, 2004-2007 and 2011-2013, produced advances that have led to positive developments in the educational processes of the participating countries.[1] The approach between teachers, researchers and representatives of organizations linked to higher education in different countries, allowed the effective construction of the new list of elements to consider in curricular designs, to give importance to social demands and achieve better learning effectiveness. All this was due to three main results of the Phase I of the Tuning Latin America, namely: general and specific competences; approaches to teaching, learning and evaluation; student workload. Similarly, the results obtained have allowed mutual understanding and identification of ideas and aspirations among the participants of the Tuning AL, which had the effect of causing concrete experiences of continuity and deepening of the project through cooperation between countries. So, there have been some successful initiatives, which have been structured and developed in order to achieve positive results for the institutions involved and are currently concrete examples of curricular innovations, which are disclosed in the countries involved. A typical example was the Competence-based Curriculum, developed and implemented at the Tiradentes University, Brazil, due of the cooperation established between this university and the University of La Habana, Cuba, through the representatives of these countries in National Tuning Centres.[2]

The preparation for the implementation of Curriculum Design to develop competences at the Tiradentes University[3] (Unit for short) began in 2012. The project with students of Engineering courses (Environmental, Civil, Electrical, Control and Automation, Oil and Production) and of Business Area courses (Administration, Accounting and Technology courses in Human Resources) started in the first semester of 2013, at the campus of Unit, that is located in Aracaju, state of Sergipe, Brazil, and at the campus, located in the inner cities of the same state.

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[1] Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panamá, Paraguay, Peru, Dominican Republic, Uruguay and Venezuela.

[2] The authors of this article were the representatives of Brazil and Cuba.

[3] The Tiradentes University is located in the state of Sergipe, Brazil. It's a recognized quality institution of Brazil, which develops teaching, research and extension. Currently offers 43 graduation university degrees, 5 Master and 4 Doctoral programs. It also offers various graduate and postgraduate e-learning courses. Develops scientific and applied research and is a university that has contributed to the development of the region where it operates.

I.1. *Project characteristics*

The curriculum design for the development of competences covered the following phases:[4]

• Curriculum design
• Psycho-pedagogical references
• Planning and execution
• Monitoring and evaluation

I.1.1. Curriculum design

In a curriculum designed to develop competences the **systematicity** and the **integration** in the curriculum are important.

The first element, the systematicity, leads to the construction of the curriculum design with a systemic approach. Thus, the larger system — the professional profile — induces curriculum determination to vertical axes. In turn, these subsystems determine the other subsystems, namely: content matrix, curriculum horizontal axes, disciplines, learning programs and lesson plans. All subsystems are designed with a focus on competences profile to be developed by the student. For example, each horizontal axis is associated with a particular competences profile, so that the student, after completing a specific academic period (semester or year), has developed the associated competences set to that period. The general competences profile was built from the competences proposed in the Latin America Tuning Project[5] and completed based on questionnaires sent to different work scenarios with the aim of identifying the profession tasks, action fields and acting spheres of graduates.

The second element underlying the curriculum design is the **integration** at all levels: intra-disciplinary and interdisciplinary. The **intra-disciplinary integration** focuses on the logical and coherent development of the content of each discipline with a view to the perception of the whole. In turn, **interdisciplinary integration** is produced in the following ways:

• The contact points between disciplines.

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[4] Letícia S. Suñé, Paulo J.L Araújo, and Roberto de Armas, *Desenho de currículo para desenvolver competências: uma proposta metodológica* (Aracaju: Editora Unit., 2015).
[5] Pablo Beneitone, César Esquetini, Júlia González, Maida Marty, Gabriela Siufi, and Robert Wagenaareds, *Reflexões e perspectivas do ensino superior na América Latina* (Bilbao: Publications of the Deusto University, 2007).

- The development of full horizontal integration between the disciplines of a same academic period, through an integrative discipline that aims to ensure the development of the period competences profile.

- The cross training which works across the curriculum competences, in context in different subjects throughout the course.

- The vertical integration that occurs between the subjects of the vertical axis, to enable the learning progression of a given subject area and hence the competences profile associated with these axes.

Silva[6] stated that there is interdisciplinary integration when there are actions that contribute to the integration of various fields of knowledge, building the scientific knowledge in a systemic way, so that the interactions between systems avoid fragmentation. Only integration can ensure interdisciplinarity, and therefore the development of complex thinking in students, which is essential for the educational pathway of professionals who are able to give solutions to the problems that life presents, in professional, personal and community levels. Tobón[7] said that complex thinking complements the systemic approach enabling a knowledge construction method that takes into account the links between the parties, building relationships, chaos, change and uncertainty.

I.1.2. Psycho-pedagogical references

In teaching and learning processes it is essential to know not only how students learn but also the teachers should use different methodologies to achieve an effective learning. In this sense, Galperin[8] postulated the theory of learning by stages. This theory states that the student interacts with the objects of study through actions that evolve from the external phase, called material or materialized, and reaches the internal phase, called mental. These steps, however, signal the way of construction and internalization of knowledge, namely:

- Motivation

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[6] Antonio Carlos Ribeiro Silva, *Educação por competências* (Jundiaí: Paco Editorial, 2012).

[7] Sergio T Tobón, *Formación basada en competencias* (Bogotá: Ecoe Ediciones, 2005).

[8] Galperin cited by García Mendoza, Héctor J., Ortiz Colón, Ana M., Martínez Moreno, Juan, and Tintorer Delgado, Oscar, "La Teoría de la Actividad de Formación por Etapas de las Acciones Mentales en la Resolución de Problemas," *Inter Science Place* 1, no. 9 (2009): 1-25.

- Guiding Basis of Action
- Material step
- Verbal step
- Mental step

Learning begins when the student in a concrete teaching situation makes the first contact with the proposed action to promote his/her interaction with the object of study in its material or materialized form; then advances to the step in which the student already dominates the structure of action and has acquired the knowledge needed to develop the action, so that he/she can express in the oral or written language plan with the teacher, other students or himself/herself; finally learning reaches the stage where the action is internalized and incorporated into the student's mental plane. When the student arrives at this point acquires independence by developing the ability to generalize and apply knowledge to new situations in different contexts.

In order to take place effectively, learning must be preceded by two other steps: motivation, addressed to stimulate interest and lead to a positive attitude of students toward learning, and Guiding Basis of the Action which consists of a set of operations that meets certain order and rules that must be followed by the student in order to facilitate the implementation of the action. According to Díaz Pupo,[9] the guiding bases create internal mechanisms necessary for the development of strategic learning skills. The absence of a Guiding Basis of the Action leads the student to develop the action through trial and error, especially in his/her first contact with an action proposal to work a particular object of study. The Guiding Basis of the Action was one of the valuable elements contributed to competences curriculum methodology, which allowed students with knowledge gaps to organize and structure the thinking in the development of interaction activities with the objects of study, making them advancing their learning processes.

As to the teaching methods used in the curriculum to develop competences, any methodological strategy is valid, when it enables the active participation of students in the learning process and takes into account the following aspects:

- The type of content that should be worked
- Learning objectives of the disciplines and disciplinary axes to be achieved and the competences to be developed

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[9] Arledys Díaz Pupo, "Propuesta de bases orientadoras de la acción para estimular las habilidades conformadoras del desarrollo personal desde la asignatura 'Psicología de la personalidad' en condiciones de Colegios Universitarios Municipales," *Pensando Psicología* 6, no. 10 (2010): 75-96.

• The characteristics of students
• The resources available.

Moreover, it is important to remember that education to develop competences should focus on learning to action and resume the true meaning of knowledge, from its functionality, as commented by Zabala and Arnau.[10]

Experience has shown[11] that the following active methods are very effective in developing of competences:

• Project Oriented Learning — POL;[12], [13]
• Case Studies as teaching method

These were therefore the psycho-pedagogical and methodological assumptions that supported the planning and implementation of the teaching process and learning in a curriculum to develop competences, which are summarized in the mental map of Figure 1.

I.1.3. Planning and execution

The joint planning among teachers before the beginning of each academic year must be a necessary step in the competence-based curriculum. It is what allows true integration and interdisciplinarity at all levels. One of the hardest aspects of the implementation of the curriculum was to change the mind-set of teachers to break paradigms and move from an individual pedagogical practice to a new one, built on team. This aspect requires constant planning workshops of teaching activities, every three months, including:

• Programs of teaching and learning
• Lesson plans
• Activities inside and outside the classroom
• Interdisciplinary activities
• Projects of integrating axis
• Evaluation Memorials.

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[10] Antoni Zabala and Laia Arnau, *Métodos para la enseñanza de las competencias* (Barcelona: Editorial GRAÓ, 2014).

[11] Letícia S. Suñé, Paulo J.L.Araújo, and Roberto de Armas, *Desenho de currículo para desenvolver competências: uma proposta metodológica* (Aracaju: Editora Unit, 2015).

[12] Antoni Zabala and Laia Arnau, *Métodos para la enseñanza de las competencias*. Barcelona: Editorial Graó, 2014.

[13] William N Bender, *Aprendizagem baseada em Projetos: educação diferenciada para o século XXI* (Porto Alegre: Editora Penso, 2014).
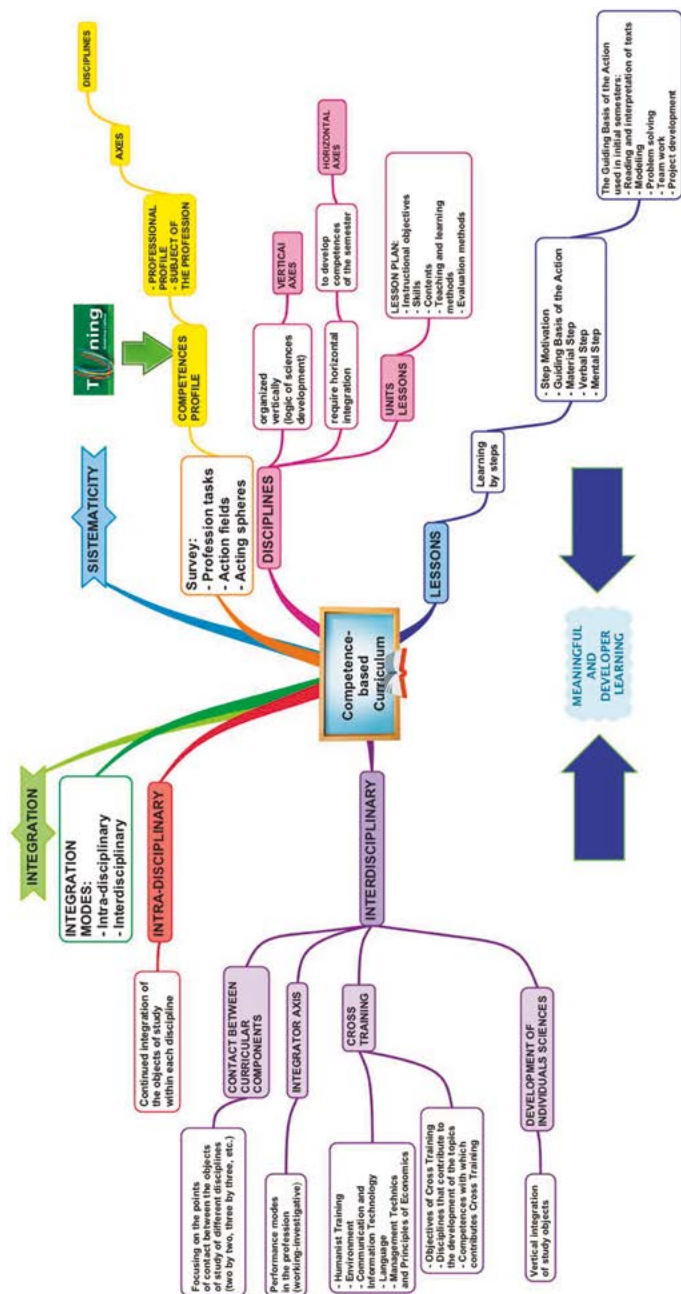
Figure 1

Mind map of curricular design foundations to improve competences[14]

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[14] Suñé, Araújo, and de Armas, *Desenho de currículo para desenvolver competências: uma proposta metodológica.*

I.1.4. Monitoring and evaluation

Academic leaders and managers of the project[15] monitored the entire implementation process. They oversaw the planning documents and the practice in the classroom, in order to observe how teachers were applying the plans at the end of the teaching and learning process.

On the other hand, the monitoring of project development utilized quality indicators provided by the following ratings, regularly applied at the end of each academic year:

- Student self-evaluation for the development of general competences: analysis and interpretation of texts, problem solving, teamwork, modelling and development projects.

- Teacher evaluation by students

- Teaching self-evaluation

- Calculation of qualification and abandonment levels based on the academic data of the students stored in the management system.

II. **Research structuring**

Considering that curricula are complex and dynamic structures, this study did not aim to cover all curricular variables. The research focused on the development of competences by the students, so that sought to identify the following aspects:

- Educative theories
- Curriculum design
- Psycho-pedagogical guidelines
- Teaching methodologies, learning and evaluation
- Execution planning
- Results/Impacts

The issues that led to this study were motivated by a comparative approach in order to identify which aspects were decisive for the success of the methodology used in both universities. The purpose was to highlight best practices and to contribute to the enrichment of these methodologies. Therefore, the questions that guided the research were: "how" each university

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[15] Project of Curriculum Design to develop competences at the Tiradentes University.

applies its methodology to develop students' competences, "why" these methodologies have led to improved learning and "which" are the key aspects of each one of them. For this reason, in both cases, aspects of the curriculum that could provide answers to these questions have been studied and analysed. The comparative analysis is described at the Section III.

II.1. *Planning activities*

This research is a qualitative analysis that is based on explicit comparisons between the curriculum of the Tiradentes University — Unit, located in Aracaju, Brazil and the University of Deusto — UD located in Bilbao, Spain, using the case study approach. Thus, provided that an explicit comparison emphasizes contrasts and reveals the similarities.[16]

The structure of compared education study is based on the following elements:

Table 1

Planning of research activities in the DITA short-term visit

Aspects	Information sources	Research tools
Conceptual framework of the institution and the course (Business Management Administration and Company Direction)	Institutional documents: — Pedagogical framework of Deusto University; — Teaching and learning model of the Deusto University; — Educational Project.	— Reading and analysis of documents.
Academic semester planning	— Study program of the discipline (Student Learning Guide); — Interviews to collect information on the planning of teaching activities (to confirm that occurs in teacher groups or individually); — Materials to support teaching and learning.	— Reading and analysis of documents. — Interview with the managers of the course of Business Management Administration and Company Direction.

[16] Mark Bray, Bob Adamson, and Mark Mason, *Educación comparada: enfoques y métodos* (Buenos Aires: Ediciones Granica S.A, 2010).

Aspects	Information sources	Research tools
Execution of the process of teaching and learning	— Curricular integration; — Investigative-professional axis; — Roles of teachers and students; — Use of active methods of teaching; — The commitment and motivation of students with activities; — The interaction level in class activities (use of group work, development of communication skills and reasoning of the students); — Forms of assessment: self-assessment, co- assessment and assessment by the teacher.	— Observation of lessons; — Interviews with those responsible for the course of Business Management Administration and Company Direction. — Interviews with teachers and students. — Access to methods and evaluation tools.
Results/Impacts	— Capacities development for students. — The changing in attitudes of students; — The transformation in thinking and acting of teachers.	— Interviews with teachers and students. — Quality indicators of the courses (evasion and approval).

II.2. *Information sources*

During the period of investigation full access to the course of Business Management Administration and Company Direction of Deusto University was provided to the researcher, so it was possible to work with the following sources of information:

Course and Institutional documents:

• Pedagogical framework of Deusto University
• Strategic Plan of Deusto University
• Teaching and learning model
• Student learning guide

- Educational Project of Business Management Administration and Company Direction Course

- Competences of Business Management Administration and Company Direction Course

- Some disciplines specifics materials (evaluation criteria/feed back to students)

Monitoring of classes of Business Management Administration and Company Direction Course:

- Microeconomics (period 1)
- Accounting (period 1)
- Budgetary Forecast and Management Control (period 2)
- Direction of People (period 3)

Interviews:

- Teachers of Business Management Administration and Company Direction Course.

- Students of Business Management Administration and Company Direction Course.

- Responsible for the course of Business Management Administration and Company Direction.

III. **The comparative analysis of the collected information**

III.1. *Educative theories*

The first look when curricular concepts are compared is the educational theory that supports them. According to Bray, Adamson and Mason,

Different curriculum concepts are nourished by ideologies supported in the formative looks and beliefs about the desired roles for schooling in society, the nature of knowledge and learning and the roles of students and teachers.

There is evidence that the curriculum conceptions of both institutions, Deusto University and Tiradentes University, are nourished both of progressivism as of cognitive pluralism. Both universities have a student-centered design and are associated with constructivist learning models that drive students to explore and develop independently and to be active builders in their own learning (progressivism). On the other hand, both curricular concepts (Deusto University

and Tiradentes University) promote the development of multiple intelligences and a diversity of attitudes and competences and students are seen as apprentices in various skills that make them able to incorporate the context of the ever-changing demands (cognitive pluralism).

A comparative analysis based on the approaches adopted in the present investigation is presented below:

III.2. *Curriculum design*

The curriculum design is an inductor element of competences development. Its structure should be based on assumptions that give purpose and meaning to structuring the set of disciplines that make up the curriculum of the course. Curricular axes, as well as the sequence and simultaneity of the disciplines in the composition of these axes should reflect an organizational structure that, once completed by the students, contributes to the final proposed professional profile.

Deusto University

As a result of Deusto University to be one of the principal participants of the Tuning Project, its courses have gone through a curriculum innovation process in order to implement competence-based education.

In this process, the basis for the preparation of curriculum design was the professional profile established through:

- Opinion polls and interviews with teachers, students, alumni and employers

- Market research conducted by one independent company

- Analysis of similar studies of curriculum innovation

- Analysis of the results of the Tuning Project

- Benchmarking with other universities

Due to the proximity of the University with the professional sector, the alumni helped to establish the basic characteristics of competences. The competences profile was contrasted with students who were at the end of their university degree.

Therefore, the basis of curriculum design was the professional profile expressed in competences, from which the disciplines have been established.

The curriculum of Business Management Administration and Company Direction Course (UD) establishes interdisciplinarity, only in the disciplines of Graduate Final Project and Practices in Business. The integration between disciplines is not in an effective practice however some disciplines, for its interdisciplinary characteristics, allow some level of integration, such as finance disciplines, which has a cross-cutting nature, and therefore integrative. This is an important aspect because without the integration it is not possible to develop competences.

Tiradentes University

The elements that support the curriculum design centered on competences development adopted by the Tiradentes University are systematicy and integration. Through systematicy, the disciplines are developed as subsystems of a larger system, the professional profile, to form an articulated structure of disciplines, the curriculum, with a purpose and a meaning. This arrangement is also based on the logic sequence of disciplines in each vertical axis of the particular sciences, as well as simultaneity of these disciplines in each horizontal axis in order to facilitate integration and the consequent interdisciplinarity. In the methodology of the Tiradentes University, integration is one of the aspects considered essential because the competences are formed from the mobilization and integration of diverse knowledge (conceptual, procedural and attitudinal). The integration results in the development of complex thinking.[17] In order to give appropriate answers to the problems that life presents, students need to develop complex thinking, since the actual situations are not mono-disciplinary or linear, but multi-disciplinary, cross-cutting, multi-dimensional, and therefore complex.

III.3. *Psycho-pedagogical guidelines*

The psycho-pedagogical guidelines adopted use a psycho-pedagogical model that facilitates the way of construction of knowledge and development of competences by students.

In both institutions, Tiradentes University and Deusto University, pedagogical guidelines based on constructivist psychology of cognitive

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[17] Edgard Morin, *Os sete saberes necessários à educação do futuro* (São Paulo: Cortez; Brasília, DF: UNESCO, 2011).

character are adopted, namely socio-interactionist constructivism, because students learn through interactive activities with the objects of study and other social subjects (colleagues, teacher, community, etc.).

In terms of learning model, the two institutions adopt models that follow different paths, but with many similarities between them. Both models rely on procedures to give meaning to the study objects and appropriation of knowledge through internalization of interaction actions with the study objects that evolve to the mental stage, so that the student acquires the ability to apply the structures of thought to new situations other than those in which learning actions have been developed.

Deusto University

The Deusto University uses a learning model based on Kolb's experience[18] and Ignatian Pedagogy.[19] In this model, learning is introduced cyclically into five main steps:

- Experiential Context
- Reflective Observation
- Conceptualization
- Active Experimentation
- Evaluation

Tiradentes University

The University Tiradentes works with the model of development in steps of Galperin (see I.1.2), which describes the steps that students perform from the external phase (material) to the mental phase, through the interaction of actions with objects of study

The Guiding Basis of the Action contributes significantly to student learning, and prevents that method of trial and error can be used by students who develop, for the first time, an action on a particular object of study.

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[18] Alice Y. Kolb and David A. Kolb, *The Kolb Learning Style Inventory — Version 3.1 2005 Technical Specifications* (Boston and London: HayGroup, 2015). http://learningfromexperience.com/media/2010/08/tech_spec_lsi.pdf.

[19] The Ignatian Pedagogy is a teaching and learning model that incorporates principles of Jesuit Education, http://jesuitinstitute.org/Resources/Ignatian%20Pedagogy%20(JI%20Edition%202013).pdf.

Burón[20] highlights the need for students to establish metacognitive strategies that help them to structure their learning process. It is observed that the Guiding Basis of the Action works with this feature, and therefore leads to better learning outcomes.

Comparative analysis

The analysis of cognitive operations provided in each stage of the design allows to identify a broad agreement between the two learning models.

The **experiential context** has common features with the **motivation step**. For both models, this is the time to link up with other contexts and encourage a positive attitude of the student, as well as the interest and the willingness with respect to the topic discussed. Both steps use as a means to promote motivation, documents, sounds, images, graphics, etc. The pedagogical mark of the Deusto University[21] explains the following:

> In summary, this first step is to place the student at the topic or issue to develop. Therefore, at this stage what matters is to motivate the student through his experience and background, so that he gets a first global approach to the subject.

In the **reflective observation**, memory, understanding, imagination and feelings are used to grasp the meaning and the essential value of what is being studied. The purpose of reflective observation is that people learn to ask questions and have a questioning attitude, to achieve a significant learning. Taking this into account, some similarity of the **reflective observation** with the **material step** (in which there is a perception of the structure of action to be developed) and the **verbal stage** (where the student verbally shares his reflection on the action, with himself or other social subjects) can be found.

The **conceptualization** of the **learning model of the Deusto University** is a step in which the student acquires the knowledge, scientific terminology, facts and figures, methods and strategies that form the scientific knowledge for each subject. However, this is not a memorization step, but the learning based on the use and application of cognitive skills (understanding, analytical and synthetic thought, critical judgment and divergent thinking) that allows

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[20] Javier Burón, *Enseñar a aprender: introducción a la metacognición* (Bilbao: Ediciones Mensajero, 2012).

[21] Universidad de Deusto, *Marco pedagógico* (Bilbao: Artes Gráficas Rontegui, S.A.L., 2001).

an integrated learning (where the concepts and theories are integrated on its own intellectual framework) and significant (incorporating relevant knowledge for personal development linked to attitudes, values and competences). In the model of the Tiradentes University the conceptualization is associated with various operations related to the development of actions in which the student interacts with the objects of study. In developing the action (or actions) by which a task or activity is performed, the student has to perform a series of operations, including the conceptualization in various degrees. **The Guiding Basis of the Action** indicates the critical path that the student must follow to build the learning, that is the operations that he/she must perform to do a task, as well as the sequence in which these operations are to be performed,[22] in order to develop his/her conceptualization abilities at different times and with different level of depth. In **material step** students take a more superficial initial conceptualization, which is intensified in the **verbal step**, and reaches the highest level in **mental step** where knowledge is linked to mental structures development.

An important aspect to highlight is that the model of the Tiradentes University prioritizes the contextualization of concepts and knowledge mobilized in real or simulated activities of labour scenarios. Thus, the student acquires the ability to generalize, that is, to apply the knowledge in the development of actions related to new contexts.

The model of the Deusto University defines the **active experimentation** as the theoretical and practical linking stage, which includes any activity that encourages the development of skills and abilities of students in the application of concepts, theories or models in order to solve problems and/or develop projects and/or implement models and strategies. In model of Tiradentes University, the experimentation has its guidelines generated by the Guiding Basis of the Action and occurs in three steps, material, verbal and mental, where the interaction of the student with the object of study is realized through action. Therefore, in the model of Tiradentes University learning is always produced in association with the resolution of an activity or task linked with the scenario of professional career, so the trial is inherent to the learning steps.

The evaluation is the last phase of the learning model of the Deusto University; it is held at three levels: personal, formative and summative. In the model of the Tiradentes University evaluation does not appear explicitly as a learning step, even when the action development strategy is incorporated

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[22] Letícia S. Suñé, Paulo J.L. Araújo, and Roberto de Armas, *Desenho de currículo para desenvolver competências: uma proposta metodológica* (Aracaju: Editora Unit, 2015).

in the mental plane, the students acquires the ability to self-evaluation and evaluate other people, an aspect that will contribute to their continuous improvement, as well as their classmates. The summative evaluation is not incorporated in the Tiradentes Universty model because it is not part of learning, but rather a result of learning.

Despite the different names and different psycho-pedagogical approaches, the important thing is that both models of learning, Tiradentes University and Deusto University converge on the induction capacity of educational processes leading to the construction of knowledge and the effective competences development.

III.4. *Teaching, learning and evaluation methods*

The use of active methods is necessary in innovative curricula that choose a student-centred teaching-learning process.

The active learning methodologies facilitate meaningful learning that is closely related to the development of competences. The only use of active learning methods does not ensure the development of specific skills, but activates student learning facilitating the achievement of competences. It is important to remember that competences development requires the integration of knowledge.

Deusto University

Active learning methods are widely used in Deusto University. Based on the documents of Administration and Direction of Company course and the observation of teaching, it was found that the following methodological strategies are used:

- Presentation of content by the teacher
- Reflection and discussion
- Documentation Analysis
- Preparation of work
- Analysis and discussion of case studies
- Application exercises in very different situations of the company
- Oral exhibition of work
- Role-playing
- Discussion
- Written reports
- Visits to companies

- Generation of direction skills
- Business Games

Deusto University teachers plan the teaching activities through documents that are a support to the processes of teaching, learning and evaluation, among which stand out:

- Student Learning Guide
- Feedback to Students

These documents help structuring and planning of the teaching process, because they propose appropriate teaching methods to develop competences and explain the contents, as well as the evaluation plan which sets out, for each competence, indicators, criteria (reflecting the observed performance), the evaluation technique, and the weighting factor. A student-learning guide consists of three tables:

- Table I: Teaching Strategies/Learning of Competences (strategies are chosen taking into account the competences to be developed and the contents to be used as a means to develop these competences).

- Table II: Student Work Plan (where the competences to be developed are correlated with: the content, the activities to be carried out, the type of activity, the material used and the time in class and outside of class).

- Table III: The Competences Evaluation System (correlates each competence with the corresponding evaluation indicators, performance criteria, evaluation techniques and weighting factors).

All teachers prepare this document, some more simply and others with great detail and more complete. This is a great advantage offered by Deusto University methodology because it supports teachers to develop planning for their disciplines with a focus on competences that will be developed by the students.

Another document used is the feedback for students, where the students' observed performance are compared to the desired performance, accompanied by their evaluation. This evaluative record offers a personalized monitoring of students, in that it describes the performance of each student, compared to the established criteria. This consists of excellent student feedback tool that enables continuous improvement of their learning process.

On the modalities of evaluation, the Deusto University uses not only hetero-evaluation, but also uses the self-evaluation and co-evaluation. In relation to the moments when the evaluation is performed, the Deusto University works primarily with the formative dimensions (along the course) and summative ones (end of course).

Tiradentes University

Tiradentes University encourages the adoption of active methodologies by teachers, so that the training is offered continuously to teachers in workshops that take place every three months. The methods used are:

- Dialogic and participatory presentation
- Project Oriented Learning — POL
- Case Studies
- Peer Instruction
- Gamification
- Problem Based Learning — PBL
- TBL — Team Based Learning
- Role-playing
- Inverted Class

Within these methodologies students develop various activities such as:

- Reading and analysis of documents
- Bibliographic search
- Writing report
- Problems solution
- Oral presentation of works
- Teamwork
- Presentation of seminars

It is also considered important to refer to the strategy developed by the Unit for teamwork through a Guiding Basis of the Action developed for this purpose. This work is always problematic because of the tendency of active participation of some students, while others do not cooperate effectively with the development of activities. In order to foster active participation in all activities carried out in teams, the Unit works with five member groups, each of which plays a specific function, as follows:[23]

- LEADER — Determines the systematic flow of events, applies the evaluation models of planning and other needs, directs and controls the flow of resources.

- VICE LEADER — Replaces the Leader in case of absence. Determines the goals and objectives, identifies performance criteria, the limits and

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[23] Letícia S. Suñé, Paulo J.L. Araújo, and Roberto de Armas, *Desenho de currículo para desenvolver competências: uma proposta metodológica* (Aracaju: Editora Unit, 2015).

pressures, determines the sequence of activities and strategies consistent with the goals and objectives.

• PRESENTER — Transcribe and displays the results in a coherent and understandable way for the team.

• RESEARCHER — Develops models for data collection, recommends sources of research or people to consult, collects information about the data and how the work is being done, identifies the necessary information, the sources of necessary basic knowledge, brings to the group all the material need (knowledge base, data and information).

• DESIGNER/DEVELOPER — Organizes graphic expressions of the work that is being developed, as well as the programming language in itself.

Usually the job rotation is performed, each new group activity, to ensure that students assume all roles, an aspect which is positively reflected in its training.

Regarding the planning instruments of educational activities, the Tiradentes University works with the following documents:

• Plan for Teaching and Learning (discipline planning)
• Integrated Work Plan (planning of learning times)
• Evaluation Memorial

In the *Plan of Teaching and Learning*[24] teachers specify learning outcomes to be achieved and the corresponding skills whose development should be promoted by the discipline, content and teaching strategies to be used, activities that develop inside and outside of the classroom and the estimated student time spending with the completion of these activities. On *Memorial Evaluation* criteria and the tools that will be used in each evaluation are established.

The Tiradentes University uses the following types of evaluation: hetero-evaluation, self-evaluation and co-evaluation. Regarding time when the evaluation is performed, this university proposes formative evaluation during the development of the semester, and the final evaluation (summative) at the end of the semester. Some teachers do in their disciplines diagnostic evaluation voluntarily. The implementation of the curriculum for the development of competences in Tiradentes University caused a greater participation of procedural evaluation, formative character, in the evaluative judgment on the qualifying conditions for students.

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[24] Unit internal planning document.

Comparative analysis

With regards to teaching, learning and evaluation methods, we conclude that both the Deusto University and the Tiradentes University develop their educational activities with a focus on competences to be developed by students. The guidelines used at both institutions fulfil their role of making teachers working on content as a means and not as an end. Both in Deusto University as the Tiradentes University teachers work with active and varied teaching methodologies that facilitate the learning process of students. Namay Zevallos[25] states that effective teaching methods include the approach of problem situations that describe practical situations, an aspect that is contemplated by the two Universities. Evaluation is also carried out with a focus on developed competences that are valued by the use of criteria that describe the learning outcomes expected of students at different levels of reach. In addition, in the two institutions the evaluation is made by the teacher (hetero-evaluation), but also, by the students themselves (self-evaluation) and as well as evaluate their colleagues (co-evaluation).

In comparative terms, the document structure of the teaching process, learning and assessment used by Deusto University allows better organization of activities in class, and induce teachers to follow to the model adopted in the institution to develop competences. Moreover, these documents consist of tools to aid the student to reflect in relation to their own learning process. In this sense, it is considered that the documents supporting the workroom developed by Deusto University provide a significant contribution to the development of skills by students.

III.5. *Planning of execution*

Planning for the implementation of the academic period is of strategic importance in competence-based education, because it allows to implement teaching-learning process in accordance with the guidelines established in the institutional pedagogical framework.

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[25] Wilder Namay Zevallos, "La teoría de la formación por etapas de las acciones mentales de Galperin: un esbozo teórico y casos prácticos," *Scridb*. https://pt.scribd.com/doc/115043666/ La-teoria-de-la-formacion-por-etapas-de-las-acciones-mentales-de-P-Y-Galperin-Esbozo-teorico-y-casos-practicos.

Deusto University

At the Deusto University planning is developed by each teacher. Only teachers of the same discipline plan together. In the planning process, each teacher prepares the Student Activity Guide, a document mentioned earlier (III.3. Teaching Methodologies, Learning and Evaluation).

The didactic planning involves general and specific competences to be developed in each subject (each subject is linked to a department). The Director of the Department approves and oversees each teaching activity guide, and supervises the implementation of the subject in order to ensure the development of competences.

The teachers training at Deusto University takes place systematically and, according to teachers, it has allowed the use of teaching strategies in the classroom, with mastery and efficiency, as it has been seen in the classes visited during the development of this research.

Tiradentes University

In Tiradentes University, planning is carried out jointly with the participation of teachers from all disciplines of an academic semester, to ensure the integration, which is one of the pillars of the adopted curriculum design. Through joint planning, interdisciplinary activities and working-investigative axis are structured.

The systematic training of teachers takes place in workshops in which teachers plan and discuss their teaching and learning plans, as well as receive training adapted to the educational guidelines and active methodologies of curriculum to develop competences. Before the start of each school year, after the teachers' vacation, these are dedicated to joint planning in workshops, always accompanied by the course coordinator. At such times it is done all the planning of the academic semester, which includes the preparation of interdisciplinary activities and working-investigative axes that develop, usually, through projects.

Comparative analysis

Both institutions use planning as a key element of putting into practice of curriculum design. However, the Tiradentes University performs planning jointly, through workshops in which teachers work to integrate

the disciplines of each semester, in order to ensure the practice of interdisciplinary leading to complex thinking. This is the greatest contribution of the Tiradentes University methodology to the curriculum for competences.

Both institutions provide tools for teachers to act in order to stimulate the development of the competences by students, an aspect that is consolidated through the continuous training of teachers. Despite this, there are teachers who work well active methodologies and others who do not. Both Deusto University as the Tiradentes University understand that this is a continuous improvement process where teachers use more effectively the active methodologies during the new academic year.

III.6. *Results/ Impacts*

Results/impacts of the use of methodologies in the two universities consist of fundamental aspect of the studies focused on teaching and learning processes. The greater importance of promoting improvements in teaching and learning processes has favourable impact on personal and professional development of students. This analysis should be carried out by means of quality indicators of higher education.

Deusto University

At the Deusto University the monitoring of students' results is done by collecting data in a computer system. The curriculum innovation based on the Bologna process started from July 2009, so that the first group of students of the curriculum for competences entered the University in 2009/2010.

It was not possible to obtain comparative results of academic performance indicators of students before and after curriculum changes, but the current indicators point out an improvement above 94% and the approval from employers concerning the profile of graduates by is higher than 90% (Deusto Alumni).

Tiradentes University

The Tiradentes University monitors the results of the competence-based education through the following ratings:

- The student survey regarding the acquisition of the following competences: motivation; interpretation of texts; teamwork; problems solution

- Teaching evaluation by students regarding the use of curriculum methodology for the development of competences

- Teaching self-evaluation regarding the use of curriculum methodology for the development of competences

- Calculation of quality indicators of higher education (abandonment, qualifications, etc.), based on statistics

Here are some results of the Business Area courses.

Table 2

First year students — 2013-1
(the development of basic competences)

Number of Students Consulted — 255		
Motivation	Increased	72%
	Has not changed	26%
	Decreased	2%
Interpretation of texts	Increased	66%
	Has not changed	34%
	Decreased	0%
Team work	Increased	75%
	Has not changed	25%
	Decreased	0%
Problem solving	Increased	70%
	Has not changed	29%
	Decreased	1%

An increase in qualification (percentage of students who have passed in all subjects of the semester) levels was observed when comparing the periods before and after the implementation of the curriculum for competences, as shown in the following Tables 3 and 4.

Table 3

Comparative analysis of average approval rates
in the Business Area courses (students who attend the first semester)

compared Semesters	Evolution of Qualifications
2012-1 vs 2013-1	63% Þ 67%
2012-2 vs 2013-2	59% Þ 67%

Table 4

Comparative analysis of average approval rates
in the Business Area courses (students entering in 2013-1
and who were in the second semester of the course)

Compared Semesters	Evolution of Qualifications
2012-2 vs 2013-2	73% Þ 85%

Table 4 indicates a significant increase in approval ratings (12%), a situation that reflects a better student learning, which can be understood in the following aspects:

- Overcoming the initial difficulties of adapting to new University study rhythms

- Increased basic abilities of students because of the intensive use of Guiding Basis of the Action in the first semester of Business Area courses

It is important to bear in mind that the competence-based education began to be implemented at the Tiradentes University in 2013-1.

Comparative analysis

With respect to results, the comparative analysis between the Deusto University and the Tiradentes University is made more difficult by the many variables that affect in both contexts. So, the important thing is to analyse the benefits of education to develop competences in these institutions.

At Deusto University, although it was not possible to obtain quantitative indicators before the adoption of competence-based education, current statistics indicate high levels of performance of students. Another significant

aspect is that teachers claim that students are more engaged and motivated with the course, after the implementation of the curriculum for competences.

In Tiradentes University, qualitative and quantitative data make clear the student satisfaction with the perception they have of the increase in basic skills, as well as improved performance reflected the evolution of average approval rates.

IV. **Final conclusions**

The comparative analysis of the curricular structures indicates that there are several points of convergence because the paths that in principle may look different in reality often express the same idea. In some aspects, methodologies separately have a higher evolution, generating contributions that can be used to the mutual enrichment of teaching and learning processes of the two institutions, the Deusto University and the Tiradentes University.

Some of these contributions are reported below as best practices of competence-based curricula design and implementation that can be transferred in different contexts.

The documents used by the Deusto University in the planning process of teaching and learning leads teachers to keep the focus on the best suited conditions to the development of competences by the students seem very relevant.

The documents used by the Deusto University to support the evaluation of learning that focus on competences developed by the students, with the proposition of indicators and benchmarks, as well as tools for feedback provided by teachers to students appear as very useful. The model contributes to the quality of learning evaluation, in that sense the proposal of pre-established criteria provides a reduction of the injustices inherent of the evaluator subjectivity, as highlighted by Silva.[26] This is a practice that should be disseminated as it adds quality to the teaching and learning process.

The curriculum integration model at the Tiradentes University favours the effective interdisciplinarity with the consequent development of complex thinking and of competences by students. According Suñé, Araújo and Armas,[27] it is not possible to forget that training students for the life implies

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[26] Antonio Carlos Ribeiro Silva, *Educação por competências* (Jundiaí: Paco Editorial, 2012).

[27] Letícia S. Suñé, Paulo J.L. Araújo, and Roberto de Armas. *Desenho de currículo para desenvolver competências: uma proposta metodológica* (Aracaju: Editora Unit, 2015).

training them to deal with problems, involving the different real dimensions. These problems are not linear or monodimensional, namely they are not simple. Often the approach of traditional teacher and learning processes offers a too simplistic example of the reality. Real situations are multidisciplinary, cross-cutting, multi-dimensional and therefore complex.

The Guiding Basis of the Action, which is one of the stages of the learning model used by the Tiradentes University, provides students a structured sequence of operations that must be performed to facilitate the development of actions through which person of learning interact with the study objects.

It is also highlighted as a positive point of the competence-based approach used by the University Tiradentes the joint planning of teachers before the beginning of each academic year. This planning allows teachers to develop integrative activities involving two or more subjects, thus promoting interdisciplinarity and the consequent competences development. Integrated planning of educational activities is considered an aspect that favours the development of competences by students, and the improvement of the learning efficiency. This is a good practice recommended to be used widely by universities that opted for competence-based education.

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Increasing PhD students' employability by focusing on the academic entrepreneurship. The analysis of the entrepreneurial competences

Sabina Hodzic[*]

Abstract: The aim of the present study was to explore the perspective for entrepreneurship among PhD students coming from variety of disciplines. More precisely, to identify the most important entrepreneurial competences for succeeding in the entrepreneurial venture, to explore whether these competences are being developed during the 3rd cycle studies, and to explore the entrepreneurial intentions of the future doctors. In order to choose the most important entrepreneurial competences, individual semi-structured interviews with ten entrepreneurs from different fields were conducted. In addition, the importance of each competence was evaluated in form of the questionnaire, by seventeen entrepreneurs. After the qualitative and quantitative analysis of the interviews and the questionnaire, 20 competences were selected as the most important entrepreneurial competences. These 20 competences were then evaluated by 50 PhD students from different fields of study. They evaluated the importance of each entrepreneurial competence, the level of its development during their PhD studies, and indicated their entrepreneurial intentions after finishing the PhD. The most important and the most developed competences are presented in the results. In addition, the results showed relatively high entrepreneurial intentions in case of not finding a job after the PhD and in general. These results imply the need for incorporating some sort of entrepreneurial training and the development of entrepreneurial competences adapted to each subject area during the PhD studies.

Keywords: entrepreneurial competences; PhD students; employability; academic entrepreneurship; entrepreneurial intentions.

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I. **Introduction**

One of the emerging needs in the current socio-educational context is to increase students' and young graduates' employability and this has been a common research topic. Nevertheless, increasing PhD students' employability is not so common in the literature (nor in practice), and even less if the focus is entrepreneurship.

According to the Eurostat data[1] there were an estimated 717,320 doctoral students in the EU-28 in 2012 (enrolled at ISCED level 6 – Second stage of tertiary education; leading to an advanced research qualification). The estimated number of those who finish the last stage of tertiary education in EU-28 in 2012 was more than 121 thousand people of which more than 31 thousand graduated in the fields of social and behavioral sciences and business. Unemployment rate for people with tertiary education (ISCED levels 5 – 8) in European Union (28 countries) in 2014 was 6.1%. And although the tertiary education level unemployment rate is much lower than for people with lower educational levels, there is still almost 1.5 million highly educated unemployed people in Europe. Increasing people's (especially young people's) employability has been an important strategy goal of the European Council and European institutions[2]. However, increasing PhD students' employability has been mostly neglected, partly due to the common belief that PhD students will naturally continue their careers in the academia. Nonetheless, employment opportunities for young doctors are very limited, especially because of the big imbalance between the demand (for young researchers and/or professors) and supply (of young doctors). One of the less explored ways for addressing this issue and increasing students' employability is through enhancing their entrepreneurial competences and promoting entrepreneurship as a legitimate form of employment.

Therefore, the general aim of the present study is to explore the perspective for entrepreneurship among PhD students coming from variety of disciplines. More precisely, we were interested in detecting the most important entrepreneurial competences for engaging and succeeding in the entrepreneurial venture and see whether these competences are being developed during 3rd cycle studies and in what way. Moreover, the study aims at exploring entrepreneurial intentions of PhD students and future doctors.

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[1] "Eurostat: Statistics Explained," European Commission, http://ec.europa.eu/eurostat/statistics-explained/index.php/Main_Page.

[2] "Eurostat: Statistics Explained," Europe-2020-strategy, http://ec.europa.eu/eurostat/web/europe-2020-indicators/europe-2020-strategy

I.1. *Entrepreneurship as a new form of employment for young doctors*

The main goal of doctoral programs is to "enable students to acquire research skills, competences and knowledge in a particular field of interest"[3]

According to European Union's European Qualifications Framework,[4] third cycle (doctoral or specialization) degrees are awarded to students who:

- Have knowledge at the most advanced frontier of a field of work or study and at the interface between fields.

- Have the most advanced and specialized skills and techniques, including synthesis and evaluation, required solving critical problems in research and/or innovation and to extend and redefine existing knowledge or professional practice.

- Demonstrate substantial authority, innovation, autonomy, scholarly and professional integrity and sustained commitment to the development of new ideas or processes at the forefront of work or study contexts including research.

In other words, 3rd cycle students should have competences which fit them for employment as professionals in their own (and related) fields or for a progression to a career in academic research.

However, as previously mentioned, not all of PhD students will find employment in academia and the mentioned competences (specific for their fields of studies) would probably not be sufficient to make them employable and ready to enter the global job market. As Wall and Welsch[5] mention, skills gained through PhD studies need to be complemented with other, more generic, skills that would increase their employability and prepare them better for the labor market. One of the ways of increasing PhD students' employability prospects is through entrepreneurial competences.

Entrepreneurship has been the focus of research in many disciplines, from economy and management, to psychology and sociology and it

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[3] "Tuning-EuroPsy: Reference Points for the Design and Delivery of Degree Programmes in Psychology," http://www.deusto-publicaciones.es/deusto/index.php/es/tuning-es/tuning-refpoints-es.

[4] "European Consortium for Accreditation, European Qualifications Framework", http://ecahe.eu/w/index.php/European_Qualifications_Framework#Level_8_is_compatible_with_the_Framework_for_Qualifications_of_the_European_Higher_Education_Area.

[5] Glenda P. Wall and Carsten P. Welsch, "Employability in Europe: Enhancing Post Graduate Complementary Skills Training" (paper presented at HEA STEM Learning & Teaching Conference, Birmingham, UK, April 17-18, 2013).

managed to become a true cross-disciplinary concept. Different aspects of entrepreneurship, though, have received research attention from different disciplines. For instance, the entrepreneurial individual has been more a focus of psychological studies, while a so-called macro approach to entrepreneurship has been a subject of economic research.

Independent of the disciplinary approach to entrepreneurship, it has been identified as an important and valuable source of employment and re-employment.[6,7] Entrepreneurship is defined as a specific interaction between individuals and their environment, consisting of having entrepreneurial intent and identifying, evaluating and exploiting opportunities.[8,9,10]

When it comes to academic entrepreneurship, in the present research we would like to adopt a broader view on what academic entrepreneurship represents and how it differs and resembles "standard" entrepreneurship. According to Franzoni and Lissoni[11], academic entrepreneurs are outstanding scientists who are directed toward commercialization of their research findings (either via technology transfers, patents, university spin offs etc.) in order to broaden their influence or achieve financial resources for future research. The "results" or outcomes of entrepreneurship can be creating value[12] or creating a company,[13] or the individual can demonstrate entrepreneurial activities inside the organization.[14] In this line, the outcomes of academic entrepreneurship can

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[6] Robert Hisrich, Janice Langan-Fox, and Sharon Grant, "Entrepreneurship research and practice: A call to action for psychology," *American Psychologist* 62, n° 6 (2007): 575-589, doi: 10.1037/0003-066X.62.6.575.

[7] Nikolaj Malchow-Moller, Bertel Schjerning, and Anders Sorensen, "Entrepreneurship, job creation and wage growth," *Small Business Economics* 36 (2011): 15-32, doi: 10.1007/s11187-009-9173-y.

[8] Scott Shane and Sankaran Venkatarama, "The promise of entrepreneurship as a field of research," *Academy of Management Review* 25 (2000): 217-226, doi: 10.1016/S0149-2063(03)00016-3.

[9] Christopher L. Shook, Richard L. Priem, and Jeffrey E. McGee, "Venture creation and the enterprising individual: A review and synthesis," *Journal of Management* 29 (2003): 379-399, doi: 10.1016/S0149-2063(03)00016-3

[10] Jonathan T. Eckhardt and Scott A. Shane, "Opportunities and entrepreneurship", *Journal of Management* 29 (2003): 333-349, doi: 10.1016/S0149-2063(02)00225-8.

[11] Chiara Franzoni and Francesco Lissoni, "Academic entrepreneurs: Critical issues and lessons for Europe," in *Universities, knowledge transfer and regional development: geography, entrepreneurship and policy*, ed. Attila Varga (Cheltenham, U.K. and Northampton, Mass.: Elgar, 2009), 163-190.

[12] Hisrich, Langan-Fox and Sharon Grant, "Entrepreneurship research," 575-589.

[13] Mariola Laguna, "Self-efficacy, self-esteem, and entrepreneurship among the unemployed," *Journal of Applied Social Psychology* 43, n° 2 (2013): 253-262, doi: 10.1111/j.1559-1816.2012.00994.x.

[14] Shane and Venkatarama, "The promise," 217-226.

be expanded to identifying new research areas and sources of funds or identifying opportunities with commercial market applications, as well.

Nevertheless, the scope and influence of academic entrepreneurship to large extent depends on institutional, organizational and political factors.[15] Some countries, such as USA have a longer tradition of fostering and regulating academic entrepreneurship and therefore more success in it.[16] Therefore, it is not surprising that the research topics related to academic entrepreneurship usually focus on university spin-offs, technological transfer, policies and legislation, and more macro factors in general, offering little about the entrepreneurial individual and integration of scientific knowledge and skills and the commercial success.

In this context, Siegel and Wright[17] in their review on academic entrepreneurship propose several new perspectives of research in order to understand better the different aspects of academic entrepreneurship. However, none of the perspectives and research questions reflect the need to study the entrepreneurial individual. In other words, how to equip academics for successful entrepreneurial career.

Some earlier studies regarding academic entrepreneurship have called for analysis of the nature and behavior of academic entrepreneurs.[18]

Researchers in the field of entrepreneurship have always tried to identify what distinguishes entrepreneurs from non-entrepreneurs. Independent of the entrepreneurial outcome, it is believed that entrepreneurial individuals differ in some aspects from people who do not share this entrepreneurial spirit or intention. In this sense, they have tried to detect the individual differences that are believed to affect the entrepreneurial process. Thus, some claim it is entrepreneurial self-efficacy (people's belief in their ability to take entrepreneurial actions based on their assessment of the necessary skills they possess),[19,20,21]

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[15] Franzoni and Lissoni, "Academic entrepreneurs," 163-190.

[16] Ibid.

[17] Donald S. Siegel and Mike Wright, "Academic entrepreneurship: Time for a rethink?" *British Journal of Management* 26, n° 4 (2015): 582-595, doi: 10.1111/1467-8551.12116.

[18] Mike Wright, Sue Birley, and Simon Mosey, "Entrepreneurship and university technology transfer," *Journal of Technology Transfer* 29, n° 3-4 (2004): 235-246, doi: 10.1023/B:JOTT.0000034121.02507.f3.

[19] Chao C. Chen, Patricia G. Greene and Ann Crick, "Does entrepreneurial self-efficacy distinguish entrepreneurs from managers?" *Journal of Business Venturing* 13 (1998): 295-316, doi: 10.1016/S0883-9026(97)00029-3.

[20] Alex F. De Noble, Dong Jung, and Sanford B. Ehrlich, "Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial actions," in *Frontiers of Entrepreneurship Research*, ed. Paul D. Reynolds (Babson College, Babson Park, MA, 1999), 73-87.

[21] Laguna, "Self-efficacy," 253-262.

some that it is entrepreneurial intention, and some argue that optimism, risk taking and tolerance of ambiguity are those key individual differences that distinguish entrepreneurs from non- entrepreneurs.[22]

Nevertheless, these mentioned psychological characteristics are not sufficient to explain what distinguishes entrepreneurs from non-entrepreneurs and entrepreneurs from successful entrepreneurs. As some authors suggest, personality traits and cognitive abilities are important but not sufficient determinants of successful entrepreneurship.[23] Therefore, it is necessary to include other aspects in order to better explain the entrepreneurial process. One of these other aspects are entrepreneurial competences.

In the present study we would like to explore and identify entrepreneurial competences that are equally important for the entrepreneurial process as personality traits or cognitive abilities, by focusing on a specific population – PhD students.

I.2. *Previous examples of developing employability among students*

Although not a very common topic, increasing students' (and especially PhD students') employability has been a subject of few relevant studies that are described below. Wall and Welsch,[24] for instance, focused on bridging the gap between the academia and the job market and helping PhD students enhance their employability prospects. They identified important general skills, unrelated to the specific field of study that could be taught during the PhD studies and thus help future doctors in their career development. These skills included time management, team work and networking, assertiveness, writing skills, career planning, to mention some of them. These skills were taught in a form of different workshops and the authors suggest that they be embedded in the research training across all universities in Europe.

Another relevant research focused on entrepreneurship development in higher education, more precisely, on the university-enterprise relationship in enhancing entrepreneurship among university students. The aim of this research was to investigate the way the main stakeholders—academics,

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[22] Shane and Venkatarama, "The promise," 217-226.

[23] Susana Santos Correia, António Caetano, and Luís Curral, "Psychosocial aspects of entrepreneurial potential," *Journal of Small Business & Entrepreneurship* 26, nº 6 (2013): 661-685, doi: 10.1080/08276331.2014.892313.

[24] Wall and Welsch, "Employability in Europe."

employers, students and graduates—view the training of entrepreneurial competences.[25]

The main objective of the project was to define generic[26] entrepreneurial skills for the students and guidelines for professors in order to adjust the theoretical training to the requirements of the practical placement, in terms of entrepreneurship. To do so, key entrepreneurial competences were identified and the level of their importance for each stakeholder was compared.

One of the interesting findings of this study was the importance of several generic entrepreneurial competencies (or skills) that several stakeholders mentioned. The authors identified communication and presentation skills, creativity, teamwork etc. among the things that should be included in universities' curricula in order the students could adjust better to their practical placements and to improve the entrepreneurial training.

I.3. *The aims of the study*

In this sense, the aim of the present study is two-fold. First, the study tries to identify the most important entrepreneurial competences necessary for pursuing (academic) entrepreneurial activities. More precisely, to identify generic entrepreneurial competences that two important target groups (PhD students and young entrepreneurs) find important, relevant and necessary for potential entrepreneurial ventures. The term "entrepreneurial competences" will be used to refer to all those competences that are considered as necessary or highly instrumental for a person who wants to become an entrepreneur (a successful entrepreneur). Second, the aim is to examine to what degree and how are these entrepreneurial competences being developed during the doctoral studies and through doctoral programs.

The main research questions of the present study are:

- Which entrepreneurial competences are considered important for starting and succeeding in own bussiness/venture/project according to young entrepreneurs?

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[25] Marcela Rodica Luca and Laura Teodora David, "Tuning research on university-enterprise partnership in training entrepreneurship" (European University-Enterprise Cooperation Network, Project EUE-NET), retrieved from http://www.eue-net.org/_download/EUE-Net_Tuning_book.pdf.

[26] Generic competences refer to those multifunctional, transversal, mentally complex and multidimensional combinations of knowledge, abilities, attitudes, roles and responsibilities as developed in Aurelio Villa Sanchez and Manuel Poblete Ruiz, eds., *Competence-based learning. A proposal for the assessment of generic competences* (Bilbao: Deusto University Press, 2008).

- Which entrepreneurial competences are considered important for starting and succeeding in own bussiness/venture/project according to PhD students?

- At what level and how are important entrepreneurial competences developed during doctoral studies?

- What are entrepreneurial intentions of the PhD students?

II. **Method**

II.1. *Literature review*

The initial pool of entrepreneurial competences was created after reviewing some of the most relevant publications about entrepreneurship and more precisely, about entrepreneurial competences. The aim was to identify some of the most important competences that different authors in the field highlighted as essential for successful entrepreneurship. As already mentioned, the term "entrepreneurial competences" is used to refer to all those competences that are considered as necessary and useful for a person who wants to become an entrepreneur (a successful entrepreneur). The summary of the used sources and different classifications of the competences is presented in Annex 1. After gathering the competences, a synthesis of all the gathered information was made and an initial list of 38 competences was created.

II.2. *Sample and procedure*

After creating the initial pool of 38 competences, a pilot interview was conducted with one entrepreneur in order to evaluate the importance of each competence and create the final list of entrepreneurial competences which would be assessed by other entrepreneurs. After analyzing the answers from the pilot interview, the following aspects were modified:

- We introduced a signed consent to be presented to and signed by all the interviewees, through which they would be informed about the objective of the study and the scientific purpose of all the obtained information. The informed consent is presented in Annex 2.

- Two additional questions were added to the initial interview structure:
  - *Is there something from your studies that helped you in particular to start your own business?*
  - *What would you include to your study program that would help future entrepreneurs?*

- It was decided to include a list of definitions (a definition for each competence) in case the respondent does not understand fully some of the competences or would like to consult it.

Additionally, some aspects to be improved by the interviewer were analyzed and agreed to be considered for the following interviews:

> To focus on identifying important factors for entrepreneurship that are more competence-related. For example, if the answers to questions, such as "*What helped you start your own business?*" do not actually reflect any competence, the interviewer would try to re-formulate the question to guide the interviewee to give a more competence-related answer.

After analyzing the pilot interview two competences were eliminated: *Capacity to evaluate perspectives for new ideas* because it was considered to be very similar to *Opportunity evaluation and development* and *Industry skills* because it was too wide. In addition, some of the competences were renamed or slightly changed to be more understandable and less ambiguous. In addition, the literature on entrepreneurial competences was consulted again in order to define some aspects that the pilot interviewee mentioned, and four more competences were added to the initial list - *Understanding market dynamics in a particular field, Negotiation and deal making skills, Business ethics* and *Team work*. Finally, the lists of 40 competences and 40 corresponding definitions were made. Leaning on the literature review, these 40 competences were divided into four parts — entrepreneurial competences, psychological competences, social competences and technical competences. The list of 40 competences in English is presented in Annex 3.

In order to assess the importance and relevance of selected entrepreneurial competences and to choose the most important ones, 10 individual semi-structured interviews (approx. 20-30 minutes long) with 10 entrepreneurs from different fields were conducted. All of the entrepreneurs were recruited in Deusto Entrepreneurship Center, more precisely, in DeustoKabi incubator, the University of Deusto's first Technology Based Business Nursery (TBBN). The interviewed entrepreneurs signed the informed consent and agreed that the interview could be recorded. The total duration of all ten interviews was around three and a half hours. Apart from obtaining demographic data and data related to entrepreneurs' start-ups, the interview served to obtain an evaluation of the importance of the presented competences. The interviewees were asked to evaluate the importance of each competence presented in the form of questionnaire. The final version of the interview with the competences questionnaire and the list of definitions are presented in Annex 4 and 5.

Moreover, in order to obtain more data for a quantitative analysis (quantitative evaluation of the importance of the competences) 7 more entrepreneurs (recruited at the local employment fair) completed an on-line version of the same competences' questionnaire that was given to the interviewed participants. They did not go through the interview but they did have a chance to add or point out the most important competences from the list or some other characteristic they found important that were not on the list, in open questions at the end of the questionnaire.[27]

All of the entrepreneurs who participated in the study (both those interviewed and the additional seven) were founders or co-founders of the company/start-up and all of them had at least a university degree (except one interviewee who was finishing his university career). The majority were male (fourteen), and the age range was 21 to 43 years (mean age was 31.9 years). Almost all start-ups belong to Information and Communications Technology sector, but some of them offer services and some offer products. In addition, not all of the start-ups were in the same development phase — some of them were at the beginning (establishment or capital search) and some of them were more mature (product launch or growth). The average duration of the start-ups whose founders were interviewed is almost 2 years (23.9 months), the longest one having more than 4 years and the shortest one 3 months duration.

Table 1

Classification of educational areas of the entrepreneurs who participated in the study

Education	Nº
IT Engineering	8
Advertising	3
Telecommunications engineering	1
Electronic engineering	1
Fine arts	1
Law	1
Journalism	1
Superior technical education	1
Total	**17**

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[27] The on-line version of the questionnaire consisted of the same list of 40 competences that was given to the interviewed participants.

Table 2

Development phases of the start-ups that participated in the study

Phase	N°
Establishment	2
Project design	3
Capital search	1
Growth	8
Optimization	1
Product launch/ product selling	2
Total	**17**

II.3. *Interview*

The purpose of the interview was to evaluate the importance of different entrepreneurial competences according to entrepreneurs and to choose the most important to be included in the final questionnaire. The interview consisted of 3 parts. First part was dedicated to collecting some general demographic and professional data, such as age, sex and start-up type and duration. Along with that data, the participants were asked about the factors and characteristics they consider important or necessary for entrepreneurship. After that, they were given the list with 40 competences to evaluate their importance for entrepreneurship on a scale from 1 (Not important at all) to 5 (Very important). Finally, the last part served to fulfil the data from the questionnaire, asking the participants to add or point out any additional competence or characteristic they consider important for the entrepreneurial process.

II.4. *Analysis of the data obtained through the interviews with the entrepreneurs and the design of the questionnaire for doctoral students*

The data obtained from the interviews, as well as the scoring of the competences was analyzed in detail. After calculating the final score for each competence, the median score was calculated and it was decided that the competences that obtained a score higher than the median score (that is higher than 4.06) would be kept and included in the version of the questionnaire designed for the PhD students.

The ranking of the importance of all entrepreneurial competences made by entrepreneurs is presented in Annex 6. As can be seen in Annex 6, several competences indicate very similar means (e.g. 4.47, 4.53), implying that the interviewed entrepreneurs considered these competences to be highly and equally important. However, the competence that had the highest score (in comparison with the other competences) was O*rientation toward the clients (4.82)*. This competence was also mentioned as important by various interviewees during the interview. The entrepreneurs we interviewed think that knowing how to listen to the clients and their needs is a necessary condition to have success in the new business.

Besides client orientation, *Market orientation (identifying, evaluating and developing market opportunities*) was also considered as very important by entrepreneurs. When discussing about the reasons why they started their own business, besides other reasons, it became clear that recognizing the opportunity and evaluating it as something viable and valuable (and further exploiting that opportunity) was something that all of the interviewed entrepreneurs had experienced. In addition, it was decided to merge two competences into one - *Market opportunity identification /recognition* and *Identification and definition of a viable market niche* - and name it *Identification of market opportunities or a viable market niche*. The reason for this was that the meaning of these two competences was very similar and it reflected the same competence.

Moreover, after analyzing the answers from the individual interviews (the qualitative part) it was decided to add two more competences from the list that did not score above the median but were mentioned in various interviews as important. The first is *Innovation*, which, in one form or another, emerged as an important factor for entrepreneurship. Several interviewees mentioned that added value was extremely important for a successful business. People usually think if they don't invent a new non-existing product they won't succeed in the business, but that is wrong according to the interviewed entrepreneurs. The second is *Written and oral communication skills*. Various interviewees mentioned that oral and written expression and public speaking was something they either learned during their careers that helped them or they think it should be included in the current study programs in order to help future entrepreneurs.

In addition to the above, more than half of the respondents emphasized the persistence and resilience (*be able to dedicate a lot of time, sacrifice, not give up, not listen to bad comments, have good will etc.*) as a highly important factor or even the key factor for entrepreneurship. This competence was supported by high scores on the questionnaire as well (4.53).

According to the scoring, *Technical competences* were not found as important as anticipated, which was confirmed by the interviews as well — several respondents mentioned that this is something that could be learned and that everyone can learn by themselves "on the way", if necessary. Some entrepreneurs would include technical and business skills and knowledge (budget, business plan, invoicing etc.) into study programs but they consider that most of those things are easily learned by oneself, and if a person is willing to learn and find information she would succeed in it. Thus, none of the technical competences were included in the final version of the questionnaire. Table 3 shows the highest (6) and the lowest (5) rated competences by the entrepreneurs.

Table 3

Highest and lowest rated entrepreneurial competences according to entrepreneurs' ratings

Highest rated competences	Mean
Customer orientation/ Capacity to understand customers' needs	4.82
Building trust	4.60
Evaluation and development of market opportunities	4.53
Decision making	4.53
Understanding, analyzing and solving problems	4.53
Willingness to assert oneself/ Resilience/ Intense effort/ Commitment / Endurance and adaptability	4.53
Lowest rated competences	Mean
IT competences	3.53
Social perception	3.41
Business plan preparation	3.41
Financial and budgeting skills	3.24

In order to complete the quantitative analysis of the scores, we examined the semi-structured interviews looking for some additional factor or competence that was not included in our preliminary list that the entrepreneurs found important.

The synthesis of all the answers yielded some important factors, mostly psychological or social, thus none of these aspects were included in the final questionnaire. Nevertheless, we would like to mention these aspects:

- The strongest reason for entering into entrepreneurial adventure for almost all the interviewees was *a desire to be independent, to have autonomy in one's own work, not to depend on others.* Although, other external factors might have contributed to entrepreneurship (lack of work, downsizing of the companies they previously worked in) they all mention this as their main motivation. This *need for independence* has been highlighted in previous research as well, as a primary motive that drives individuals to engage in the entrepreneurial process.[28,29]

- In addition to this, several interviewees mentioned *passion, believing in your project/product/idea and believing in success* as important. This aspect might reflect on what is often mentioned in entrepreneurial research and that is self-efficacy or *entrepreneurial self-efficacy.* People's belief in their ability to take entrepreneurial actions, having a good conception of themselves and high level of self-esteem are often considered a key determinant of entrepreneurial process or enterprising spirit.[30,31,32] After talking to the entrepreneurs, this factor, along with the desire to be independent were marked as the primary motivational drives for the entrepreneurial process.

- Additional two factors that emerged as important were more social-related. *Being around people in similar situation,* such as other entrepreneurs, with the same problems/difficulties and doubts stood out as one of the helping factors. Sharing this experience helped the entrepreneurs feel more confident and secure about their own entrepreneurial adventure.

- Also, it was very clear that none of the interviewees would have gone into entrepreneurship without *social support* from their surroundings and, more importantly, without a partner(s). In addition, several interviewees mentioned that it is important to search for right and adequate partners that can complement their own knowledge and skills. This is also reflected in the analysis of the results from the questionnaire, where *Network development* (as we defined it) obtained a score higher than the median score and was included in the final version of the questionnaire.

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[28] Caetano, Santos and Curral, "Psychosocial aspects," 661-685.
[29] Shane Scott, Locke Edwin A, and Collins Christopher J., "Entrepreneurial motivation." *Human Resources Management Review* 13, n°2 (2003): 257-279. doi: 10.1016/S1053-4822(03)00017-2.
[30] De Noble, Jung, and Ehrlich, "Entrepreneurial self-efficacy," 73-87.
[31] Santos, Caetano, and Curral, "Psychosocial aspects," 661-685.
[32] Aurelio Villa Sanchez, and Manuel Poblete Ruiz, "Competence-based learning."

The final list of competences included in the questionnaire for the doctoral students is presented in table 4.

Table 4

Final list of competences included in the questionnaire for doctoral students

1. Have vision and share it with others
2. Identification of market opportunities or a viable market niche
3. Evaluation and development of market opportunities
4. Understanding market dynamics in a particular field
5. Development of products or services appropriate to the firms chosen market niche / product innovation
6. Negotiation and deal making skills
7. Customer orientation
8. Leadership capacity
9. Decision making
10. Understanding, analyzing and solving problems
11. Resilience / Endurance and Adaptability
12. Emotional stability / Emotional intelligence
13. Creativity
14. Innovation
15. Expresiveness
16. Written and oral communications skills
17. Network development
18. Interpersonal skills
19. Building trust
20. Team work

II.5. *Pilot subject feedback*

The first version of the questionnaire for doctoral students consisted of 3 parts as well. The first part was dedicated to assess the level of development of each competence during the doctoral studies. The second part was designed to evaluate the importance of the each competence for entrepreneurship. Finally, the last part included the questions about students' plans after they finish their studies and their intention to engage into entrepreneurship. This version of the questionnaire was completed by first pilot respondent. After the feedback from the pilot respondent, some

competences were better defined and the questions about the students' plans were structured better. Also, the instructions were re-formulated to be more clear and understandable. The necessary time for completing the questionnaire was around 30 minutes according to the respondent.

After re-evaluating the purpose of the questionnaire, it was decided to change the part about evaluating importance of each competence, because it was expected that the majority of the competences would be ranked as very important, which would not yield interesting information for the study. Thus, this part was changed in a way that the respondents were asked to choose ten most important competences for entrepreneurship.

This new version of the questionnaire was sent to another pilot respondent and after his feedback, some small changes were made to the format. We then proceeded to collect data.

The final version of the questionnaire included 3 parts:

1. The students were asked to imagine that they will start their own business related to their PhD studies after they finish. They were the asked to assess each competence from the list of 20 competences according to the **level of development** during their PhD studies on scale 1 (not developed) to 4 (very developed). Evidence for the development of each competence was also asked for.

2. Students were asked to evaluate **the importance** of entrepreneurial competences by choosing ten most important competences for starting own business among the list of twenty competences.

3. Students were asked to report their **entrepreneurial intentions** after finishing PhD, in general and if they do not find job after the PhD.

III. **RESULTS**

III.1. *Quantitative results*

Some descriptive results regarding the age, sex and year of the PhD of the participants are presented in the following tables.

In addition, frequency and percentage of entrepreneurial intentions after finishing the PhD are presented in table 8. Just under 40% of the candidates believed they might proceed to engage in entrepreneurial activity immediately after finishing their PhD, but almost two thirds intended to do so in the longer term (or straight away in the event of not finding a job). No significant

differences in entrepreneurial intentions (none of the three) were found according to the sex or year of study of the students.

Table 5

Age

N	50
Mean	39.94
SD	7.74
Minimum	23
Maximum	57

Table 6

Sex

Sex	N	%
Female	27	54
Male	23	46
Total	**50**	**100**

Table 7

Students according to the PhD year

PhD year	N	%
1	19	38
2	15	30
3	1	2
4	5	10
5	1	2
"Last year"	3	6
Finished	6	12
Total	**50**	**100**

Table 8
Students' entrepreneurial intentions

Entrepreneurial intention after finishing PhD	N	%
Yes	19	38
No	18	36
I don't know	13	26
Total	**50**	**100**
Entrepreneurial intention in general	N	%
Yes	33	66
No	7	14
I don't know	10	20
Total	**50**	**100**
Entrepreneurial intention in case of not finding a job after the PhD	N	%
Yes	32	64
No	5	10
I don't know	13	26
Total	**50**	**100**

As for the development and importance of different entrepreneurial competences, the results can be seen in table 9. The results show that students rated *Written and oral communications skills (rank 1)* as the most developed competence during their PhD studies, followed by *Understanding, analyzing and solving problems (rank 2), Creativity (rank 3), Team work (rank 4) and Resilience/ Endurance and adaptability (rank 5)*. The least developed competence during the PhD studies was found to be *Evaluation and development of market opportunities (rank 20)*. Among the ten least developed competences the students identified were almost all the competences that were nominated "entrepreneurial competences" in the first version of the competences list (*Recognition and identification of market opportunities or a viable market niche, Understanding market dynamics in a particular field, Development of products or services appropriate to the firms chosen market niche / product innovation*). Also, three social competences (*Expressiveness, Network development and Building trust*) and two emotional

competences (*Emotional intelligence* and *Innovation*) were rated as not so developed during the PhD studies.

As for the importance of different entrepreneurial competences, students rated *Team work (rank 1)* as the most important competence for entrepreneurship, followed by *Network development (rank 2), Creativity (rank 2)* and *Recognition and identification of market opportunities or a viable market niche (rank 2).* The least important competence, according to the students' rating, is *Expressiveness (Rank 13)*, followed by *Emotional intelligence (rank 12)*, *Negotiation and deal making skills (rank 11)* and *Customer orientation (rank 10).*

In addition, figure 1 shows a graphical representation of the development and importance of each entrepreneurial competences perceived by the PhD students. The scores of each aspect (development and importance) have been standardized to allow a visual comparison between the two aspects.

Table 9

The ranking of the importance and development of entrepreneurial competences made by students — in order of item list

Competence	Rank importance	Importance	Rank (development)	Total points (development)
1. Have vision and share it with others	6	26	8	112
2. Recognition and identification of market opportunities or a viable market niche	2	33	18	90
3. Evaluation and development of market opportunities	6	26	20	74
4. Understanding market dynamics in a particular field	8	23	19	83
5. Development of products or services appropriate to the firms chosen market niche / product innovation	5	28	16	94
6. Negotiation and deal making skills	11	19	15	95
7. Customer orientation	10	20	13	100
8. Leadership capacity	6	26	9	111
9. Decision making	3	30	6	123

Competence	Rank importance	Importance	Rank (development)	Total points (development)
10. **Understanding, analyzing and solving problems**	7	24	**2**	135
11. **Resilience/ Endurance and adaptability**	5	28	**5**	125
12. Emotional stability / Emotional intelligence	12	12	11	105
13. **Creativity**	2	33	**3**	128
14. Innovation	4	29	14	100
15. Expressiveness	13	6	10	111
16. **Written and oral communications skills**	9	21	**1**	144
17. Network development	2	33	12	103
18. Interpersonal skills	8	23	7	123
19. Building trust	9	21	17	94
20. **Team work**	1	36	**4**	127

Note. The most important competences are underlined and the highest developed are bolded.
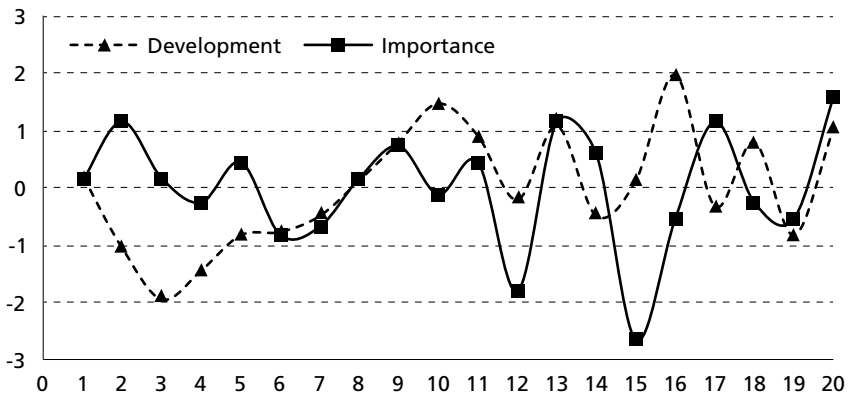
Figure 1

Diagram showing the development and importance of each competence according to students' answers

Note. The scores of each competence importance and development were standardized

III.2. *Qualitative results*

In addition to the quantitative results obtained through the questionnaire (quantitative evaluation of the level of development and importance of the 20 entrepreneurial competences) we analyzed students' answers to the open questions and their thoughts on how the competences are developed during their PhD studies. Some of the most important aspects of this analysis are presented below.

Written and oral communications skills were ranked as the most developed competence during the PhD studies. The majority of the students mention shared experience, sessions with other students and with the professors, where sharing of the ideas and feedback is possible, following trends and market needs in the area.

U*nderstanding, analysing and solving problems* was identified as the essence of the PhD thesis and the PhD training. Different phases of the PhD process are identified as the context where this competence is developed.

Team work is identified as the most important entrepreneurial competence and among the most developed. Students mention that it is mostly developed through participation in joint projects and collaborating with their peers and other researchers. However, this competence reflects largely the type of PhD program or the culture that a particular PhD program promotes — whether they require team work and whether team work is something that is highlighted through participation in projects etc.

One of the least developed competences, and ranked as highly important for entrepreneurship (rank 2) was *Recognition and identification of market opportunities or a viable market niche*. This competence, if perceived as developed, was mainly dependent on field of study. More precisely, it was developed through particular subject during the PhD studies or specific task required from the PhD program.

Apart from the competences presented to the students in the questionnaire, other important aspects were mentioned as important for entrepreneurship. In first place, financial resources, economic viability and how to obtain and manage those was mentioned as an important factor to succeed in the entrepreneurial adventure. Many respondents mentioned this aspect as crucial for succeeding in the entrepreneurial venture. In addition, financial support, business plan and learning how to make a viability commercial plan was also highlighted as an important factor. Finally, although the so called psychological competences were not rated as very important according to the quantitative analysis, several aspects that fit this category were mentioned in the open question part of the questionnaire. Those aspects are assertiveness,

persistence, ambition and confidence. These factors might be categorized as certain personality facets or psychological strengths that are viewed as important and helpful for the success in the entrepreneurial venture.

IV. **Conclusion**

The focus of the present study was the employability prospects of PhD students and future doctors. Current job market and educational contexts are not in favour of the massive "production" of doctors in various fields of research. Increasing their employability prospects is of great importance, and should be considered as an alarming issue by all stakeholders — industry, educational institutions and professors, and students. Some isolated attempts to vouch for increasing post graduates' employability have been made. In general, the situation in UK is more favourable for post-graduates' employability prospects, because inclusion of different generic skills trainings has been made in various UK universities in one form or another.[33,34] There is also an interesting initiative for promoting entrepreneurship among postgraduate students in Ireland.[35] However, this trend is not common in the European universities.[33]

One of way to enhance PhD students' employability is by promoting entrepreneurship. Therefore, the aims of this study were to identify the most important entrepreneurial competences for succeeding in the entrepreneurial venture, to evaluate the extent to which these competences are developed among the PhD students of various areas, and to explore PhD students' entrepreneurial intentions.

Our results show that some competences that could be defined as entrepreneurial competences are being developed during the PhD studies, but many of them are not. In addition, the respondents to our study had, in general, relatively high entrepreneurial intentions, especially in the case of not finding a job after the PhD. These results imply the need for incorporating some sort of entrepreneurial training and the development of entrepreneurial competences adapted to each subject area. Moreover, students rated market-related competences (e.g. *Recognition and identification of market opportunities or a viable market niche, Evaluation and development of market opportunities, Understanding market dynamics*

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[33] Villa Sanchez, and Poblete Ruiz, "Competence-based learning."

[34] Wall and Welsch, "Employability in Europe."

[35] http://www.tcd.ie/innovation/education/innovation-academy/.

in a particular field or *Development of products or services appropriate to the firms chosen market niche*) as the least developed ones. This area could be one of the key focuses of future attempts to foster entrepreneurial competences among PhD students. However, as Meyer[36] suggests, business plan oriented curricula is not the key and it neglects the entrepreneur in entrepreneurship. It is necessary to further explore the entrepreneurial individual and adapt the training to fit the description of a successful entrepreneur.

We do not wish to define academic entrepreneurship narrowly. Franzoni and Lissoni[37] define academic entrepreneurs as scientists who are directed toward commercialization of their research findings. In the current academic entrepreneurship literature, this commercialization usually refers to technology transfers, patents, university spin offs etc. We believe that other outcomes of successful academic entrepreneurship should also be included. These outcomes might be identifying new research lines, funds and financial sources, possible university-company collaborations and different opportunities that can bring commercial application of the research findings and even recruit people who can bring these commercial benefits to the organization, research institution or the individual.

As for possible directions for future practical implication of the obtained findings, we argue for the incorporation of entrepreneurial competences training in the PhD curricula. Similar to Wall and Welsch's[38] suggestions to include different general skills workshops in the PhD trainings for various research areas, we believe that entrepreneurial competences could be part of these generic skills, and that it is essential for increasing PhD students' employability prospects. In light of the definition of generic competences by Villa Sánchez and Poblete Ruiz,[39] we propose that entrepreneurial competences should be considered as generic competences and are included in the PhD trainings in European universities.

In summary, universities and other relevant stakeholders in education, need to be aware of the limited employment options of their PhD students and should act in order to prevent possible problems in the career pursuit of their students. Future research on this topic, should investigate the best way to include these competences in the form and the content of PhD curricula, and make proposal for a suitably revised training framework.

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Annexes

Annex 1: Summary of sources used and different classifications of the competences

	Entrepreneurial motivation	Management competences	Psychological Competences	Social Competences
1. Santos, Caetano, Curral, 2014	Desire for Independence Economic motivation Entrepreneurial self-efficacy	Vision Resources mobilization capacity Leadership capacity	Innovation capacity EI Resilience	Persuasion & communication Network development
2. Raab, Stedhar, Neuner, 2005	Entrepreneurial (psychological) attributes		Predictors of Entrepreneurial potential	
	Achievement motivation Internal locus of control Risk taking propensity Problem solving Willingness to assert oneself Tolerance of Ambiguity Emotional stability		Empathy Customer orientation Team ability	
3. Baron, Gideon, Markman, 2003; Hoehen-Weiss, Brush, Baron, 2004			Social skills	
	Social Perception Impression management Persuasiveness Social adaptability Expressiveness			

4. Chandler & Jansen, 1992

Entrepreneurial role	Management role	Technical-functional role
Opportunity recognition, Intense effort	Conceptual competences: coordinate organization's interests and activities (budget, program etc.) Human competences: communication of the goals to others, motivation, leadership, inter-personal skills Political competences: connect with people who control resources	Use of tool, procedures & techniques of a specific field

5. Man, Lau, Chan, 2002

Opportunity competences	Relationship competences	Conceptual competences	Organizing competences	Strategic competences	Commitment competences
Recognizing and developing market opportunities	Communication Interpersonal skills Persuasiveness Building trust Contacts/ connections	Risk taking Innovation Decision making Understanding information	Organizing human, physical, technological and financial resources	Setting, implementing and evaluation strategies	Drive for moving ahead and succeeding

6. Levenson, Vanber, stede & Cohen, 2006

Managerial competences

Technical/functional skills	Management skills	Leadership skills
Technical and business expertise	Designing strategic plans, addressing customer needs	Networking, mentoring, developing others

7. Feeny and Willcocks, 1998; Ashurst, 2011

IT competences

IT leadership	Business systems thinking	Archi-tecture planning	Making technol-ogy work	Relation-ship build-ing	Contract facilita-tion	Informed buying	Contract monitor-ing	Vendor develop-ment

8. Athayde, 2011

Entrepreneurial potential

Achievement	Personal control	Creativity	Leadership	Intuition

9. Villa Sanchez & Poblete Ruiz, 2008

Enterprising capacity

Enterprising spirit	Creativity	Innovation
Self-motivation (initiative) Leadership and motivating others and sharing the vision with them Endurance and adaptability Decision making capacity Risk taking and opportunity evaluation Sharing vision of the future Social influence	Capacity to generate solutions Originality Critical thinking Capacity to do something with the new ideas	Intentionality Personal position Search for new methods Application of novel methods Evaluation of results

10. Luca & David, 2007

Top 5 competences as rated by the three groups (students, academics and employers) together

Capacity to understand customers' needs	Capacity to Establish productive relationships	Capacity to make decisions under conditions of uncertainty	Ability to gain social capital (professional networking)	Capacity to evaluate perspectives for new ideas

11. Izquierdo, Deschoolmeester, Salazar, 2005

Top 7 entrepreneurial competences according to scholars and entrepreneurs

Identifying business opportunities	Evaluating business opportunities	Decision making	Networking	Innovative thinking	Identifying and solving problems	Oral communication abilities

	Entrepreneurship Competency Model						
	Personal effectiveness Competences	Academic competences	Workplace competences	Industry-wide technical competences	Industry-sector technical competences	Management competences	Occupation-specific requirements
12. Consortium for Entrepreneurship Education (CEE), & the Employment and Training Administration (ETA) http://www.careeronestop.org/COMPETENCYMODEL/competency-models/entrepreneurship.aspx	Interpersonal skills, Initiative, Ambition Adaptability and Flexibility, Willingness to take risk, Willingness to learn	Reading, Writing, Mathematics Science and Technology, Communication, Critical and analytical thinking	Creative thinking Networking Planning &Organizing, Problem solving and decision making, Checking, examining and Recording, Business fundamentals, Computer applications	Principles of entrepreneurship, Innovation and Invention, Planning, Marketing, Financial management, Business operations, Risk assessment & Management	Youth Entrepreneurship, Micro-Enterprise, Small Business Development, Social Entrepreneurship, High-Growth, High-Value Entrepreneurship		

	Entrepreneurial competences	Business and management Competencies*	Human relations competencies	Conceptual and relationship competencies
13. Mitchelmore & Rowley, 2010	Identification and definition of a viable market niche Development of products of services appropriate to the firms chosen market niche/product innovation Idea generation Environmental scanning Recognising and envisioning taking advantage of opportunities Formulating strategies for taking advantage of opportunities	Development of the management system necessary for the long term functioning of the organisation Acquisition and development of resources required to operate the firm Business operational skills Financial and budgeting skills Marketing skills Technical skills Industry skills The ability to implement strategy (develop programmes, budgets, procedures, evaluate performance) Business plan preparation Goal setting skills Management skills	Development of the organisational culture management feel Delegation skills The ability to motivate others individual and in groups Hiring skills Human relations skills Leadership skills	Conceptual competencies Organisational skills Interpersonal skills The ability to manage customers Mental ability to coordinate activities Written communication skills Oral communication skills Decision making skills Analytical skills Logical thinking skills Deal-making skills Commitment competencies
14. KEY COMPETENCES FOR LIFELONG LEARNING — A EUROPEAN REFERENCE FRAMEWORK http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006H0962	Sense of initiative and entrepreneurship creativity, innovation and risk-taking, Project management (Ability to plan, organise, manage, lead and delegate, analyse, communicate, de-brief, evaluate and record in order to achieve objectives)			

	Practical experience, project-based and flexibility/ innovation skills	Management skills for the twenty-first century	Information and communications technology skills	Generic skills
15. Entrepreneurship Education: Meeting the Skills Needs of Graduates in Ireland Briga Hynes, Michele O'Dwyer and Naomi Birdthistle In West, G. P., Gatewood, E. J., & Shaver, K. G. (Eds.). (2009). Handbook of university-wide entrepreneurship education. Edward Elgar Publishing.	adaptability, flexibility and innovation	creativity, opportunity sensing, decision-making competencies, risk-taking propensity and people management skills	in order to create greater efficiencies in areas such as sales, customer service, market research, product development, research and development (R&D)	literacy, numeracy, personal and professional development-related skills

* Some of the competences are eliminated due to its nature – such as Previous involvement with start-ups or Managerial experience.

Annex 2. The informed consent form

<div align="center">CONSENTIMIENTO INFORMADO</div>

Los investigadores de Deusto International Tuning Academy (DITA) están realizando una investigación sobre competencias emprendedoras de los estudiantes del tercer ciclo de la Universidad de Deusto.

El objetivo de este estudio es identificar las competencias emprendedoras que deben ser incluidas en los programas de estudio de tercer ciclo para que los estudiantes puedan iniciar su propio negocio/empresa/proyecto en sus respectivos campos después de terminar sus estudios de doctorado.

Con el fin de obtener datos para la investigación solicitamos su colaboración, participando en una breve entrevista y evaluando la importancia de cada una de las competencias presentadas.

La información que se obtenga será utilizada con carácter confidencial y de uso exclusivo para fines científicos, respetando el anonimato de los participantes.

El abajo firmante confirma que ha leído y comprendido la información sobre la investigación y que entiende que su participación es voluntaria. Además, es libre para retirarse de la investigación en cualquier momento, sin necesidad de previa justificación.

NOMBRE Y APELLIDOS   FECHA   FIRMA

Annex 3. The list of entrepreneurial competencies

1. Have vision and share it with others
2. Recognition and identification of market opportunities or a viable market niche
3. Evaluation and development of market opportunities
4. Understanding market dynamics in a particular field
5. Identification and definition of a viable market niche
6. Development of products or services appropriate to the firms chosen market niche / product innovation
7. Setting, implementing and evaluating strategies
8. Resource mobilization capacity
9. Negotiation and deal making skills
10. Coordinate interests and activities (Budget, program etc.)
11. Customer orientation/ Capacity to understand customers' needs
12. Leadership capacity/ Mentoring, developing others/ Delegation skills
13. Decision making
14. Understanding information
15. Understanding, analyzing and solving problems
16. Organizing human, physical, technological and financial resources
17. Business ethics
18. Willingness to assert oneself/ Resilience/ Intense effort/ Commitment / Endurance and adaptability
19. Emotional stability / Emotional intelligence
20. Creativity
21. Innovation
22. Risk taking propensity
23. Social perception
24. Impression management
25. Persuasivness
26. Social adaptability
27. Expresiveness
28. Written and oral communications skills
29. Network development
30. Interpersonal skills
31. Building trust
32. Ability to gain social capital/ Establish productive relationships
33. Team work
34. Use of tool, procedures & techniques of a specific field
35. Technical and business expertise/ Business operational skills
36. Financial and budgeting skills
37. Development of management system
38. Marketing skills
39. Business plan preparation
40. IT competences

Annex 4. The final version of the interview with the competences questionnaire

Entrevista inicial:

A cumplimentar por el entrevistador:

Fecha _____

Entrevistador _____

DATOS PERSONALES

APELLIDOS	NOMBRE

PREGUNTAS

1. ¿Qué edad tiene?

2. ¿Nivel de estudios? (años de estudios/título)

3. ¿Qué negocio/empresa/proyecto tiene?

4. ¿Cuál es el sector de su negocio?

5. ¿Por qué ha empezado con este negocio/proyecto/empresa?

6. ¿En qué fase se encuentra actualmente el negocio?

7. ¿Cuándo fue formado?

8. ¿Cuantas personas participan en el negocio/proyecto/empresa?

9. ¿Qué rol tiene Ud. en la empresa?

10. ¿Ha trabajado antes en alguna otra empresa y en cuál? ¿Cuál fue su rol en esa empresa?

11. ¿Qué fue la parte más difícil para empezar y desarrollar el proyecto/negocio?

12. ¿Qué le ha ayudado más para empezar? (Qué factor es necesario para empezar con el negocio) ¿Algo en Ud. mismo que le ayudado?

13. ¿Qué factor es necesario para tener éxito y seguir a pesar de los obstáculos?

En continuación se presenta una serie de competencias emprendedoras que se consideran importantes para emprender. Por favor, indique la importancia de cada una de las competencias presentadas eligiendo de 1 (nada importante) a 5 (muy importante).

1	2	3	4	5
NADA IMPORTANTE	**ALGO IMPORTANTE**	**NO SÉ**	**BASTANTE IMPORTANTE**	**MUY IMPORTANTE**

Competencias emprendedoras/Competencias de gestión					
41. Tener visión y compartirla con los demás	1	2	3	4	5
42. Reconocimiento e identificación de oportunidades del mercado	1	2	3	4	5
43. Evaluación de oportunidades y desarrollo de oportunidades del mercado	1	2	3	4	5
44. La comprensión de la dinámica del mercado en un determinado campo	1	2	3	4	5
45. Identificación y definición de un nicho de mercado viable	1	2	3	4	5
46. Desarrollo de productos o servicios adecuados al nicho de mercado elegido / innovación de productos	1	2	3	4	5
47. Establecimiento, implementación y evaluación de estrategias	1	2	3	4	5
48. Capacidad para movilizar los recursos	1	2	3	4	5
49. Negociación y habilidad para llegar a acuerdos	1	2	3	4	5
50. Coordinar intereses y actividades (presupuesto, programa, etc.)	1	2	3	4	5
51. Orientación al cliente / Capacidad para comprender las necesidades de los clientes	1	2	3	4	5
52. Capacidad de Liderazgo / Guiar, orientar, desarrollar los demás / habilidades de delegación	1	2	3	4	5

Competencias emprendedoras/Competencias de gestión					
53. La toma de decisiones (incluso bajo condiciones de incertidumbre)	1	2	3	4	5
54. Comprensión de la información	1	2	3	4	5
55. Comprensión y resolución de problemas	1	2	3	4	5
56. Organización de los recursos humanos, físicos, tecnológicos y financieros	1	2	3	4	5
57. La ética empresarial	1	2	3	4	5

Competencias psicológicas					
58. La voluntad para asertividad personal / Resiliencia / Intenso esfuerzo / Compromiso / Resistencia y adaptabilidad	1	2	3	4	5
59. Estabilidad emocional/Inteligencia emocional	1	2	3	4	5
60. Creatividad (Capacidad para generar soluciones, originalidad, pensamiento crítico, capacidad de hacer algo con ideas nuevas)	1	2	3	4	5
61. Innovación (Indicadores: intencionalidad, actitud y posición personal, búsqueda y aplicación de nuevos métodos, evaluación de los resultados)	1	2	3	4	5
62. Propensión para tomar riesgos	1	2	3	4	5

Competencias sociales					
63. Percepción social	1	2	3	4	5
64. Saber dejar buena impresión	1	2	3	4	5
65. Persuasión	1	2	3	4	5
66. Adaptabilidad social	1	2	3	4	5
67. Expresividad / Comunicación oral	1	2	3	4	5
68. Habilidades de comunicación escrita	1	2	3	4	5
69. Desarrollo de las redes	1	2	3	4	5
70. Habilidades interpersonales	1	2	3	4	5

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Competencias sociales					
71. Creación de confianza	1	2	3	4	5
72. Capacidad para obtener el capital social / Establecer relaciones productivas	1	2	3	4	5
73. Trabajo en equipo	1	2	3	4	5

Competencias técnicas					
74. Uso de herramientas, procedimientos y técnicas de un campo específico	1	2	3	4	5
75. Conocimiento técnico y de negocios/ Habilidades operativas de negocio	1	2	3	4	5
76. Habilidades financieras y de hacer presupuestos	1	2	3	4	5
77. Desarrollo del sistema de gestión	1	2	3	4	5
78. Habilidades de marketing	1	2	3	4	5
79. Preparación del "business plan"	1	2	3	4	5
80. Competencias de IT	1	2	3	4	5

14. ¿Hay alguna competencia de esa lista que destacarías en especial como extremadamente importante o útil o extremadamente inútil? ¿Por qué?

15. ¿Hay algo más que quiere destacar como necesario/importante/ imprescindible para emprender? ¿Por qué?

16. ¿Hay algo de los estudios que finalizaste que te ha ayudado en especial para emprender?

17. ¿Qué incluirías tú al programa de tus estudios para ayudar a los futuros emprendedores?

Annex 5. Definitions of the competences

Competencias emprendedoras/Competencias de gestión	
1. Tener visión y compartirla con los demás	Tener meta idealizada que se quiere conseguir en el futuro o una imagen ideal y única del futuro que sirve como guía para las acciones emprendedoras. Saber compartir y comunicar la visión de futuro a los demás.
2. Reconocimiento y evaluación de oportunidades / Reconocer y desarrollar oportunidades del mercado	Capacidad de reconocer, evaluar, concebir y desarrollar las oportunidades del mercado, considerando los intereses personales y posibles consecuencias sociales.
3. Identificación y definición de un nicho de mercado viable	Capacidad de realizar la exploración del entorno para obtener información de marketing, de identificar una base de clientes, de definir un nicho de mercado, de hacer análisis de mercado y de los clientes.
4. Desarrollo de productos o servicios adecuados al nicho de mercado elegido / innovación de productos	Implementar varios métodos para generar un producto/servicio/idea.
5. Establecimiento, implementación y evaluación de estrategias	Capacidad de determinar la dirección de una organización / empresa y el establecer la estrategia para lograr esa dirección. Preparar planes completos: plan financiero, plan contable, plan legal, plan de gestión, plan de producción, y el plan operativo.
6. Capacidad para evaluar las perspectivas para nuevas ideas	
7. Capacidad para movilizar los recursos	Capacidad de organizar los recursos financieros y materiales para gestionar una empresa con el objetivo de proporcionar la empresa con flexibilidad estratégica y facilitar su adaptación a entornos complejos.

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Competencias emprendedoras/Competencias de gestión	
8. Coordinar intereses y actividades (presupuesto, programa, etc.)	Capacidad de coordinar todos los intereses y actividades de la organización.
9. Orientación al cliente / Capacidad para comprender las necesidades de los clientes	Capacidad de entender y orientarse hacia las necesidades del cliente. Capacidad de concentrar el pensamiento operacional y la acción en el cliente (en las necesidades, deseos, expectativas y problemas del cliente).
10. Capacidad de Liderazgo / Guiar, orientar, desarrollar los demás / habilidades de delegación	Capacidad de influir en los demás, gestionar recursos con el fin de enfatizar los comportamientos de búsqueda de oportunidades y de ventajas. Capacidad de entender, motivar, delegar los demás.
11. La toma de decisiones (incluso bajo condiciones de incertidumbre)	Saber tomar decisiones considerando los intereses personales y posibles consecuencias sociales. En casos de situaciones muy complejas, buscar ayuda para confrontar problemas. Evaluar numerosas soluciones potenciales, tomar decisiones difíciles, incluso en ausencia de datos sólidos o en situaciones ambiguas, observar los resultados de la implementación de la solución, evaluar la necesidad de enfoques alternativos e identificar las lecciones aprendidas.
12. Comprensión de la información	Capacidad de entender la información compleja.
13. Comprensión y resolución de problemas	La aplicación de habilidades de pensamiento crítico para resolver problemas mediante la generación, evaluación e implementación de soluciones.
14. Organización de los recursos humanos, físicos, tecnológicos y financieros	Capacidad de organizar diferentes recursos internos y externos (humanos, físicos, financieros y tecnológicos (team-building, gestionar los empleados, formación y control.

Annex 6. The ranking of the importance of entrepreneurial competences made by *entrepreneurs* — in order of item list

Competence	N	Min	Max	Mean	SD
1. **Have vision and share it with others**	**17**	**4**	**5**	**4.47**	**.51**
2. **Recognition and identification of market opportunities or a viable market niche**	**17**	**4**	**5**	**4.47**	**.51**
3. **Evaluation and development of market opportunities**	**17**	**3**	**5**	**4.53**	**.62**
4. **Understanding market dynamics in a particular field**	**17**	**2**	**5**	**4.12**	**.69**
5. **Identification and definition of a viable market niche**	**17**	**4**	**5**	**4.41**	**.51**
6. **Development of products or services appropriate to the firms chosen market niche / product innovation**	**17**	**3**	**5**	**4.35**	**.61**
7. Setting, implementing and evaluating strategies	17	2	5	3.60	1.06
8. Resource mobilization capacity	17	2	5	3.94	1.08
9. **Negotiation and deal making skills**	**17**	**2**	**5**	**4.47**	**.79**
10. Coordinate interests and activities (Budget, program etc.)	17	2	5	4.00	.79
11. **Customer orientation/ Capacity to understand customers' needs**	**17**	**4**	**5**	**4.82**	**.39**
12. **Leadership capacity/ Mentoring, developing others/ Delegation skills**	**17**	**3**	**5**	**4.30**	**.69**
13. **Decision making**	**17**	**4**	**5**	**4.53**	**.51**
14. Understanding information	17	2	5	3.76	1.20
15. **Understanding, analyzing and solving problems**	**17**	**4**	**5**	**4.53**	**.51**
16. Organizing human, physical, technological and financial resources	17	2	5	4.00	.86
17. Business ethics	17	2	5	3.60	1.12

Competence	N	Min	Max	Mean	SD
18. **Willingness to assert oneself/ Resilience/ Intense effort/ Commitment / Endurance and adaptability**	**17**	**3**	**5**	**4.53**	**.62**
19. **Emotional stability / Emotional intelligence**	**17**	**2**	**5**	**4.30**	**.85**
20. **Creativity**	**17**	**3**	**5**	**4.47**	**.62**
21. Innovation	17	2	5	4.00	.94
22. Risk taking propensity	17	2	5	3.47	.94
23. Social perception	17	1	5	3.41	1.12
24. Impression management	17	2	5	4.00	.94
25. Persuasivness	17	2	5	4.00	.94
26. Social adaptability	17	2	5	3.60	1.06
27. **Expresiveness**	**17**	**2**	**5**	**4.18**	**1.01**
28. Written and oral communications skills	17	2	5	4.06	.83
29. **Network development**	**17**	**2**	**5**	**4.12**	**.78**
30. **Interpersonal skills**	**17**	**4**	**5**	**4.50**	**.51**
31. **Building trust**	**17**	**3**	**5**	**4.60**	**.62**
32. Ability to gain social capital/ Establish productive relationships	17	2	5	4.00	.87
33. **Team work**	**17**	**3**	**5**	**4.47**	**.72**
34. Use of tool, procedures & techniques of a specific field	17	2	5	3.60	.94
35. Technical and business expertise/ Business operational skills	17	2	5	3.76	.97
36. Financial and budgeting skills	17	1	5	3.24	1.25
37. Development of management system	17	1	5	2.82	1.01
38. Marketing skills	17	2	5	4.06	.75
39. Business plan preparation	17	2	5	3.41	.87
40. IT competences	17	2	5	3.53	1.01

"Lost in translation". Soft skills development in European countries[*]

Maria Cinque[**]

Abstract: The world of work is changing profoundly, at a time when the global economy is not creating a sufficient number of jobs. Many documents issued by the EU and various researches, carried out by companies and human resources experts, point out that the so-called "soft" skills are closely connected with employability, particularly for young people entering the labour market. At present, EU countries have different methodologies and approaches to the teaching and assessment of soft skills. Another obstacle is represented by the absence of a common language. There are different ways of naming 'soft skills', different definitions of them, different manners of classifying and clustering them. The article explores some classifications of soft skills and presents a collection of best practices and methods for teaching and learning them at University level, taking into account different perspectives and basing on the results of two European projects focused on this topic. The final goal is to provide an analysis aimed at the identification of the most important soft skills needed for a successful transition from University education to the labour market. The analysis includes a brief chronological excursus on relevant studies on the subject, a review of current literature on employability skills, quantitative (surveys) and qualitative (focus groups) researches from Europe and Third Countries, identifying the range of soft skills relevant for newly graduates. The aim of this overview is to enhance understanding of soft skills and to indicate key areas for soft skill development at University level.

Keywords: soft skills; employability; university; terminology; taxonomies; best practices.

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I. **Introduction**

In the last few years many studies, research reports, surveys, even newspapers articles highlighted a problem of the labour market: they reported a skill shortage among employers. In the USA, in 2011, more than 600,000 positions in manufacturing went unfulfilled due to a skill shortage in employees and this skill shortage concerned mainly non-technical skills, work ethic, punctuality and professionalism.[1]

According to the ManPower Group's *Talent Shortage Survey* (2012),[2] nearly 20% of employers considered the lack of soft skills as one of the key reasons they couldn't hire needed employees. The American survey *Career Builder*, conducted in 2014 over a sample of 2,138 human resource managers, indicate that soft skills are just as important as hard skills, ranking at the first position the skill "work ethic", with 73% of preferences, at the second position "reliability", again with 73% of answers, and third "positive attitude", with 72%.[3]

In a research carried out by McKinsey,[4] that involved more than 8,000 people in eight European countries (France, Germany, Greece, Italy, Portugal, Spain, Sweden, and the United Kingdom), one-third of employers said that lack of skills is causing major business problems in the form of cost, quality, or time. Furthermore skill gaps cause the most problems in countries with the highest youth unemployment (i.e. Italy, Greece, and Spain). A major reason that students do not gain skills employers are seeking is that all three constituents — students, employers, and educators — are not speaking the same figurative language. The report shows that universities and companies

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[1] Deloitte, *Boiling Point? The Skills Gap in U.S. Manufacturing*, 2011, accessed March, 31, 2016, http://www2.deloitte.com/content/dam/Deloitte/us/Documents/manufacturing/us-indprod-pip-2011-skills-gap-report-01142011.pdf.

[2] Manpower Group, *Talent Shortage Survey,* 2012, accessed March, 31, 2016, http://www.manpowergroup.us/campaigns/talent-shortage-2012/pdf/2012_Talent_Shortage_Survey_Results_US_FINALFINAL.pdf.

[3] Many studies, in Italy too, reported a skill mismatch depending on the educational mismatch. Employers often claim that university graduates are well prepared in their disciplines, but lack general competences. Practical skills are lacking among graduates. Among them: ISFOL (Istituto per la formazione e il lavoro), *Rapporto ISFOL 2012. Le competenze per l'occupazione e la crescita* (Roma: ISFOL, 2012). IULM, CRUI, Centromarca, *Osservatorio sulle professioni. Prima indagine sulla formazione dei neolaureati ed esigenze d'impresa* (Milano: Università IULM, 2012).

[4] Mona Mourshed, Jigar Patel, and Katrin Suder, *Education to Employment: Getting Europe's Youth into Work*, McKinsey & Company, accessed March, 31, 2016, http://www.mckinsey.com/industries/social-sector/our-insights/converting-education-to-employment-in-europe.

often move in "parallel universes": while the majority of education providers (74%) are confident that their graduates are prepared for work, yet only 35% of employers have the same opinion. As far as young people are concerned, only 42% believe they have received adequate training for work, and only 30% finds temporary employment after graduation.

The report *Modernisation of Higher Education in Europe: Access, Retention and Employability*, published in 2014,[5] highlights that, while employability of newly graduates is a topic of considerable priority in higher education policy debates, the approaches and levels of engagement differ considerably. Some countries conflate employability with employment by taking an employment-centred approach that focuses primarily on graduate employment rates. Others put the accent on skills development, emphasising the competences relevant for the labour market that need to be acquired through higher education. Several countries combine these two perspectives.

Skill development is one of the four main areas of the European Union's flagship initiative *An agenda for new skills and new jobs*,[6] and the focus of the more recent *Rethinking education strategy. Investing in skills for better socio-economic outcomes*.[7] According to those documents, companies need a more skilled workforce and opportunities should be given to young people to develop those soft skills, such as entrepreneurial skills, coping skills (i.e. the capacity to deal with a problem in a creative way), learning to learn and other skills that will help university students to make a successful transition from full-time education to entering the labour market.

One of the strategic actions for development, recommended by those EU documents, is the university curricula reform to tailor them with the requests coming from the labour market. Nevertheless, relevant weaknesses are still detectable. In fact, the programs of most European universities are still rooted on teaching traditional scientific skills rather than paying attention to soft and complementary skills.

In this article, basing on a literature review and on the results of two European projects, we focus on the identification of the most important soft

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[5] European Commission/EACEA/Eurydice, *Modernisation of Higher Education in Europe: Access, Retention and Employability 2014*, Eurydice Report (Luxembourg: Publications Office of the European Union, 2014).

[6] European Commission, *An agenda for new skills and new jobs in Europe: Pathways towards full employment*, 2012, accessed March, 31, 2016, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52010DC0682&from=EN.

[7] EC (European Commission), *Rethinking education strategy: Investing in skills for better socio-economic outcomes*, 2012, accessed March, 31, 2016, http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52012DC0669&from=EN.

skills needed for a successful transition from University education to the labour market.

The questions we want to answer are the following:

1. What are soft skills (how can they be defined) and what are the different ways of calling and clustering them?

2. What are the skills most required by the labour market and which initiatives have being carried out in different European countries to enhance soft skills development at the undergraduate level and to foster employability?

3. Which methodologies can be used to teach and learn soft skills at undergraduate level?

The first part of this article provides a brief chronological excursus of relevant studies on the theme of soft skills, in order to outline the dominant theoretical approaches to the theme. In the second paragraph, the results of quantitative (surveys) and qualitative (focus groups) analysis, carried out during two European projects, are illustrated in order to highlight which soft skills are mostly required by the labour market. The third part presents a comparative analysis of the state of the art of soft skills researches and initiatives in different European countries. Finally, the article presents a collection of best practices and methods for teaching and learning soft skills at University level, taking into account different perspectives — mainly the pedagogical, philosophical and psychological ones — and mapping some best practices in halls of residence.

II. Relevant studies towards taxonomy of soft skills

II.1. *Different names and definitions*

There are various ways of naming soft skills, also called social skills, transversal competences, social competences, generic competences, even basic and life skills. Some international research projects or institutions prefer the term "21st century skills", whereas the Organisation for Economic Co-operation and Development (OECD) uses the terms "key competencies" (2003)[8] and,

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[8] OECD (Organisation for Economic Co-operation and Development), Definition and Selection of Competencies: Theoretical and Conceptual Foundations (DeSeCo), *Summary of the final report Key Competencies for a Successful Life and a Well-functioning Society* (Paris: OECD Publishing, 2003).

more recently, "skills for social progress" (2015).[9] In Europe different countries use different denominations, as illustrated in Table 1.

Table 1

Different names for soft skills in some European countries

Countries	Denominations
Austria	*Schlüsselkompetenzen* (key competencies)
Belgium	Belgium fr.: *compétences transversales*. (transversal competencies) Belgium nl.: *Sleutelcompetenties* (key competencies)
Denmark	*Nøglekompetence* (key competencies)
England	key skills (England, Ireland) core skills (Scotland) life skills, key transferable skills, cross competencies
France	*compétences transversales*
Germany	*Schlüsselkompetenzen* (key competencies), *übergreifende Kompetenzen* (general competencies)
Italy	Competenze trasversali
Portugal	*competências essencias* (essential competencies), *competências transversais ou genéricas* (transversal or generic competencies)
Spain	*competencias genéricas*

Some authors identify soft skills with EI (*Emotional Intelligence*) or EQ (*Emotional Quotient*), i.e. the "emotional side" of human beings in opposition to the IQ (Intelligent Quotient).[10] One might debate if soft skills like "critical thinking" or "problem solving" might be considered emotional skills. Some authors call them "non cognitive skills"[11] but, as a matter of fact, soft skills

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[9] OECD, *Skills for Social Progress. The Power of Social and Emotional Skills*. OECD Skills Studies (Paris: OECD Publishing, 2015).

[10] André Iland, *Soft skills. Be professionally* proactive (Iland Business Pages, 2013). Verma Shalini, *Enhancing Employability @ Soft Skills* (Chandigarth-Delhi-Chennai: Pearson, 2013).

[11] James J. Heckman and Yona Rubinstein, "The Importance of Noncognitive Skills: Lessons from GED Testing Program", *The American Economic Review* 91(2), Papers and Proceedings of the Hundred Thirteenth Annual Meeting of the American Economic Association (May, 2001): 145-149.

include both social/interpersonal skills and methodological skills or meta-competences, i.e. the capacity to work on competences, to reframe and transfer them from one field to another, even from informal to formal learning. Soft skills must also be conceptualized in a broad sense, as competences transferable from job to job, from company to company, from one economic sector to another.[12]

A further issue is connected with the doubt if those skills might be trained or can be considered "innate". According to Heckman and Kautz[13] "soft skills [are] personality traits, goals, motivations, and preferences that are valued in the labour market, in school, and in many other domains [...]". They are "a mix of dispositions, understandings, attributes and practices".[14]

Knight and Page[15] define soft skills as "wicked competences," as it is very difficult to define them, because they can assume different forms in different contexts and they keep developing along the entire lifetime.[16]

In the Mass project, soft skills were defined as "intra- and inter-personal (socio-emotional) skills, essential for personal development, social participation and workplace success".[17]

Haselberger and other authors, within the ModEs project, proposed another definition:[18]

> Soft Skills represent a dynamic combination of cognitive and meta-cognitive skills, interpersonal, intellectual and practical skills. Soft skills

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[12] EC (European Commission), *Transferability of Skills across Economic Sectors: Role and Importance for Employment at European Level* (Luxembourg, Publications Office of the European Union, 2011).

[13] James J. Heckman and Tim Kautz, "Hard Evidence on Soft Skills," *Labour Economics* 19, nº 4 (2013): 452.

[14] Mantz Yorke, *Employability in higher education: What it is — what it is not*, Learning and employability series 1 (York, UK: The Higher Education Academy, 2006), 26.

[15] Peter Knight and Anna Page, *The Assessment of "Wicked" Competences,* Report to the Practice Based Professional Learning Centre, 2007, accessed March, 31, 2016, http://www.open.ac.uk/opencetl/sites/www.open.ac.uk.opencetl/files/files/ecms/web-content/knight-and-page-(2007)-The-assessment-of-wicked-competences.pdf.

[16] Cristiano Ciappei and Maria Cinque, *Soft skills per il governo dell'agire* (Milano: FrancoAngeli, 2014).

[17] Konstantinos Kechagias, ed., *Teaching and Assessing Soft Skills* (Thessaloniki: 1st Second Chance School of Thessaloniki, 2011), 33.

[18] David Haselberger, Petra Oberhuemer, Eva Pérez, Maria Cinque, and Fabio Davide Capasso, *Mediating Soft Skills at Higher Education Institution*s (ModEs project: Lifelong Learning Programme. 2012), 67, accessed March, 31, 2016, http://www.euca.eu/en/prs/modes-handbook.aspx.

help people to adapt and behave positively so that they can deal effectively with the challenges of their professional and everyday life.

We can notice in this definition the expression "dynamic combination" that, as acknowledged by the authors, comes from the Tuning definition of competences:

> Competences represent a dynamic combination of knowledge, understanding, skills and abilities. Fostering competences is the object of educational programmes. Competences will be formed in various course units and assessed at different stages.[19]

This might lead to a misunderstanding concerning the possible overlapping of the two terms. As a matter of fact, "skill" and "competence" are often used interchangeably, but they are not necessarily synonymous.

The difference between skill and competence was illustrated by the Organisation for Economic Cooperation and Development (OECD) in the DeSeCo Project:

> While the concept of competence refers to the ability to meet demands of a high degree of complexity, and implies complex action systems […] The term skill is used to designate the ability to use one's knowledge with relative ease to perform relatively simple tasks. We recognize that the line between competence and skill is somewhat blurry, but the conceptual difference between these terms is real.[20]

Sometimes skills are defined as the "visible" and/or "behavioural" components of a competence. As highlighted by EUCEN Glossary, "skills" indicate the ability to apply knowledge and use know-how to complete tasks and solve problems.[21] In the context of the European Qualifications Framework, competence is described in terms of *responsibility* and *autonomy* while skills are described as *cognitive* (involving the use of logical, intuitive and creative thinking) or *practical* (involving manual dexterity and the use of methods, materials, tools and tools and instruments).[22]

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[19] Tuning Educational Structures in Europe, *Competences*, accessed March, 31, 2016, http://www.unideusto.org/tuningeu/competences.html.

[20] Dominique S. Rychen and Laura H. Salganik (eds.), *Definition and selection of Key Competencies* (Gottingen, Germany: Hogrefe & Huber Publishers, 2000), 10.

[21] Glossary — Recommendation of the European Parliament and of the Council of 23 April 2008 on the establishment of the European Qualifications Framework for lifelong learning accessed March, 31, 2016, http://www.eucen.eu/EQFpro/GeneralDocs/FilesFeb09/GLOSSARY.pdf.

[22] https://ec.europa.eu/ploteus/en/content/descriptors-page.

II.2. *Classifications*

There are different ways of naming soft skills (sometimes called competences or even learning outcomes), different definitions of them, and different manners of classifying and clustering them. Furthermore, the theme of soft skills — or "non technical" skills — sometimes overlaps and intersects already known concepts, like "life skills", "generic competences", "key competences", etc.

In Table 2 a chronological synthesis of some frameworks is presented, in order to outline the different approaches to the theme of soft skills. It synthesizes key studies and their findings emerging through different stages, which help illuminate how the vision of those skills has evolved over time. It also offers insights into how this evolution specifically relates to studies in different fields, conducted in different ways and with different theoretical approaches.

The main frameworks are the following: life skills (WHO);[23] transversal competences (ISFOL);[24] key competencies for a successful life and a well-functioning society (OECD);[25] key competences for lifelong learning (UE);[26] generic competences (Tuning);[27] 21st century skills (OECD);[28] future work skills (IFTF);[29] and skills for social progress (OECD).[30]

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[23] WHO (World Health Organization), Life Skills Education in Schools. *Skills for Life*, 1 (Genève: WHO, 1993).

[24] ISFOL (Istituto per la formazione e l'orientamento al lavoro), *Competenze trasversali e comportamento organizzativo. Le abilità di base nel lavoro che cambia* (Milano: FrancoAngeli, 1994).
ISFOL, *Unità capitalizzabili e crediti formativi. I repertori sperimentali* (Milano: FrancoAngeli, 1998).

[25] Rychen and Salganik, eds., *Key Competencies…*

[26] EU (European Union), *Key Competences for Life Long Learning*, Recommendation the European Parliament and the Council of 18th December 2006, *Official Journal of the European Union* (2006/962/EC), L394/10-18, accessed March, 31, 2016, http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:32006H0962.

[27] Julia Gonzalez, Robert Wagenaar, eds., *Universities' contribution to the Bologna Process. An introduction*, 2nd Edition (Bilbao: Publicaciones de la Universidad de Deusto, 2008), accessed March, 31, 2016, http://www.unideusto.org/tuningeu/images/stories/Publications/ENGLISH_BROCHURE_FOR_WEBSITE.pdf.

[28] Katerina Ananiadou and Magdalena Claro, "21st Century Skills and Competences for New Millennium Learners in OECD Countries", *OECD Education Working Papers*, 41 (2009), OECD Publishing, accessed March, 31, 2016, http://dx.doi.org/10.1787/218525261154.

[29] IFTF (Institute for the Future), *Future work skills 2020*, 2011, accessed March, 31, 2016, http://www.iftf.org/system/files/deliverable/SR-1382A%20UPRI%20future%20work%20skills_sm.pdf.

[30] OECD, Skills for Social Progress, 33.

Table 2
Relevant studies toward a taxonomy of skills

Organization	Name	Skills
WHO (World Health Organization) — 1993	*Life skills*	— decision-making and problem-solving; — creative thinking and critical thinking; — communication and interpersonal skills; — self-awareness and empathy; — coping with emotions and coping with stress.
ISFOL (Istituto per lo Sviluppo della Formazione Professionale dei Lavoratori) — 1994/1998	*Transversal skills*	Useful to: — *diagnose* the nature of the environment and task (mainly cognitive skills); — *relate* to people and issues of a specific context (interpersonal or social skills, which is the emotional skill set, cognitive and behavioural styles, but also communication skills); — *address,* that is to "face, cope, predispose to deal with the environment and the task, both mentally and emotionally…take action on a problem with the best chance of solving it" (be able to set goals, to develop strategies, and to build and implement action plans).
OECD (Organisation for Economic Co-operation and Development) — 2003	*Key competencies for a successful life and a well-functioning society*	— *using tools interactively*, that includes the capacity to use language, symbols and texts interactively, use knowledge and information interactively, use technology interactively; — *interacting in socially homogenous group*, i.e. relate well to others, co-operate, work in teams, manage and resolve conflicts; — *acting autonomously*, includes key competencies that empower individuals to manage their lives in meaningful and responsible ways by exercising control over their living and working conditions (for example, form and conduct life plans and personal projects, defend and assert rights, interests, limits and needs

Organization	Name	Skills
EU (European Union) — 2006	*Key competences for lifelong learning*	— communication in the mother tongue; — communication in foreign languages; — mathematical competence and basic competences in science and technology; — digital competence; — learning to learn; — social and civic competences; — sense of initiative and entrepreneurship; — cultural awareness and expression.
Tuning Educational Structures — 2008	*Generic competences*	— *instrumental competences*, i.e. cognitive abilities, methodological abilities, technological abilities and linguistic abilities; — *interpersonal competences*, i.e. individual abilities like social skills (social interaction and co-operation); — *systemic competences,* i.e. abilities and skills concerning whole systems (combination of understanding, sensibility and knowledge; prior acquisition of instrumental and interpersonal competences required).
OECD — 2009	*21st century skills*	— *Information* — "Information as source" (searching, selecting, evaluating and organizing) and "Information as product" (restructuring and modelling of information and the development of own ideas/knowledge); — *Communication* — "Effective communication" (sharing and transmitting the results or outputs of information) and "Collaboration and virtual interaction" (reflecting on others' work, creation of communities); — *Ethics* — "Social responsibility" (applying criteria for a responsible use at personal and social levels).

Organization	Name	Skills
IFTF (Institute for the Future) — 2011	*Future work skills 2020*	— sense making; — social intelligence; — novel and adaptive thinking; — cross cultural competency; — computational thinking; — new media literacy; — transdisciplinarity; — design mindset; — cognitive load management; — virtual collaboration.

II.3. *Analysis and comparison of the frameworks*

As we have seen, there are a number of different ways to identify soft skills, different ways of classifying and clustering them. We can identify some differences among the different clusters presented, in particular among "generic skills", "key skills/competences" and "basic skills".

The first observation is that "generic skills" are skills that are applicable and useful in various contexts, and thus they can be supposedly transferred among different work occupations. They include soft skills and additional abilities, such as literacy, numeracy, technology use etc. Soft skills are considered a subset of generic skills.

The expression "key competencies" refers to those generic skills that warrant special recognition for their outstanding importance and applicability to the various areas of human life (educational and occupational, personal and social). Indeed, the adjectives 'generic' and 'key' are sometimes used as synonyms. In one of its papers, the Information Network on Education in Europe, Eurydice, outlines its position as follows:

> Despite their differing conceptualisation and interpretation of the term in question, the majority of experts seem to agree that for a competence to deserve attributes such as 'key', 'core', 'essential' or 'basic', it must be necessary and beneficial to any individual and to society as a whole.[31]

"Basic skills" are not the same as "key competencies". Most experts usually talk about "basic skills" when referring to the sub-group of generic or key competencies that are instrumentally essential in a given culture for every person and job, and particularly as we use 'basic' skills to communicate with one

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[31] Eurydice, *Key competencies* (Brussels: Eurydice, 2002).

another and for continous learning. Classic examples of basic skills are: carrying out basic arithmetical calculations (adding, subtracting, multiplying and dividing), and reading and writing in one's mother tongue. Since the 1990s, at least two more basic skills, the outcomes of both economic globalisation and accelerated technical progress, have come to the fore: speaking foreign languages and using electronic Information and Communication Technologies (ICT).

Different generic/key/basic skills schemes have been developed in many countries. In some countries, more than one scheme has been developed, either sponsored by different organizations or because the original scheme has been modified as a result of experience. These schemes represent taxonomies of skills, to varying levels of complexity, and as taxonomies, they are informative about the theoretical bases (most of which are tacit) that formed the foundations for the development of these schemes.

As far as the identification of the skills is concerned, three approaches can be identified in the delineation of them. First, skills have been identified by employer organizations through interviews with and focus groups of employer representatives and reviews of other schemes. Second, skills have been identified through analyses of the skills enacted by practitioners in workplaces. Third, a discipline-based approach has been taken in the DeSeCo Project in which academics from six discipline groups were commissioned to propose lists of generic skills.[32]

There is no one definitive list of generic skills; instead, there are a number of lists. Each list has been compiled under the influence of both global and local factors and reflects a particular situation. Some common elements are the following:

- *Basic/fundamental skills*, such as literacy, using numbers, using technology

- *People-related skills*, such as communication, interpersonal, teamwork, customer-service skills

- *Conceptual/thinking skills*, such as collecting and organizing information, problem-solving, planning and organizing, learning-to-learn skills, thinking innovatively and creatively, systems thinking

- *Personal skills and attributes*, such as being responsible, resourceful, flexible, able to manage own time, having self-esteem

- *Skills related to the business world*, such as innovation skills, enterprise skills

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[32] Rychen and Salganik, eds., *Definition and selection of Key…*

- *Skills related to the community*, such as civic or citizenship knowledge and skills

It might be discussed which of these skills belong to the category of "soft skills". Nevertheless, all the discussion reveals the importance that the modern approaches give to the development and assessment of soft skills.

II.4. *Beyond employability: a 'holistic' approach*

In 2015 OECD produced a report, *Skills for social progress: The power of social and emotional skills*,[33] that presents a synthesis of the OECD's analytical work on the role of socio-emotional skills and proposes strategies to raise them. It analyses the effects of skills on a variety of measures of individual well-being and social progress, which covers aspects of our lives that are as diverse as education, labour market outcomes, health, family life, civic engagement and life satisfaction. The report discusses how policy makers, schools and families facilitate the development of socio-emotional skills through intervention programs, teaching and parenting practices. Not only does it identify promising avenues to foster socio-emotional skills, it also shows that these skills can be measured meaningfully within cultural and linguistic boundaries.

This report is mainly focused on development at school and not at university because social and emotional skills are more malleable between early childhood and adolescence; however it is interesting because it provides information about the skills that foster lifetime success, learning contexts that drive skill formation, national approaches, policies and assessment methodologies.

Emotional intelligence studies also support the hypothesis that interpersonal skills are more likely to predict successful careers[34] and that they are necessary for the increasing use of teams, the rapid pace of globalization, the capacity to dialogue in a cross-cultural environment, and the growing need to retain talent in organizations.

As highlighted by the philosopher Martha Nussbaum, in *Not for profit*, "we increasingly treat education as though its primary goal were to teach students to be economically productive rather than to think critically and become knowledgeable and empathetic citizens. This focus on profitable skills has eroded our ability to criticize authority, reduced our sympathy with

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[33] OECD, Skills for Social Progress [cit.].

[34] Daniel Goleman, *Emotional intelligence* (New York: Bantam, 1995). Daniel Goleman, and Richard Boyatzis, "Social Intelligence and the Biology of Leadership," *Harvard Business Review*, September (2008): 74-81.

the marginalized and different, and damaged our competence to deal with complex global problems". [35]

The American researcher Neil Noddings claims that "schools shouldn't serve merely as factories for the mass production of an able labour force". [36] In addition to professional success — perhaps even as a prerequisite for it — schools must equip students with the tools they need to flourish as well-rounded human beings.

Adapting a framework created by UNESCO for a study on transversal skills in the Asia-Pacific Region, [37] we can say that the need for soft skills is not only connected with employability but it intersects different discourses (the economic, the social and the humanity discourses) and different perspectives (the global, national and personal ones). Sometimes the drivers for the integration of soft skills into education are built upon a combination of these discourses and perspectives.

Table 3

Rationale for Integration of Transversal Competencies into Education

	Economic Discourse	Social Discourse	Humanity Discourse
Global Perspective	Competitiveness	Social Progress	Global Citizenship
National Perspective	GDP* Growth	HDI** Growth	National identity
Personal Perspective	Employability	Community	'Holistic' formation

Source: adapted from Unesco Asia-Pacific Education Research Institutes Network (ERI-Net), *Regional Study on Transeversal Competencied in Education Policy and Practice*, Regional Report (Paris: Unesco, 2015).

* *GDP: Gross domestic Product*
** *HDI: Human Development Index*

At a glance, the economic discourse appears as the most powerful driver to integrate soft skills in the university curriculum, both in a global and national perspective, i.e. to boost economic development and increase international competitiveness, but also to improve employability of young people (personal perspective). This stems from the implicit factor of the

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[35] Martha Nussbaum, *Not for Profit: Why Democracy Needs the Humanities* (Princeton University Press, 2010).

[36] Neil Noddings, *Happiness and Education* (Cambridge: Cambridge University Press, 2003).

[37] UNESCO Asia-Pacific Education Research Institutes Network (ERI-Net), *Regional Study on Transeversal Competencies in Education Policy and Practice*, Regional Report (Paris: UNESCO, 2015).

changing workplace, and hence, the changing expectations placed on new young employees. At the same time, some researches also emphasise the social and humanity discourse in which education is seen as a vehicle for fostering a number of social, ethical, and moral attributes among students, such as national identity, respect for diversity, tolerance, and empathy. From the research it is made clear that all countries and economies seek the integration of transversal competencies as imperative to the holistic development of their youth, and consequently their societies. All reports mention changing global and social contexts as important factors driving the promotion of soft skills / transversal competencies as these are seen as integral to fostering the attitudes and inter-personal attributes necessary to manage and cope with, for example, uncertainty and changes.

III. **The soft skills most required by the labour market**

III.1. *Quantitative analysis*

In 2009, EucA (European University College Association) launched the ModEs (*Modernizing Higher Education Through Soft Skills Accreditation*) project, financed by the EU program "Lifelong Learning Erasmus" and involving 15 partners from 10 countries for three years. The project was aimed at integrating a common European program on soft skills in the academic curricula. The two main products of the ModEs project were represented by a *Handbook*,[38] containing a set of guidelines to teach soft skills at the undergraduate level, and a prototype of a "serious game" in different languages to develop soft skills. The main targets of these deliverables were university teachers, trainers, and student affairs and services educators.

In order to identify and group the soft skills required in the professional field, the experts in professional skills from the different partner organisations involved in the ModEs project developed a list of skills and their definitions from a literature review and their professional experience This list was validated and reviewed within the project consortium, prior to validation by companies. Thus, the list and the definitions of the soft skills have been subject to an internal validation which provided: *validity*, what refers to whether the meaning of the skill is in line with the reality to be defined; *importance*: the relevance of the skills in the business environment; *proposal*

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[38] Haselberger et al., *Mediating Soft Skills at Higher Education Institution*s, ModEe project: Lifelong Learning Programme, 2012, accessed March, 31, 2016, http://www.euca.eu/en/prs/modes-handbook.aspx.

of inclusion: both observations and modifications to the soft skills included in the preliminary list, as well as the possibility to add, delete or merge skills.

To complement the information the partners of the project counted on the cooperation of people working in the area of human resources of companies, and persons responsible for staff professional development from different sectors, operating in Spain, Italy, Slovenia, Latvia and Malta. This stage has been developed through the design and provision to the companies of an on-line questionnaire. For this survey a Likert-type scale has been selected. A total of 500 companies operating in different sectors of activity (from Spain, Italy, Slovenia, Latvia and Malta) assessed the importance of the skills included in the on-line questionnaire.

Additionally, a total of 35 experts coming from different European countries — with academic or consultancy background — determined the relative importance of the skills required and their grouping, according to the affinity of the actions that can be undertaken to contribute to their development. For this exercise, the experts were provided with the information on the results from the on-line questionnaires to the companies. For the skills clustering activity, the experts used the Concept Mapping methodology and transformed qualitative data into quantitative information to be treated with statistical techniques. As part of the process, data are structured, quantified and analysed using statistical methods including Multidimensional Scaling (MDS) and Hierarchical Cluster Analysis.

The result was a list of 22 skills divided into three main groups:

- *Personal skills,* i.e. Learning skills, Tolerance to stress, Professional ethics, Self-awareness, Commitment, Life balance, Creativity/Innovation

- *Social skills*, i.e. Communication, Teamwork, Contact network, Negotiation, Conflict Management, Leadership, Culture Adaptability

- *Content-reliant/Methodological skills*, i.e. Customer/User orientation, Continuous improvement, Adaptability to change, Results orientation, Analytical skills, Decision making, Management skills, Research and info management

III.2. *Qualitative analysis*

A qualitative analysis on the skill gap was carried out in a further project, eLene4work (*e-Learning for work*), that started in 2015 and is still going on.[39]

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[39] The website of the project is the following: http://elene4work.eu.

The eLene4work project aims at helping students develop the soft skills mostly required by companies and at helping companies exploit the digital talents of new employers and young workers. eLene4work then proposes a strategic partnership among universities, whose goal is to test and monitor the possibility offered by MOOCs (Massive online courses) and OERs (Open Educational Resources) to fill the gaps between the university and the labour market.

One of the main Outputs of this project is represented by a report, *Which soft skills do students have and which should they have?*, that describes and compares qualitative data about soft skills gathered through focus groups carried out in 9 partner countries: Belgium, Finland, France, Germany, Greece, Italy, Poland, Spain, UK.[40]

Focus Group meetings were organised with 2 stakeholders groups:

1. Students and young workers (FG1)
2. Employers, Human resources managers, Higher education teachers (FG2)

For each target focus groups were organized in two rounds. During the first round participants were asked to answer a set of questions aimed at investigating on the meaning that the different stakeholders attribute to the expression "soft skills", on the importance of them in the labour market and on the skill gaps that newly graduates and young workers might have in these areas. In each partner countries the same sets (one for each group) of questions were used during meetings, in order to make it possible to compare the results in all countries.

The second meeting with both groups was devoted to share and discuss results of first meeting in the opposite group (Impressions from the results about soft skills from FG1 and FG2). It means that students and young workers were discussing about main findings from first meeting of employers and Higher education teachers, and employers and Higher education teachers were discussing findings from first meeting with students and young workers.

The expression "soft skills" was illustrated and explained in different ways in different countries by both focus group participants. For example: through analogies, by examples, by opposition to "hard skills". They were also defined as talents, as something that makes a person different from others, as personal attributes.

The participants to focus group meetings listed a lot of soft skills which are needed by the labour market. The most popular mentioned in most counties are social skills connected with team working, communication, openness etc.

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[40] The complete report is available at this link: http://elene4work.eu/project-outputs/focus-groups/.

Business representatives and Higher Education teachers pointed out a lot of gaps concerning soft skills in students. The most important of them were divided into four groups:

- *Social skills*, i.e. teamwork, communication (online but also face-to-face "traditional" communication; all levels: speaking, listening, formal and informal writing), flexibility, openness for constructive feedback and humility (in social contacts students are too self-confident and convinced they know everything)

- *Personal skills*, i.e. empathy (and other competences appropriate for emotional intelligence), honesty, commitment and motivation, openness for new things to learn, curiosity, patience, perseverance, capacity to learn from one's failure

- "self-skills", like self-evaluation, self-regulation of the learning process and, as a consequence, capacity to make a conscious career choice

- *Learning skills*, i.e. synthesis, skills of numeracy, ability to absorb in and deeply familiarize the topic, presentation skills

Furthermore, students, as well as business representatives, pointed out a few areas of existing potential in young workers/candidates:

- Ability to search the information quickly and effectively

- New ideas, ways of working and thinking; they have abilities to see and do things in different ways and to innovate and improve existing process

- Effectiveness and productivity, e.g. new ways to work, collaborate, fast communication and right kind of visibility to the organization

- Versatility

- Freshness and agility

- Multitasking methods

- Speed in processing information

- Free of a reputation in the work place

IV. **Soft skills development in European countries**

IV.1. *A comparative analysis on the state of the art in some European countries*

This comparative analysis was carried out during the already mentioned eLene4work project. The first output of the project was represented by a

comparative analysis on the state of the art situation of soft skills and digital soft skills in different European countries (Belgium, Finland, France, Germany, Greece, Italy, Poland, Spain and UK).[41]

In order to collect the data from all these countries in a homogenous way, a template was designed and a glossary with the definition of the different soft skills was made available to all the partner institutions in order to share a common framework to work with. Among the results of this work, an overview of the main initiatives carried out in different countries and transnational projects. In the next paragraph some European projects on soft skills are presented.

At a national level, the state of the art on soft skills varies from country to country. While in some countries the topic seems to be very important — and therefore it is easier to find research on it, in other countries this topic is still developing.

In **Belgium**, a very interesting initiative is the U2ES — University to Enterprise and Society "Boost your skills" (University of Namur).[42] It presents additional courses (14 credits ECTS in all) focused on soft skills that enrich bachelor/master/PhD students' university curriculum. Courses focus mainly on organisation skills, communication, personal development. They can last from 6 months to 2/3 years. Another initiative is the HoGent — Centre for Entrepreneurship (University of Gent).[43] The Centre carries out practical-oriented research and services for entrepreneurs. Students engaging in the Centre's activities acquire knowledge about entrepreneurship and receive a certificate as proof of their skills and (first) relevant practical experience. There are also trainings, like the training on Soft Skills for PhD students (University of Liège).[44] Considered that not all PhD students will have academic positions, the University of Liège provides them additional courses on soft skills to make them more prepared to enter the labour market. Another initiative is "Logistics in Wallonia — Soft Skills Certificate".[45] Trainings focus on flexibility, leadership, team-working, self-development,

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[41] A full report of the first output (*Comparative analysis on the state of the art of soft skill and soft skills 2.0*) is available at: http://elene4work.eu/project-outputs/comparative-analysis/.

[42] U2ES — University to Enterprise and Society "Boost your skills" (University of Namur), http://u2es.unamur.be/introduction.

[43] HoGent — Centre for Entrepreneurship (University of Gent), http://centrum-voor-ondernemen.be/en/centre-for-entrepreneurship.

[44] Training on Soft Skills for PhD students (University of Liège), https://www.ulg.ac.be/cms/c_775258/en/soft-skills-for-researchers.

[45] Logistics in Wallonia — Soft Skills Certificate http://www.logisticsinwallonia.be/news/un-nouveau-certificat-pour-renforcer-ses-competences-transversales-et-favoriser-une-insertion.

interpersonal skills, ability to work in multicultural groups and problem solving capacities. The program is the result of an agreement among the above mentioned universities, the Centre for Long-Life Learning of the University of Liege and "Logistics in Wallonia", an association of 265 members from different fields (industries, infrastructures management services, research centres). Additional training on soft skills addressed to students of the Haute École Mosane, the Haute École Charlemagne, the Haute École de la province de Liège.

In **Finland** the focus in on life skills. The importance of both working and life skills has been recognized and identified by the various stakeholders (employers, students and universities). Finnish universities have actively developed skill studies in the recent years.[46] Working and life skills were categorized as: 1) academic knowledge building and academic thinking 2) integration of knowledge 3) social and communication skills 4) self-regulation skills 5) leadership and 6) networking skills. Projects in this country intend to develop new ways to organize university courses based on collaborative knowledge creation and digital technology. Päivi Tynjälä[47] (Head on research group in The Finnish Institute for educational research, University of Jyväskylä) has studied how university teaching may develop skills needed in working life in Finland. The solution for increasing expertise and working and life teaching is presented as the so-called integrative pedagogy, where courses are organized in such a way that they combine all the expertise components. For example, the internship is a good opportunity to implement integrative pedagogy, as long as the training is held in controlled manner so that it includes practical experience and reflection. Other practices that combine theory and meta-cognitive

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[46] Liisa Ilomäki, Minna Lakkala & Kari Kosonen, "Mapping the terrain of modern knowledge work competencies." A paper presented in a symposium *Generating working life competencies during higher education* at the 15th Biennial EARLI conference for Research on Learning and Instruction August 27-31, 2013, Munich, Germany, accessed March, 31, 2016, http://www.earli2013.org/programme/proposal-view/?abstractid=1157.

Johanna Penttilä, *University student`s work orientation. Study contents, career guidance and pictures of the future*. Otus 30/2009. Helsinki: Opiskelijajärjestöjen tutkimussäätiö. Otus, accessed March, 31, 2016, http://ek2010.multiedition.fi/korkeakouluharjoittelijat/liitteet/yo-opiskelijoiden_tyoelamaan_orientoituminen.pdf.

Antero Puhakka, "Mapping the skills masters need in their work". In Puhakka & Tuominen (toim.), *Kunhan kuluu viisi vuotta — ylemmän korkeakoulututkinnon suorittaneiden työurat. Aarresaari-verkoston julkaisusarja*. 61-86, accessed March, 31, 2016, http://www.aarresaari.net/pdf/Kunhankuluuviisivuotta.pdf.

[47] Päivi Tynjälä, "Workplace expertice and higher education pedagogy", *Aikuiskasvatus* 28, nº 2 2008, 124-127.

elements in pedagogy are problem-based and project-based learning. The ProWo-project (2014)[48] provides research-based ideas and models about how to advance students' modern working life competences in university education. During the project, teachers, students, and other stakeholders developed new ways to organize university courses based on collaborative knowledge creation, digital technology and cross-fertilization of practices with working life.

In **France**, the Career Center[49] is an initiative with the aim of developing soft skills. On the website of the Career Center there is help to find a job and it suggests several transversal skills to develop: leadership, teamwork, problem solving, organization, communication, self-knowledge, motivation and enthusiasm, decision-making and flexibility. Another initiative is the CEDEFI,[50] an association of the directors of French Engineering Schools, which offers a course to help future PHD students to improve their competences to join a company (80% of PhDs in scientific disciplines are working in enterprises). The curricula includes a part called 'autonomy and project management' where some soft skills are taken into account, such as learning skills, adaptability to changes, project management, leadership or communication. Finally, the Reflex Soft Skills Academy[51] is a website with videos to learn to develop soft skills in relation with the book *Reflex soft skills* (Conscientiousness, entrepreneurship, confidence and synergy). A further initiative in the field of soft-skills development is the TalentCampus project.[52] TalentCampus is one of the programmes supported by the Centre for Research and Higher Education (PRES) Bourgogne Franche-Comté via its Foundation for Scientific Cooperation. TalentCampus is an innovative education programme designed for the development of social competences using soft skills. Proposed in the format of Summer, Winter and Spring schools, TalentCampus aims to develop competences complementary to academic ones: leadership, behaviour in society, emotional intelligence, stress management.

In **Germany**, the topic is considered very relevant and the focus is more on "key skills" that, as we have seen previously, only partially overlap the

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[48] http://blogs.helsinki.fi/prowo-project/2014/06/29/the-website-of-knork-project-launced/.

[49] Career center: http://www.michaelpage.fr/career-center/developper-competence-transverses.html.

[50] CEDEFI, Association of the Directors of French Engineering Schools: http://www.cdefi.fr/files/files/R%C3%A9f%C3%A9rentiel%20parcours%20Comp%C3%A9tences%20pour%20l%27Entreprise.pdf.

[51] Reflex Soft Skills Academy: http://reflexsoftskills.fr/.

[52] TalentCampus project: http://www.talent-campus.fr/.

concept of soft skills. There are many initiatives that stress the importance of key skills and that promote recommendations on how to organize and implement skills in higher education.[53] Universities in this country have established centres for key skills or expanded the existing departments to support and promote key skills. Many universities organize the promotion of key competences by setting up interdisciplinary centres (key competences centres). It is a chance for the universities to be visible to the world, get to be known by companies and optimize their reputation. Other universities try to develop the concept of 'Service learning': The professional higher education is connected to projects that respond to actual needs layers of non-profit actors in the region. Companies would more often select the so-called "Key Universities" for enhanced cooperation. The companies are then prepared to support these universities with equipment know-how but also financially.

In **Greece**, there is a general recognition of the importance of soft skills in improving the productivity of the workforce, but there is still quite a degree of ambiguity in defining their boundaries.[54] In general, soft skills are seen as people-oriented skills and self-management skills. At a national level there are not many initiatives that are dedicated to this problem and most of them are associated with European policy and European funds, like in the case of Poland. The importance of soft skills for enhancing employability, personal fulfilment and social participation is widely accepted. In Greece, the educational institutions have accepted that they should prepare their students for a complex and uncertain society and labour market. While they appear to have accepted their new vocational role, there is considerable confusion over how generic competencies, soft skills, attributes or capabilities should be defined and implemented.

Also in the case of **Italy**, the soft skills development arouses the interest of various stakeholders. Among these, universities play an important role and sometimes offer targeted training, such as MOOCs in the Polytechnic

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[53] Some examples: http://www.va-bne.de, http://www.egs.uni-bremen.de.
Society for key competences in Education, Research and practice; http://www.gesellschaft-fuer-schluesselkompetenzen.de.
Nexus Impulse für die Praxis "Employability," Von der Leerformel zum Letziel, 2014, www.hrk-nexus.de.
Virtuelle Hochschullandschaft Norddeutschland, "(VHN), Empfehlungen der Arbeitsgruppe Schlüsselkompetenzen," 2007, https://studieren.de/berblick-soft-skills.0.html.
[54] LinkedIn group for Entrepreneurship, Financial Literacy, Skills for employability: https://www.linkedin.com/grp/home?gid=4272606.
Facebook page for Entrepreneurship, Financial Literacy, Skills for employability: https://www.facebook.com/SENJAGREECE/.

University of Milan. Furthermore, the ManPower Group[55] carried out a survey in collaboration with the Department of Education and Psychology of the University of Florence in order to create a basis for the development of a national "observatory" on soft skills recognized and required by the labour market. The ManPower Group has identified a set of soft skills connected with the three levels of organizational roles: fundamental operational roles, managerial roles and executive roles. The research found out that for operational roles and entry-level team working and orientation to results are the most requested competences. As concerns managerial roles, the need to provide concrete solutions and / or alternatives to daily problems, by bringing together and harmonizing the contributions of various collaborators is fundamental. Two skills emerge for the executive roles: leadership and strategic vision. The survey also investigated which skills are important for the future and transversal to all the roles. This data is more fragmented since there is no basis of common experience on which to base certain answers or imagine future needs. In general, given the current and changeable working environment, adaptability and integration in the employment context become essential. There are also initiatives aiming at assessing and developing the soft skills needed to enter the labour market[56] or national policies which intend to regulate the national system of certification of skills.

The subject of the skills required for the labour market is also relevant in **Poland**, where, in the last years, there has been a lot of discussion and research on this subject.[57] However, there are not many initiatives or policies at a national level in this country, as most of them are associated with

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[55] Manpower Group, *Soft Skills for Talent*, Internal Report, 2014, accessed March, 31, 2016, http://www.manpowergroup.it/indagine-soft-skills-manpowegroup.

[56] POK Project Politecnico di Milano: www.pok.polimi.it. Luiss Skill A Bus/Geek Café: http://www.luiss.it/studenti/soft-skills-and-training-opportunities/soft-skills-con-cfu. Competency Centre, Università Cà Foscari, Venezia http://www.unive.it/nqcontent.cfm?a_id=141907. JUMP (Job University Matching Project) promoted by Fondazione RUI http://www.rui.it/it/pagine/view/jump.

Project Skill License promoted by Adecco: http://www.adecco.it/opportunita-speciali/skill-licence/default.aspx. GIOTTO Project promoted by FederManager (company association for Managers): http://www.manageritalia.it/content/download/Associazione/associazioni/firenze/GIOTTO_2015_Presentazione.pdf.

[57] GoldenLine (similar to LinkedIn portal) group for Business Trainers and Coaches: http://www.goldenline.pl/grupy/Przedsiebiorcy_biznesmeni_trenerzy-biznesu-szkolenia-miekkie/.

GoldenLine group for measurement of soft skills: http://www.goldenline.pl/grupy/Zainteresowania/miekkie-kompetencje-pomiar-i-szkolenie/.

GoldenLine coach group: http://www.goldenline.pl/grupy/Zainteresowania/coaching-praktyka-oparta-na-dowodach-coaching-ebp/.

European policies and funds. In Polish universities, soft skills are not well developed, although companies underline the importance of these skills and the soft skills gap. Moreover, there is not a clear definition of soft skills.

Soft skills and digital skills are also very important in **Spain**, as it is reflected by the debates and amount of research on this issue recently.[58] There is a lot of research coming from Spanish universities, which has treated the topic of how to introduce soft skills in the academic curriculums. However, according to some sources, it is believed that these actions have been taken without having generated enough debate on the issue in order to clarify the concepts around it and to analyse the most appropriate models. The initiatives are not only appearing in the academic context, but also in companies, where there are trainings on soft skills.

Last but not least, the development of soft skills to enhance graduate employability is a major area of concern is the **UK**. This concern is shared by the UK government, employers and higher education institutions, where the Higher Education Academy has a whole department dedicated to employability.[59] However, it is not easy to find valuable sources in this country, even if there is a number of articles and initiatives on transferrable skills, the development of soft and digital skills and the skills for employability.[60] As in

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[58] Gobierno de España, Ministerio de empleo y seguridad social, *Estrategia de emprendimiento y empleo joven 2013/2016*, Accessed March, 31, 2016, http://www.empleo.gob.es/ficheros/garantiajuvenil/documentos/EEEJ_Documento.pdf.

Some more examples of this debate are available at the following links:

- http://www.fib.upc.edu/eees/cicleactivitats_08-09/mainColumnParagraphs/05/text_files/file/EvaluacionCompetenciasTransversales.PDF
- http://excelcon.blogs.upv.es/2014/10/01/cuales-son-las-competencias-transversales-de-la-upv/
- http://www.uwc.org/uwc_education/short_programmes/spain_2015.aspx
- http://www.aqu.cat/tallers/jornada_ocupadors/index.html#.VUz0Ivntmkp
- https://www.facebook.com/CompetenciasTransversales/info?tab=page_info
- https://www.facebook.com/institutodecompetenciastransversales/info?tab=page_info
- http://www.habilidadesblandas.com/.

[59] UK Commission for Employment and Skills, *The Future of Work: Jobs and skills in 2030*, 2014 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/303334/er84-the-future-of-work-evidence-report.pdf.

[60] Manuel Salas Velasco, "More than just good grades: candidates' perceptions about the skills and attributes employers seek in new graduates," *Journal of Business Economics and Management* 13, nº 3 (2012); 499-517, DOI: 10.3846/16111699.2011.620150.

David Nicol, *The foundation for graduate attributes: developing self-regulation through self-assessment*. QAA Scotland, 2010, accessed March, 31, 2016, http://www.enhancementthemes.

UK, in **France**, there are also factors which make the research on soft skills difficult, such as the fact that the topic is still emerging and that it is difficult to find a common French term to indicate soft skills and a common definition. In general, the teaching of soft skills in universities is not well developed and there are no national policies on soft skills for higher education. However, soft skills tests are being used in companies in order to hire or promote employees.

IV.2. *European projects*

In the last few years different projects financed by EU focused on soft skills. The MASS project[61] outlines importance of using different approaches of assessment for different group of people. A variety of approaches were collected, which can be used as a base for an adaptable system for many types of institutes and audiences, for example to prepare disadvantaged learners for employment.

The results of a survey in the E-QUA project,[62] that maps the various models of mobility in Europe, give exact situation regarding the soft skills on European universities. It was shown that only eight out of twenty-eight universities offer a soft skills development programme. All of them provide the development programme for both local students and incoming mobility students. The developed skills are mostly operative skills, intellectual/practical/relational/managerial skills, personal skills and thought skills. Furthermore, only 50% of incoming mobility students receive a formal acknowledgment of the soft skills programs that could be recognized once back in their home country. In the project „Soft skills — improving professional competence and management"[63] is also highlighted a significant lack of training in soft skills. At the same time, if they exist, they are too expensive or physically out of reach of most SMEs. Therefore, the authors

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ac.uk/docs/publications/the-foundation-for-graduate-attributes-developing-self-regulation-through-self-assessment.pdf?sfvrsn=28.

Catherine Jane Hack, "Developing an open education resource to develop digital literacy skills for employability in the Life and Health Sciences," *Journal of Educational Innovation, Partnership and Change* 1, n° 1 (2015), accessed March, 31, 2016, https://journals.gre.ac.uk/index.php/studentchangeagents/article/view/206/211.

[61] MASS — Measuring and Assessing Soft Skills Project, available at http://www.mass-project.org/attachments/396_MASS%20wp4%20final%20report%20part-1.pdf.

[62] 7. E-QUA — Erasmus Quality Hosting Framework', available at http://www.equa-project.eu/en/index.aspx.

[63] Soft skills — improving professional competence and management, available at http://softskillsproject.com.

realized the importance of delivering a full range of training materials for free to as many European organizations as possible that can be used to improve the skills of European professionals.

The DAISS project[64] also supported many unemployed adults in 6 EU countries to gain greater self-awareness in terms of their soft skills. They also supported recognition of the need to develop these skills and competences to meet the needs of an increasingly competitive labour market. The project results consisted in a number of new collaborations where VET providers and employers have worked together. The NESSIE project[65] brings up a list of skill gaps that are linked to a range of labour market problems: high staff turnover/difficulty recruiting (particularly in the young), lack of ability to compete, inability to cope with change, reasons for staff dismissal and problems in school.

The HISS project[66] aimed at transferring existing tools on screening soft skills, workplace learning methodologies and mentoring methodologies into a wider range of target-groups (including students, younger job seekers, employers, unemployed adults), sectors of activities and in different countries at European level. The Learning Partnership "Gaining soft skills"[67] was aimed at developing learning tools and environments for strengthening soft skills and models of supporting learning and training while connecting generations in order to increase employability and motivation for all ages.

The GRASS project[68] focused on representing soft skills of learners of various ages and at different levels of education in a quantitative, measurable way, so that these skills might become the subject of formal validation and recognition. The S-Cube project[69] developed an online role play training to help Social Enterprises improve soft skills. The VALEW project[70] developed a model for certification of competences acquired in non-formal /informal learning environments.

The YES ME project[71] selected international cases concerning the development of transversal and personal skills, both in active labour market

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[64] "Job Matching Diagnostics for Assessing Soft Skills and Work Role Preferences: DAISS", available at: http://daiss-project.eu.

[65] NESSIE — Network for Soft Skills Innovation for Employment, available at http://www.adam-europe.eu/prj/9722/project_9722_en.pdf.

[66] HISS — Help to Improve Soft Skills, available at: http://www.hisstoolbox.eu.

[67] "Gaining and strengthening 'soft skills' for employment through models of supporting methods (peer coaching and mentoring), available at: http://www.gainingsoftskills.eu/Index.aspx

[68] GRASS — Grading Soft skills, available at: https://sites.google.com/site/llpgrassproject/.

[69] S-Cube — **S**oft **S**kills for **S**ocial enterprises, available at: http://www.s-cubeproject.eu.

[70] VALEW — Validate Learning at Work, available at: http://www.valew.eu/.

[71] YES-ME — Young Employment System for Mobility in Europe, available at: http://www.yesme.it.

and training policies, targeted to unemployed youth who lack technical and transversal skills and aimed to the improvement of youth employment and mobility.

V. **Teaching and learning soft skills at University level**

V.1. *Mapping best practices*

A further step of the already mentioned ModEs project consisted in mapping the best practices and methodologies applied for the development of soft skills through the analysis and comparison of the scenarios in four countries (Italy, Spain, Great Britain and Poland).

Beside this, plenty of information concerning universities and halls of residence was collected with the aim of understanding how the soft skills theme is approached in different institutions. We developed the research in two phases. In the first phase we designed a questionnaire, which was administered in 93 institutions (some universities and many university halls of residence) in 4 countries.

After gathering quantitative data through the survey, a further phase of qualitative research was necessary in order to map the best practices and analyse teaching, learning and assessment methods concerning the development of soft skills in halls of residence. This second phase was carried out through focus groups and interviews with directors of halls of residence and an ethnographic study, i. e. 'a portrait' of the halls of residence, based on information collected through observation on the field. Thus, after constructing an initial framework, giving us a general overview of the nature of soft skill learning and teaching in halls of residence, we carried out further enquiries to gain a more thorough understanding of the practices, gathering evidence about formal, non-formal and informal activities carried out in halls of residence for soft skill development.

From the analysis of the answers collected in the survey (93 institutions in 4 countries), the development of soft skills emerges as a popular theme, especially in Italy, but only half of the halls of residence that completed the survey have a programme for the development of soft skills, and a structured assessment model.

Skills mapping models only exist in Italy and Spain. Their descriptions articulate different circumstances, in line with the universities' and halls of residences' declared goals: intellectual and cultural growth (29,2%); ethical, spiritual and human growth (52,4%); personal growth (22,2%); professional
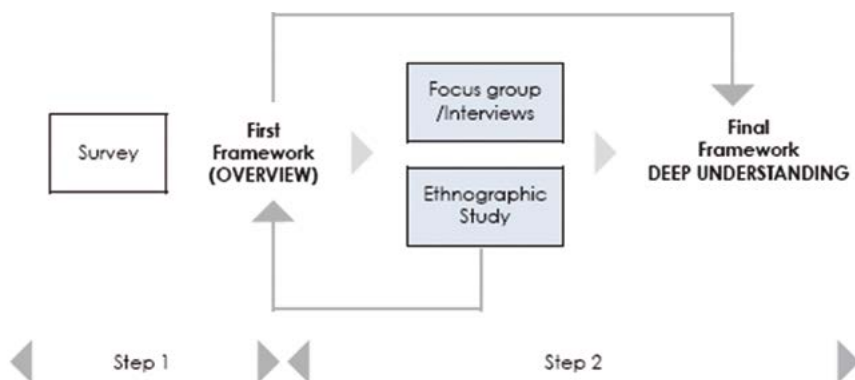
Figure 1

Soft skills development in halls of residence:
quantitative and qualitative research

and academic excellence (32,8%). As far as the different skills are concerned, there are some differences. On the one hand, Italian halls of residence focus on managerial capabilities, while in Spain, personal skills (for example, creativity and innovation, tolerance to stress etc.) receive more attention. In general, the two countries place a lot of importance on relational skills, intellectual abilities and learning skills.

In different countries halls of residence have adopted different polices in regard of students' development. In Italy, in many halls of residence, courses are mandatory and prescribed according to rules in most institutions. In Spain both universities and halls of residence encourage students to take part in courses but they are not mandatory. In all the English halls participation in soft skill development activities is purely voluntary. In Poland soft skills training is part of non-obligatory studies and training sessions are organised by the students themselves through the Career Office.

Soft skill development is fostered also through international exchanges and the promotion of an intercultural environment. International exchanges are available for students at all the English colleges, in most of the Italian colleges (86.2%) and in the 64.7% of the Spanish ones. Poland does not offer any opportunity in this respect. These data are also in line with the answer collected about students' nationality: the majority (97.5%) of them comes from Poland. By contrast, the results obtained from the English colleges show a very high percentage of non-English students (79.5%).

Traditional lessons are offered in particular in Italian halls of residence, while they represent just the 25% of the whole training activities in Spain. The other activities may be clustered into two main groups: 'connection with external professionals and companies' and 'internal practical activities'. The percentages of these two categories are similar, even if internal activities reach a higher percentage and this because they are easier to organise and manage.

Connections with universities are present in all the countries in a high percentage, except of Poland. Not all the halls of residence completed this section of the questionnaires and the answers provided were in the most part unspecific. As far as Italy and Spain are concerned, this connection can take the form of: course recognition through credit acknowledgement (13% in Italy and 25% in Spain); jointly course and projects organisation (8.7% in Italy and 16.7% in Spain); agreement about grants and hospitality (39.2% in Italy); collaboration (unspecified) and promotion (26.1% in Italy and 58.3 in Spain).

The qualitative part of the research was performed in different phases. After sending a template for the best practices, we interviewed the directors of the halls of residence (or the people working at educational and cultural activities in the colleges) and gathered direct data, which were compared with the information available on the websites of the halls of residence, annual reports, or internal journals. The product of this qualitative research was used both to inform the *Handbook* of the ModEs project with best practices drawn from the experiences of the colleges, and to gain a deeper understanding of soft skill development in halls of residence. This is often based on very informal practices, and difficult to standardise and formally acknowledge. Only the very effective 'best practices' were selected for the *Handbook*. In some cases, the templates were sent back to the interviewees for a double check. All the other activities, mainly the informal ones that were not suitable for inclusion in the 'best practice template', were analysed and included in another publication.[72] This second step of the research was also useful to investigate the pedagogy of soft skills, i.e. innovative teaching and learning methodologies and assessment tools for soft skill development in halls of residence. In this paragraph, a general overview of the results obtained from the qualitative research is presented.

In the halls of residence, soft skills are developed through formal, non-formal, and informal activities that can be divided into four main typologies:

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[72] Maria Cinque, S*oft Skills in Action. Halls of Residence as Centres for Life and Learning* (Brussels: EucA, 2012).

1. Recognised (i.e. accredited according to the European transfer Credit System) soft skills courses organised by universities or at universities by halls of residence's teachers and tutors

2. Recognised soft skills courses organised in halls of residence and colleges — attended by residential and non-residential students

3. Non-recognised soft skills courses organised in halls of residence

4. Soft skills in action, i.e. experiential learning trough practical activities

In the first two groups only formal activities are included because they are accredited both if they are carried out at universities and in halls of residence. Consequently, we can have academic, recognised activities and non-academic, recognised activities. The third group is composed of activities that are non-academic and non-recognised, although the structure of the courses is similar to the previous ones. Non-academic, non-accredited and informal activities belong to the fourth group since they do not have the structure of a course but mainly consist in tasks and forms of 'social learning'. Generally soft skill development can be performed under different forms and with various tools: mini-curricula; programmes, workshops and labs; training sessions (sometimes with outdoor activities); projects (internal project works, external cooperation projects etc.); internal and external competitions; cycles of seminars (face to face lessons) and/or colloquia (guest speakers); company visits, journeys (study tours), internship and on the job training; individual or group tasks / learning based on practical activities.

Various forms of assessment are used in halls of residence to evaluate students' improvements. The majority of colleges assess students' skills at the beginning and at the end of the training course but sometimes, assessment models are not structured. Occasionally, only an evaluation form (measuring students' satisfaction of the courses) is provided. Very rarely assessment is 'formal' and quantitative, through written or oral tests. This kind of assessment is normally used for academic courses. Generally, assessment of soft skill courses is based on teachers' or tutors' observations of individuals working in groups or on their own. This observation can be unstructured and based on teachers' or tutors' free descriptions; sometimes an assessment grid or a checklist can be provided. Another tool is self-assessment, which is probably the most popular method in halls of residence to evaluate students also during courses; nonetheless, also in this case there is a lack of structured tools.

Self-assessment and interviews are widely used to examine students entering in colleges; only some Italian residences have adopted assessment

centres. Assessing students' capabilities is a fundamental step to define their training paths, focusing on the areas to improve and determining the selection of courses to attend; ignoring this phase will strongly influence learning and personal education goals. Assessment at the end of the process (at the end of a course, of a year or of a whole period in the hall of residence) is important to verify the fulfilment level of the set goals. At the same time, it is also true that accurately summarizing learning — especially the breadth and depth of learning that occurs across different years in collegiate halls of residence — in a few simple quantitative parameters is a difficult task. Not only do tests of this type tend to measure merely factual knowledge (as compared to understanding, reasoning, or creative ability), but they do so in a manner that isn't enough meaningful for the student. As a matter of fact, halls of residence are shifting the focus of assessment from quantitative to qualitative assessment but the problem is that very often this kind of assessment is not systematic or structured.

Some halls of residence in Italy are providing a university coaching services for their students. With the help of a coach, each student is required to set personal goals for continuous improvement. Through this process the student is able to explore his/her own areas of development, set SMART (i.e. Specific, Measurable, Attainable, Relevant and Time-bound) goals as well as identifying the best tools to achieve these goals. At regular intervals students — together with their coaches — monitor their progress through assessments. At the end of the individual coaching process, the coach could issue a coaching report, which is composed of the following parts: analytical description of the skills that the coachee (student) has chosen to develop; analytical description of set goals and intended outcomes; synthetic assessment of the results, comparing the initial and the final self-assessment of soft skills mapping.

V.2. *Methodologies for soft skills development*

Learning methodologies continue to be shaped and impacted by changing societal and trends, taking also into account the new possibilities offered by technology. One way to understand this impact on the development of soft skills is by outlining a map of the most appropriate methodologies in use.

Soft skills are developed through formal and informal activities as mentioned previously, and universities recognise formal skill development activities in the classroom and outside the classroom. The informal skill development activities are non-academic and while not officially recognized

in terms of bearing credit for participation, the structure of the courses and training programs can be similar to those offered for credit. Soft skills development in the classroom can be performed using mini-curricula, programs, workshops, labs, training sessions, projects, company visits and study journey, and individual or group tasks. Similarly, these same or similar activities can take place in the co-curriculum to compliment the skills obtained in the classroom.

With the qualitative research on the best practices applied to soft skills,[73] different kinds of teaching strategies were identified in the ModEs project. They can be divided into three groups: expository, guided, and active strategies (see Table 4). The strategies include both university teaching methods and company training techniques.

Table 4

Learning Methodologies to Develop Soft Skills

Expository	Guided	Active
Lecture	Discussion, debate	Brainstorming
Seminar	Workshop	Role play
Conference	Case study	Business game
Demonstration	Project work	Visits, Journeys
	Simulation	Outdoor training
	Mentoring	Coaching

A further challenge is represented by the use of digital technologies for the training of the soft skills. In the ModEs project a prototype of "serious game" was implemented in order to train communication, negotiation and team work. The approach taken to develop the serious game included three different pedagogic concepts — i.e. exploratory, experiential, and game-based learning — which reflect the paucity of existing research linking pedagogic elements to both learning requirements and technical features. In the eLene4work project students learn how to fill their soft skill gaps using MOOCs (Massive online courses) and OER (Open Educational Resources).

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[73] Maria Cinque, *Soft Skills in Action. Halls of Residence as Centres for Life and Learning* (Brussels: EucA, 2012). Maria Cinque, *Soft Skills in Action. Halls of Residence as Centres for Life and Learning*. Second Revised Edition (Brussels: EucA, 2014).

The aim is to provide a proof of concept and introduce innovative ways of soft skills training.

Halls of residence promote different kinds of teaching methods and educational settings that can produce different kinds of learning,[74] which are described here:

- *Cooperative Learning*: students work in small groups on an assigned project or problem, under the guidance of the facilitator who monitors the groups.

- *Problem-based/Project-based learning*: participants work in small groups to solve a problem and are guided by a tutor-facilitator.

- *Action Learning*: it is a process that facilitates and enhances the learning of groups of people coming together to tackle real challenges and at the same time learning from experience through reflection and action.

- *Experiential learning*: it is the process of grasping meaning from the experience itself. The student must be able to reflect on the experience, must possess and use analytical skills to conceptualize the experience.

- *Reciprocal learning*: two students form a learning partnership committed to helping each other reach a particular learning goal.

- *Progressive mastery*: it is characterized by sequential micro-reinforcement in units of learning about a subject or training aimed at developing a competence.

- *Critical reflection*: students are required to carry out specific tasks that enhance their reflection and their metacognition about the activities performed.

- *Active seeking of meaning*: it consists in helping student to actively seek the personal and social meaning of whatever they are doing, of their activities and experiences, in order to overcome difficulties that arise during study.

It is important to bring students together in a collaborative/competitive environment and they can learn from each other and through the exposure to authentic, complex and real-life problems. Soft skill learning is 'meaningful,' since it is a wilful, intentional, active, conscious, constructive,

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[74] *Ibidem.*

and socially mediated practice that includes reciprocal intention — action — reflection activities.

VI. **Conclusions**

Pushed by current socio-economic projections, a rising number of governments and international institutions are trying to bring closer the world of education and training and the world of work: graduates' employability, innovation and entrepreneurship, ICT use in tertiary education, are just some of the topics on this agenda. The level of youth unemployment across the world is one factor in the increasing pressure on universities to tailor their curricula on current labour market needs as well as anticipating competencies for future jobs. From gathering evidence on skills demand, experimentation with curricula design, research on the training and assessment of soft skills in academia, to university-business cooperation, universities can provide an important contribution both with research initiatives for evidence-based policies and actively working toward the development of national and international skills strategies.

Soft skills, as discussed earlier, might be listed among the expected outcomes of the university curriculum. From 1999 to 2010, the Bologna Process members aimed at creating the European Higher Education Area (EHEA), which was officially created with the Budapest-Vienna Declaration of March, 2010.

Since 2001, Dublin Descriptors have been adopted as the cycle descriptors for the framework for qualifications of the European Higher Education Area. They offer generic statements of typical expectations of achievements and abilities associated with awards that represent the end of each Bologna cycle: knowledge and understanding, applying knowledge and understanding, and the 'soft' skills; making judgements, communication skills, learning skills. The Member States have gradually integrated the descriptors within their Higher Education systems. In Italy, for example, in 2010, the Ministry of Education published the Qualifications Framework for Higher Education, which summarises the main features of the Italian Higher Education Degree System, describing each course in terms of credits and general learning outcomes. In spite of this general trend, the focus of the programmes offered at most EU universities is still based on teaching traditional scientific skills rather than on soft and complementary skills.

The decade 2010-2020 has been aimed at consolidating the EHEA, so that universities may become motors of change and innovation. One strategic action is the curricular reform to tailor higher education institutions to the requests coming from the labour market. Mismatches between skills and

jobs, such as skill gaps in the workplace, shortage of adequately skilled figures for certain positions or the abundance of candidates in sectors where there are not enough suitable vacancies need to be corrected. Effectively anticipating which skills will be required by companies in years to come is crucial in order to equip future workers with the 'right' competencies.

The aim of this article was to enhance understanding of soft skills and to indicate key areas for soft skill development at University level.

One difficulty is represented by the fact that different countries have different methodologies and approaches to the teaching and recognition of skills for employability. The presence of such discrepancies requires that cooperation should be strengthened among the different stakeholders to find common solutions and educational models that provide a common set of skills and of training tools.

Another obstacle is represented by the absence of a common language. This is why in the first part we discussed different definitions and classifications of soft skills in order to enhance the understanding of this theme.

One further issue is to identify the soft skills most required by the labour market. Different studies have investigated on this theme. We presented two examples, carried out during two European projects, of quantitative and qualitative researches.

The comparative analysis of the state of the art of soft skills development in different European countries presented in the fourth part of this article painted a very dis-homogenous picture: although the topic is widely debated in all the countries, in some of them (Belgium, Finland, France, Germany, UK) there are many initiatives going on, whilst in some others (Greece, Italy, Spain) the topic is still developing. Nevertheless, besides national and transnational initiatives (many European projects have been carried out on this theme), we mapped "best practices" coming from European halls of residence, where besides with learning methodologies and techniques, soft skills development is fostered through an opportune environment.

The importance of the "environmental factor" is also stressed in the recent Report published by the High Level Group on the Modernisation of Higher Education:[75]

> Universities and higher education institutions, as part of the education system, should not educate students only in narrow, knowledge-based specializations, but must go further, seeking the integral education of the

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[75] EC (European Commission), "Modernisation of Higher Education, Report on Improving the quality of teaching and learning in Europe's higher education institutions," 2013, 36, accessed March, 31, 2016, http://ec.europa.eu/education/library/reports/modernisation_en.pdf.

> person. [...] Efforts need to be concentrated on developing transversal skills, or soft skills [...]. In order to develop these skills, teaching is not enough: an appropriate environment is also required. For example, extra-curricular activities, whether organized in a university/college/institute environment, ranging from volunteering, culture and the arts, to sports and leisure activities, help develop soft skills and nurture talents.

Future research should focus on the relationship between soft skill development and environmental conditions, not only at university but also in schools and on the job, also exploring the connection between these skills and what was already known as "hidden curriculum", i.e. the unwritten, unofficial, and often unintended lessons, values, and perspectives that students learn, as a function of implicit values held by the institution as a whole. The hidden curriculum consists of the unspoken or implicit academic, social, and cultural messages that are communicated to students while they are in a specific environment (school, university, hall of residence etc.) and that are part of the organizational culture of that environment. Educators (school teachers, university professors, halls of residence directors etc.) need to be aware of the symbolic aspect of the environment and of their role in structuring students' soft skills.

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A long way to go … A study on the implementation of the learning-outcomes based approach in the EU[*]

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Abstract: Higher Education institutions have, in the framework of the Bologna Process, been called to re-define their degree programmes on the basis of the learning outcomes approach. This implies a change of paradigm moving from teacher-centred to student-centred education. The Tuning project was set-up in 2000 to develop — through a bottom-up approach — a methodology to achieve this shift. This methodology proved not only to be relevant for Europe, but also for other world regions, including the USA, where Tuning projects were launched from 2009. In 2010 both in the EU and the USA the need was felt to find out whether the intended modernization of learning was actually taking place and how this process was perceived by its main stakeholders. For this purpose a study was initiated, covering the period 2011 to the beginning of 2016, based on the two-pillar approach of quantitative and qualitative instruments. For the study a robust evaluation instrument was developed, consisting of surveys and in-depth interviews implemented by a research team at a selected group of Higher Education institutions, involving management, teaching staff, student counsellors and students. In this paper the outcomes of the EU part of the study are presented, cross referencing to some of the USA study results. The main outcome of the study is that in general limited progress

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has been made regarding the intended paradigm shift and that key expectations of the reform Process have not been met. This is both the case for Europe and the USA. Although, good practices have been identified, the actual implementation of the student-centred approach is not proceeding beyond a discourse on the paradigm shift and there is no certainty it will be achieved. For Europe there is also a worrying disconnect between the various tiers of the HE sector, ranging from Ministers to students, regarding the actual penetration of the student-centred approach and the education experience of the students. There has been a failure to engage with and convince academic staff about the necessity and advantages of this paradigm shift. Teaching staff are struggling to adjust to the new concepts and paradigm shift and are challenged by no longer being the "knowledge owners" but rather learning facilitators. It does not help that the vast majority of staff members have not undertaken professional development for HE teaching. Where staff development has taken place, it is too focused on process, rather than the concepts and benefits of a learning outcomes approach. The outcomes of the study should therefore be perceived as a wake-up call because without additional and continued support in particular for the teaching staff the reform process could fail.

Keywords: Bologna Process; student-centred learning; learning outcomes; surveys; site-visits.

I. Origins of the Tuning/Learning Outcomes approach in Europe and the study providing the focus for 'A long way to go'

More than a decade has passed since when in 2003, as part of the Bologna Process and through the means of the Berlin Communiqué,[1] the Ministers of Education encouraged the member States "*to elaborate a framework of comparable and compatible qualifications for their higher education systems, which should seek to describe qualifications in terms of workload, level, learning outcomes, competences and profile*". As a consequence of this call the European Higher Education Institutions were urged to re-define their degree programmes in output-based terms, using learning outcomes to define the outputs to be achieved. In other words to make these programmes student-centred so as to better prepare graduates for their future role in society. This approach gradually became the axiom for modernizing higher education in Europe. This was confirmed in the Bologna follow-up Leuven-Louvain-la-Neuve 2009 Communiqué in which a special paragraph was devoted to student-centred learning and the

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[1] "Realising the European Higher Education Area," Communiqué of the Conference of Ministers responsible for Higher Education in Berlin on 19 September 2003.

teaching mission of HE. The ministers reasserted in that document '*the necessity for ongoing curricular reform geared toward the development of learning outcomes*'.[2] For the very first time in an official Bologna document the central role of learners and academics in the modernization process was highlighted: '*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*'. Academics were urged, '*in close cooperation with student and employer representatives*', to continue '*to develop learning outcomes and international reference points for a growing number of subject areas*'. This would require '*higher education institutions to pay particular attention to improving the teaching quality of their study programmes at all levels*'.

These statements could be read as an advertisement for a project that had been launched 9 years earlier, with the support of the European Commission, by a significant group of renowned universities to develop an approach that would offer the instruments to make the required modernization a reality. This university-driven process, named *Tuning Educational Structures in Europe* (in short Tuning) developed a universal approach to implement the Bologna Process at the level of higher educational institutions and subject areas. It published the main part of its results in the period 2009-2010.[3] The Tuning approach consists of a methodology to (re-) design, develop, implement and evaluate study programmes for each of the three Bologna cycles. It served, and still serves, as a platform for developing reference points at subject area level, basing its work on a wide stakeholder consultation, including employers, graduates, students and academic staff. The reference points that were developed during these years were and are relevant for making programmes of studies comparable, compatible and transparent. They are expressed in terms of competences (distinguishing between general, transversal and subject-specific ones) and learning outcomes. Tuning contributed to the development and enhancement of high-quality competitive study programmes by focussing on fitness of purpose (to meet expectations) and fitness for purpose (to meet aims) as well as providing a "living" assessment and pedagogical learning environment that is applicable to the "4ever" learners: whoever they may be, wherever they may be, however they learn, whenever they learn. The methodology transcends "delivery" and encompasses all learners.

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[2] Communiqué of the Conference of European Ministers Responsible for Higher Education, Leuven and Louvain-la-Neuve, 28-29 April 2009.

[3] Tuning Academy website: http://www.tuningacademy.org/.

Since 2003 the Tuning methodology spread gradually around the globe in varying degrees and with a local context often put on the core principles. In the case of Tuning Latin America it covered 18 countries and 15 subject areas, for Tuning USA it was sometimes a single state within the country and always a single language,[4] whilst in China, Georgia and Russia it was in a single language in a single country.[5] However, although Tuning spread around Europe and the world, it must be stated at the outset that the term Tuning is not universally recognised. It meets strong 'brand loyalty' from those who have been engaged in projects around the globe[6] but beyond that recognition is limited, in particular to HE management. To that end throughout this article the term Tuning encompasses the student-centred approach (requiring a learning outcomes approach). Indeed it was Tuning that raised awareness about the need for a paradigm shift from staff driven to student-centred higher education.[7]

The study, which provides the basis for this article, originates from the co-operation between the International Tuning Academy experts from Europe and *Lumina Foundation*.[8] The private *Lumina Foundation* has at its core "Goal 20%25", to have 60% of Americans with high-quality degrees (by 2025). Funding has covered a number of analytical tracts of the Bologna Process[9] and projects (Tuning USA) and discussion working documents.[10] The development of Tuning USA (2008) involved higher education institutions in three US states covering six disciplines with a mix of two-year, four-year, public and private institutions. The initial pilot project was completed in August 2010. Tuning USA 2 was launched in early 2012 with more states and disciplines as well as taking the subject area of history deeper and wider with the American Historical Association (AHA). The Degree Qualifications Profile (DQP) and Tuning are being more closely aligned. The extensive range of projects funded by Lumina to foster the attainment of Goal 20%25 ranges from *inter* alia Tuning and the DQP through Competency

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[4] For example see: MHEC website: http://www.mhec.org/programs/tuning.

[5] See: Tuning Russia website: http://www.tuningrussia.org/index.php?lang=ru.

[6] See: Tuning Educational Structures in Europe website: http://www.unideusto.org/tuningeu/ for details.

[7] Tuning Educational Structures in Europe, Final Report, 2003 and Tuning Educational Structures in Europe, Universities' contribution to the Bologna Process, Final Report Phase 2, 2005.

[8] See: www.luminafoundation.org.

[9] Adelman, *The Bologna Process for U.S. Eyes: Re-learning Higher Education in the Age of Convergence* (Washington, 2009).

[10] McKiernan and Birtwistle, 'Making the Implicit Explicit: Demonstrating the Value Added of Higher Education by a Qualifications Framework'.

Based Education, New Business Models, funding arrangements, completion, and credentials framework.[11]

By 2010 the need was felt to check whether in two world regions, the USA and Europe, the intended modernization of learning was actually taking place and how this process was perceived by its main stakeholders. To find this out, an initial study was set up and implemented during the period 2011-2012, the purpose of which was to develop robust evaluation survey instruments.[12] Already during the implementation of this first study, the need was felt for extension to other stakeholder groups, graduates and employers and to enhance and deepen the existing set. This resulted in a follow-up study, which covered the period July 2013 — January 2016. Although limiting the initiative to Europe and the USA, it was clearly understood that it should be structured in such a way to allow, at a later stage, the whole "Tuning Family" in all of its aspects (the nuclear family, the extended family, the dispersed family and the disenchanted family) stretching around the globe to adopt the methodology. What must be recognised is that local contexts, conditions, traditions and imperatives affect the way in which the Tuning competence/learning outcomes based approach develops. Whether implemented in Africa, Canada, China, Russia, Central Asia, the United States, Latin America or Europe (or indeed in any of the other areas where Tuning is being used) the need for evidence based analysis is there, requiring a robust evaluation process to be able to be tailored to the local, national or regional context.

This article covers the outcomes of this challenging study. The EU part of the study was co-financed by the European Union,[13] the USA part by Lumina Foundation. The findings presented here focus in particular on Europe, being sometimes referenced against those of the USA. This is to ensure that the focus is clear and to enable policy implications to be analysed and ways forward to be suggested in a European context. A further article will focus on the US context compared with the EU and thus offer that analysis.

II. **The study**

The study recognised from the outset that a robust methodology was required and that for this to operate across two continents it had to be

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[11] See footnote 6 supra.

[12] Tender reference first phase of study: Negotiated procedure EAC-2010-1243.

[13] Tender reference second phase of study: Negotiated procedure EAC-03/2013.

developed with care, culturally, linguistically (English was used across the Study, because multiple translations were just not possible) and in terms of the time for respondents to complete the online surveys. A great deal of development work — testing, improving as a result of the testing, 'translating' context and language — and then finalising the evaluation instruments was needed. These survey instruments were designed to gather information and thus provide evidence of the relative impact on the learning environment as a result of the Tuning/learning outcomes process/approach or of comparable initiatives and activities. In terms of impact this should be evidenced by changes in behaviour brought about by adopting the Tuning process or comparable Learning Outcomes based processes, by changes in learning and teaching strategies and methodologies and by the provision of learning opportunities and assessment of student learning. This has to be set against the overall objective of the student-centred approach to prepare graduates better for their role in society, both in terms of employability and citizenship.

The approach reflects the paradigm shift from input or staff/expert driven learning to output based student-centred learning. This shift has been promoted in the framework of the Bologna Process and in reform processes that Tuning has also initiated in other parts of the world. Although the Tuning approach has been received well and is widely used today, there is only limited evidence about how effective the student-centred approach is in practice for today's and tomorrow's society. Of course, where Tuning Projects have taken place, there is a strong 'brand recognition' amongst the academic staff (faculty), who have participated. However, it must be said that, beyond these project participants (admittedly thousands of people around the globe), there is little 'brand recognition'. Then, throughout the Study, those participating could, if they recognised Tuning, choose — through the 'skip logic' used in the present survey, see later — that very route which makes use of Tuning terminology or alternatively go down the 'learning outcomes approach' terminology route.

In both the USA (for example A Culture of Evidence: An evidence based approach to accountability for student learning outcomes[14]) and Europe there was a demand for up to date hard data to be collected using a single methodology (surveys), allowing analysis by project, subject, institution, region and group, plus the qualitative data (visits) to compare with the quantitative data. Previous attempts at gathering such data had been undertaken, in various guises.

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[14] Millett, Catherine M. a.o., A Culture of Evidence: An Evidence-Centered Approach to Accountability for Student Learning Outcomes.

In Europe there have been the various European University Association TRENDS (I — VII) reports which clearly illustrate the long and winding road that needs to be followed to achieve some degree of change. The following extracts and references illustrate what has happened over the past 17 years (TRENDS I and II[15] had largely analysed what was in place and how change might develop). For example: TRENDS III (2003)[16] identified what it called the 'gaps' between levels of perceived adoption of changes (see "disconnect" later) as well as the rising star of ECTS and the challenge of student centred learning. TRENDS IV in 2005[17] undertook a major set of visits and asked some general questions about change in learning. TRENDS V (2007)[18] stated that: "the most significant legacy would be a change of educational paradigm […]; institutions are gradually moving away from a teacher-driven provision, and towards a student-centred concept of higher education". TRENDS VI (2010)[19] stated: "some institutions have begun to support pedagogical skills' developments and curricular reforms but that these changes entail many challenges. […] Student-centered learning entails a more creative approach to teaching and therefore even more hours spent on developing new ways of teaching. Institutions must find ways to motivate academic staff to spend the time required to design, evaluate and re-design their modules, if necessary, and to assume different roles''. Then there is TRENDS VII (2015)[20] asking: "To what extent have learning and teaching moved up as institutional priorities? How extensive has the shift been to student-centred learning across Europe and is this shift supported by national and institutional policies and other measures (e.g. funding, staff development, internal and external quality assurance procedures)?" A good deal of attention is given to learning (ICT, internationalization etc.) and it is reported that: "Given the interest of national authorities and policy makers in the EHEA, it is not surprising that the implementation of a learning-outcome approach has been an important development for 60% of institutions. As a result, by 2015, 64% have applied it to all courses and 21% to some courses. This shows a continuing progression since TRENDS 2010, when 53% had applied it to all courses and 32% to some'. Is this implementation or wholesale adoption? Is it documentary lip-service or a shift in paradigm, practice and purpose?

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[15] EHEA website: http://www.ehea.info/article-details.aspx?ArticleId=87.
[16] European Union Association, TRENDS III.
[17] European Union Association, TRENDS IV.
[18] European Union Association, TRENDS V.
[19] European Union Association, TRENDS VI.
[20] European Union Association, TRENDS VII.

In the case of the present study, implementation of the Visits proved to be very time consuming. Cooperation of Higher Education Institutions was not always easy to organise. In fact, there were many institutions and their staff that were approached, who were reluctant to discuss the state of affairs in their institution. Some simply stated that position whilst with others their degree of obfuscation and prevarication rendered a Visit impossible. This hampered the collection of data. Also too many institutions did not promote participation in the surveys, for whatever reason — 'survey overload' might be one the causes. This applied to both Europe and the USA. It proved to be necessary to extend the original project period of the study to meet the planned objectives.

Nevertheless, the outcomes presented here offer — in the view of the research team — a picture of the actual situation regarding the implementation process of the modernisation of Higher Education. Although the team found excellent examples of good practice, the overall picture is worrying. It seems that the discourse related to the paradigm shift is now landing, but that overall the actual implementation is very slow to commence or, indeed, not taking place at all. Only at places where tailored action has taken place, initiated by individuals because they were involved in specific initiatives such as Tuning, Thematic Network Programmes (TNPs) and/or ECTS related activities or other projects, it seems that serious progress has been made.

When the findings in this Study are compared to the *Bologna Implementation report 2015*,[21] the already quoted European University Association (EUA) *TRENDS VII: Learning and Teaching in European Universities* report[22] and the European Students' Union (ESU) *Bologna with Student Eyes 2015: Time to meet the expectation from 1999* report,[23] it seems that the state of implementation at Higher Education institutional level is even weaker than is stated in those reports. It is worth noting in this respect that in the ESU *Peer Assessment of Student Centred Learning 'Putting students at the heart of learning'* (2015),[24] it is observed that "Institutional reviews […] rarely signify the aspect of teaching and learning as a core one, which also gives a false signal to the institutional leadership about priorities of management".

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[21] European Commission/EACEA/Eurydice, The European Higher Education Area in 2015: Bologna Process Implementation Report. Luxembourg: Publications Office of the European Union, 2015.

[22] European University Association, TRENDS VII.

[23] European Student Union, *Bologna with Student Eyes 2015*.

[24] PASCL website: http://pascl.eu/publications/overview-on-student-centred-learning-in-higher-education-in-europe/.

III. **Methodology**

The initial project statement was driven by the need for evidence concerning how far the student-centred approach in HE has been taken up in institutions. To address this aim, a mixed methodology was tailored and fine-tuned, using quantitative and qualitative indicators. The ultimate aim was to test whether this student-centred approach addresses current issues better than the traditional forms of education in the European Union.

The evaluation process reflected in this study is based on two pillars: quantitative and qualitative instruments. The quantitative or inner instruments are based on a set of surveys in which the respondent can self-identify as either being more familiar with Tuning or with the learning outcomes/competences/student-centred approach and as a result have the questions framed in language appropriate to that selection (so called 'skip logic'): (1) questionnaires for academic staff and institutional management, (2) questionnaire for students (3) questionnaires for graduates and (4) questionnaires for employers. Questionnaires 1 and 2 were developed as part of the first phase of the Study and focus on the reception and implementation of the approach. They were piloted twice before going to scale as part of the second phase of the Study. The questions included in the questionnaires were the result of intense cooperation between the EU and the US team. During this process sensitivities regarding educational models and use of terms came to light and required accommodation. Having started with common models it was then decided that it was necessary to split these into European and US versions, taking in to account linguistic, cultural and context differences, but keeping exactly the same methodology and core questions about the educational process.

Questionnaires 3 and 4 were mainly developed during the latter stages of the Study and focus on the effectiveness of the (Tuning) competences/learning outcomes approach for career development. They both need further field-testing before going to scale. The same self-identifying approach was applied for the 3 larger questionnaires to make these as user friendly as possible. The operational questionnaires can be accessed (and indeed completed) via the Tuning websites.[25]

Involving institutions and their staff and students to complete the questionnaires proved not to be a simple process of distribution. In January 2014 tailored action was required by the EU Steering Group to identify more

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[25] Tuning Educational Structures in Europe website: http://www.unideusto.org/tuningeu/component/content/article/385-euus-research-project.html, accessed March 18th 2016.

institutions to be involved, approaching various representative bodies in Europe, making an open invitation to complete the surveys, identifying persons previously involved in projects. A spreadsheet was set up to track contacts and responses.

The second pillar covered the qualitative approach using what were referred to as the outer instruments. For this part the research teams in the US and Europe were both extended with researchers. The team in Europe was made up of 5 members, covering 4 nationalities, to be able to operate in pairs. In the original set-up of the study, it was foreseen that the "outer instrument" sessions (focus groups, interviews etc.) would be conducted initially by two members, an expert and graduate assistant, then by the graduate assistant only with periodic sampling and validation of the process by a Steering Committee member. In practice it proved necessary to involve for each session two experienced researchers, because of the size of the groups to interview, the complexity of the issues at stake and the note taking. For each visit a report was drawn-up. The approach used in Europe was mirrored in the United States. The reports from these sessions were aggregated ensuring anonymity whilst at the same time allowing for accurate analysis. The visits were constructed around the following headings:

1. Introduction

2. General information about the visit / Basic information

3. Level of implementation of LO/competences approach at Institutional/ Programme/ course units level

4. Kind of information/support for teachers provided by the institution to use Learning Outcomes/competences approach

5. Strengths, weaknesses and main challenges occurred in teaching, learning and assessment strategies by using the Learning Outcomes/ competences approach

6. Changes and impact of LO/competence approach in student performance

7. Students' perspective on LO/competence approach and utility for them to find a suitable job

8. "Tuning" dissemination in the institution (projects, materials, implementation, etc.)

9. Main conclusions of the visit including recommendations. Prior to each visit a rigorous analysis of all on-line information available in

the public domain was undertaken, this then allowed for a further comparison between the results gathered during the visit, responses to the on-line surveys and the 'public face' of the institution.

These qualitative instruments inform about behaviour(s) and attitude(s) of key stakeholders regarding redesigning/enhancing of curricula; formulating competences and learning outcomes statements and their practical use; learning opportunities and structures; assessment of students; communication of learning outcomes to students and other stakeholders, etc. This should lead to some clear evidence whether the use of the student-centred approach has a (positive) effect on student and staff motivation and performances resulting in higher success rates. Data collected from the first Pilot provided indicators of change.

In the EU 14 site visits took place, spread over Higher Education Institutions from as many countries.[26] The available budget did not allow for more visits.

IV. **Terminology**

The use of consistent terminology and well and broadly understood concepts are a crucial element for successful reforms. In this case the focus was on the paradigm shift from expert driven education to student-centred education based on the use of the competences/learning outcomes based approach. The outcomes of this study show there is (still) a lot of confusion about both terminology and concepts applied.

The reasons for this are manifold. Terminology is to a large extent culturally and historically bound. In the framework of the Bologna Process it has been agreed to use English as the lingua franca. However, using an English term does not automatically imply that such a term has the same meaning and connotation in other countries. A good example is the term

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[26] List of countries, states and subject areas:

List of Countries: Austria, Belgium, Germany, Ireland, Italy, Lithuania, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden; *List of US states:* California, Indiana, Maryland, Michigan, New York, North Carolina, Texas, Utah; *List of subject areas*: Administration, Aeronautics, Architecture, Arts, Banking and Finance, Biology, Biotechnology, Business, Business Administration, Chemistry, Christianity, Computer Science, Economics, Electrical Engineering, Electronics, Engineering, Facility Management, Foreign Languages, Gender Studies, History, Information Technology, International Business, Mathematics, Mechanical Engineering and Mechatronics, Media (TV & Radio), Medieval & Early Modern History, Modern British History, Pedagogy, Philosophy, Physics, Physiotherapy, Psychology.

'competences'. In the UK this term is traditionally associated with more applied forms of education, such as vocational education and training, while in the USA and continental Europe it is perceived as encompassing knowledge, skills and (personal) attributes. Differences in understanding and interpretation of terms has led to many misunderstandings, also due to the way these have been translated in other languages. These misunderstandings have been boosted by the definitions and practical use of terminology in different European documents, two competing European Qualifications Frameworks, ECTS Users' Guide, CEDEFOP terminology guide,[27] Tuning documents, etc.

The many websites, course catalogues and course manuals of the universities studied by the research team reflect the confusion in use of terminology. Concepts (and terms) such as competences,[28] learning goals and objectives[29] and programme and module/unit learning outcomes[30] are in the

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[27] CEDEFOP, Terminology of European education and training policy. A selection of 130 key terms. Second edition, Luxembourg, 2014.

[28] Tuning applied the following definition: Represent a dynamic combination of cognitive and metacognitive skills, knowledge and understanding, interpersonal, intellectual and practical skills, and ethical values. It is complementary with the definition used by the EQF for LLL. In this overarching framework — making a distinction between knowledge, skills and competences — the following definition is used: "competence" means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development. This is based on the assumption that these have been acquired at an earlier stage in the learning process. European Commission, *The European Qualifications Framework for Lifelong Learning (EQF)*, 11.

[29] Learning objectives can be defined as clear and concise statements that describe what the teacher intend the students to learn by the end of the course. It outlines the material intended to be covered or the questions related to the discipline that the class will address. This approach means in practice that the focus is on the teaching process (instead of the learning process) and on knowledge transfer of the teacher to the students. Learning objectives express knowledge acquisition and transfer and the term is part of the paradigm of the staff-centred approach.

In the USA learning objectives are often defined as learning outcomes. This has contributed to the confusion of terms. See for example: The Glossary for Education Reform: http://edglossary.org/learning-objectives/; Another example of the mixing-up of terms terms is: Raoul A. Arreola, Writing Learning Objectives. A Teaching Resource Document from the Office of the Vice Chancellor for Planning and Academic Support, The University of Tennessee, Memphis, s.a.

[30] Statements of what a learner is expected to know, understand and be able to demonstrate after completion of a process of learning. According to Tuning Learning outcomes are expressed in terms of the *level of competence* to be obtained by the learner. They relate to level descriptors in national and European qualifications frameworks. The term is applied in the context of the student-centred approach.

vast majority of documents mixed up and used interchangeably. Misunderstanding exists also about the term student-centred education, not meaning a cafeteria model,[31] but flexible programmes covering a particular field of study, allowing for individual profiling with the aim to preparing students most effectively for their future role in society.[32]

In this study the definitions used were as defined by Tuning and applied worldwide, in particular the ones regarding competences and learning outcomes[33]. In Tuning terms, learning outcomes set a level of competence to be achieved, basing it on the idea that the role of education is to make the learner more competent. It also allows for making the important distinction between disciplinary based competences and general or transversal ones to be developed in the context of a field of studies which are also included in the 2015 version of the ECTS Users' Guide.

What has not been to date sufficiently understood, from the methodological point of view, is the difference between 'learning outcomes' and the 'outcomes of learning'. The latter is a very broad evaluation of the total gain made by a learner throughout their studies. This includes formal, informal and non-formal learning. This is a very relevant distinction, because the institution is manifestly responsible for the learning outcomes of its programmes; it can only be partly responsible for the total experience of learning, social interaction, maturation, etc.

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[31] A misunderstanding has been created in this respect when defining student-centred learning as 'an approach to learning in which learners choose not only *what* to study but also *how* and *why* that topic might be of interest. See: Rogers, C. (1983). As a teacher, can I be myself? *In Freedom to learn for the 80s*. Ohio: Charles E. Merrill Publishing Company, 1983.

Jeffrey Froyd, Nancy Simpson from Texas A&M University give a comprehensive overview what is understood by student-centred learning from the perspective of the teacher in their paper Student-Centered Learning Addressing Faculty Questions about Student- centered Learning (2010).

[32] The European Student Union applies the following definition of student-centred learning: A learning approach characterised by innovative methods of teaching which aim to promote learning in communication with teachers and students and which takes students seriously as active participants in their own learning, fostering transferable skills such as problem-solving, critical and reflective thinking. Education International and European Student Union, Time for a new paradigm in education: student-centred-learning, 2010, 4.

[33] Anna Serbati, Implementation of Competence-Based Learning Approach: stories of practices and the Tuning contribution to academic innovation, in: *Tuning Journal for Higher Education, Growing Tuning Seeds*, Volume3, Issue No.1, November 2015. See also: Jenneke Lokhoff, e.o., *A Tuning Guide to Formulating Degree Programme Profiles. Including Programme Competences and Programme Learning Outcomes*. Bilbao, Groningen, The Hague, 2010.

It became apparent during the course of the visits, in particular the interviews with the students, that there is a disconnect between the levels of communication regarding student learning outcomes and the value that students place, for obvious reasons, on their total learning experience, including other activities: group work, project work, work experience, etc. The students need to pass the hurdles to obtain their reward but they also wanted a rounded total experience to be better employable.

V. **Survey results**

The opening questions were used to establish the context within which the respondent worked/studied: institution, post, how long in post, subject area, cycle of study and year of study etc. This data is of use to the researchers because it enables a helicopter view of where the response are coming from and thus an oversight of the project spread. The responses came from a wide range of countries, institutions, post-holders, cycles of study, subject areas. With a number of questions respondents were asked to check all applicable options, thus the numbers do not always add up to 100%.

SURVEY 1: 'Teaching, Learning and Assessment: Process and Impact'

The survey counted 399 respondents in total. Of the EU respondents, 70% were academic staff, 20% were management and leadership and 10% were student advisors or counsellors. However, in the EU, many respondents wore multiple hats, as both academic staff and management and leadership. So there is some overlap where a respondent could be counted for both the academic staff and other categories. Of the American respondents 42% were faculty members, 46% were adjunct/contingent faculty, 2% were deans, 6% were department chairs and 4% wore a variety of other hats. In total 83.5% of the academics/faculty completing the survey have been in post for more than 5 years (for administrators and other staff it was 54.8%).

 When asked if they felt "informed" regarding expectations for their courses about how they relate to the discipline and/or degree programs 53.9% of EU staff said 'Yes' and 46.2% said 'No' (for the US the Yes count was much higher).

Regarding what students might receive credit for only 29.7% of EU respondents stated that recognition of informal prior learning was given, but 85.4% said that recognition for formal prior learning is the case. Only 14.6%

said yes for Massive Open Online Courses and 22.8% for experiential learning. In all cases the figures were significantly lower from the US respondents.

Regarding methods of delivery in all cases a variety of modes are used but again with significant differences between the EU and the US, much higher figures being returned from the EU respondents showing that 93.7% use campus-based learning, 60.8% use flipped classrooms, 7.6% use MOOCs, 50.6% use blended learning and 28.4% use online only delivery.

Given the history of the use of ECTS in much of the EU, it is not surprising that academics say they take into consideration student workload when planning courses. In fact 96.2% said this is the case (the figure is lower from the US).

When asked how the curriculum is defined, the vast majority (in both the EU with 80.3% and the US) said that it is in terms of learning outcomes and competences. About 12.5% still cling to the use of aims and objectives and 6% stated 'other'.

Of those who stated defining their curricula on the basis of learning outcomes/competences, most academics/faculty gathered information to help define these through discussions with colleagues at their institution, but some also frequently gathered information from discussions with colleagues at other institutions as well as students at their institution, as can be learned from the survey outcomes presented below. Multi-answers were allowed in responding to the question illustrated by Table 1.

Table 1

How did you gather information to help define
the learning outcomes and/or competences?

Discussions with current students	48.7%
Discussions with discipline academic staff at my institution	81.2%
Discussions with faculty across subject areas/disciplines at my institution	58.1%
Discussions with faculty in my subject area/discipline in other institutions and sectors	45.3%
Discussions with professional organizations and/or discipline specific associations	30.8%
Discussions with other stakeholders (employers, alumni, community members, etc)	42.7%
Discussion has not been initiated	6.0%

As follow-up questions, staff acquainted with the learning outcomes/ competence approach were asked whether the curriculum designed had been a collaborative effort, and had been discussed and agreed by academic staff. The first part of this statement was answered positively by 48.2%, the second part by 66.4%. Respectively, 45.4% and 29.1% answered that to a certain extent ('somewhat') these elements had played a role. Asked whether academic staff discussed student learning, degree outcomes, and competences, 63.4% confirmed this was the case. 51.4% stated that the discourse had changed focussing more on these topics. Respectively, 25.7% and 36.7% mention there had been some impact. The USA surveys proved to be more or less comparable to the EU outcomes.

High percentages of respondents acquainted with the learning outcomes/ competences approach agreed that as a result of using this approach, learning outcomes are more integrated in the classroom, that course learning outcomes align with degree programme learning outcomes, and that the syllabus references learning outcomes. Respondents felt less strongly that the course catalogue reflects the learning outcomes for each course. In more detail: 56.4% of the respondents answered that the course catalogue reflected the learning outcomes for the degree and 62.9% for each course. Respectively 39.1% and 26.6% thought this was the case to a certain extent. 74.5% stated that their unit learning outcomes were consistent with the programme learning outcomes, 18.2% thought this was partly the case. This relates to the answers to the question whether 'my syllabus' includes learning outcomes/competences, which 79.3% think is really the case and 14.2% partly. 56.1% think the learning outcomes are integrated in assessment, learning, and teaching, 42.2% presume this is partly the case. Asked whether the advising and information materials described the learning outcomes at programme and course unit level 41.3% said this was the case and 47.7% to some extent. Finally, 51.8% stated that they discussed the learning outcomes with students and 39.3% 'somewhat'. The figures for the USA with regard to most of these statements are higher and significantly higher for 'integration of learning outcomes in teaching, learning and assessment' and 'discussion of learning outcomes with students'.

Multi-answers were allowed again in responding to the question illustrated by Table 2.

As a result of using a learning outcomes approach, the majority of respondents felt that student learning is an indicator of quality, the learning outcomes/competences approach drives the way they structure their courses and that assessments are based on learning outcomes. Fewer participants felt that they had tailored their specialisation to the needs of the degree programme.

Table 2

As a result of using a learning outcomes/competencies approach to what extent do you agree with the following?

%	1 — Yes	2 — Somewhat	3 — No	I don't know*	USA Mean	EU Mean
The learning outcomes / competences approach drives the way I structure my courses	EU 56.1% / Tot. 61.3%	EU 39.3% / Tot. 32.3%	EU 3.7% / Tot. 5.5%	EU 0.9% / Tot. 0.9%	1.43	1.45
I make adjustments throughout the term in my teaching when I see the students are not achieving the learning outcomes	EU 34.9% / Tot. 52.1%	EU 43.1% / Tot. 35.2%	EU 21.1% / Tot. 12.3%	EU 0.9% / Tot. 0.5%	1.42	1.88
I have broadened my perspective of the entire curriculum by tailoring my specialization to the needs of the degree program	EU 34.9% / Tot. 39.7%	EU 49.1% / Tot. 38.8%	EU 12.3% / Tot. 15.9%	EU 3.8% / Tot. 5.6%	1.74	1.76
My assessments are based on learning outcomes	EU 62.6% / Tot. 71.4%	EU 31.8% / Tot. 21.2%	EU 2.8% / Tot. 5.1%	EU 2.8% / Tot. 2.3%	1.33	1.31
Student engagement has improved	EU 34.3% / Tot. 38.5%	EU 34.3% / Tot. 34.9%	EU 20.4% / Tot. 15.6%	EU 11.1% / Tot. 11.0%	1.69	1.83
Student learning is a central indicator of quality	EU 55.7% / Tot. 66.5%	EU 37.7% / Tot. 26.0%	EU 4.7% / Tot. 3.7%	EU 1.9% / Tot. 3.7%	1.29	1.43
There is an opportunity for an end of course open dialog with students to discuss the extent to which learning outcomes have been achieved	EU 45.4% / Tot. 40.5%	EU 38.9% / Tot. 28.9%	EU 12.1% / Tot. 27.5%	EU 3.7% / Tot. 3.2%	2.0	1.67

NB: the extent was rated on a scale from 1 to 3, see Table headings. The *Mean*, which is shown in the two last two columns reflects the answer of respondents on this scale.

* Please, note that "I don't know" responses were eliminated in *Mean* calculation

Respondents felt that the most positive impact from applying a learning outcomes approach came from the way they assess learning (40.7%), the way they present their course materials (48.2%) and state course outcomes (50.9%), the alignment of the curriculum and courses to the learning outcomes (43.5%), the way they teach (55.6%) and discussions with students (49.1%). Student engagement (31.5%), type of discussions with colleagues in the field (24.1%), the impact on quality assurance mechanisms (28.8%) and the development of a common language in the discipline scores significantly lower (19.4%). The impact on the quality of programme scores 41.7%. The figures for the USA are significantly lower.

SURVEY 2: the EU students

Out of a total of 666 respondents, 86% were from the first or second cycles (53% and 33% respectively). Short cycle, doctoral candidates and 'traditional' long or single cycle students were also represented. Respondents were also from every year of study (1 to 6) and from across the spectrum of subject areas (architecture to zoology).

When asked how their curriculum is defined, 67.1% said learning outcomes but 70.3% said objectives with 57% stating competences. This is at variance with the responses from academic staff/faculty (see above) and also with the findings from the visits (see later).

To test the levels of communication a series of questions were asked of the students, as illustrated by Table 3.

Table 3

Levels of communication

	Not at all	Somewhat	Very much	Don't know
When I was advised on course unit selection there was a focus on the competences I would gain	10.3%	53.9%	26.2%	9.6%
My discipline/degree programme has a clear statement of expectations	4.7%	39.2%	52.6%	3.6%
I understand why I am required to take the course units needed to earn my degree	6.1%	35%	56.1%	2.9%
My workload is appropriate to achieve the learning outcomes of the course unit	10.1%	37.6%	49.8%	3.6%

	Not at all	Somewhat	Very much	Don't know
Advisors are able to provide a clear explanation of how course units fit into a bigger picture	14.1%	46.8%	33.1%	6%
The course catalogue states the learning outcomes for each unit	10.4%	36.7%	46.2%	6.8%
The course catalogue states the learning outcomes for my degree	9.2%	38.3%	44.4%	8.1%
Progression routes to a degree are clearly stated and explained	13.5%	36%	43.4%	7.2%

In only two cases do more than 50% of the students believe 'very much' that they are getting a clear explanation of what they need to do and why they need to do it to achieve their degree. 'Somewhat' figures are large in all categories but the visits show that often 'somewhat' is a kind way of saying 'no'. This indicates a gap[34] ('disconnect') between what academics and management believe and what the students perceive and believe they are experiencing.

It does appear that the level of discussion of learning outcomes in class (23.9% saying 'very much' and 75% stating 'not at all' or 'somewhat') and at the end of the course (24.4% saying 'very much' and 70% 'not at all' or 'somewhat') is disappointing. The connection between the learning outcomes and the assignments is slightly higher (41.8% saying 'very much') but even so disappointing (once again the meaning of 'somewhat' is a problem).

51% of the academic staff state they discuss learning outcomes with students 'very much' and 39% 'somewhat' compared to the 23.5% and 51% respectively felt to be the case by the students. The gap shows. Moreover, 45.4% of academic staff state that there is 'very much' an opportunity for an open discussion with students at the end of the course whereas only 24.4% of the students feel this is the case. The gap ('disconnect') is writ large.

Some main conclusions can be drawn from the surveys. The results in Europe and the USA are largely comparable. However, it is clear that care must be taken when interpreting these survey/questionnaire results because earlier examples in the Bologna Process show there is a tendency to overestimate one's own performance to leave a more positive impression,

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[34] 'Gap' is the term first used in TRENDS III 2003.

even if this is subconscious. This has been noticed with regard to both the official Stocktaking and the TRENDS Reports over the years.[35] This seems also to be the case with these surveys if compared with the outcomes of the in-depth visits (see below). This seems not only to be the case in the 'yes' responses, but in particular in the 'somewhat' responses.

VI. **Visits process and results**

VI.1. *Process*

As has been said (see above) setting up the visits proved to be very difficult. Some institutions actually stated that they felt they were not ready for such "scrutiny" (term used by them, although we kept stressing — at every stage of communication with all approached — that these visits were research visits and not, in any way, shape or form validation or providing feedback to any outsiders or agencies, but that, on the contrary, the visits were learning opportunities because of the feedback). Others prevaricated such that time ran out (giving a feeling of not wanting to take part) and some made every effort to accommodate the visit and to lay themselves open to analysis in the true spirit of the visits and the research objectives.[36] To these we are indebted and once again say 'Thanks'.

In the end 14 visits across all EU took place, from research intensive universities to those with a teaching only mission, encompassing a wide breadth of missions and sizes. There was no visit to a private for profit institution, but this was not for the lack of asking.

In the set up phase the same information was sent to each institution approached as well as a suggested format for a single full day visit. The categories of persons the team hoped to see were stated but whom the team did see was up to the institution, depending on the availability in different subject areas. This led to a wide range of subject staff and students being seen but also some repetition of subject areas — this did not matter because the original evaluation had been that, apart from subjects directly involved in

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[35] TRENDS Reports III, IV, V, VI and VII; Bologna Stocktaking reports 2005, 2007 and 2009.

[36] As described in detail in Section 2 and 3 above, the aim of EU-US Study on the *implementation of the Learning Outcomes/Competences approach* was simply to determine the extent to which universities have adopted it. Recall that the methodology used a variety of instruments to find evidence (mixed methodology: online questionnaire plus in-depth interviews).

Tuning, Thematic Network Programmes (TNPs) or ECTS projects from a particular institution, the methodology was unlikely to have been influenced apart from by national policies (the national qualifications framework, quality assurance mechanisms, diploma supplement, continuing professional development requirements etc.).

Once the visit date had been agreed (and researchers allocated — from a calendar of availability) an internet search of the institution took place. This looked at references to the national qualifications framework, diploma supplement (examples and availability), quality assurance mechanisms (internal and external), availability of in-house staff development, degree profile, curriculum, unit learning outcomes, any sample assessments etc. This formed Part 2 of the institutional feedback report and informed the researchers (and institution) of the public face of the institution.

At the end of each visit the researchers gave informal feedback to the institution — to whom this was given varied by institution as it was for them to decide. The next step was that a draft report be sent for correction of factual elements. Following any required amendments of fact, the final report was sent.

It is important to note that anonymity was promised, no institution or individual would be identified or identifiable. Each institution received a copy of the final report.

VI.2. *Findings*

There are certain recurring themes from the visits (and these do actually show to varying extents but are nonetheless present across the continents). The main headlines are:

VI.2.1. Varied institutions display varied behaviour

Higher education activity still falls largely in to three categories: teaching, research, administration. The nuances of each of these have changed over the years and continue to change. Institutions have proliferated and with that (and the change in most places to mass participation systems even where there is still selection based on prior educational achievement) the variety of missions has changed and the mix of the elements. However, there are students in universities and they are there to learn. The mission of the university will impact on the learning process as will funding patterns, the

political will of the state, the background of the student population, etc. However, as was stated in Modernisation of Higher Education (2013):[37] "With this report, we put quality of teaching and learning centre stage" and "Our focus, therefore, is on the quality of teaching and learning for those who enter or who hope to enter higher education in the future."

Some institutions visited were highly micro managed — this impacted upon the curriculum, staff development, the mix of workload for staff, student staff ratios, assessment calendar, appraisal systems, internal quality assurance etc. Across the spectrum then there were: central macro management, devolved management, self-management within institutional parameters. All styles leading to varied operating environments.

What is clear is that there is a disconnect between what different tiers of responsibility believe/imagine is the higher education landscape and what those who actually participate in the learning process experience. This appeared to some extent in each and every institution visited. If one looks at 2015 statements regarding the Bologna Process at the higher policy levels, awareness about its implications is writ large, with the corresponding "font size" diminishing progressively down the levels until there is — in some places, it has to be said — a total lack of actual experience by the students of any active knowledge of, and participation in, the learning outcomes process.

This metaphor recognizes that there is a lack of progress but, as the research results show, not the full extent of the actual lack of progress.

VI.2.2. Insufficient learning alignment

By learning alignment is meant the continuum of the learning environment from learning outcomes (LO) to the learning activities (LA) to the all essential learning assessment (LA), hence the frequently used term of 'LO,LA,LA'. None of these segments is free standing and can make any meaningful contribution to the learning process without the other two. Learning outcomes are not a passive ossified artefact but must be active (and thus subject to re-evaluation and change after an appropriate feedback loop). The learning activities must reflect the learning outcomes and are now required (European Standards and Guidelines 1.3 2015) to: "encourage students to take an active role in creating the learning process" leading on to learning assessment that "reflects the approach" (that is reflects the student involvement).

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[37] High Level Group on the Modernisation of Higher Education, *Report to the Commission*. June 2013, 7 and 12.

Once again there was a disconnect here; it varied in magnitude as did the institutions vary. However, although a few institutions were making very positive (in some cases strident) requirements of their staff to engage in all aspects of learning alignment, there remained a lack of report back from students that they could see the connection and that there had been continued efforts to both engage them in the process and to continually communicate with them. So, even where efforts were clear and demonstrable there was still a lack of meaningful penetration. Imagine how disappointing it was where there was no management drive or institutional buy in to ensuring that the learning outcomes approach and learning alignment were embedded in the warp and weft of the learning experience. Such a situation was sometimes totally obvious and showed no signs of there being a "learning spring" around the corner.

In some sessions the lack of engagement by staff involved in pedagogics with the learning outcomes approach was clear ("what do we want to know about learning outcomes for?"). If those who are custodians of the development of learning show a total disregard for student-centred/learning outcomes, what hope is there for a paradigm shift?

Where staff development was taking place which engaged with why and how the change from didactic expert driven delivery to student centred/ learning outcomes facilitation of learning (with learning alignment) many staff did both welcome this and fully engage with it. Where there was active engagement in mentoring/coaching, this too made a positive difference. Where there had been involvement in projects such as Tuning or in the past ECTS, that also made a positive difference. Where there was institutional indifference or mere lip service, that, not surprisingly, had a negative impact.

VI.2.3. Vocabulary, semiotics, messaging and communication

Any systematic search through university websites reveals much. Of course there are claimed problems with updating, editing, proof reading. However, the evidence on the websites (prior to a visit) is then confirmed by the visits — there is a lack of consistency in the use of terminology and vocabulary and then documents, web pages, course handbooks, and study manuals. Discussions then did confirm the confusion. Does this matter? Yes, it does matter because confusion abounds when terms are used inconsistently, interchangeably and incorrectly.

There is no single definition of terms such as 'competences', 'learning outcomes', 'learning alignment', 'student-centred learning' but there are

recognized definitions used consistently in policy documents and working documents (for example ECTS Users' Guide 2015, Tuning documents, Frameworks etc.). Adherence to these more commonly used and available definitions with the phrase 'for the purpose of this document we use the following definitions' would at least start to eliminate wider confusion and would certainly limit internal institutional confusion.

At meetings on the visits staff commonly used 'competence' and 'learning outcome' as interchangeable terms. Slipping back in to the language of the former paradigm (expert driven delivery), for example 'learning goals/ objectives' rather than the language of the new paradigm, for example 'learning outcome' is more than a slip of the tongue. The semiotics of this is one of confusion, lack of clarity, lack of determination to join the paradigm shift and therefore lack of consistency.

This confusion is commonplace. The lack of consistent messaging and communication does lead the stakeholders (across the spectrum) to lack in belief that a paradigm shift is underway, let alone that it has been achieved. This also leads to the question (see above) of how can there be learning alignment when there is a lack of clarity as to what it is that is being aligned. These are more than issues of editing and proof reading; they are issues of a true buy in to the paradigm shift.

VI.2.4. Staff development

Staff development is a crucial issue. Without staff development the change in paradigm will remain stalled but it must encompass the "why and how" not merely the process of form filling. There must be engagement with the staff and this was said and gained in the visits. Where there was active engagement in mentoring/coaching, involvement in projects (such as Tuning or in the past ECTS), that made a positive difference but institutional indifference or lip service that made a negative difference.

Those members of the staff who want to engage and master the learning outcomes approach, and many interviewed were of that mind, felt stranded both by lack of training and by the pull towards research and away from teaching as a career enhancement. It was often mentioned that at the outset of the introduction of their national qualifications frameworks and learning outcomes, there had been some training. From what was said, such development was either viewed as a done deal or any attempt to deal with concepts, benefits etc. was abandoned and replaced by process training. This was anathema to the staff. They want concepts, benefits, links etc. and not form filling to comply with internal QA and audit requirements.

Where new projects were launched (for example joint degrees, centres of excellence in teaching etc.) there did tend to be a reinvigoration of training, or often what was much liked was in-house mentoring/coaching and peer-to-peer activities and evaluation of documents. These ventures were both cost effective and engendered a collegial spirit.

A main challenge for Higher Education Institutions is that too often there is lack of a well-established unit for staff-development. Some examples of excellent staff development provision were found either at university or faculty/school level. Some provision was also at country level. In general, it has to be noted, however, there is low priority for establishing and sustaining such centres. In many institutions there was a lack of informed trainers. As mentioned above, staff will not accept sub-standard process driven 'training'. They want to understand the concept and benefits of the new paradigm. Without this, it is feared that this shift will not take place. Use should be made of examples of good practice, which for some of the countries visited will be in other countries and therefore require an international endeavour.

VI.2.5. Student reaction

All meetings with students were interesting, stimulating and regrettably confirmed beyond reasonable doubt the disconnect that exists between even the most pessimistic of the 2015 reports cited above (BWSE linked to the ESU country coordinator reports) and the reality shown on the ground by the responses of the student interviews. The disconnect was confirmed by the consistent themes that they disclosed, namely: lack of (perceived) communication; lack of understanding of the gains to be had from having a good understanding of their studies and of what they would know, understand and be able to do on completing units of learning; that they displayed learning behaviour immersed in the former paradigm — what are we told, what information do we have, what are the past assessments, how can we best get through this subject. Thus in terms of the learning outcomes approach there was only evidence of a lack of penetration and understanding at first cycle in the vast majority of cases and at second cycle with some evidence of impact, particularly amongst mature students. In terms of student-centred learning, of course the European Standards and Guidelines 1.3 2015 is too recent to have impacted on process, but, notwithstanding this, at first cycle level there was very limited evidence of this shift, at second cycle there were some green shoots of development.

Students were not convinced that there was any link between what was demanded of them and any description, or analysis, of what outcomes they

would achieve by the end of their learning. Some knew that they had been told by some staff of the learning outcomes at the start of their studies but few felt there was consistent communication and messaging about this. Those who did placements (work based learning, internships, stages etc.) did not make any link between learning outcomes and the skills/competences that they could offer an employer. Even where they had been provided with CV writing guidance this link had not been made, nor had the simple benefits they would gain by using such language and demonstrating the competences they had gained from their studies been pointed out.

In terms of their studies, there was little perceived link to workload from the credits allocated to a unit of study. Some students did know what the norm should be (28 hours per credit being often quoted) but few felt this was in any sense realistic. Most felt that the workload demanded of them was less than that quoted. However, there was a general feeling that the smaller the credit allocation was, the heavier the workload/credit required to achieve the learning outcomes was (in their terminology 'to pass'). All institutions operated a post learning review in one form or another; this varied from the very tightly prescribed in terms of scheduling, analysis of responses and feedback to rather haphazard process and follow up, with all shades of process in between. All students felt that if their views were sought (which they were) then there should be some clear line of follow up — analysis of returns, discussion of the data, action plan, action and communication of what had happened and why. Once again the extent of this line of action being in place varied greatly — at one end of the spectrum staff was replaced if the feedback and data was very negative, at the other no action appeared to be taken or follow up communication made.

VI.2.6. Impact of the National Qualifications Framework and ECTS

In particular management and senior staff with management experience, or duties, acknowledged the impact that the introduction of their national framework had made. The link to ECTS in terms of programme structure and profile was also acknowledged. However, those engaged in the teaching did not often see this — of course if the university regulations required a certain format then that in reality is enough (and often this was the case).

The Frameworks had been, without exception, a catalyst for change in terms of levels, outcomes (the Dublin Descriptors were often cited as being a significant agent of change), and, of course, creating a fundamental and often fraught change to a 3 cycle system with the consequences of this still reverberating around some country systems.

VI.2.7. Impact of Tuning

Senior management at all institutions were aware of Tuning, some simply because of having received the documents for the initial approach and others because of involvement over the years with projects or having attended conferences. Staff who had already undertaken the on-line survey had some awareness of Tuning as did those who had been involved in projects, however, others were not aware of the process. Students were unaware of the process, as they were largely unaware of the learning outcomes approach.

There was little brand awareness of Tuning, but where there was awareness and where there had been participation in projects there was great brand loyalty, much more so to Tuning than to any passing knowledge of the learning outcomes approach.

VI.2.8. Disconnect

This term has become the by-word for the overall findings of the research (a stronger version than 'gap' from TRENDS III, see above). By the term is meant the inability to have, throughout the tiers of a higher education institution (and indeed beyond that throughout the European Higher Education Area), a consistent awareness let alone 'buy-in' and adherence to the learning outcomes approach. Given that this is a core element of ECTS, of Frameworks and the European Standards and Guidelines, this has to be both disappointing and indeed a shock and a wake-up call.

VII. **Examples of good practice**

On the basis of the visits the team has been able to identify a number of good practices that are relevant to the whole sector. Each institution had examples of good practice but not one was exemplary. Nevertheless, from these instances it proved to be possible to aggregate cognate areas and thus produce the following list:

a) A well-defined university policy on learning, teaching and assessment in accordance with the mission of the institution. However, this policy must be put into action right through the institution. Having the policy is not sufficient, the institution has to be sure that there is wide acceptance and, indeed, 'buy in' to the policy and the action resulting

from it. The need for good communication is essential to ensure that all stakeholders are involved, aware and committed to the actions.

It can be noted that where a clear policy has been defined and followed through there is a shift of paradigm underway, however, even in these institutions this remains patchy at implementation levels. This means that constant attention to the policy implementation is required for continuing development and success.

b) Some universities are working with fixed templates for describing the curriculum as well as its modules and units. These require statements of the profiling of the programme and its learning outcomes as well as the learning outcomes for individual units, plus the learning and teaching methods and the forms of assessment. It is crucial that these are shared with potential as well as actual students. In the set up phase it is essential that these are viewed by the staff as something more than just a 'tick box administrative task' but as an integral part of the curriculum development owned by the staff who develop them and then facilitate the, hopefully, aligned learning.

c) Staff development is an essential component for enhancing study programmes and their delivery that will meet the needs of all stakeholders (both internal to the university and its students as well as external, for example employers and professional organisations). Staff development can have many different forms. What seemed to work best was a central policy underpinned by central funding, the actual staff (who took part in training, advising, mentoring, supporting) was based in a central unit but with well organised and defined links to individual departments, faculties etc. The staff, of course, should be well versed in the paradigm shift taking place and able to communicate this whilst fully understanding the university policies and their place within the wider world. Staff often acted as the ambassadors for the university in national and regional bodies and activities.

Decentralised models do exist and where there was alignment with university policies and excellent internal communications with some central coordination they too did work effectively. Activities that these models might deliver include: international staff mobility, courses, workshops, peer mentoring, continual professional development, learning gatherings (often 'learning lunches'), team building, allotting credits to activities to enable staff to accumulate credit to achieve a qualification etc.

d) With activities such as curriculum development the building of Teams (including staff, students, central staff development representative, employers, professional body representatives etc.) to take responsibility for defining, organising, implementing and delivering the learning in all of its aspects. This ensures collegial 'buy in'.

e) Structured links to employment and the world of work, including: alumni tracking, visiting lecturers, CV coaching, staff communication on learning outcomes, competences and professional standards, relations with employers, internships/placements, entrepreneurship labs etc. All of these assist the students to understand their place within their studies and how to best present themselves when applying for internships/placements, jobs, further studies.

f) National initiatives — these can provide impetus and re-launch the conversation about the paradigm shift. New initiatives are needed on a regular basis because otherwise other new ideas push the 'older' ones down the memory and institutional/personal priorities. Such initiatives have included: centres of excellence, 'lecturer of the year', 'best university' etc.

VIII. Conclusions and next steps

'A long way to go …" reflects the findings of this study. This is in terms of the findings in the inner but in particular in the outer instruments, the surveys and site visits respectively. It is fair to conclude that the discourse about the shift of paradigm is taking place to various degrees, amongst management and to a lesser extent staff, but much less amongst students. There is a long way to go but there is no certainty that the shift will be achieved, indeed it seems that it is finely balanced and could, without additional and continued support, fail. Making it work is the responsibility of all levels involved and cannot be simply left to the academic staff responsible for delivering the programmes. The evidence clearly shows the disconnect between the rhetoric, political ambitions and reality. This has already been reported on in the already quoted '2015 analyses' of progress. At a policy level, examples of the perception of success in implementation of a student-centred learning approach are reported by: the Bologna Implementation Report 2015: "lack of recognition of the value of student evaluation, independent learning and the use of learning outcomes"; the TRENDS VII (2015): "not all these positive

developments are common everywhere and, therefore, more progress is needed"; and the Bologna With Student Eyes 2015: "there has clearly been some progress; … 50% of respondents think that progress is slow; … the other half...are still not convinced that student-centred learning has been made a priority in higher education."

These statements are confirmed by this study. In fact, the actual level of penetration is lower than that which was stated in those documents. The main cause of this has been the insufficient communication between the political players and university hierarchies and the academic staff, as highlighted in the Yerevan Communiqué.

There has been a failure to engage with and convince academic staff about the necessity and advantages of this paradigm shift. Many initiatives have been taken in terms of national and international cooperation but have not received the endorsement and support required by the political policy makers. Seed corn funding has proven to be of help in the launch of relevant activities but a long-term commitment is the only way to achieve changes of this magnitude across such a broad spectrum of higher education systems.

It has been underestimated by all involved in the process how crucial a commitment to staff training and development is. It must be remembered that most staff in higher education have had no pedagogic/andragogic education and training — most staff are indeed 'driving without a licence', they base their own teaching on their own experiences as a student. The world has changed but not — in the vast majority of countries and cases the training for life as a university academic involved in facilitating learning and then assessing the achievement of the learning outcomes. What came as a shock was that many 'trainers/professionals' interviewed were actually themselves still operating in, and indeed wedded to, the old paradigm of expert driven delivery. Many institutions proved not to have any form of a well working Staff Development Unit with a focus on the new paradigm and all that it entails, including the many benefits to both staff and students. If this is not remedied the future looks bleak. However, any such Units must be positive, well informed, truly engaged and truly serve the needs of the staff and their students in line with institutional policies. They must not be perceived as a 'side show'. Recognition of such a Unit's value and ability to enhance and add value to the learning is vital. Success without these factors is unlikely. Full engagement by all actors is a *sine qua non* for success.

Without engaging students and employers in programme design, implementation, delivery and quality assurance there will not be the required

level of progress. Good initiatives in this respect are there, but it is a patchwork rather than all pervasive.

Given the financial situation, students show, for obvious reasons, concern about their future role in society. What they observe is a flexible labour market in which they are expected to demonstrate a sufficiently wide range of general competences and where possible some work experience. They know they need subject specific knowledge and skills but do also desire the wider outcomes of learning. In today's ever changing job market and challenged society it is of crucial importance to involve employers and societal leaders in the educational process, if possible in a structured way. They should be seen as advisers in this process, not decision makers in what should be taught and learnt, something which is a collective responsibility but must have at its core the academic staff. Nevertheless, their involvement as guest lecturers and placement/internship providers adds great value. Many institutions have already recognised this and taken appropriate steps in that direction.

To achieve these enhancements follow-up steps are required. The programme of visits was able to engage the institutions once more with the required paradigm shift and to re-launch the dialogue as well as allowing the researchers to analyse the state of play and the needed enhancements. The most important of these are:

- A stronger commitment at national level to achieving the paradigm shift, which is, in any case in the national interest in terms of economic prosperity and a sustainable society.

- European, as well as national, support to create better conditions for success. This can be both organisational and financial. This also implies a well-defined strategy for communicating the benefits of the paradigm shift at national, institutional and personal level. This might require tailored taskforces to operate at all those levels.

- Renewed institutional commitment and stronger leadership to achieve the paradigm shift, including adopting those good practices that already exist. This requires serious investment in targeted staff development and effective structures for curriculum development and learning backed by an effective quality culture.

- A systematic approach for analysing the reality of what is happening in practice. This could make use of the robust instruments developed, tested and used in the framework of this study. Site visits by an international team have proven to be of great value both in the

analysis that takes place but also in the heightened awareness created. It seems to be the best way to obtain a reliable picture of what is happening and allows for relevant and useful constructive feedback.

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Editors’
Acknowledgments

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Guidelines
for Authors

Guidelines for Authors

Version 1st May 2016

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TJHE
Ethical Guidelines
for Publication

TJHE Ethical Guidelines for Publication

Final Version (March 2015)

Tuning Journal for Higher Education (TJHE), Tuning Journal in short, is an international journal publishing in English original research studies and reviews in all aspects of competence-based, student-centred, and outcome-oriented education reforms at university level across the globe. It is published by the University of Deusto's Publications department on behalf of the International Tuning Academy (Tuning Academy in short), a jointly managed project of the Universities of Deusto (Spain) and Groningen (The Netherlands). The Journal, essentially an open access, online and peer-reviewed publication, is committed to maintain the highest ethical standards. Hence, the involvement of any stakeholder in any function connected with TJHE, including acting as an editor, the reviewing of manuscripts, the management and production of the Journal and the authorship and submission of manuscripts implies acceptance of and adherence to **TJHE Ethical Guidelines for Publication**.

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Date: 16 March 2015

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Tuning Academy

Echoes from micro and macro Higher Education Reform processes

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